

VERNACULAR TIMBER HOUSES OF UZUNGÖL:  
*EXAMINING / ANALYZING THEM IN THEIR RE-FUNCTIONING PROCESS*

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EXAMINING / ANALYZING THEM IN THEIR RE-FUNCTIONING PROCESS**

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## ABSTRACT

### **VERNACULAR TIMBER HOUSES OF *UZUNGÖL*: EXAMINING / ANALYZING THEM IN THEIR RE-FUNCTIONING PROCESS**

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M.Arch. in Restoration, Department of Architecture

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The aim of this study is to define structural and architectural features of vernacular houses in *Uzungöl*, town of *Çaykara*, *Trabzon* and to determine intervention types of houses in order to prevent losing original architectural characteristics.

For this purpose, the studies that were carried out about the history, geographical/physical character, settlement pattern and socio-economic character of the region in general and the district of the study area were surveyed. To be able to take reliable results, a study area, which has a representative character, was defined. All registered houses in the study area were surveyed and building characteristics of *Uzungöl* were identified. Beside gathering information, all surveyed buildings was documented in various details as structural scale and architectural scale.

In order to examine the intervention character at houses in the district, all applied interventions at houses were documented. At the end of the documentation, specific intervention types were found. Values of the study area were listed and physical/architectural features that decided be preserved were identified.

Keywords: Vernacular House, Conservation, Re-functioning, Intervention, *Uzungöl*

## ÖZ

### UZUNGÖL'ÜN GELENEKSEL EVLERİ: EVLERİN DÖNÜŞÜM SÜRECİNDE ANALİZİ

Çiçek, Ümit Gökhan

Yüksek Lisans, Restorasyon, Mimarlık Bölümü

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Bu çalışmanın amacı Trabzon ili Çaykara ilçesine bağlı Uzungöl Beldesi'nde bulunan geleneksel konutların yapısal ve mimari özelliklerini ortaya koymak, evlerin özgün mimari karakterinin kaybolmamasını sağlamak amacıyla evlerde görülen fiziksel müdahalelerin niteliğini ve karakterini saptamaktır.

Bu amaç doğrultusunda, önce bölgenin, sonra yörenin tarihi, coğrafi / fiziksel özellikleri, genel yerleşim doku karakteri ve sosyo-ekonomik yapısı hakkında yapılmış olan çalışmalar incelenmiştir. Yöredeki evlerde görülen fiziksel müdahalelerin niteliğini anlamak üzere doğru ve güvenilir sonuçların alınabileceği bir çalışma alanı belirlenmiştir. Çalışma alanında bulunan her bir tescilli yapı çalışılmış ve geleneksel Uzungöl Evi'nin karakteristik özellikleri saptanmıştır. Yapılardan toplanan bilgilere ek olarak, çalışılan yapıların her biri yapısal ve mimari ölçekte değişen detaylarda belgelenmiştir.

Evlerde yapılan değişikliklerin niteliğini ve karakterini anlamak üzere her bir evde gözlenen müdahaleler incelenmiştir. Böylece çalışma sonunda evlerde belirli tiplerde müdahale gruplarının bulunduğu görülmüştür. Çalışma alanındaki değerler saptanmış, korunması gerekli unsurlar ortaya konmuştur.

Anahtar kelimeler: Geleneksel Ev, Koruma, Yeniden İşlevlendirme, Fiziksel Müdahale, Uzungöl

*To my family...*

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## CHAPTER 1

### INTRODUCTION

*Uzungöl* is a small settlement in the Eastern Black Sea Region of Turkey, located in a unique geographical formation. Although small in area, the settlement is an attraction point for a lot of people for its both natural geographical environment, climatic features and preserved social body. In that natural environment, vernacular *Uzungöl* houses form quite a big amount of built environment. Houses have been survived in the district for a long time since they are resistant to tough physical conditions and compatible with ground. They are production of a certain cultural body and a certain life style.

Existing for years in the district, vernacular houses have started to be changed after various interventions applied. In the thesis, vernacular houses of *Uzungöl* and their physical changing process have been analysed.

Eastern Black Sea Region has unique geographic and climatic character in Turkey. Paralelly located to the coast, mountains form both geography and climatic character of the region. Starting from the shore, elevation increases to the inner parts in the region. In this way, the humid air that comes from the sea turn to falling. So the climate is both rainy and terrestrial because of the elevation. Steep mountains are covered with forests. *Uzungöl* is located at a higher place of that region.

*Uzungöl* is a settlement, which takes place in the boundaries of town of *Çaykara*, *Trabzon*. It is on the south-eastern part of *Trabzon* province and has an altitude of

1110 mt<sup>1</sup>. The settlement's name *Uzungöl* is also the name of the lake, which placed in the middle of the settlement. The lake *Uzungöl* is a natural *landslide set lake*. Surrounded steep green mountains, lake in the middle, valley and the river that passes through the settlement are natural geographical elements in the district. Among all, the lake creates an impressive composition with the other natural elements as natural landscape. Settled areas are at plain lands near the lake and at the slopes of the hills.

As a settlement scale, *Uzungöl*, is a *town* that is called "*belde*" in Turkish local governmental body. Plain settled areas near the lakeside are called *center* in the town. The buildings in the center are differently functioned buildings such as commercial buildings, tourism facility buildings, souvenir shops, tea houses as social meeting points, mosque, administrative buildings and some residential buildings. Relatively far from the lake, at the slope of the hills, there are many small quarters in the district, which are totally residential. Most of those settlements are scattered settlements as it is in the Eastern Black Sea region character, while one of the quarters called '*Büyükköy* quarter' shows collective settlement character. The thesis study is conducted in *Büyükköy* quarter, which is located on a slope of a hill that overlooking the lake.

Settlement consists of two storey houses on a large scale in the district. Located perpendicular to the slope land, houses are positioned not to block any other's view. Vernacular houses are designed to have a functional order between its floors and spaces. Basement floors are arranged as stable to feed animals and hayloft to put fodder. Ground floors are arranged as living spaces, whole household lives on the ground floor. Except living spaces, there are service spaces such as woodshed, larder and storage. Houses have direct contact with garden at outside via two side doors. One of the side entrances is the main entrance. Access to the basement floor spaces is via outside. Beside living, sleeping, cooking and eating, drying crops, storage of the

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<sup>1</sup> Archieve of General Directorate of the Protection of Natural Properties. "*Tabiat Varlıklarını Koruma Genel Müdürlüğü*". At the moment the thesis had been started, the name of the Organization was "*Özel Çevre Koruma Kurumu – Special Environmental Protection Agency*"

grain, drying fodder to feed animals and storage of the fire woods are the other activities done at houses.

Vernacular houses of Uzungöl were designed to be both functional and have resistance to climatic conditions. Houses have been constructed with same material and same method. Being compatible with the environment and constructed as simple woodwork by using simple tools, those buildings are the production of a traditional practice carried by years. Architectural tradition in the region has been kept by years with the reliable information transfer system (Tuna, 2008: 9).

Primary construction material is timber that's because it is easy to get from the forests in the district. As a secondary construction material, stone is used especially at the sections, where the building contacts to the soil.

2248 people live in the center of the district<sup>2</sup> (see Table 2). Main sectors are agriculture, animal husbandry, salmon trout production, beekeeping and tourism. Among those sectors, tourism is rising in the last 15-20 years in the district. People come to visit from both inside the country or from abroad. Average number of 40.000 people visits *Uzungöl* every year (*Trabzon Valiliği*, 2004: 20). Its natural properties, fresh air and conserved social body make more people come to the town.

For having such natural properties, the town is labeled to be a Natural Park Area, Tourism Center, Natural Site and Special Environmental Protection Area. The aim of the listing is to keep its natural features. For this purpose, 1/25000 scaled Environmental Plan and 1/5000 scaled Regulatory Plan was prepared. Tourism facility area-residential area distribution of the settled areas was determined by the plan decisions. For the fact that plan decisions have conservative characters, new settlement areas are limited.

Formerly settled areas and the original boundaries of those have been preserved by the plan decisions, where buildings individually have been changing. With the effect

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<sup>2</sup> www.tuik.gov.tr - last visit June 2011

of applied interventions, changes in physical architectural properties at vernacular houses have been observed.

### **1.1. Definition of the Problem:**

In *Büyükköy* quarter of *Uzungöl* town, physical changes at vernacular houses can be followed more clearly among all settlements. *Büyükköy* is a collective settlement, composed of the houses that settled on the slope of a hill overlooking lake view. Although it is not exactly placed in the center of the town, it has direct visual relationship with the lake. The quarter is one of the places that forms the composition of the vernacular houses built with same style and overlooking the same direction.

At vernacular houses, some physical changes are observed. It is important to determine the character of those physical changes in order to analyse the deterioration risks on buildings and then settlement pattern.

Although rising in the number of people living or coming to visit, with the decisions of Environmental Plan in 1/25000 scale and Regulatory Plan in 1/5000 scale, new settlement areas, such as new housing and tourism areas, have been limited in order to control inharmonious effects of urbanization (see Figure 9). Now, number of dwelling units and the number of accommodation units is not enough for the demand in the district. This makes people do some interventions on vernacular houses in order to hold the demand. One can say that human action has been started in the town recently (see Figure 1).

The first type of human action on vernacular houses has been caused by the limitations of new building areas in the district. In order to get more living units, alterations on houses have been started. There have been two types of demand for the vernacular houses seen in the district. First one is the demand of local people. The growth in population with the marriage of local people's children causes increasing in new dwelling necessity. By this demand, local people tend to do some interventions on registered vernacular houses such as arranging basement floors as living spaces, where they used to feed animals before. New living spaces on

basement floors mean new living opportunity for the married children of families. New living spaces have been generally built with new construction systems and new material<sup>3</sup>.

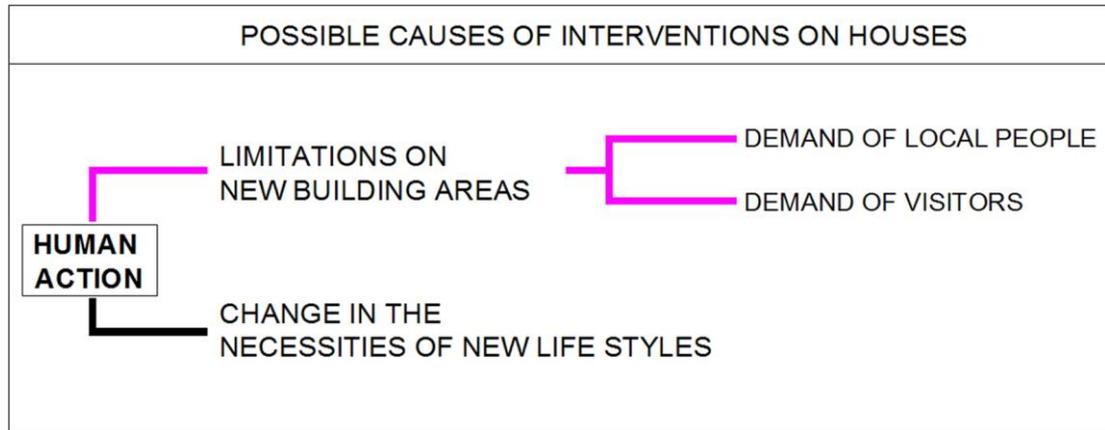


Figure 1, Diagram of Possible Causes of Interventions

Other is the demand of the people coming to visit town. Especially in summertime, not to be able to find free rooms in hotels, tourists have started to rent vernacular houses for some periods. Being also suitable for the householders as an opportunity to support their income, householders have started to hire the houses temporarily to visitors. Staying periods of visitors vary. Visitors from nearby environment generally choose staying for a day, visitors from different cities in the country generally choose staying for the weekend and visitors from foreign countries generally choose staying for longer periods. Because of this tendency, in the quarter there is home-pension operating activity grown in the lakeside in summertime. By this situation, doing interventions on the houses has become new tendency for some householders. Alterations have started at some of the houses by this rearrangement process. Generally ground floors are altered and arranged as accommodation units for foreign

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<sup>3</sup> See Stage 3.3.2.8.-“Atreration of the Space that the Basement Floor Spaces have been Re-arranged as Living Spaces or Accommodation Units” and Stage 3.3.3.2.-“Replacement of the Masonry System Basement Floor with Reinforced Concrete System Brick Wall” for further information

visitors who want to stay for longer periods<sup>4</sup>. Common tendency is reserving one floor for one big family.

The second type of human action has been caused by the change in life necessities. New functions have been added to vernacular houses. For instance, simple timber structures have been added to the sides of buildings<sup>5</sup>. New interspaces have been attached. Original functions of some spaces have been changed. Some original architectural elements have been altered and replaced with new ones, while some new architectural elements have been added to the buildings<sup>6</sup>. New materials have been added inside and/or outside of buildings as covering material<sup>7</sup>. Some parts of the buildings have been altered with using new construction techniques<sup>8</sup> and new spaces have been added beside the buildings<sup>9</sup>. Those interventions may be damaging as the whole building changed in construction system and material scale<sup>10</sup>.

That means an unconscious re-functioning process has begun in some of vernacular houses. Those unconscious interventions have been threatening houses to lose their characteristic features. Negative change in structures will also affect the settlement tissue in negative way. As a consequence, interventions will cause negative change in not only built-up environment but also in natural environment. Change in physical environment may also affect the socio-cultural body in the district.

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<sup>4</sup> See Stage 3.3.2.8.-“Alteration of the Space that the Basement Floor Spaces have been Re-arranged as Living Spaces or Accommodation Units” for further information.

<sup>5</sup> See Stage 3.1.1.1.-“Addition of Extra Woodshed” and Stage 4.1.1.2.-“Addition of Extra Hayloft” for further information.

<sup>6</sup> See Stage 3.3.3.4.-“Replacement of the Original Fireplace with New One” for further information.

<sup>7</sup> See Stage 3.1.3.2.-“Addition of New Timber As Facade Covering” for further information.

<sup>8</sup> See Stage 3.3.3.1.-“Replacement of the Original Parts with Reinforced Concrete System Brick Wall” for further information.

<sup>9</sup> See Stage 3.3.2.8.-“Alteration of the Space that the Basement Floor Spaces have been Re-arranged as Living Spaces or Accommodation Units” for further information.

<sup>10</sup> See Stage 3.3.1.1.-“Alteration of Whole Building” for further information.

## 1.2. Aim and Scope of the Study:

The vernacular houses have been existing for years in the study area. They are reflecting a life style with a proper plan organization, forming a relationship of inner and outer spaces with their plan layout and their differently functioned spaces. They are reflecting a life style with a construction technique which is indigenous. Compatible with environment, they have been located to form organic relations with other houses and also form visual and social connections.

In the last years, continuity of the vernacular houses in *Uzungöl* has been under threat to be lost by the interventions. They still represent region's traditional physical and cultural properties.

With defining the properties of these vernacular houses, the thesis aims to contribute both safeguarding the original building character and protecting their material substance and ensure their integrity for future generations<sup>11</sup> (Feilden, Jokilehto: 14). For this reason, aim of the study is to determine and to criticise overall interventions on houses and their reasons in order to preserve buildings and traditional pattern together; investigate the properties of the houses in terms of sustainability, flexibility to the new functions and compatibility with the environment.

Being a guide to keep the continuation of the architectural characteristics of the structures, the study seeks to define criterias in this **changing process caused by local people and tourism** in the spesific area called *Büyükköy* quarter.

To be able to define the conservation criteria, vernacular houses that was searched for their properties, in terms of architectural character of plan and façade order, original architectural elements, mass proportions, previous interventions and their aerial physical properties that contribute to compatibility in panoramic view will be in the context.

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<sup>11</sup> The terms 'material substance' and 'ensuring integrity for future generations' are used as it is in the book of Feilden and Jokilehto.

The search for the negative and positive role of plan decisions, effects of growing population and the tourism that causes to stop the continuity of the structural values and socio-cultural state in the district will be in context.

The study seeks to find out the functional / physical aspects of the vernacular houses in *Uzungöl* and the potentials of the spaces in order to use them for the right purpose in the refunctioning process. Intervention proposals for the houses in re-functioning process in terms of re-using original spaces for new functions will be pointed out; space uses, space potentials, volumetric characters of spaces will be searched; giving new function to a space without loosing its authenticity and inserting additional spaces to the authentic structure by the contemporary needs will be in context.

The structures planned for refunctioning will be aimed to support main necessities of modern life uses. In the refunctioning process, causing no negative change in social structure with tourism activities will also be taken into consideration.

Using traditional material and traditional construction systems at intervention proposals will be taken into account.



1st GROUP of BUILDINGS



2nd GROUP of BUILDINGS

3rd GROUP of BUILDINGS

Figure 2, Building Numbers in the Study Area (The map was used as template taken from “General Directorate of Protection of Natural Properties”)

### 1.3. Methodology:

Vernacular houses of *Uzungöl* have rural settlement characteristics and architectural / physical features that are indigenous. It is aimed to conduct a study first to determine those features, then to analyse and examine the intervention character at vernacular houses in the district. To be able to take reliable results, a limited study area, which has a representative character of the district, was selected. And all registered vernacular houses in that study area were studied (see Appendix B- Figure 135). As the study area *Büyükköy* quarter was selected. 55 registered and 1 unregistered<sup>12</sup> building has been studied of all nearly 90 buildings in the study area (see Figures 2, 10, 136).

The method of the subject is classified in five different stages such as: 1) site surveys 2) value determination, 3) determination of overall condition of change in the study area (applied interventions on vernacular houses), 4) analysis and evaluation of interventions 5) value assessment and general evaluation and 6) proposals for conservation.

In the first phase of the study, value determination work in the study area has been done. The value determination process has been conducted in six different stages such as collecting written and visual sources, first site work, preparation of the general layout of building sheets, second site work, application of building sheets and preparation of site analysis.

Before first site work in the study area, at the starting point of the work, written and visual sources have been collected. Historical research have been done, maps of the district have been gathered, needed information about the region in general and about the study area in particular have been collected, information of socio-cultural and socio-economical situation of the district have been gathered from written sources and evaluation of former analysis.

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<sup>12</sup> One unregistered building, coded as “UH-15”, is decided for representing a unity in the study area.

At the first site work, information about the study area and information about geographical properties of the district has been collected and the boundaries of the study area have been determined by walking around; photographs have been taken and comparison of written-visual sources to current situation has been done. In order to prepare a building sheet for each house, needed information have been determined. Information categories which will be placed in sheets have been decided. Application plans of *Uzungöl* have been asked from Municipality.

General layout of the building sheets has been prepared with the collected information at the first site work. Main titles on the sheets have been arranged.

At the second site work, the building sheets have been applied systematically to the selected buildings in the study area. Basic plans of all buildings have been drawn in terms of basement floors and ground floors. Applied interventions and intervention dates have been tried to be estimated, noted down, needed details are documented by sketches, measured and photos of details have been taken. Aerial photographs of all buildings have been taken. Properties of buildings, in terms of their contribution to the street sections, to the panoramic view of *Büyükköy* quarter and their visual relationship with the lake, have been defined. The relation of the houses from being together and settlement characteristics have been determined. Daily life, social activities of local people, people dealing with trade and visitors have been observed. Main sectors as being a base on *means of life* such as agriculture, animal keeping and tourism have been observed.

For each traditional house, a building sheet has been prepared to organize the data about vernacular houses in one page (see Appendix A- Figures 80-134).

*Building sheets:* There is a representative photo, a small site plan indicating location and key plans of basement and ground floors of the houses have been attached and information about the: registration status, number of storey, mass proportions and mass dimensions, original-current function, structural system and construction material, openings (doors, windows), inner spaces - open spaces – outer spaces, roofs, shutters-railings, original architectural features, general condition of the house,

interventions applied and overall condition of change of the house have been placed on the sheets (see Figure 3).

After filling up at the site, a sheet has been arranged for each building in computer with the use of software named AutoCAD. Applied interventions have been placed at the right part of the sheet.

In the second phase of value determination, characteristics of the Eastern Black Sea region in general and the characteristics of the study area have been explained under the main titles as geographical/physical character, historical character, settlement pattern and socio-economic character. Building characteristics in the study area has been studied in a detailed way in Chapter 2.2.: “Characteristics of the Study Area” in order to say what a vernacular Uzungöl house is.

Building characteristics in the study area has been studied under four categories such as 1) Main physical architectural features of buildings, 2) Material and Structural System, 3) Façade organization and 4) Plan organization. In the first part, main features of the house such as positioning and orientation in the area, number of storey, roof type, structural system and material used and functions of its spaces have been introduced briefly. In the second part, structural system of houses has been explained in a detailed way and dimensions of structural elements were given. Construction materials and structural system elements were explained. In the third part, façade organization has been explained as front façade and side facades and façade elements such as doors-windows, *dış hayat* and other open spaces and, roofs. In the fourth part, plan organization has been explained as plan layout and spaces. Any space in house or architectural element has been explained with the methodology that explaining the space’s or architectural element’s 1) Location in the house, 2) Function 3) Dimensions and 4) Architectural elements of the space

With the use of collected data from sheets, a serious of site analyses of study area such as registration status, surveying status, number of storey, function of buildings, structural system and materials used, roof covering material, buildings having rare

architectural features, physical condition of buildings and overall condition of change of buildings have been prepared in site scale.

In the second phase of the study, **overall condition of change in the study area has been determined**. All applied interventions at houses have been classified in three main groups as additions, removals and alterations. Any of main intervention types have been subdivided into three groups as mass, space and architectural element scale. All interventions have been listed and displayed, common intervention types have been watched out by searching their percentage of application number, so common interventions in the study area have been found out. Parallel to that study, intervention dates have been tried to be estimated in order to have an idea about the period of the intervention actions. That indication would be important for the study to see if there are some breaking points about the common public habits. At the end of the chapter, all interventions have been evaluated.

In the third phase of the study, **values** have been assessed. Cultural values and socio-economical values have been pointed out.

In the fourth phase of the study, **a general evaluation** has been done that which architectural properties are under threat to be lost and which architectural properties preserved and have to be preserved were decided. In the fifth phase of the study, after defining values, **proposals for conservation have been discussed** in order to keep continuation of the values in the study area and in the district in bigger scale.

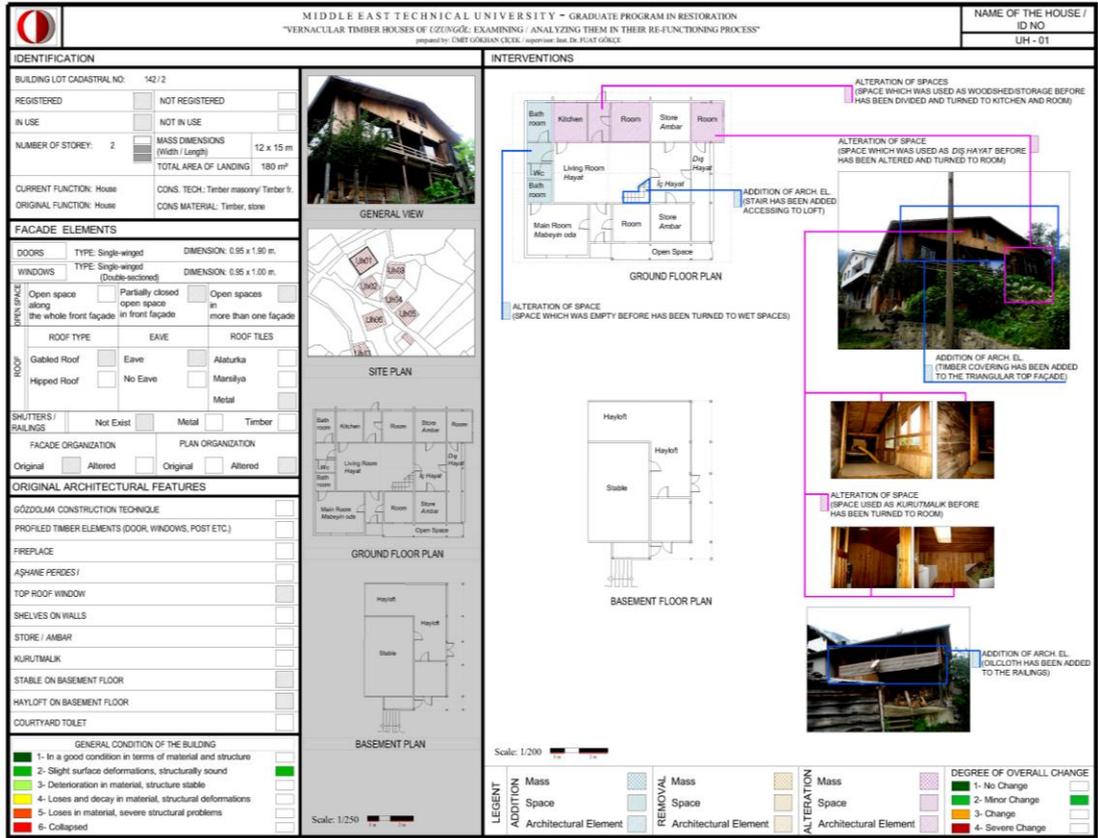


Figure 3, Example from one of the building sheets

## CHAPTER 2

### VERNACULAR TIMBER HOUSES OF *UZUNGÖL*

#### 2.1. General Characteristics of the Region

##### 2.1.1. Geographical / Physical Character (Topographic Character)

Eastern Black sea Region is bounded from the west by *Kastamonu*, from the south by *Çorum*, *Amasya*, *Tokat*, *Sivas*, *Erzincan*, *Gümüşhane*, *Bayburt* and *Erzurum*, from the east by *Kars*, *Ardahan* and Georgia and from the northern side by the Black Sea<sup>13</sup> (see Figure 4).

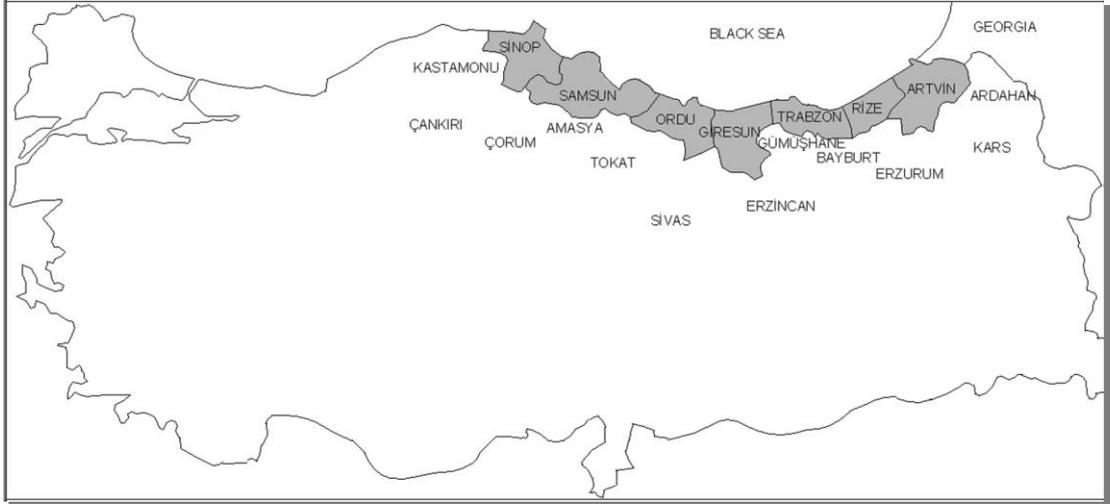


Figure 4, Eastern Black Sea region and the provinces.

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<sup>13</sup> *Doğu Karadeniz Bölgesi Bölgesel Gelişme, Şehirleşme ve Yerleşme Düzeni*, İmar ve İskan Bakanlığı, Planlama ve İmar Genel Müdürlüğü, Bölge Planlama Dairesi Yayını, 1972, pg. 2.

Topography, elevation differences in other words, is the cause of the variation in the properties of a region; such as climate characteristics, vegetation (flora), distribution of population, settlement pattern and economic structure (Çobancaoğlu, 1998: 28). Overall geographic formation of the region consists of Mounts of Northern Anatolia (*Kuzey Anadolu Dağları*), valleys, inclined terrain and some plain lands in the mountains and near the rivers<sup>14</sup>. Mountains, which are covering big amount of places, are located parallel to the coast. They seem natural separation element between the Region and Anatolia (see Figure 5).



Figure 5, Geographical Map of Eastern Black Sea Region

(<http://www.cografyakulubu.com/image/harita/turkiye/06dogu.jpg> - last visit May 2011)

### *Climate*

Heavy raining, warm weather in winters, higher degrees of relative humidity and less number of days having freezing points in a year, are the commonly seen characteristics of region. Exposed to the sea effects, approximate degree is low in the region in summer time. The degree is about 6°-7°C in the region. Surrounded Caucasus mounts block cold weather move from the east in winter<sup>15</sup>. The climate of the region shows differences at the coastal areas and the inside places which is far

<sup>14</sup> Doğu Karadeniz Bölgesi Bölgesel Gelişme, Şehirleşme ve Yerleşme Düzeni, İmar ve İskan Bakanlığı, Planlama ve İmar Genel Müdürlüğü, Bölge Planlama Dairesi Yayını, 1972, pg. 3.

<sup>15</sup> Erinç, Sırrı., *Tatbiki Klimatoloji ve Türkiye'nin İklim Şartları*, İstanbul Üniversitesi Coğrafya Enstitüsü, İstanbul, 1957, pg. 90.

from the sea effect. In the coastal areas, amount of falls increase, while temperature fluctuations go in a low range (see Table 1). At the higher levels, it is cold and tough in winters. Step climatic character is seen in the inside areas and temperature fluctuations go in a high range in that places (Çakır: 2000, 7).

Table 1, Climatic Information of Trabzon province (<http://www.dmi.gov.tr/veridegerlendirme/il-ve-ilceler-istatistik.aspx?m=TRABZON> - last visit May 2011)

<b>TRABZON</b>	January	February	March	April	May	June	July	August	September	October	November	December
<b>Average temperatures measured (1975-2010)</b>												
<b>Average temperature (°C)</b>	7.3	7.0	8.5	11.8	15.8	20.4	23.2	23.4	20.2	16.4	12.3	9.3
<b>The highest average temperature</b>	10.8	10.7	12.2	15.7	19.0	23.5	26.3	26.9	23.9	20.0	16.2	12.9
<b>The lowest average temperature</b>	4.4	4.1	5.5	8.7	12.7	16.9	20.0	20.3	17.1	13.4	9.3	6.3
<b>Average sunshine duration</b>	2.5	2.9	3.4	4.1	5.5	6.7	5.6	5.4	4.9	4.2	3.4	2.5
<b>Average rain days</b>	13.5	13.0	14.0	14.8	13.2	11.3	8.4	9.7	12.0	13.8	13.1	13.0
<b>Average precipitation</b>	78.0	63.7	59.8	59.5	52.9	51.2	38.3	46.8	77.0	121.6	100.4	83.5
<b>The lowest and highest temperatures measured (1975-2010)</b>												
<b>Maximum temperature</b>	24.3	26.4	33.1	35.0	37.8	35.9	37.0	34.8	33.2	32.7	30.3	26.4
<b>Minimum temperature</b>	-4.6	-6.1	-5.0	-2.0	5.4	10.3	13.5	13.8	9.4	3.8	1.0	-3.1
<b>Max. precipitation</b> 10.07.1992 115.1 kg/m2												
<b>Max. wind</b> 29.12.1987 112.7 km/hrs												
<b>Max. snow height</b> 22.02.1985 41.0 cm												

### **Geological Character**

General geological formation of Turkey consists of volcanic and sedimentary rocks and the soil covering them. All of the four geological formations can be observed in various places in Turkey. Main geological structure of Turkey consists of three main zones, such as Northern zone, Southern zone and variable zone. Vernacular timber houses, which take place on these zones or near, are built with the construction materials caved from the rock beds of those local zones. Overall geological

formation of the region consists of plutonic rocks, which are formed by magmatic actions, occurred inside the earth's crust (Ketin, 1983: 317).

The metamorphic series (calcareous marbles and marbles from the First Period), which forms the oldest and stabilized ground formation of the region, and plutonic rocks (deep rocks such as granite, granodiorite, quartz diorite, syenite) located at the highest points of the region. Being earthquake-resistant and a good construction material, having high load-bearing capacity, these rocks generally locate at the higher points of the places in the region, where is not suitable for the bigger settlements. Important mines have not been observed in these series of the rocks in the region<sup>16</sup>.

### **2.1.2. Historical Character**

The region has been inhabited by various communities since ancient times in history. It is mentioned in ancient sources that up to ninety ethnic groups had lived in the Black Sea coasts (Bilgin, 2000: 127). It is stated that Gas/Kas and Gud/Guti's, who were considered to be one of the leading branches of *Oğuz* Turks, had settled in the region in B.C. 3000 – 2000 (Hatipoğlu, 1979: 29). It is mentioned in Hittite written sources that Kaşka/Kaşga's, who were very active and fearless against the powerful Hittite army, were living in the region in B.C. 2000 (Yakar, J., Dinçol, A.M., 1974: 85-99). It is stated that the Karian's and the Aka's had run gold and iron mines in the shores of Asia in 10<sup>th</sup> century B.C. and also stated that Greek colonies had lived in the Black Sea in the 10<sup>th</sup> and 9<sup>th</sup> centuries B.C. However, extensive colonizations had been started since the 7<sup>th</sup> century B.C. by the Miletus people (Işık, 2001: 1). It is stated that the Cimmerians began to settle in the Eastern Black Sea region since 675 B.C. (Tarhan, 1979: 355-369). After the Cimmerians, the Scythians (*Sakalar*) came to the Eastern Black Sea region and dominated the region for 28 years. The Medes occupied the Eastern Black Sea region in 606 B.C. and put an end to the Scythians' domination (Goloğlu, 1973: 25). Persians started to rule the region in 547 B.C. and their domination had lasted until the eastern expedition of the Macedonian king

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<sup>16</sup> *Doğu Karadeniz Bölgesi Bölgesel Gelişme, Şehirleşme ve Yerleşme Düzeni*, İmar ve İskan Bakanlığı, Planlama ve İmar Genel Müdürlüğü, Bölge Planlama Dairesi Yayını, 1972, pg. 12.

Alexander in 334 B.C. (Günaltay, 1987: 261). When the struggles between the commanders of Alexander had started in order to share Anatolia after Alexander's death; the region came under the sovereignty of the Pontus in 302 B.C. (Tuna, 2008: 26). The region was under the domination of Roman Empire between 63 B.C. – 395 A.D. (Bilgin, 1990: 68-77). Between 395-1204 the region was under the rule of Byzantines. In the meantime, *Trabzon* quarter was started to be ruled by the independent kings in 1120. From 1204 to 1461, the region was remained under the rule of Trabzon Roman Empire (Komnenos) (Bıjışkyan, 1969). The region has been under Ottoman sovereignty since the conquest of *Ottoman Sultan Mehmet II* in 1461.

### **2.1.3. Settlement Pattern**

Developing and changing with the geographical formation, topography of a region has been an effective factor in changing the relations of the houses with land. Street pattern and landscape are important factors in the formation and the orientation of living units, and the relations of the basement floors with terrain.

Having a rugged terrain, the distribution of the plain areas is less in the region, which does not allow collective settlement. This situation causes increasing the scattered layout in the Eastern Black Sea region. Settlement is scattered; the distances between residential areas and the center may reach kilometers. It is not easy to see where a village begins and where it ends. One of the factors causing scattered settlement in the region is the topographical irregularity, while the other factor is the necessity of a close contact between the field and the house. That also causes scattered housing (Özgüner, 1970: 8).

*Although the scattering of the houses in the landscape gives an apparently disordered effect, there is a main layout factor which determines their placement: the size and location of the fields belonging to each. The irregularity of the ground and the uniformity of the houses are main factors that influence the general layout. The entrances of which are on the same side and the corn field on the downhill side, so that it can be easily watched from the house (Özgüner, 1970: 9).*

The orientation of the house depends not on the view or on the sun, but on the slope of the land. The main façade faces downhill. Neither the view nor the orientation is taken as design factors, that's why the houses are not parallel to each other. Houses are settled according to the slope of the land. The houses are single and detached, surrounded with a garden.

As a result of the natural formation, a particular house type, which is a rectangular shaped building of whose one side embedded into the edge of a mountain. The embedded side of the house is generally constructed with stone in the region. Roofs are inclined and roof covering material is generally tile or metal panel. As the organization of spaces, there is always one main room which serves the whole family in every type of plan. This main space has a different name in different parts of the region but basically it means "common space". The common space is called "*hayat*". The plan organization of all houses in the region is based on the same *hayat* type.

Contrary to urban house, a rural house has annexes around. Different types of annexes, which are commonly used for storage and protection, are arranged around the house according to their functions and form of the site. (Özgüner, 1970: 9)

#### **2.1.4. Socio-economic Character**

The region places 5<sup>th</sup> in rankings in terms of economic development according to the data of State Planning Organization (DPT), which is dated 2000. 70% of the working population has been employed in agriculture-based activity. That prevents development in the region. Because the agricultural income per rural population is low, local people were forced to migrate (Çakır, 2000: 16). Scarcity and lack of agricultural lands in the region prevents the development of agricultural production, while the presence of limited construction areas and lack of efficiency in the industry prevents the development of the industry (Çakır, 2000: 17). It is identified that the socio-economic condition of the villages of *Trabzon* is under Turkey- average; better than rural area average of some regions; and above the average of many developing countries. There are change in the structures of the houses, increasing usage of the consumer durable goods in the houses, decreasing livestock numbers, new

agriculture alternatives and variable fuel, increase the level of the villagers' - especially the women's- life. However, all these decrease the demand to the forest resources. The 89,5 % of the villagers have health insurance and this becomes a real advantage for them. The main income of the villagers is the salaries. Being forestcrafts and earning money from the forest is decreasing day by day. Although the rate of literacy is low among the women over middle age, it is the same as that of developed countries. It is determined that while the basic facilities and the socio-economic conditions of the villages are growing, the population is decreasing day by day. If this continues, the forest villages will be the places where just the retired people live. On the other hand, these changes will decrease the dependence on the forest resources, which is good for the use of natural sources (Alkan, 2008: 37).

In *Çaykara* district, being the average rate of the retired people %53 is largely the result of people gone outside of the village in order to earn money. This structure reflects not only in the houses built or the life-enhancing goods used, but also changes in social and cultural structure in the district. There are refrigerator in %90,3, telephone in %87,4, television in %89,2, vacuum cleaner in %42,4 and dishwasher in %1,5 of the dwellings in forest villages in the region. The use of washing machine is %75 and this situation leads increasing in the quality of life, especially women (Alkan, 2008: 41).

While living people are working for subsistence production from animal husbandry and agricultural activity in the forest villages, they are getting a large portion of revenues from outside of the villages. Forest-source income is 8.8% of the total revenue (Alkan, 2008: 41). 33% of all, the largest share of revenues are from pensions, most of which are transferred from the state (Alkan, 2008: 42). In all of the average incomes per household, revenue from animal husbandry is 20,4%., decrease of 29% in the number of cattle and decrease of 45% in the number of small ruminants have been determined since the years of 1976-1979 (Alkan, 2008: 43).

Table 2, The Distribution of Population in *Uzungöl* and Nearby Districts (www.tuik.gov.tr - last visit May 2011)

<b>UZUNGÖL</b>	<b>Sub-Districts</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
	<b>Uzungöl (Center)</b>	2.248	1.141	1.107
	<b>Arpaözü</b>	83	39	44
	<b>Çayıroba</b>	108	49	59
	<b>Demirkapı</b>	153	85	68
	<b>Demirli</b>	240	122	118
	<b>Derindere</b>	58	30	28
	<b>Köseli</b>	212	104	108
	<b>Şekersu</b>	85	36	49
	<b>Taşkıran</b>	2.107	1.075	1.032
	<b>Yaylaönü</b>	120	63	57
<b>Total</b>		<b>5.414</b>	<b>2.744</b>	<b>2.670</b>



Figure 6, General View of the Study Area

## 2.2. Characteristics of the Study Area

*Büyükköy* quarter of *Uzungöl* town is selected as study area. Located at the western part of the district, the study area is isolated from the center of town, but also having direct visual contact with the center. There are up to 90 vernacular houses in the study area, which are residential (see Appendix B- Figure 137). 55 of all are registered. Although there are built areas and open spaces (open spaces of houses and cultivated areas such as corn fields) exist together in the study area, it shows collective settlement characteristics in opposition to general Eastern Black Sea settlement character. In the study area, all registered houses have been studied (see Figure 6).

### 2.2.1. Geographical Character



Figure 7, General view of *Uzungöl*.

Having an impressive natural geographic formation, *Uzungöl* is a lake, which takes place at the intersection point of the Mount *Soğanlı* and Mount *Kaçkar* (see Figure 7). The lake is on the river *Haldizen*. It is one of the branches of river *Solaklı*. River *Solaklı* rises from the mounts *Soğanlı* and flows into the Black-sea from *Of* town

(*Trabzon Valiliği*, 2004: 19). Even varying its water level by each season, lake is 1000 mt. long, 500 mt. wide and 15 mt. deep. (Archieve of General Directorate of the Protection of Natural Properties. “*Tabiat Varlıklarını Koruma Genel Müdürlüğü*”

### 2.2.1.1. Location and Transportation

Being on the south-eastern part of *Trabzon* province, *Uzungöl* is 99 km. far from *Trabzon* and 19 km far from *Çaykara* district. Having an altitude of 1110 mt., it is located at the intersection point of the Mount Soğanlı and Mount Kaçkar (see Figure 8). Coordinates of the city are 40° 34’ 00” North Latitude and 40° 22’ 00” East Longitude. (*Trabzon Valiliği*, 2004: 19)

Access to the region was via the Black Sea until 50 years ago. After that year, focused on the overland transportation, highways had been constructed. Railways reach to the Black Sea at the points Zonguldak and Samsun. Harbor and an airport are the other important accessing facilities to *Trabzon* (Çakır, 2000: 13). Access to the district is via *Trabzon – Of – Çaykara – Uzungöl* highway (see Figure 8).



Figure 8, Geographical location and Transportation of *Uzungöl* (Google Earth).

### 2.2.1.2. Climatic Information, Flora and Fauna

Being at higher levels in region, *Uzungöl* shows step climate characteristics. Each season is rainy in the district, where generally winter is snowy and summer is cloudy.

The district has the oldest forests of *mild climate zone* of the globe. There is constant precipitation and relatively humid air seen in the district<sup>17</sup> that land is always green in any season. There are 157 plant species identified in the district. More than 60 species of all are endemic species existing in the mounts *Soğanlı* and *Demirkapı* (*Trabzon Valiliği*, 2004: 20). Surrounding mounts have various plant structures varying from big-leafed trees near lakeside to needle-leafed trees in the middle and green pastures at the top can be seen according to the level in the district. Being a part of the natural formation, floral areas in the district promotes and evolves day by day according to the properties of areas; such as climate, topographic character, altitude and the directional location. That is why plant species varies in different places of the region<sup>18</sup>. The most important value in the district is the big amount of eastern laden forests. Beech forest can be seen to the altitude of 1700 mt. Existing generally with lime, chestnut, maple, elm, oak and hornbeam are common species observed in the area (Çakır: 2000, 8).

In surrounded forests, 20 species of mammals and 151 bird species have been identified (*Trabzon Valiliği*, 2004: 20). Wild life of animals has moderately been conserved in the district. There are various species such as wolf, bear, wild goat, fox and wild rooster living in the district. However, brown bear, roe, lynx, wild goat are the species that are under threat to become extinct by illegal hunting. Coyote does not exist anymore because of hunting with cyanide<sup>19</sup>.

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<sup>17</sup> See Table 1 for further climatic information of *Trabzon* province – Part 2.1.1.-Geographical/Physical Character

<sup>18</sup> *Cumhuriyetimizin 50'nci Yılında Ormancılığımız*, Orman Bakanlığı, Ankara, 1973, pg. 30.

<sup>19</sup> Archive of General Directorate of the Protection of Natural Properties. “*Tabiat Varlıklarını Koruma Genel Müdürlüğü*”. At the moment the thesis had been started to be prepared, the name of the Organization was “*Özel Çevre Koruma Kurumu – Special Environmental Protection Agency*”

### **2.2.1.3. Geological Character**

As a geological formation, volcanic structure, having a wide spread presence in the mountains of the Eastern Black Sea region, is commonly seen in *Uzungöl* district. In the slopes that surrounding the lake, there are large amount of rocks, both volcanic rocks such as andesite, dacite and basalt, and sedimentary rocks such as clay, marl and limestone seen in the district. Both the volcanic rocks and sedimentary rocks have been decomposed severely by the effects of climate. In spite of the lush vegetation, the land is suitable for mass movements because of the sloped geographical structure (Verep, 1999: 9,10).

### **2.2.1.4. Formation of the lake *Uzungöl***

Being in the middle of the valley, which is surrounded by steep sloped mounts, the lake is set up by the big rocks fall into the valley and stops the river *Haldizen*.

The exact year that the lake was first formed is not known. But it is anticipated that the river *Haldizen*, which rises from the Mounts *Soğanlı* and flows through the Valley, could have been blocked by an avalanche caused an accumulation of river waters 5-6 centuries before. The topography, climate and geological character of the area are effective factors in formation of the lake. (Verep, 1999: 9)

## **2.2.2. Historical Features**

### **2.2.2.1. Historical Breaking-points**

Being one of the sub-districts of *Çaykara*, *Uzungöl* was first mentioned in *Avarızhane* Book<sup>20</sup> (White, 2011: 205), which is an official written source, published in 1681. In *Uzungöl*, known as *Şerah* in that year, 60 people were living in 12

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<sup>20</sup> In Ottoman administrative body, *avarız* was used as a tax that calculated the ratio determining the contribution of each tax unit. *Avarız-hane* book is a document that includes the amount of tax to be paid by each household.

dwellings<sup>21</sup>. According to *Salname-i Trabzon*<sup>22</sup>, which dated to 1876, 710 people were living in 229 dwellings in the 19th century in *Uzungöl (Şerah)*, which now is belonging to *Çaykara* district<sup>23</sup>. The population of *Uzungöl* was 9% of the total population of the district and *Uzungöl* was one of the largest settlements in the district<sup>24</sup>. Configured as a township of the district *Of* in 1925, *Çaykara* was labeled as district in 1947 and was reorganized in 1948<sup>25</sup>. According to the 2000 census, 4192 people were living in *Uzungöl* and that population was 11,85% of the population of *Çaykara*<sup>26</sup>.

**Breaking Points:** First of the important events affecting the population of *Çaykara* had happened in the 20th century. Migration and epidemic diseases were seen in the district in the First World War period (Lermioğlu, 1949: 225-246). In the First World War period, 330.000 – 340.000 people emigrated from *Trabzon*. 24.999 of people, who had gone before, returned to *Trabzon* and the rest 224.143, some of whom had died from disease, some died from starvation and some others had died during the migration as a result of the attacks of the Armenian and Greek Cypriot irregulars<sup>27</sup>.

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<sup>21</sup> *Geçmişten Geleceğe Çaykara-Dernekpazarı: Tarih, Toplum, Kültür*, Çaykara ve Dernekpazarı Kültür ve Yardımlaşma Cemiyeti Yayını, İstanbul, 2005, pg. 33.

<sup>22</sup> *Salname*'s were statistical, geographical and biographical yearbooks that were first published by the central Ottoman governments in 1847 and later, beginning in 1865, by provincial authorities as well. *Salname*'s contained information on population, expenditures and education. They were discontinued after 1922. (*Encyclopedia of the Modern Middle East and North Africa*, 2004)

<sup>23</sup> *Geçmişten Geleceğe Çaykara-Dernekpazarı: Tarih, Toplum, Kültür*, Çaykara ve Dernekpazarı Kültür ve Yardımlaşma Cemiyeti Yayını, İstanbul, 2005, pg. 34.

<sup>24</sup> *Salname-i Trabzon*, Def'a 8, pg. 132-143.

<sup>25</sup> *Trabzon İl Yıllığı*, 1967, pg. 68.

<sup>26</sup> *2000 Genel Nüfus Sayımı: 61- Trabzon*, Ankara, 2002.

<sup>27</sup> Kaya, E., *Birinci Dünya Savaşı'nda Trabzon Muhacirleri*, Trabzon ve Çevresi Uluslararası Tarih-Dil-Edebiyat Sempozyumu Bildirileri, 2001, c.1, pg. 539-540; Ural, S., *Kurtuluştan Mütarekeye Kadar Trabzon Vilayetinin Sosyo-Kültürel ve Ekonomik Durumunu Düzeltmeye Yönelik Hükümetin Aldığı Tedbirler*, Trabzon ve Çevresi Uluslararası Tarih-Dil-Edebiyat Sempozyumu Bildirileri, 2001, pg. 567-577; Lermioğlu, M., *Akçaabat-Akçaabat Tarihi ve Birinci Genel Savaş – Hicret Hatıraları*, İstanbul, 1949, pg. 260-302; Bilgin, Mehmet., *Doğu Karadeniz Tarih-Kültür-İnsan*, Serander Yayınları, Trabzon, 2000, pg. 393-397; Albayrak, Haşim., *Tarih Boyunca Doğu Karadeniz'de Etnik Yapılanmalar ve Pontus*, 2. Baskı, İstanbul, 2003, pg. 187-244.

In 1929 in July 29th, a great flood disaster, called *Of Seylabı*, had occurred in the towns *Of*, *Çaykara* and *Dernekpazarı*. As a result of forty-eight hours of incessant raining, 80% of the lands in the towns *Of*, *Çaykara* and *Dernekpazarı* have become unavailable, while almost 4.000 people died in flood. After the flood disaster, many families had decided to move to Maçka and Bayburt. Some people were inhabited in the towns of *Tercan* and *Çayırlı* and their villages in *Erzincan* province and some in *Muş* province<sup>28</sup>. A similar flood disaster was occurred in the town of *Çaykara* in 1959. In 1959, a total of 408 households were located in the town of *Kırıkhan*, *Hatay*. In 1963, a total of 200 households, 150 of which is from *Uzungöl*, were located in the town of *Özalp*, *Van*<sup>29</sup>.

#### 2.2.2.2. Legislative Chronology

Having both cultural and natural properties town of *Uzungöl* is accepted and designated to be:

1. **Natural Park Area:** *Uzungöl* was labeled to be “Natural Park Area” with the decision dated 03.10.1989 and numbered 1625 by the Ministry of Forrestry.
2. **Tourism Center:** *Uzungöl* was labeled to be “Tourism Center” with the decision dated 18.01.1990 and numbered 90 / 70 by the Council of Ministers.
3. **Natural Site:** *Uzungöl* was labeled to be “Grade I and Grade III Natural Site Area” with the decision dated 04.12.1998 and numbered 3332 by the Cultural and Natural Heritage Preservation Board.
4. **Special Environmental Protection Area:** *Uzungöl* was labeled to be “Special Environmental Protection Area” with the decision dated 07.01.2004 and numbered 2003/6692 by the Council of Ministers (Environmental Law numbered 2872).

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<sup>28</sup> Öztürk, M., *Sessiz Göç*, Çaykaralılar Dergisi, sayı 1, İstanbul, 1992, pg. 9; *Zaman Tüneli 1929 Sel Felaketi... Çaykara'dan Göç Var*, Çaykaralılar Dergisi, sayı 16, İstanbul, 1992, pg. 22

<sup>29</sup> Çaykara Kaymakamlık Katibi Ahmet Ziya Ayaz'ın 1959-1974 döneminde Çaykara ve Dernekpazarı'ndan başka yerlere yapılan iskanla ilgili verdiği bilgileri konu ile ilgili yazılan eserler doğrulamaktadır. Duman, G., *Gökçeada'da Çaykaralılar*, Yeni Çaykaralılar Bülteni, sayı 10, pg. 7; Kara, M., *Kabataş (Fotinos) Köyü*, Yeni Çaykaralılar Bülteni, sayı 10, pg. 17; Ayaz, A. Z., *Çaykara İçin*, Çaykaralılar, sayı 1, pg. 27; Uygun, F., *Gökçeada ve Çaykaralılar*, sayı 3, pg. 13-15; Altuncu, M., *Gurbetteki Çaykaralılar-Kırıkhan 408 Evler Mahallesi*, Çaykaralılar, sayı 6, İstanbul, 1994, pg. 33-38.

### 2.2.3. Settlement Pattern

#### 2.2.3.1. Settlement Pattern of *Uzungöl*

The Environmental Plan, which was prepared in 2009, shows the distribution of the functions of areas in *Uzungöl*. The study area of the thesis is decided to be ‘pension area’ (see Figure 9).

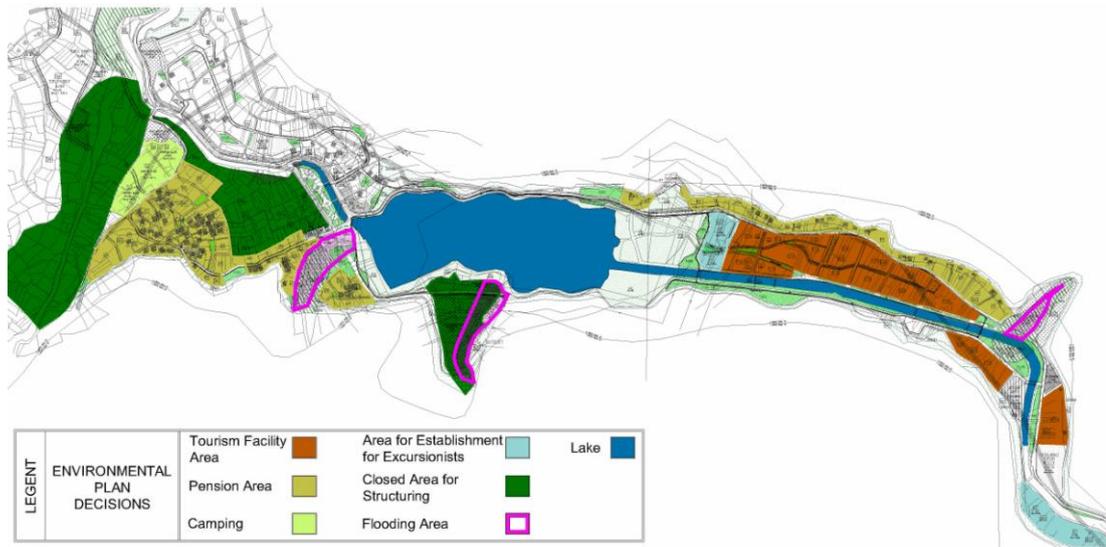


Figure 9, Map showing Environmental Plan Decisions (The map was used as template taken from “General Directorate of Protection of Natural Properties”)

#### 2.2.3.2. Settlement Pattern of the Study Area

The buildings, forming the settlement pattern in the study area, show parallel characteristics to the Eastern Black Sea Region settlement character, in terms of positioning and orientation in terrain (see Figures 10, 11). In the study area, the prevailing factor for the buildings is topography. Buildings are generally located perpendicular to lines of land slope and the main façade of buildings oriented towards lower points of land. Exceptionally few buildings are located parallel to lines of land slope. As a natural consequence of this, the direction accepted as ‘the front façade’ for the building is the direction looking to the lower parts of the land. For the study area, the direction looking to the lower parts of the land is on the same

direction with the lake view and this is one of the striking characteristics of the study area (Figure 11).

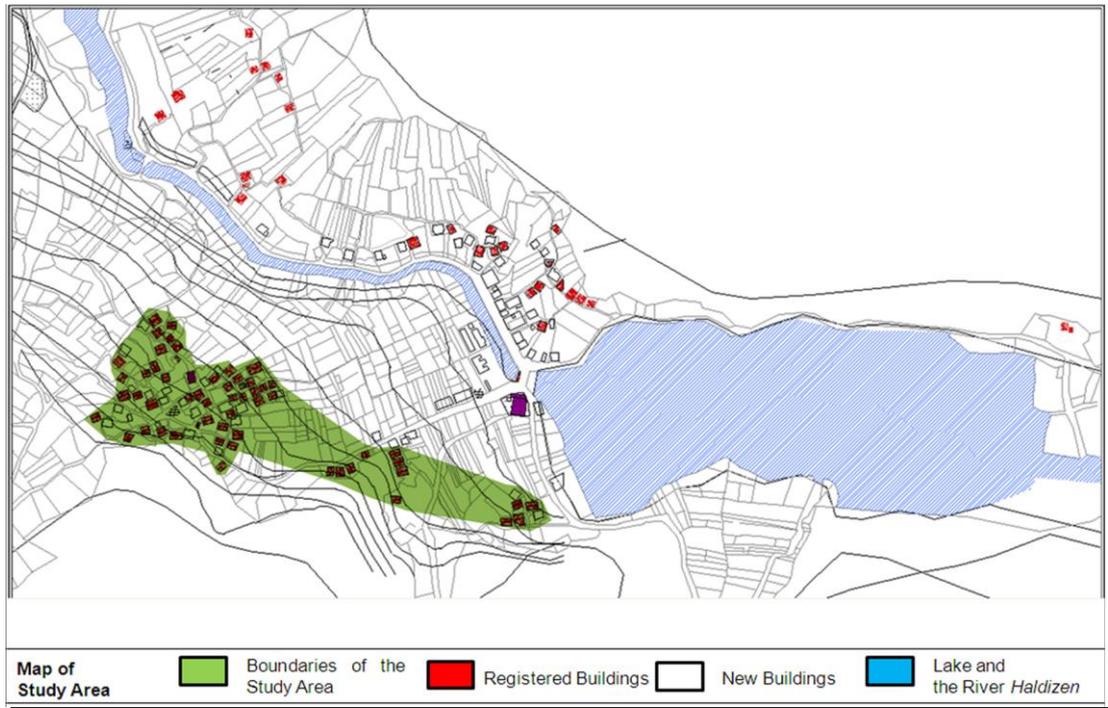


Figure 10, Settlement of the Study Area (The map was used as template taken from “Environmental Protection Agency for Special Areas”)



Figure 11, General View of Buildings in the Study Area showing settlement-lake visual relationship.

Buildings exist in a formation of three different groups in the study area. First group, is located on the highest points of the land. It is in the most remote location from the lake and containing highest number of buildings. The buildings compose a close

settlement pattern. Despite being close to each other, buildings do not block other's views. Each house has its own open space. There is no order for the houses being together with its cultivated area or not. There are houses both with its cultivated area and without (see Figures 10, 11).



Figure 12, General View of the Second Group of Buildings in the Study Area

The second group of buildings is located on the middle points of the land and placed closer to the lake from the first group. Positioned close to each other, the number of structures is extremely less. Located parallel to the road that going upward in front, this small group of buildings creates a panoramic view, which is harmonious with the environment (see Figures 10, 12).

The third and the last group of buildings in the study area are located at the lower level of the land and closer to the lakeside among all groups. This group of buildings is located on a relatively plain terrain and is close to each other (see Figures 10, 13, 14).



Figure 13, View of the Third Group of Buildings in the Study Area



Figure 14, View of the Third Group of Buildings in the Study Area

Buildings in those groups show similar architectural and physical characteristics that contributing to the perception of the pattern as a single image. Physical and architectural properties such as construction material, construction system, plan layout and facade organization are similar in all buildings; small changes do not affect general layout (Özgüner, 1970: 45).

## 2.3. Building Characteristics

### 2.3.1. Main Features

Vernacular *Uzungöl* houses are two storey houses consisting of a basement and a ground floor (see Appendix B- Figure 138). They oriented towards lower points of land. In the inclined topography, houses seem two storeys from the lower point and half of the storey from the higher points. Having nearly the same height with the soil at the back facade, the height of the building reaches to 6.5 meters on the front facade<sup>30</sup> (see Figure 16). As a settlement character, each house is located on the ground leaving a 1.5-2 meter gap with the retaining wall (see Figure 18).

The houses are built with composite structural system such as rubble stone masonry on the basement floor; timber masonry system on the ground floor(see Appendix B- Figure 139)<sup>31</sup>. Timber masonry system is used as *kurboğazi geçme*<sup>32</sup> construction technique at houses. The houses in the study area originally show similar architectural and structural features (see Figure 15).

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<sup>30</sup> As the terminology of the facades; the side that overlooks the lower level is accepted as ‘front façade’. The side, where the structure set onto and/or partially buried into the terrain on the upper level is accepted as ‘back façade’.

<sup>31</sup> SeeStage 2.3.2.-“ Material and Structural System” for further information.

<sup>32</sup> SeeStage 2.3.2.-“ Material and Structural System” for further information.



Figure 15, Former and Latter Views of the Study Area. All Houses Have Same Structural System.

As plan organization, ground floors of houses are designed as living spaces and service spaces, while basement floors are designed as stable and hayloft (see Figures 17, 18). All people in the house live in central space *hayat*, which is surrounded by other spaces in the houses (Eldem, 1984: 31) (Arel, 1999: 37)<sup>33</sup>. The space is

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<sup>33</sup> Most of Turkish house-type categories have been classified according to the positioning of *hayat* and its relationship with rooms. According to Eldem, the most distinctive characteristic of Turkish house is *hayat (sofa)*. All plan layouts are organised around *hayat*. That central space defines the whole organization of house. According to Eldem, *hayat* is the center of living in house.

According to Arel, in the analyses of Anatolian vernacular houses that especially located in rural areas, it is seen that houses are detached structures that organized around the central space *hayat (sofa)*. *Hayat* is the meeting or working space. See Stage 2.3.4.2.-“Spaces / Living Space *Hayat*” for further information.

illuminated by the little hole, which locates at the ridge point of the roof<sup>34</sup>. Other living room is the main room, called *Mabeyin oda*<sup>35</sup>. Located near the main entrance, the room has distinctive properties in both dimensions and construction system.



Figure 16, View of the Settlement. Houses are from the Front Side and from the Back Side.

Entrances to the building are from both sides in accordance with the plan layout. One of the side doors is used as main entrance door and the other is used as leading to outside from woodshed<sup>36</sup>. As architectural element of open space, there is a courtyard toilet located outside of the building.

In the buildings, roof type is gable roof in the study area (see Appendix B- Figure 140). Directions of the ridge lines on roofs are generally perpendicular to the lines of slope<sup>37</sup>.

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<sup>34</sup> See Stage 2.3.3.1.-“Facade Elements: Doors – Windows” for further information.

<sup>35</sup> See Stage 2.3.4.2.-“Spaces / The Main Room (*Mabeyin Oda*)” for further information.

<sup>36</sup> See Stage 2.3.3.1.-“Facade Elements : Doors – Windows” for further information.

<sup>37</sup> See Stage 2.3.3.1.-“Facade Elements : Roofs” for further information.

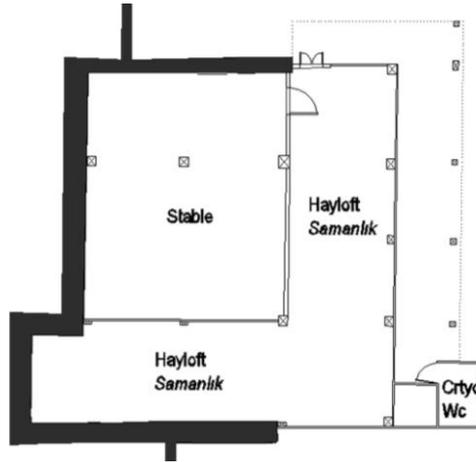


Figure 17, Plan layout of Basement Floor of a Vernacular *Uzungöl* House<sup>38</sup>

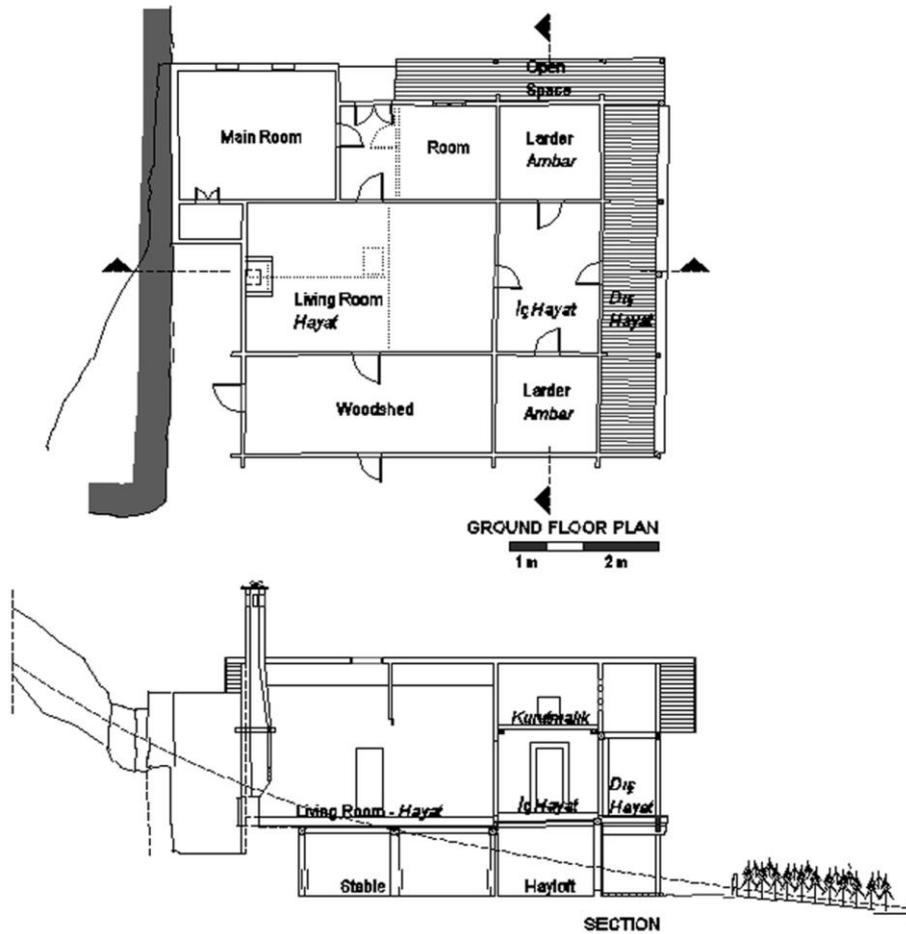


Figure 18, Ground Floor Plan and Longitudinal Section of a Vernacular *Uzungöl* House<sup>39</sup>

<sup>38</sup> The plan layout above is a key-plan that has been drawn to represent the simple layout of the house.

<sup>39</sup> The plan layout and section above is a key-plan that has been drawn to represent the simple layout of the house.

### 2.3.2. Material and Structural System

In the district, vernacular houses are constructed with composite structural system. The ground floor is constructed with timber masonry system with *kurtboğazı geçme* construction technique<sup>40</sup>. The basement floor is constructed with rubble stone masonry walls on the back side and partially on both sides. Front façade of building is constructed with timber skeleton system (see Figures 19, 20).

Construction material used at buildings is timber. Stone, as secondary construction material, is used on basement floors. Roof covering materials are over&under type tile (alaturca tile) and tile. In recent years, usage of new construction materials seen at buildings such as new timber as façade covering material; brick, briquette, cement, as components of reinforced concrete frame system and metal sheet or metal panel as roof covering material.

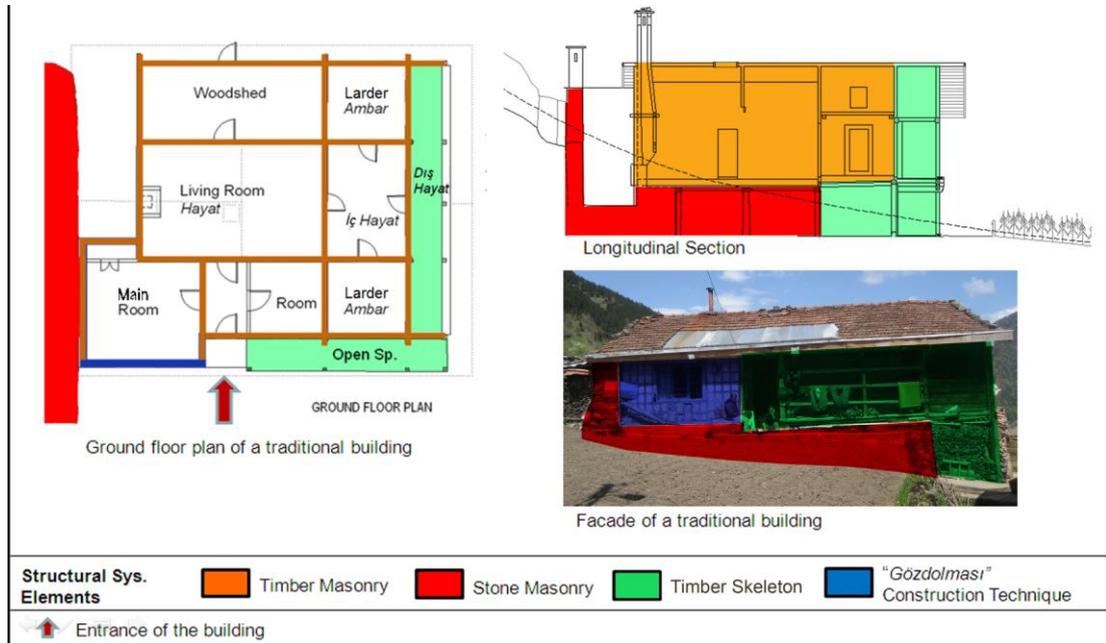


Figure 19, Structural System of a Vernacular *Uzungöl* House

<sup>40</sup> See Stage 2.3.2.2.-"Structural System / Wall Construction" for further information.

### **2.3.2.1. Material**

Timber is the most commonly used construction material in the buildings. Ground floors of houses and front facades of basement floors are constructed with timber. Timber has been used at various parts of the buildings such as; at walls and at roof as a structural element, at open spaces in front and at side facades as supporting construction element.

Timber is used at walls as structural element. In a specialized construction technique, it is used at a particular section at the building with various sizes of stone as infill material in a gridal timber construction<sup>41</sup>. At roof, timber is used both as a construction material and covering material fixing to the ceiling under the roof. In the construction of a floor, it is used as floor covering material<sup>42</sup>.

As a construction material, stone is used at the back side at the retaining wall and on the side facades as infill material on the basement floor in the form of rubble stone masonry wall. As binding material, the mixture of mud and lime mortar is used in stone masonry wall construction. It is used as infill material in *gözdolma* construction technique.

### **2.3.2.2. Structural System**

Structural systems used at a building are varied for the building located on inclined terrain. The first system is timber masonry system at the ground floor that is used at the upper parts of the land. The second system of the building is timber skeleton system that is used at front façade of the building (see Figure 20).

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<sup>41</sup> See Stage 2.3.2.2.-“Structural System / *Gözdolma* Construction System Outer Walls” for further information.

<sup>42</sup> See Stage 2.3.2.2.-“ Structural System / Joist Work of Floor and Ceiling” for further information.

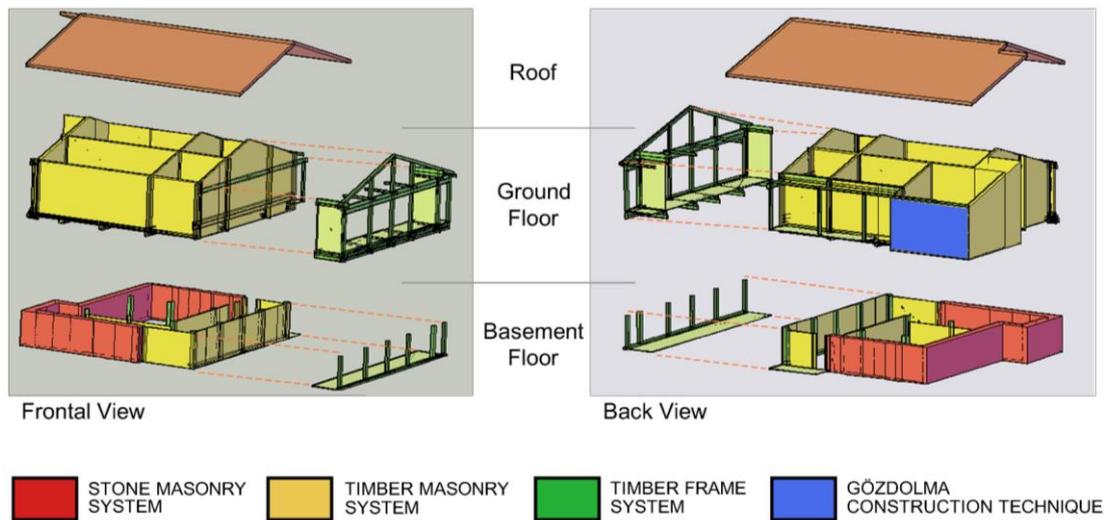


Figure 20, Structural System of the Houses in the Study Area

The name “timber masonry” is used to define log houses<sup>43</sup>. In that system, the walls are built-up by putting timber elements (logs) as locate on top of each other, (Tuna, 2008: 130).



Figure 21, Side Facade of a Building in the Study Area.

Various structural systems and construction techniques such as, stone masonry system, timber masonry system, timber frame system and infilled timber frame system (*göz dolma* construction system) are seen at the houses in the study area.

<sup>43</sup> Log is roughly shaped timber, which is used in the construction of masonry system houses.

Among these systems, timber frame and timber masonry are lighter systems. Therefore, the front façade is preferably constructed with timber in order to reduce the sliding danger in the sloped land. A craftsman, who is knowledgeable with all these systems, can combine these different kinds of structural systems, depending on the available material and the location of construction (Özgüner, 1970: 36) (see Figure 21).

**Foundations:** Rubble stone masonry system foundations are not buried into the ground, they are located on the flattened terrain (see Figure 22).

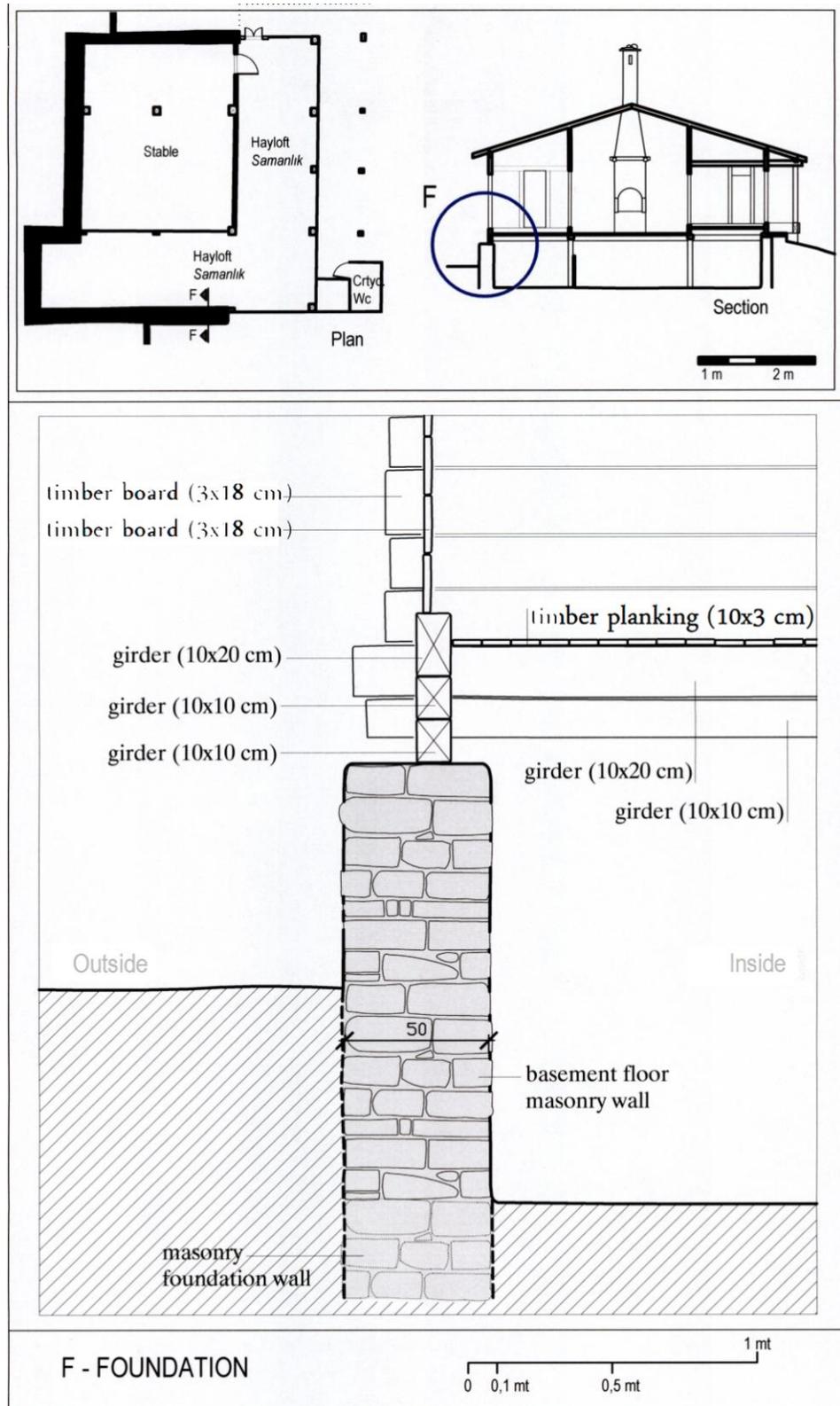


Figure 22, Construction Detail of Foundation

**Timber Basement:** Timber basement is simple construction that established above the rubble stone masonry foundation of the building. 10x10 or 10x20 thick timber girders, which are interlocking at the corners, are laid horizontally above the stone foundation. As the main living section, timber masonry part is located above that timber basement (see Figure 23).

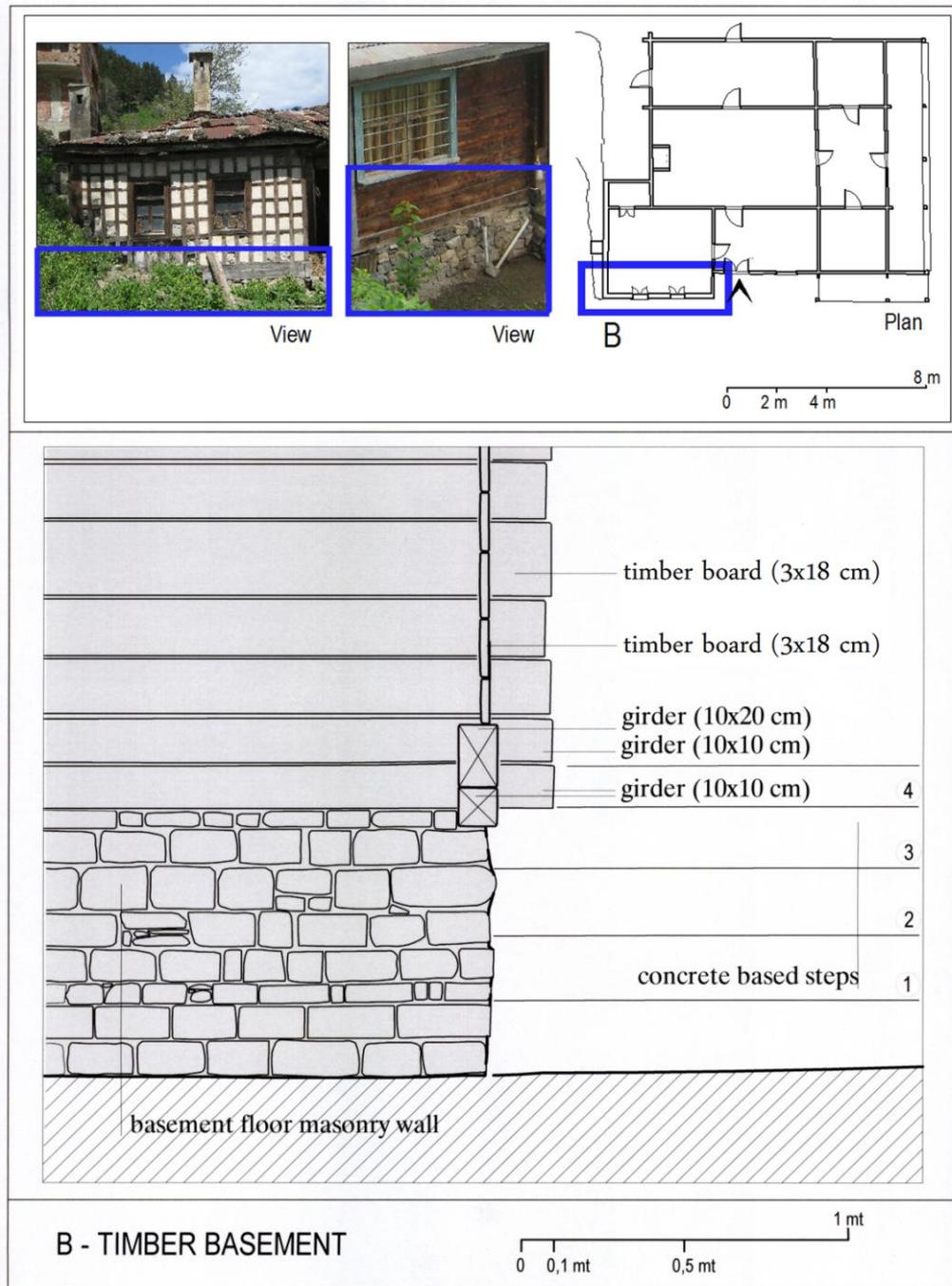


Figure 23, Timber Basement

**Wall Construction:** Parallel to the technological development, the shape of timber elements has changed in the construction of log houses. Construction type of timber masonry system is tongue and groove interlocking system. That is specifically named as *kertme boğaz*, *karaboğaz*, *kurtboğazi* and *çalmaboğaz* in local language with the relation of process level of timber (Tuna, 2008: 130) (see Figure 24). Among those construction techniques, *kurtboğazi* technique is used at buildings in the study area.

In timber masonry system, wood wall construction is applied by using 3 to 16-20 cm thick timber boardings of various diameters, which are connected at the corners. This jointing system is locally named as “*boğaz*”. The method, in which roughly refined wood used, is named as “*kurtboğazi geçme* system” locally (Özgüner, 1970: 31). At the application process of “*kurtboğazi geçme* technique”, the jointing sides of timber element are grooved regularly in accordance with the wall length. After preparation, timber elements are attached on top of each other from the grooved points without leaving any gap (Tuna, 2008: 131) (see Figures 24, 25). In “*kurtboğazi geçme* technique” there is no need for timber elements to have same height; the adjustment of timbers is provided by using dowel. The interior walls are extended 15-25 cm towards outside; so one may understand the planning organization of such a house by walking around it. In other words the inside is reflected outside (see Figure 26). Like standing columns on each corner in a space, interlocking joints of timber walls define a “space” in houses. Four joints define one single space.

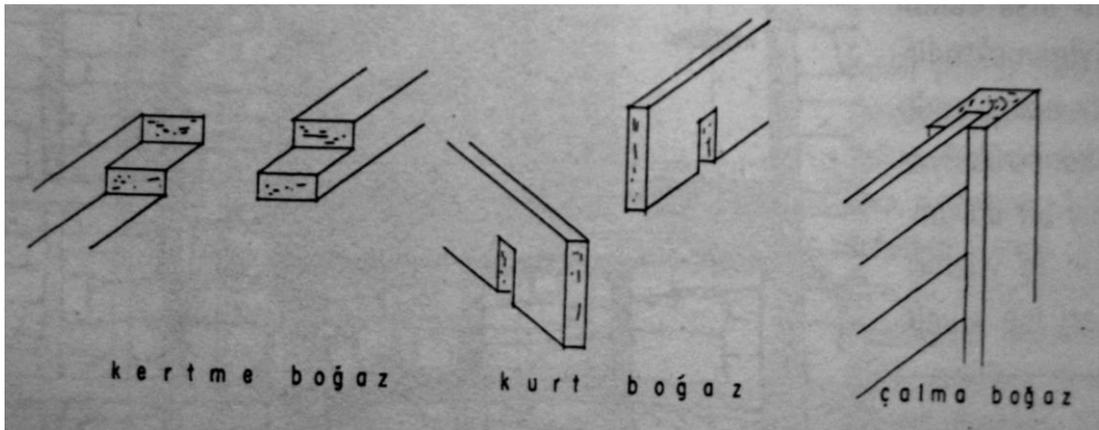


Figure 24, Types of Tongue and Groove Joint Construction Technique (Özgüner, 1970: 30)

The timber elements at walls also provide the wall surface without using filling material or partitions. It is rather difficult type of construction, since all the walls have to be erected together (Özgüner, 1970: 9). In this type of walls, generally there are no gaps seen on wall surface because of the timber elements are well processed and there is no need to plaster wall surface.

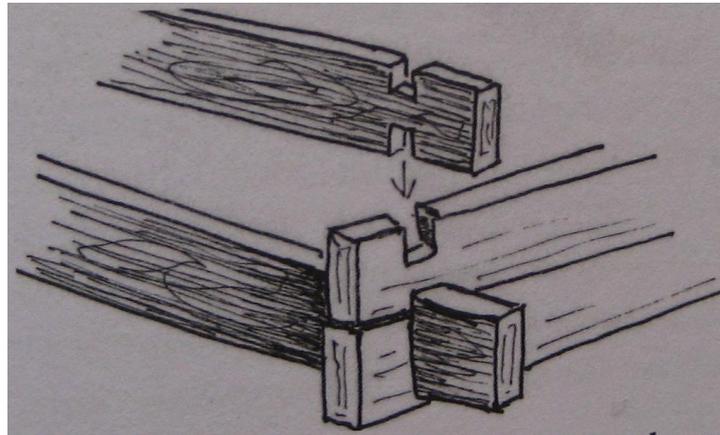


Figure 25, Application Process of Tongue and Groove Joint Interlocking Construction Technique (Tuna, 2008)



Figure 26, Example of Timber Masonry System Showing the Extension of Walls Towards Outside.

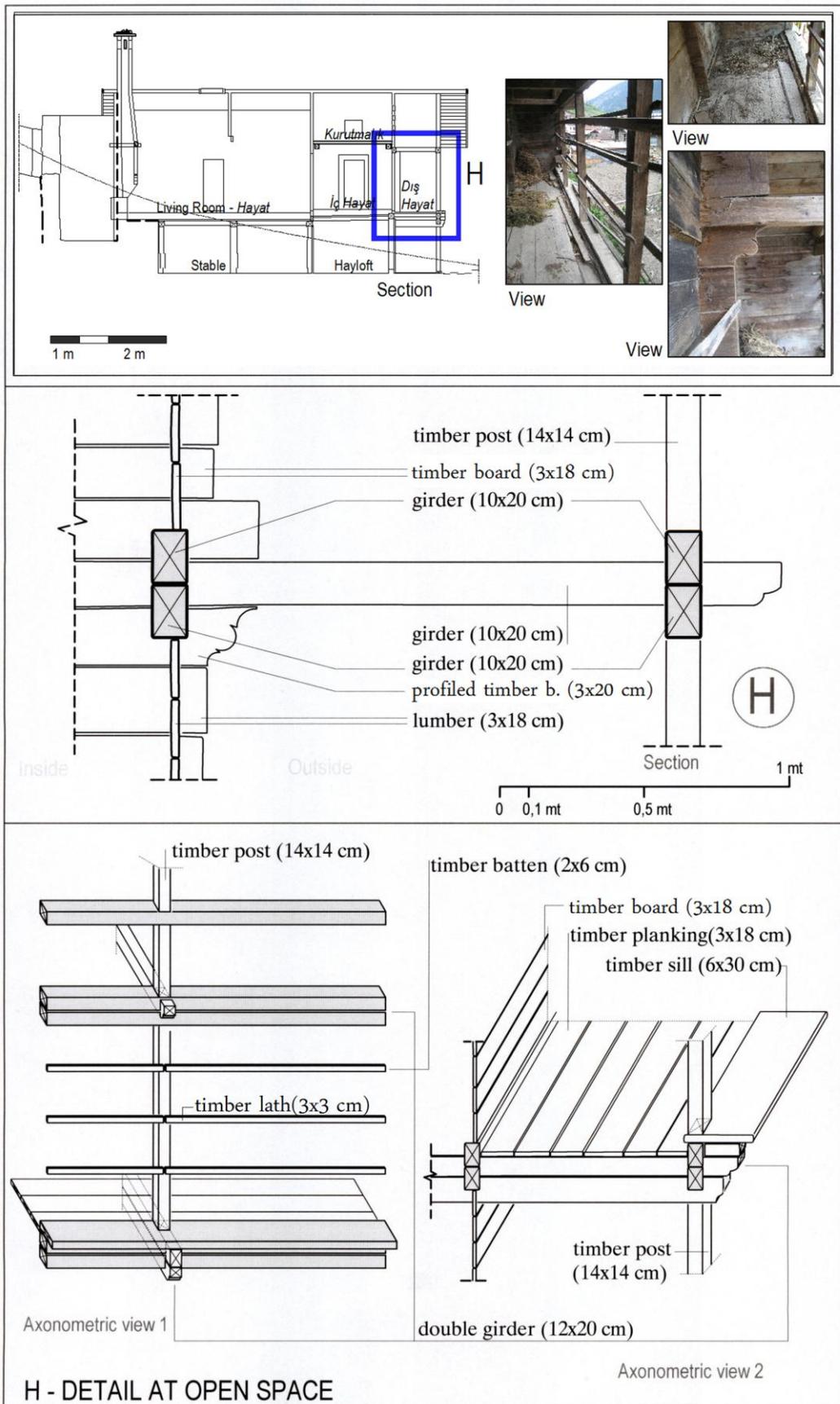


Figure 27, Construction of Open Spaces

**Construction of Open Spaces (Dış Hayat in front and other open spaces):**

Structural system of open spaces is timber frame system. Located at the front façade of the building, space *dış hayat* is supported by the 14x14 or 16x16 cm cross sectioned timber posts; which are placed symmetrically from the middle point of the front façade. The posts divide the façade length into four equal parts. Axis' of the posts are the axis of the inner walls that are coming from the plan layout at the buildings. Between those vertical elements, there is 2x5 - 3x3 cm cross sectioned wood laths existing, which are nailed to the posts from both sides. Located horizontally at every 45-55 cm, those wooden bars divide the storey height into four or five. The bars work as a hanging elements for the fodder to be dried. Open spaces that are existing on the side facades are also supported by timber posts that are on the axis' of the extended inner walls. Side open spaces are also divided into 4-5 horizontally by wooden bars (see Figure 27).

**Gözdolma Construction System Outer Walls:** *Gözdolma* construction technique is seen at the specific part of the building as a vernacular construction type. The outer wall of the main living room, which is called *mabeyin oda*, is constructed with *gözdolma* construction technique in order to have an insulated living space against atmospheric conditions. In order to obtain 14 cm-thick wall, square shaped timber studs that are 10x10 - 14x14 cm cross sectioned are put on the two outer corners of the space and the span between the two posts is divided with the rectangular shaped studs. The studs, which are 5x10 cm cross-sectioned, are erected very close to each other that are located 15-20 cm apart from each other. Then they are connected by means of horizontal or diagonal 5x10 cm-cross sectioned wooden bars.

Each connection method gives a completely different design pattern, which are called with specific names by local people. The horizontal connections create square-shaped boxes type called “cellular”<sup>44</sup> (Özgüner, 1970: 8-9). At the outer face of the wall, the square shaped spaces between vertical studs and horizontal wooden bars are filled with a big piece of stone to cover the gap. The spaces in the corners are filled with smaller pieces of stone and the infilled spaces are plastered with lime mortar. Inner surfaces of the walls are covered with timber lining (see Figure 28).



Figure 28, Cellular Type - *Göz dolma* Construction Technique (Özgüner, 1970: 26)

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<sup>44</sup> “Cellular” box type is called *göz dolma* locally.

**Roof Construction:** In the timber masonry system houses, the last timber element of the wall construction is used as the first element of the roof construction. The roof is simple gabled roof and it is established by putting circular-sectioned logs juxtaposed on the hipped rafter<sup>45</sup> (see Figure 29).

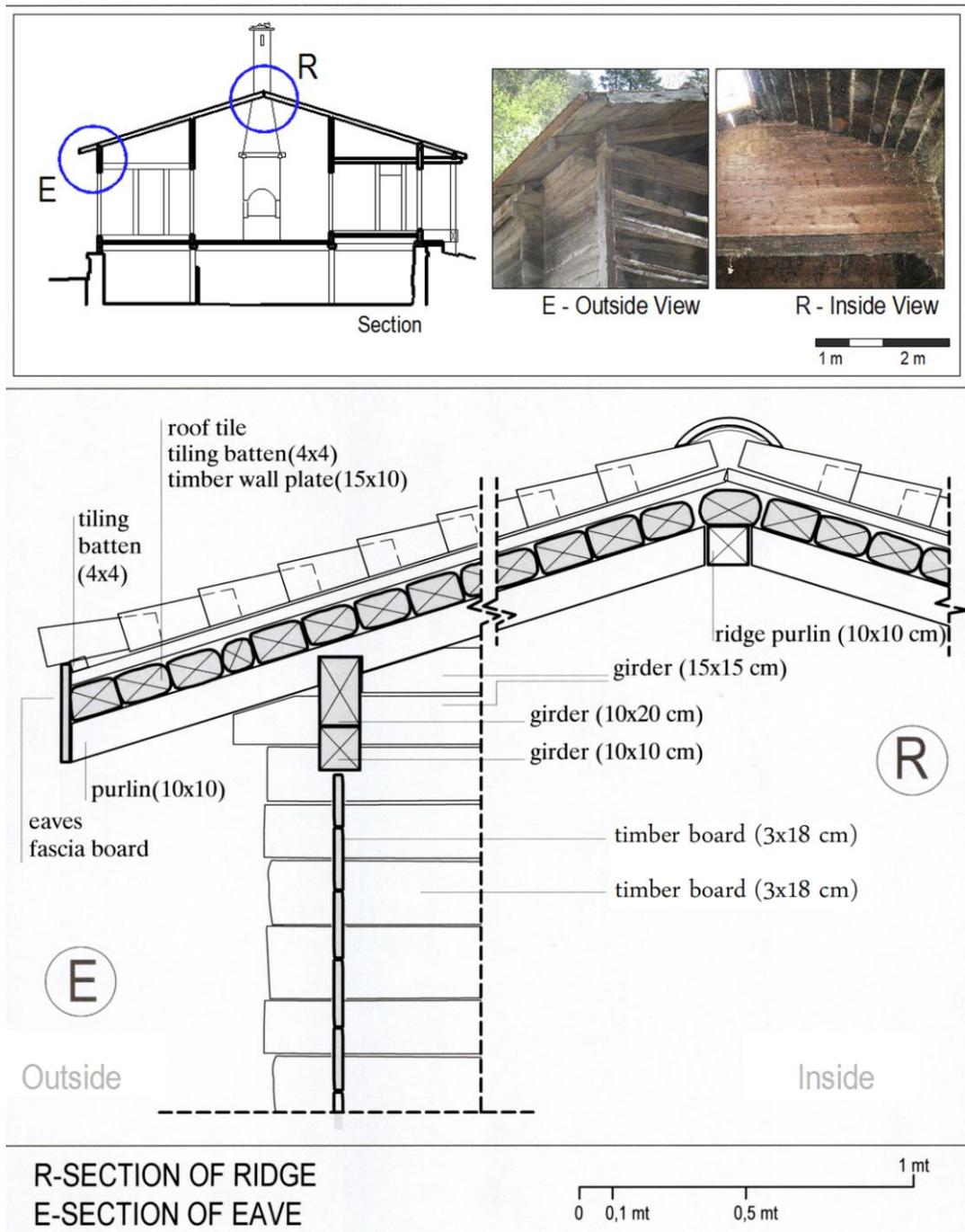


Figure 29, Construction Detail of Roof

<sup>45</sup> Önal, Hakkı., a.g.e, pg. 80

**Joist Work of Floor and Ceiling:** In the study area, construction material of floor joist system is timber. Being also a kind of pine, poplar and fir are the most used tree species at buildings. Roughly processed or circular-shaped beams are placed in same direction. Depending on the carried load and span, beams are placed side by side or placed 10-20 cm apart from each other.

**Floor and Ceiling Coverings:**

a) **Floor Coverings:** Construction material of the floor joists and covering material of the floors are also timber. Selected wood type is generally pine. Having the average of 25-30 cm width, timber elements are applied by nailing to the floor joists in opposite direction.

b) **Ceiling coverings:** Loft joists and ceiling joists are generally exposed without any covering. In some spaces, timber covering is applied, the application by attaching 25-30 cm width timber elements simply to the beams.

**Establishment of the Openings of Windows:**

Openings are one of the important elements of façade characteristics in buildings. Spaces of window openings are considered during the construction of timber frame system. The only window or windows locates at the outer wall of *mabeyin oda* section, where *gözdolma* construction system is applied, at buildings. As application method, the spaces of window openings at wall are formed by establishing a selected space by leaving it free in the gridal pattern, which is formed by vertical studs and horizontal bars. The window measurement as width and height comes from the module in the gridal section of the wall. The ratio of window spaces is generally 1/2. The gridal pattern, which is formed by timber and stone, creates also a geometrical order on façade (see Figure 28).

**Chimneys:** Placed in *hayat*, as an architectural element fire place consists of the fire place section and the chimney. No fireplace hood or a cover is seen. Carefully

shaped in external appearance and projecting into the space, fireplace is impressive internal architectural element in the main living space. Fireplaces have an extensional part, but chimneys are simple in shape. Placed at a certain height, plastered or exposed, chimneys are completed at top with a roof tile or a flat-shaped stone. In the original use of the houses, the hole at the ridge point of the roof is generally used as an alternative discharging element in order to discharge the smoke of the fireplace (Eruzun, 1981: 19). A separation element, hanging from the ceiling, is placed at the middle of the space *hayat* helps preventing the smoke spread into the all living room space<sup>46</sup> (see Figure 30).

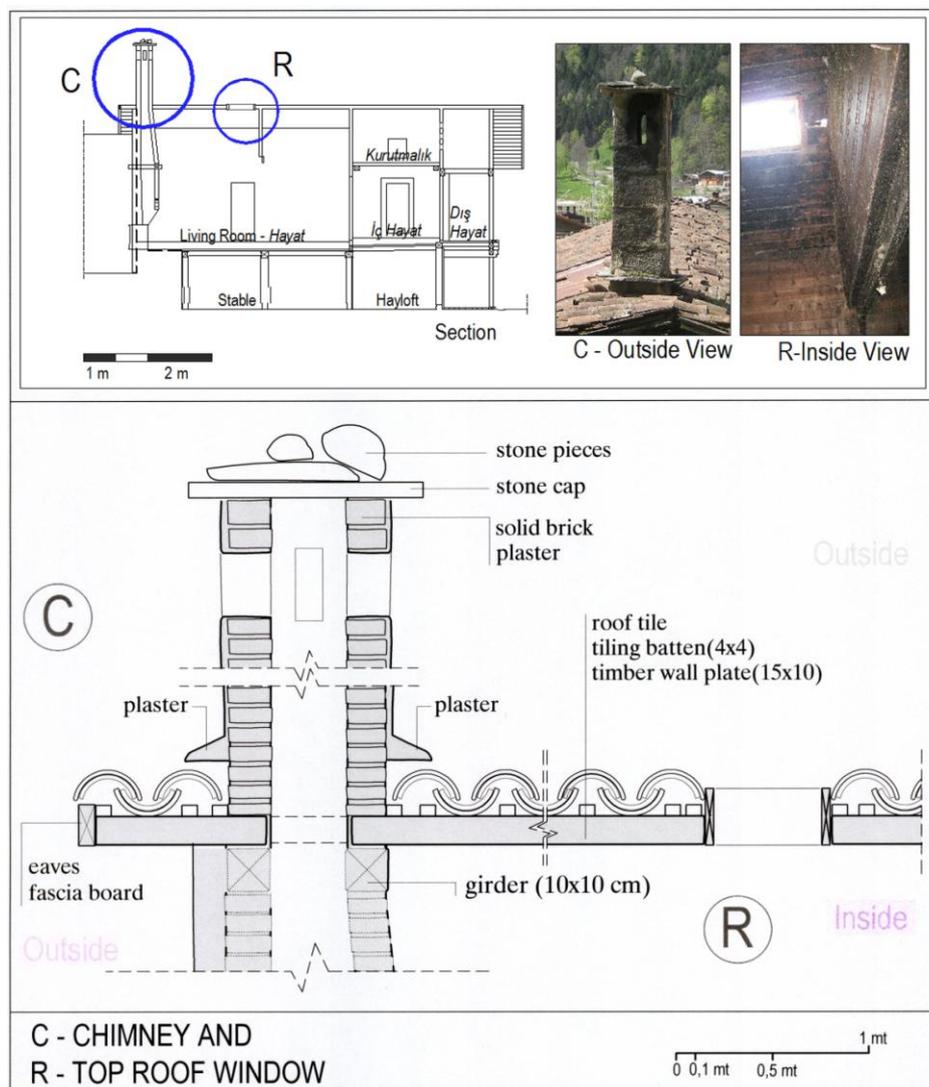


Figure 30, Construction Detail of Chimney and Top Roof Window

<sup>46</sup> See Stage 2.3.4.2-“Spaces: Living Space” for further information.

### 2.3.3. Façade Organization

***Front Façade:*** From the front façade, the building height is two and a half-storey-height. The two of stories are main floors and the other is the attic storey. Perceived as vertical lines on the ground floors at buildings, timber posts are placed at the edge of open spaces<sup>47</sup>. These posts, which also define the boundaries of the space *dış hayat*, are placed symmetrically at front façade<sup>48</sup>. Between these vertical elements, horizontal wood laths are placed, which divide the height of storey into four or five. It is identified that **the ratio of the ground floor height to length of the front façade is between 1/2.5 and 1/3.5** in the study area (see Figure 31).



Figure 31, Front Facade of a Vernacular House in *Uzungöl*

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<sup>47</sup> See Stage 2.3.4.2.- “Construction of Open Spaces (*Dış Hayat* in front and other open spaces)” for further information.

<sup>48</sup> See Stage 2.3.3.1-“Façade Elements: *Dış Hayat* and Other Open Spaces” for further information.

Being on the same direction ground floor posts, there is same number of timber posts exist on the basement floor. Similar horizontal wood laths exist also on the basement floor. There are different application types at basement floors, such as removal of the basement floor posts or just covering the framed construction from the outside in order to get a closed space.

On the front façade of the ground floor, there is no opening except one single door, which is located on the middle axis of the façade that opens to *dış hayat*.

Features that are contributing to the façade characteristics can be listed as 35-40% inclined pitched roof, triangular facing of the roof and the hole pattern of the space *kurutmalık* existing on the loft.

**Side Facades:** On each side facades, there is a door opening to outside. Generally an open space, arranged as balcony, is located on one of the sides of the building. The open space starts at the level of the front façade and goes to the ending level of the larder. The main room is located on one of the side facades on the same direction with main entrance side.

Functioning as a retaining wall also, there is no opening on the back façade, which is constructed with rubble stone masonry system.

Variety of the structural systems that are seen at different sections of the house, create different aerial effects at side facades. Rubble stone masonry system opaque wall and *gözdolma* technique wall seem massive effect at upper levels of land; where timber masonry system and timber frame system seem lighter effect at the lower levels of land (see Figures 21).

### 2.3.3.1. Façade Elements

#### Doors-Windows:

Doors: There are three main doors at ground floors of the buildings. Two of them are at each side facades that open to outside and the other is at the front façade opening from *iç hayat* to *dış hayat*. The main entrance door width is 75-95 cm. if the door is single winged. The width is 110-120 cm if it is double winged. The height is about 190-200 cm. The rest of the doors have 65-75 cm width and 190 cm height<sup>49</sup>.

Windows: The only original openings are the window(s) of the main room at houses. The window ratios in the houses show variety in the study area. First type of window is vertical sliding single-winged window that is applied as double-window and having the ratios of 2/3 or 3/4 in the study area. Second type is double-sectioned and single-winged window that is having the ratio of 1/1. Third type of window is triple-sectioned and single-winged type. At the triple-sectioned type, the single wing locates on the middle or double wings locate on both sides. The ratio of that type of windows is 4/3. Fourth type of window is fourth-sectioned and double-winged type, which has the ratio of 4/3<sup>50</sup>. Except those windows, there are ventilation holes at the front façade of the building. Located symmetrically at the front side of the building, ventilation openings are 20-20 or 30-30 cm in dimension.

On the basement floor, originally there is no window; but there is a single-winged or double-winged door. The location of the doors is decided by the plan layout that they are located at the front façade or at both side facades.

Located at the ridge level of the roof, there is a top window in the living room (*hayat*). The top window is designed as no framed originally, 40x50 in dimension. It

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<sup>49</sup> The information about the main entrance doors has been placed in the building sheets (see Appendix A).

<sup>50</sup> The information about windows that are at the main room section (*mabeyin oda*) has been placed in the building sheets (see Appendix A).

is positioned to provide discharging smoke of the fireplace. Those openings are now used as framed and glassed in shape for providing enlightenment (see Figure 32).

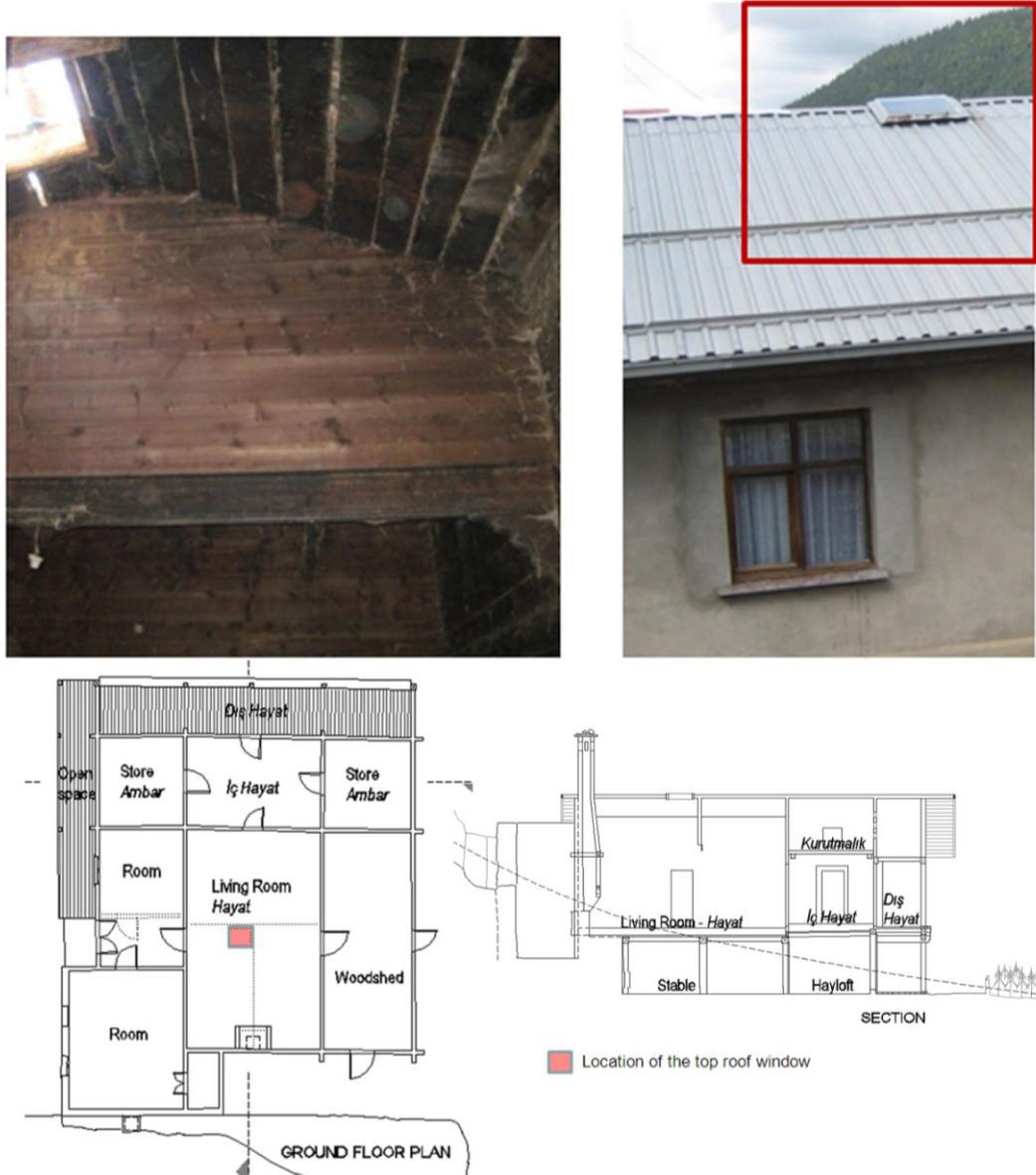


Figure 32, *Aşhane Perdesi* and Top Roof Window

### *Dış Hayat and Other Open Spaces*

There are open spaces existing on the front façade and on one of the side facades or on both two side facades. The open space, which goes through the whole front façade, is named as *dış hayat* locally<sup>51</sup>.

The side open spaces cover half of the side façade length. Being originally open, some open spaces are covered with timber sheets from the outer sides in order to have a closed space at some houses (see Figure 33).



Figure 33, View of *Dış Hayat* and Other Open Spaces

### *Roofs*

The roof type in the study area is gable roof, which named as “*iki omuz*” locally. The term “*iki omuz*” is used to describe that there are two pitched surfaces at the roof. Triangular facings of the roofs are on the front facades. When looked at the study area from the lower points of land, triangular faces can be seen from any point.

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<sup>51</sup> See 2.3.2.2.-“Structural System” for Open Spaces and Stage 2.3.4.2.-“Spaces: *Dış Hayat* and Other Open Spaces” and for further information

Gable roofs of the buildings have eaves, which have the extension of 90 cm at the front façade and 50 cm at the side facades. Originally there is no roof gutter at the buildings. Covering materials used in the roofs are over&under tile (alaturca tile), tile, corrugated iron sheet and metal panel<sup>52</sup> (see Figure 34) (see Appendix B – Figure 140).



Figure 34, Gable Roof of a Vernacular House in the Study Area

#### 2.3.4. Plan Organization

*To read a building and to analyse it, it is necessary to know the factors such as climate, topography, settlement, construction material and construction technique; but beside the tangible factors, the arrangement of the plan layout of a house is also related with intangible values such as custom, habit, living,*

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<sup>52</sup> Addition to mentioned roof covering materials, timber shingle /overlapping roof covering material is used in the region, which is called *hartama* or *bedevra* locally. No timber shingle is seen in the study area.

*culture, historical relations. The plan of a house is the result of the way of life. The most effective factor in formation a plan layout is the life style. Climate, topography, sun, view and construction material are secondary factors in the formation of a plan layout. Vernacular timber houses have been built by local craftsmen, who are well experienced of timber houses. A craftsman does not think about applying a new, a different plan layout. Internal arrangements are based on the experiments tried and perfected during the centuries; the plan layout does not change, unless there is a change in life style of local people (Özgüner, 1970: 59).*

#### **2.3.4.1. Plan Layout**

Vernacular Uzungöl houses are two and a half storey houses. Two main floors are ground floor and basement floor, while the other one is the attic floor. In the houses, the basement floor spaces are arranged as stable and hayloft, the ground floor spaces are arranged as living spaces and service spaces and the attic floors are arranged as crops to be laid and dried (see Figures 17, 18).

Structural system provides a uniform geometry in the interior layout. Due to the requirement of this formation, spaces are placed symmetrically on both sides of the longitudinal axis of the building (see Figure 18). Having three longitudinal and two transverse axes, the houses are named as six-jointed (*altı boğazlı*) locally, meaning six-roomed structurally<sup>53</sup> (Özgüner).

Built generally on sloped land, entrances to the building are from the sides. There are two outer doors on both sides that open to outside. Connection of the ground floor and the basement floor spaces is via outside. The main space in the house is the living space, which is called *hayat* locally. Space *hayat* is in the middle of the building that is surrounded by the other spaces. At the main entrance side, there is the main room (*mabeyin oda*) that opens to the entrance hall. At the other side, there is woodshed going along with the same length as the main living room (*hayat*). On the front side, there are two larders on both sides that are accessed from *hayat* and then *iç hayat* in the middle. At the front side there is the open space called *dış hayat* going

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<sup>53</sup> See Stage 2.3.2.2.-“Structural System / Wall Construction” for further information.

along the whole façade length. Other open spaces can be at one of the sides or on both sides at the building. At the back side of *hayat*, there are not any spaces, but an empty outer space, which is like a corridor, between the building and the retaining wall.

*The plan organization of all houses in the study area is based on the same plan type. Because of the order of life does not change due to the number of people living in a family, the same plan layout is continued to be applied; but there seems to be differences in the dimensions of the spaces related with the density of the population (Özgüner, 1970: 60).*

#### **2.3.4.2. Spaces**

##### **The Entrance:**

The entrance of the building is always from side facades. The door leads to an inner hall. On one side of the inner hall, there is the main room (*mabeyin oda*) at the higher level of land. On the other side of the hall, there is a space, which is used as a woodshed or a small room serving as storage.

##### **The Main Room (*Mabeyin Oda*):**

*Varying in accordance with the family composition, generally the elder members of the family sleep in the room (*mabeyin oda*) or it is used as guest room. The room is positioned as separated in the plan layout and can be functioned as different purposes (Özgüner, 1970: 65).*

The main room (*mabeyin oda*) has a different character at vernacular houses in the study area. That section is specialized with its dimensions and properties such as its construction technique at its outer wall. The room has timber covering on its inner walls and shelves going in lines on the inner walls. There is also a built-in cupboard in the room. The outer wall of the main room locates one meter forward from the main façade level of the building.

Having direct sunlight in it, generally there is no fire place in the main room. Being preferable, the coolest room of the house in the summer time is the main room and so it is also called summery room (see Figure 35).

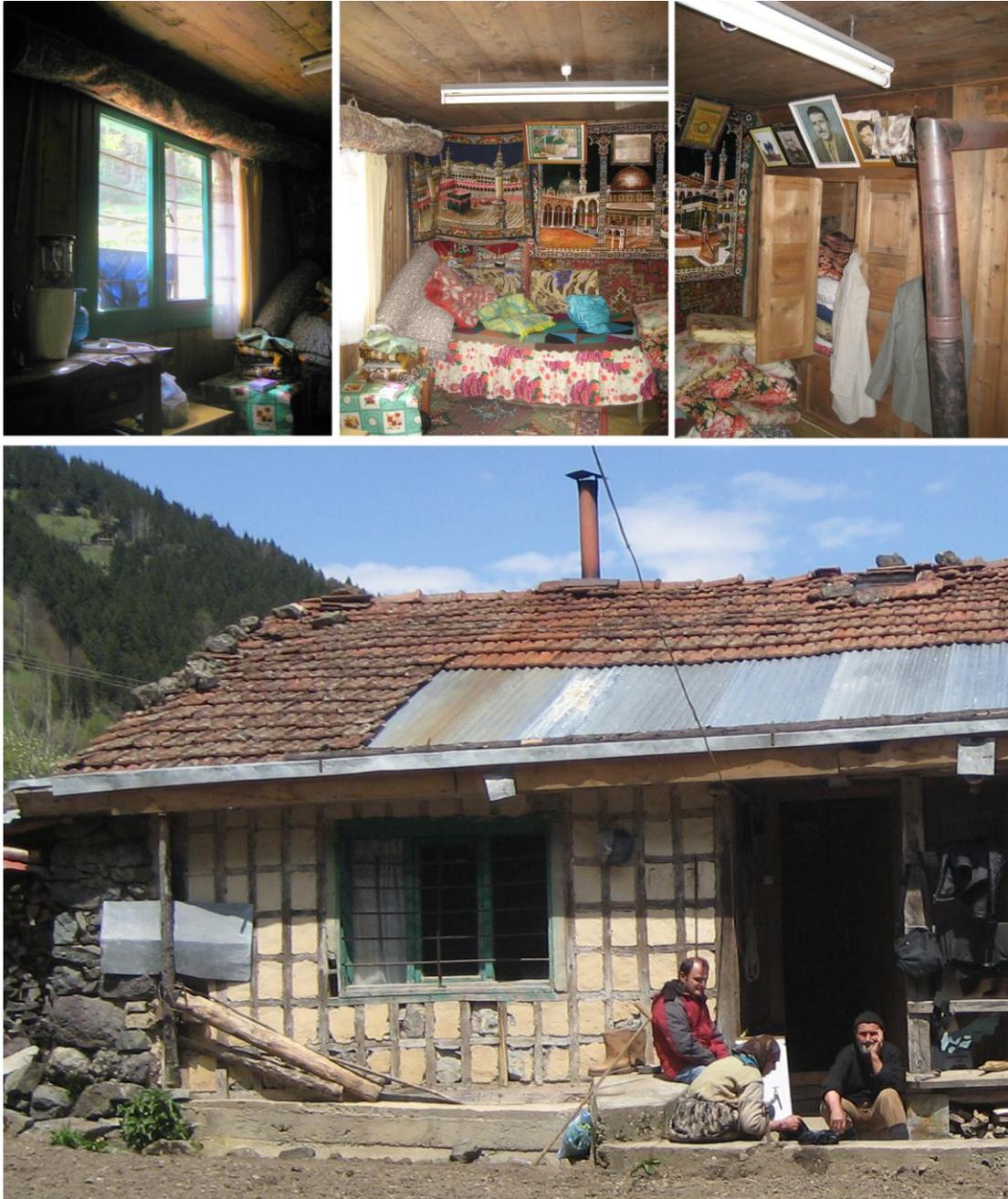


Figure 35, The Main Room (*Mabeyin Oda*)

### **Storage Room / Woodshed:**

The small room is used for different purposes. The space is used as a storage room, which is arranged to put various things such as mattress, quilt, carpet and blanket as storage. In this type of usage, the room is separated from the entrance hall with a wall (see Figure 18). This storage room has a small window, whose dimensions vary in the range of 40x40 – 50x50 cm. The space is also used as a woodshed in winters. Wood pieces are placed to the wall surface regularly in the space. Whole space distance is filled with woods. That section acts like a heat insulation as to be a buffer area between outside and living space (*diş hayat*).

### **Living Space (Hayat):**

Located in the middle of the house, the central living room is called *hayat*. *Hayat* is surrounded by many other spaces and connected to almost all spaces in the house. The structure of *hayat* provides an easy access between outside and inside that it opens to outside from two sides. The space keeps the members of the family together and it functions like a square in the city (Özgüner, 1970: 60). As the main living room, it is used originally for cooking, dining and also living activities of family members. All members of the family get together around the table for dining and all sleep in the same place. Living and sleeping activities are mixed in the space.

Having an area of 27 m<sup>2</sup>, the space occupies almost one-third of the construction area. In *hayat*, there are architectural elements such as fire place, the hanging wall in the middle (*aşhane perdesi*) and the shelves on walls.

The most important and the most specific element of *hayat* is fire place with its function and its structure (see Figure 36). The fire place is located in the middle of the back wall of *hayat*. Beside its heating function, cooking activity is at fire place originally. The fire place has 110 cm width and 70 cm depth (see Figure 37). The structure of the architectural element is stone masonry system. The space beside fire place is planned to serve as kitchenette in *hayat*. That space is between the fire place and the side wall. There are shelves fixed on the wall surface (see Figure 36). The

shelves are used for putting kitchen equipment. Kitchen tools, made of wrought copper and burnt clay, are lined on the shelves near the fireplace. Beside their functional use, these displayed items enrich the interior view (Özgüner, 1970: 67) (see Figure 36). As a place, in where all cooking activities are happened, total area of *hayat* is too big for today's life. And the waste of cooking, especially smoke makes inner walls get dark. At some of the vernacular houses in the study area, cooking stove is used for cooking and for heating, as it is easier to cook and requires smaller space. The stove is called *kuzine*.

The hanging wall is placed at the exact middle point in the living space (*hayat*) between the cooking part and the living / sleeping part. That hanging wall is called *aşhane perdesi* (see Figure 38). It prevents smoke and the smell of food spreading inside. The volumetric geometry of the roof becomes narrower towards up-side that seems like a huge hood inside<sup>54</sup>.



Figure 36, Living Space (*Hayat*), Fire Place in the Middle and the Kitchen in the Corner of the Space

<sup>54</sup> The term huge “hood” is used by Özgüner.

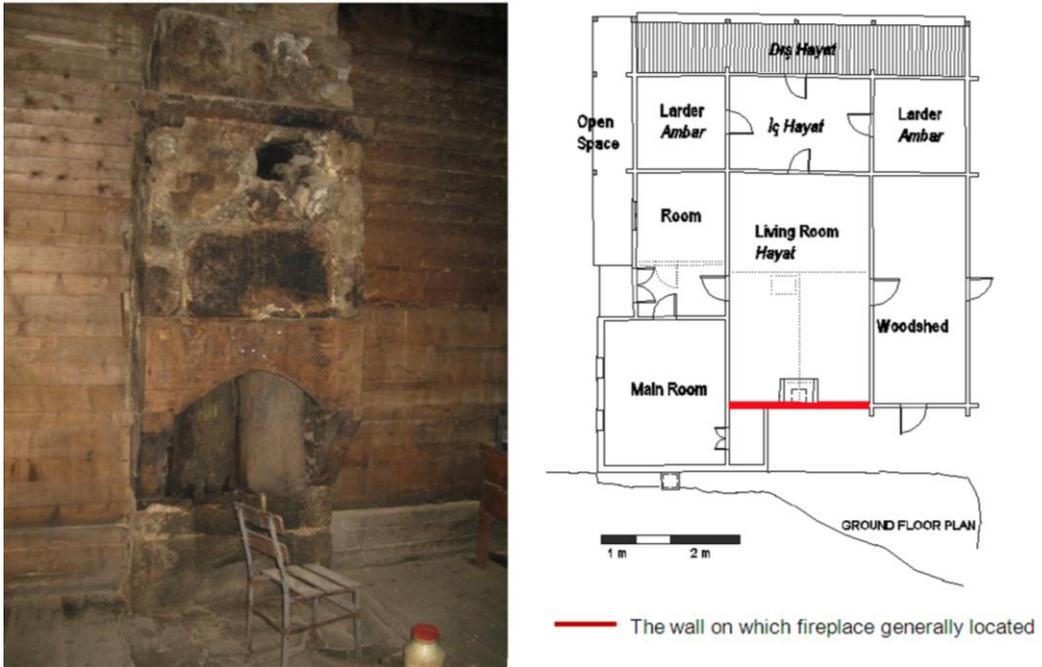


Figure 37, Fireplace

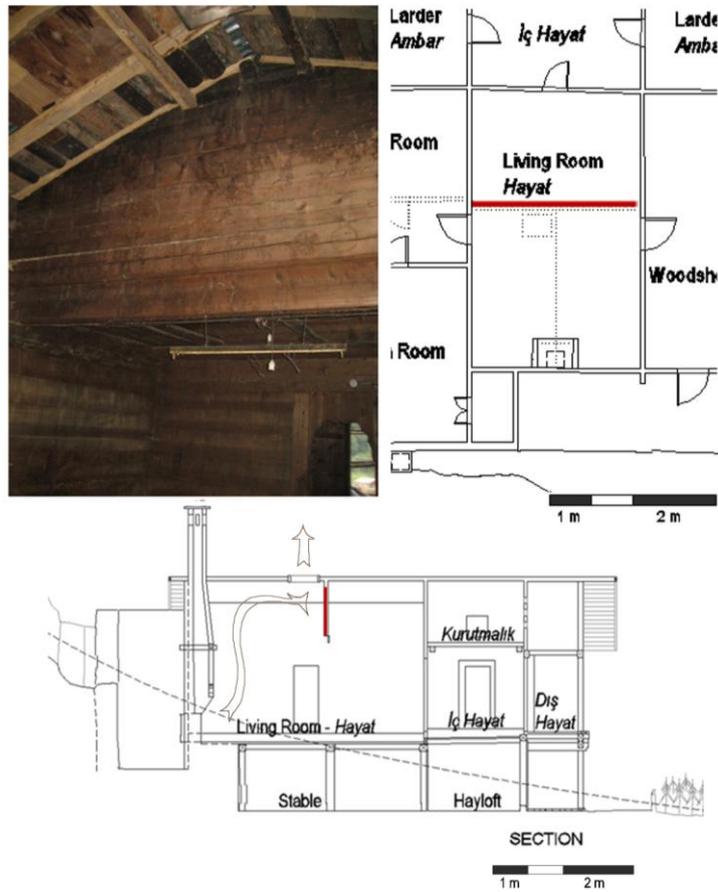


Figure 38, The Hanging Wall - *Aşhane Perdesi*

## Larders:

There are two symmetrically located larders at the front façade of buildings (see Figure 39). Two larders open to the inner hall called *iç hayat*<sup>55</sup>.

The larders are functioned to preserve all crops. The space has built-in furniture originally. Those are multi-cell structured architectural elements and located at three walls except the wall of the door in the space. The cells of the furniture have the 50x40 cm width and 50-60 cm height. Unlike other spaces, ceilings of larders are covered with timber in order to prevent crops from rodentia and from insects. On the front side of the larders, there is ventilation holes are placed, which is 30x30 cm.

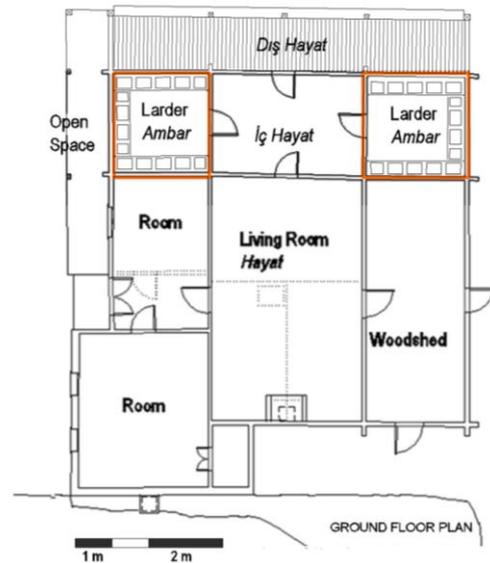


Figure 39, Larders

## İç Hayat:

*İç Hayat* is an interspace providing an access to *diş hayat* from the living space (*hayat*). The both two larders also open to *iç hayat*. Above the space *iç hayat*, up at the section, between the ridge level and the eaves level, there is a space called *kurutmalık* in the houses<sup>56</sup>.

<sup>55</sup> See Stage 2.3.4.2.-“Spaces / *İç Hayat*” for further information.

<sup>56</sup> See Stage 2.3.4.2.-“Spaces / *Kurutmalık*” for further information.

**Drying Space (Kurutmalık):**

Above *iç hayat*, the sectional space, located between the ridge level and the eaves level, and there is drying space (*kurutmalık*) in the houses. The floor of the space is established by putting roughly processed round logs side by side above the coupling purlins. The crops that would be seasoned are laid out on the floor of the space *kurutmalık*. To supply air ventilation in the space, ventilation holes are left on the outer wall façade. The little holes are composed by emptying one of every two vertical studs. These ventilation holes are sometimes covered with a net in order to prevent crops from rodentia, birds or any kind of insects (see Figure 40).

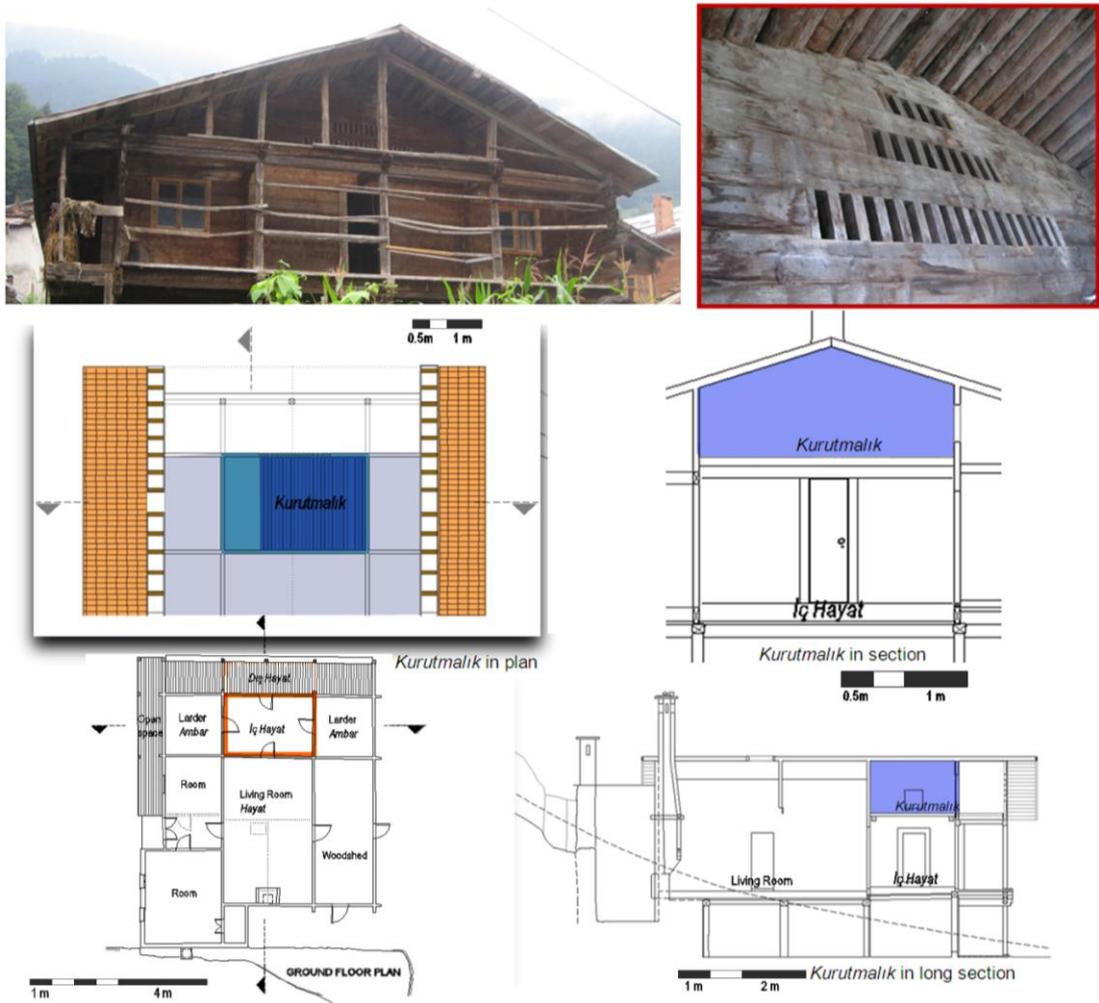


Figure 40, *Kurutmalık* in Plan and Section

### **Front Open Space (*Dış Hayat*):**

The open space (*dış hayat*), which is located at the front, is placed at the whole façade length. The width is 1.5 mt. The open space is closed from both sides, but open at the front. The space is sheltered by the eaves. Access to *dış hayat* is via *iç hayat*. *Dış hayat* is functioned to hang and dry fodder to feed animals in winter.

In the design of the construction, hanging the maximum amount of fodder is taken into consideration. Timber frame construction is preferred at that section of building<sup>57</sup>. The construction elements are rectangular-sectioned supporting timber posts and horizontal wood laths that are located between posts. These horizontally placed timber laths, which divide the storey height horizontally, are working as a hanger for the fodder to make it dry (see Figure 41).



Figure 41, *Dış Hayat* Placed in Front and Other Open Space on the Side Facade of the Building

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<sup>57</sup> See Satage 2.3.2.2.-“Structural System” of open spaces for further information.

### **Woodshed:**

Beside living room (*hayat*), there is space woodshed located on the last axis of the building. The length of the woodshed is the same with the living room (*hayat*) and the width is the same with larder that comes from the structural system, so the plan layout. Located at the opposite side of the main entrance, there is also access to outside from the woodshed. The space is functioned for stacking the firewood regularly. After stacking, that firewood section set a buffer area between outside and the living space (*dış hayat*) that acts as heat insulation. The space also serves as storage for various equipments in the summer time.

### **2.3.5. Overall Physical Features of the Vernacular Houses in the Study Area**

- Vernacular houses in the study area are two storey houses consisting of a basement floor, a ground floor and an attic floor, located perpendicular to the terrain (see Figure 13).
- Vernacular houses in the study area are located perpendicular to lines of land slope and oriented towards lower points of land (see Figure 11).

Vernacular houses in the study area were constructed with composite structural system (see Figure 20). Several of structural systems had been used in the buildings such as:

- Ground floor is constructed with timber masonry system with *kurtboğazı geçme* construction technique (see Figure 25).
- Basement floor is constructed with rubble stone masonry walls on the back side and partially on both sides (see Figure 19).
- The whole front façade is constructed with timber skeleton system(see Figure 19).
- At the specific part of the building, that is named *mabeyin oda*, *gözdolma* construction technique is seen as a vernacular construction type (see Figure 28).

- The total composition of the external architectural elements gives both two effects of horizontality and verticality from different distances at the vernacular houses in the study area (see Figure 31).
  - From a certain distance, the front facade height - length ratio of the ground floor that is varying in a range of 1/2.5 and 1/3.5 and the wooden bars at the edge of the open space (*dış hayat*) that are located horizontally give **the effect of horizontality** in the study area.
  - At the close range, the timber posts of the front open space (*dış hayat*) give **the effect of verticality**.
- The roof type of the houses in the study area is gable roof, which is named as “*iki omuz*” locally to define the number of pitched surfaces of the roof (see Figure 31).
- Triangular roof facings at the houses are on the front facades in buildings (see Figure 31).
- Located at attic storey, the composition of the holes of the outer wall of the space *kurutmalık* at the triangular facing, contributes to the architectural character of the buildings (see Figure 40).

Structural systems of vernacular houses show variety at different sections (see Figure 21).

- Opaque wall at the back façade and *gözdolma* technique wall at the one side seem **massive effect at upper levels** of land;
- Timber systems on the ground floor and at the whole front façade seem **lighter effect at the lower levels** of land.
- For the plan organization, main living space, named *hayat* locally in the middle axis at the center of the building (see Figure 18).
- Architectural elements in the space *hayat*:
  - Fire place in the middle of the back wall (see Figure 37)
  - *Aşhane perdesi* that is hanging from the middle of the ridge point (see Figure 38)
  - Top roof window in the middle of the roof surface enlighting the space (see Figure 32)

- Spaces in the vernacular houses in the study area:
  - The main room that is named *mabeyin oda*, positioned apart from the main living space (see Figure 35)
  - Woodshed on one side or both sides of the living space (*hayat*)
  - Two larders located on the front façade (see Figure 39)
  - The attic floor space, which specially is named as *kurutmalık* in the study area (see Figure 40)
  - Open spaces one in front facade and one partially on side or two on both sides (see Figure 41)
  
- For the outer space of the vernacular houses in the study area; unlike the general character of the Eastern Black Sea region, no rule for any houses to be with its cultivated area; there are houses both with its cultivated area and without, existing together (see Figure 13).

The vernacular houses that form the built environment existing in a special geographical location in the district (see Figure 42). The exact location of that built area can be defined as the less inclined land, which exists between the lake shore and the steep slope. The relationship and interdependence of the built and the natural environment can be noticed in the study area. Surrounding steep slopes, the lake on the valley bottom, plain sections on various levels of land are the natural - geographical properties. The lake and the houses on the background compose harmonious scene in the study area.



Figure 42, General Settlement and Natural/Geographic Elements of the District

## CHAPTER 3

### INTERVENTIONS IN THE STUDY AREA

As a construction material, timber generally needs regular maintenance and repair. As a result of that, a great majority of the houses are in a good physical condition in the study area (see Appendix B- Figure 141). But looking from the other side, it is seen that there have been always a change at the houses for long years. Especially in the last years interventions at vernacular houses have been increased and intervention types are not only regular maintenance works (see Figure 43). Possible reasons of the increased interventions in the study area can be listed as<sup>58</sup>:

- Necessity in functional change,
- Economic growth (income growth),
- Diversity in construction materials and improved transportation facilities,
- Increase in the number of household living in vernacular houses,
- Change in lifestyles,
- Increasing in quality of life,



Figure 43, Original and Altered View of Some Vernacular Houses in the Study Area

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<sup>58</sup> See Stage 2.1.4.- “Socio-Economic Character” for Further Information.

The interventions have been followed under three groups such as additions, removals and alterations. According to the terms of acceptance, an ‘addition’ is an element, which was added to the building, a ‘removal’ is an element, which was removed from its original place and an alteration, is the transformation of an architectural element to another one by addition and removal. Each type of intervention is subdivided into three groups such as mass scale, space scale and architectural element scale. Common intervention groups that were applied to the buildings are listed below.

### **3.1. Additions**

There are 95 total additions applied to the houses in the study area.

#### **3.1.1. Addition of Mass**

There are 23 mass additions applied to the houses in the study area.

##### **3.1.1.1. Addition of Extra Woodshed**

Among mass additions, at the 6 of all, are simple timber structures, which are used as woodshed, have been added to one or more than one façade of the building (see Figure 44). Added woodsheds are generally on the side facades or on the back façade. The simple space, provided with the posts, is sheltered by a secondary eave, extended apart from the main eave.

According to the analyse of the mass additions that are functioned as woodshed in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 20 years.



Figure 44, Addition of Mass (Addition of Extra Woodshed)

### 3.1.1.2. Addition of Extra Hayloft

Among mass additions, at the 5 of all, simple timber structures, which are used as hayloft, have been added to the front or side façades of the building (see Figure 45). Added haylofts are generally on the front façade of the basement floor. Due to the insufficiency of space, the lately added hayloft is designed to be connected with the original one placed at the basement floor. And the easiest way to provide the connection is via front façade. Supported by timber posts, that simple space is used as closed space, covered with timber sheets. The roof of the space is covered with the corrugated metal sheet.

According to the analyse of the mass additions that are functioned as hayloft in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 15 years.



Figure 45, Addition of Mass (Addition of Extra Hayloft)

### 3.1.1.3. Addition of Extensional Reinforced Concrete Section to the Original Structure

Among mass additions, at the 4 of all, the reinforced concrete structures have been added to the back side or to the last axis beside the living space (*hayat*) in some of the houses in the study area. Reinforced concrete mass additions have been functioned as living spaces (room) and/or service spaces (see Figure 46). The roof of the added part is the extension of the original roof system. The window and door openings, which are located on the lately added parts, have been positioned functionally, considering no façade order.

According to the analyse of the reinforced concrete mass additions that have been functioned as living spaces or service spaces in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 5-10 years.



Figure 46, Addition of Mass in the Study Area (Addition of Reinforced Concrete Extension)

### 3.1.1.4. Other Mass Additions

The other mass additions rarely or individually seen in the study area are the addition of extra living space that is stone masonry mass, addition of wc to the one of the side facades that is connected with the room as simple timber construction, addition of

extra living space to the front façade of the basement floor that is constructed with reinforced concrete system and addition of extra storage to one of the facades that is having simple timber construction.

### **3.1.2. Addition of Space**

There are 18 space additions applied to the houses in the study area. Originally positioned 1.5 meters away from the retaining wall, there are various types of using of that gap between the main wall of the building and the retaining wall. Two types of functioning are seen in the study area such as using the gap as wet spaces or using it as an extra storage for the house.

#### **3.1.2.1. Addition of Wet Spaces Behind the Building**

Among space additions, at the 6 of all, the gap has been functioned as wet spaces (see Figure 47). The gap defines a space, which is able to connect with the living space (*hayat*), the main room (*mabeyin oda*) and the woodshed at the same time. So the empty space has been functioned in order to serve all those spaces. Among added spaces, one of them serves to the main room (*mabeyin oda*) that is connecting with a door. Other added wet space, as bath room and wc at the backside, serves to the whole household providing a connection with a door to the living space (*hayat*) or indirectly with inner hall. Also the other wet space, which is at the back side of the kitchen, has been used as storage. It serves to kitchen. Access to the added spaces is from inside. The structural system of the added part is reinforced concrete. The added part has been applied on the same line with the original boundaries of the original building. Concrete framed construction is applied with brick infill and cement plastered. The size of the added window openings are in the range of 40x40 – 50x50 cm and considering no façade order. The roof of the added space is the extension of the original roof of the building and so that intervention seems like more space addition than mass addition.

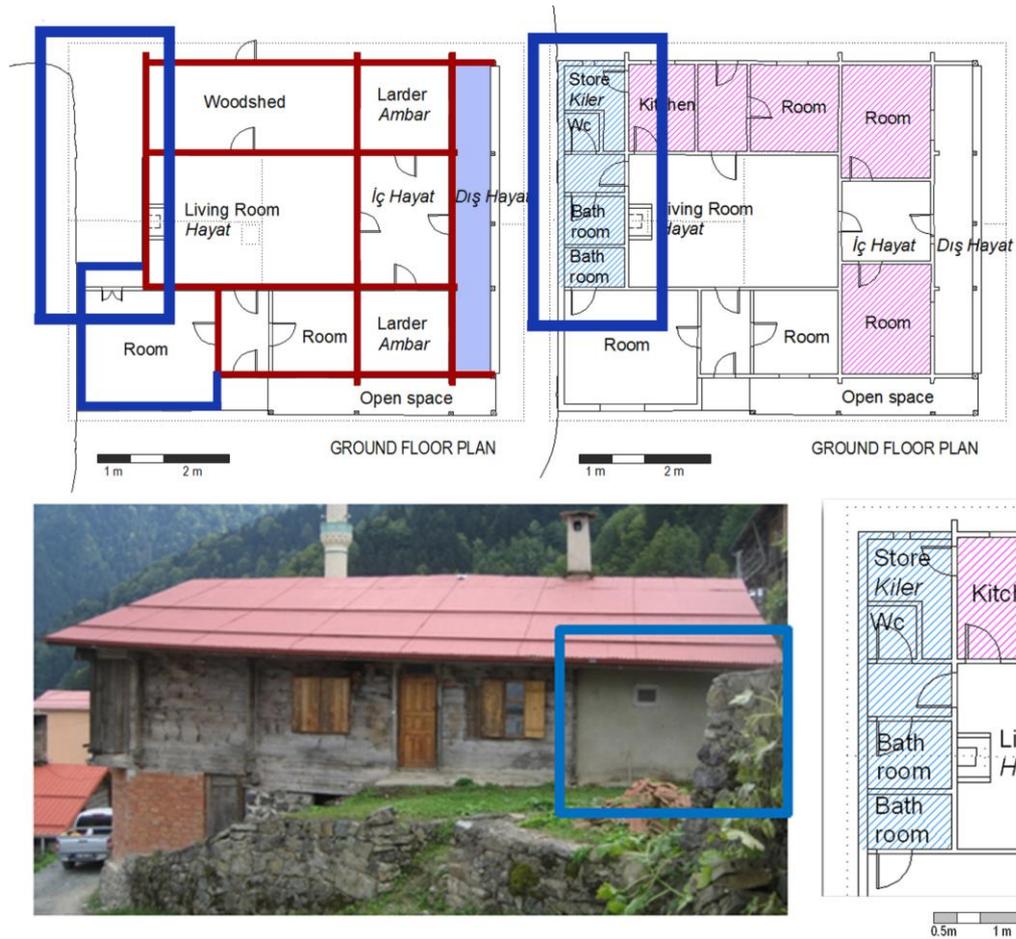


Figure 47, Addition of Wet Spaces Behind the Building

According to the analyze of the space additions that have been functioned as wet spaces in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 5-10 years.

### 3.1.2.2. Addition of Storage/Woodshed Behind the Building

Among space additions, at the 6 of all, the gap has been functioned in order to serve as storage or an extra woodshed. Access to the space is from the outside. The outer boundary of the empty space is defined with a wall. The wall is placed at the same level with the boundary of the building. The wall of the space is constructed by various techniques such as rubble stone masonry system, brick masonry system or timber skeleton system. The dimensions of the door on the wall are selected according to function, considering no façade order. The roof of the added space is the

extension of the original roof of the building and so that the intervention seems like more a space addition than a mass addition (see Figure 48).

According to the analyze of the space additions that have been functioned as storage or an extra woodshed in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 20 years.

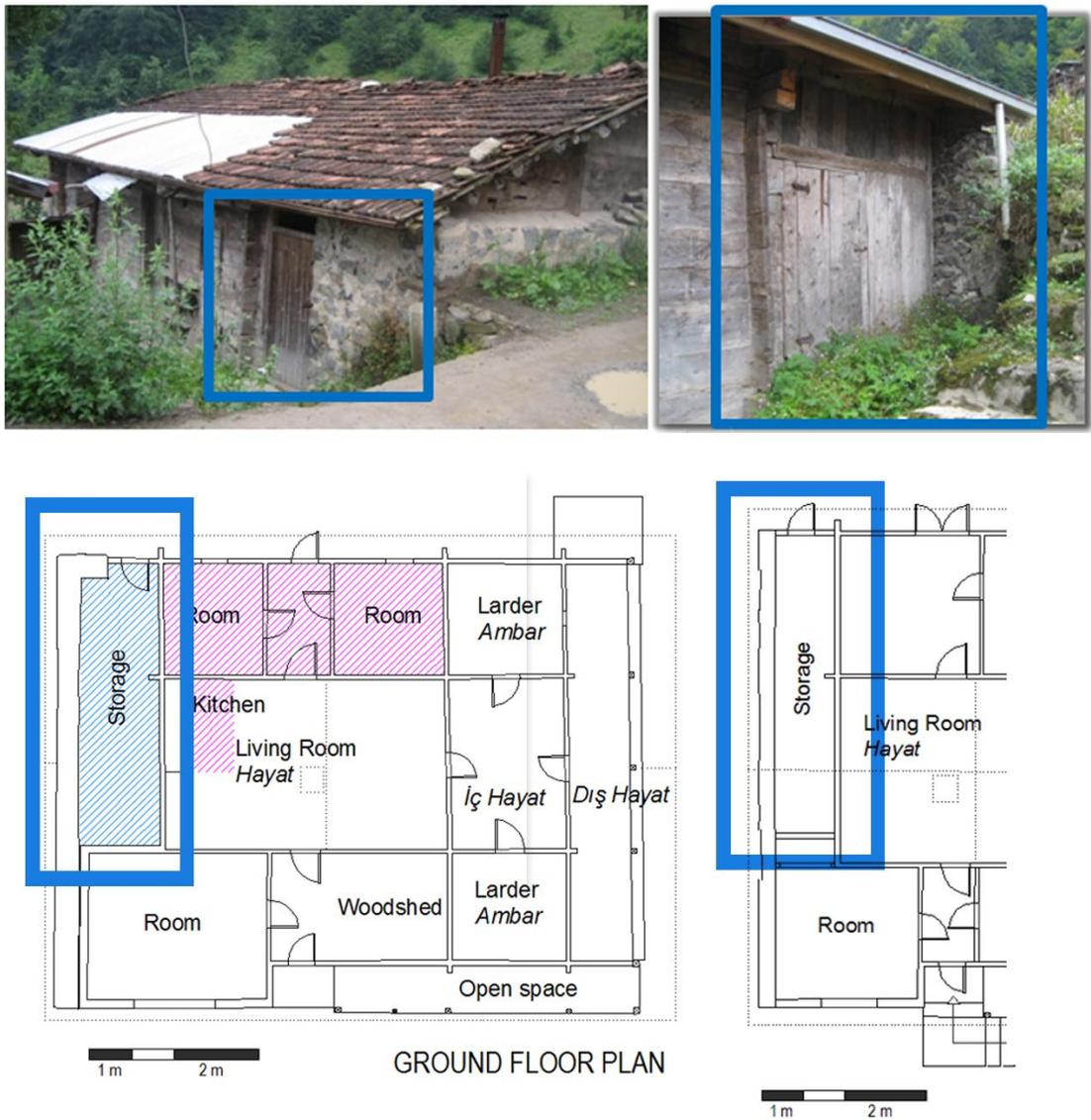


Figure 48, Addition of Storage Behind the Building

### **3.1.2.3. Other Space Additions**

The other space additions that are rarely seen in the study area are the addition of the reinforced concrete system workshop/storage arranged under the sloped land and the addition of storage to the space, which is under *dış hayat*, by defining a closed space by partially covering with timber.

### **3.1.3. Addition of Architectural Element**

There are 54 architectural element additions applied to the houses in the study area. In some of the buildings there are various architectural element additions seen in the study area.

#### **3.1.3.1. Addition of New Openings With the Organization of New Spaces**

Among the architectural element additions, at the 14 of all, original spaces have been reorganized by various arrangements in some of the houses in the study area. After this reorganization, the dimensions of the original spaces could be changed and the original spaces could be reused for new purposes. The reorganized spaces need windows for illumination and doors for connection if access to outside is desired. That brings the addition of new window and door opening at the altered spaces (see Figure 49). The material of the added windows and doors can be new timber, pvc based material or sectional iron. The dimensions of the windows vary according to the space, where the openings are added to, such as: the bigger windows at the living rooms and smaller windows at wet spaces. The windows, which are applied in the rooms, are placed in the middle of the wall surface, being compatible with the façade order; but at the added windows in the wet spaces, no façade order is considered.

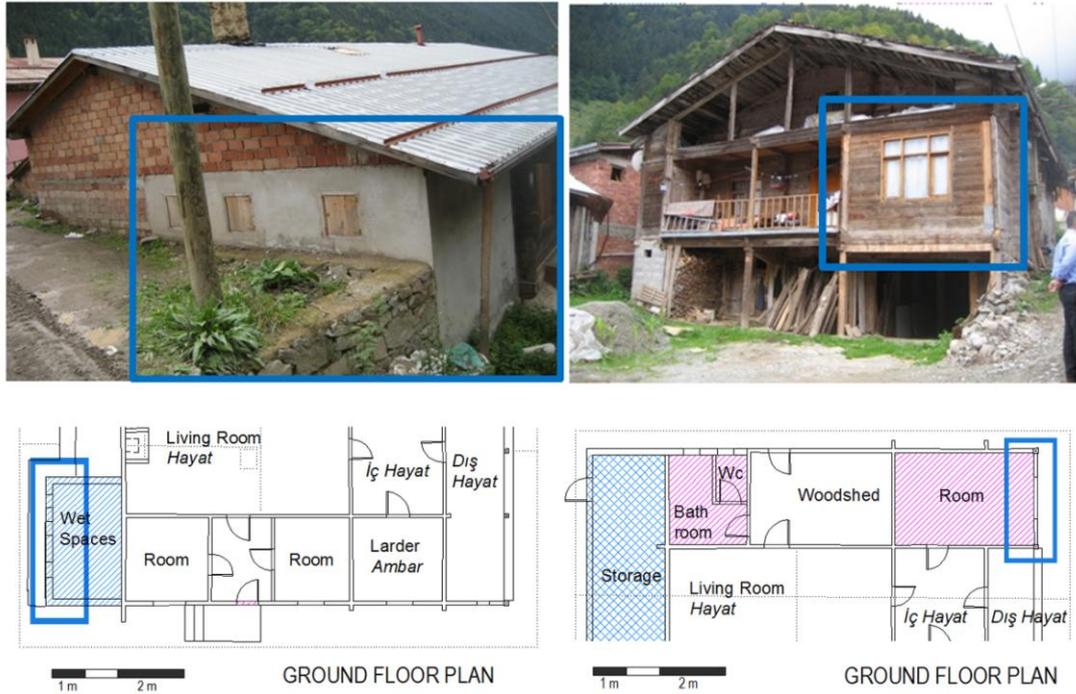


Figure 49, Addition of New Openings with the Organization of New Spaces

### 3.1.3.2. Addition of New Timber as Façade Covering

Among the architectural element additions, at the 13 of all, it is seen that inner or outer surfaces have been covered with new timber in some of the houses in the study area (see Figure 50). It could be seen on the whole surface or a part of it. New timber covering on the inner or the outer surfaces applied in order to rehabilitate physical condition, to prevent heat loss from the walls and to make the the house well in terms of appearance. Covered with new timber, the façade seems to lose its original character.

According to the analyze of the façade coverings that is made of new timber in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 10 years.



Figure 50, Addition of New Timber Covering to the Façade

### 3.1.3.3. Addition of New Timber Covering to the Triangular Facing of the Roof

Among the architectural element additions, at the 10 of all, it is seen that that space, which is used originally as *kurutmalık*, the triangular facing of it has been covered with new timber at some of the houses. According to the analyze of the coverings at the triangular facing of the space *kurutmalık* in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 15 years (see Figure 51).



Figure 51, Addition of New Timber Covering to the Triangular Facing of the Roof

#### 3.1.3.4. Other Architectural Element Additions

The other architectural element additions that are rarely seen in the study area are the covering a part of a façade with metal panel sheet (3)<sup>59</sup>, addition of chimney by the necessity of heating in the added spaces (3), addition of the timber construction wall that is defining the space between the retaining wall and the building (2), covering the railings of the open spaces from the sides with oilcloth (nylon-based material) (2), addition of a door to side open space that is providing access from new entrance hall to open space (1), addition of a stair to the living space (*hayat*) providing access to upstairs to the attic (1), addition of brick wall to the inside of a space as secondary wall to where the original space has been altered and turned to wet space (1), addition of cement plaster to the outer wall of the main room section (*mabeyin oda*), the construction system of which has been altered (1), covering of open spaces with timber sheets in order to have a closed space that would be used as woodshed (1) and the addition of the outdoor sign at the façade of the building that is used as pension (1).

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<sup>59</sup> The numbers in the parentheses show the number of interventions.

## **3.2. Removals**

There are 19 total removals applied to the houses in the study area.

### **3.2.1. Removals of Mass / Space**

There are 2 mass/space removals applied to the houses in the study area.

#### **3.2.1.1. Removal of Mass that has been Composed of the Spaces Entrance and *Mabeyin Oda***

Among the mass removals, at the 2 of all, it is seen that the entrance space, including the entrance door, and the main room (*mabeyin oda*) have been removed from the structure at some of the houses in the study area. The type of removal of these two spaces is defined both as mass removal and space removal<sup>60</sup>. At the two of the removals, it is seen that the usage of the houses continues even after the removal of these two spaces. The access to the house is provided directly from the living space (*hayat*). As totally removed, there are no remains of the spaces. The reason why the interventions are accepted as removal is for that the areas of removed spaces remain under the original roof boundaries (see Figure 52).

According to the analyze of the removing of the spaces entrance hall and the main room (*mabeyin oda*) in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of removals have been applied in the last 15 years.

There are two mass/space removals applied to the houses in the study area, no more removals existing in that category.

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<sup>60</sup> For the fact that spaces define also masses, it is accepted as mass removal. And for the fact that the boundary of the spaces remains under the roof level and the removal can not be perceived, it is accepted as space removal.

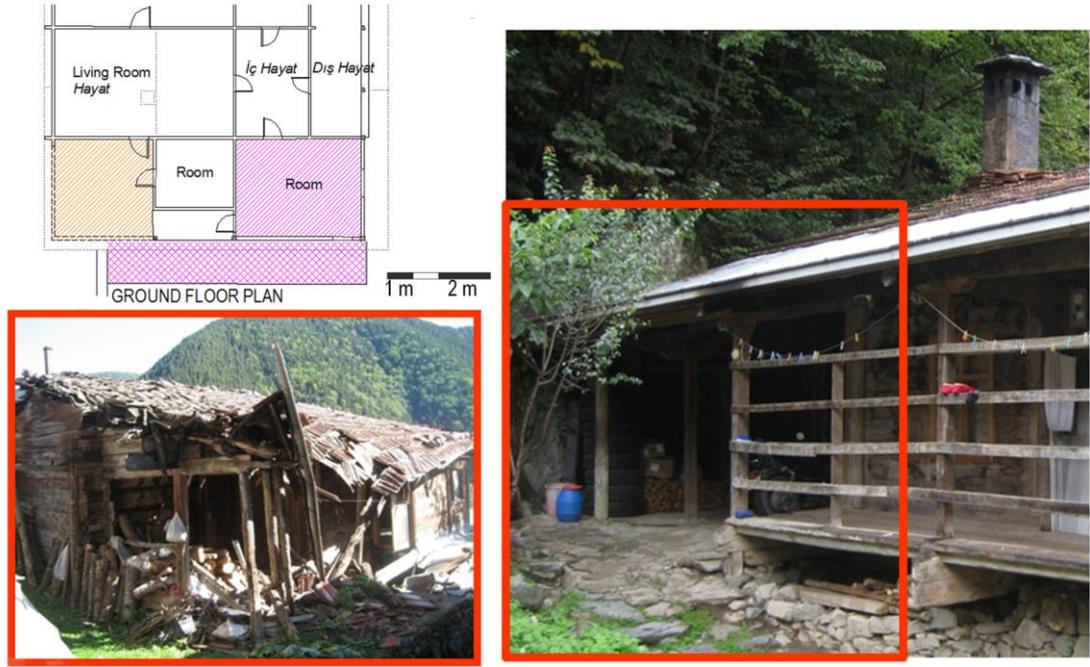


Figure 52, Removal of Mass that is Composed by the Spaces Entrance and *Mabeyin Oda*

### 3.2.2. Removal of Architectural Element

There are 17 architectural element removals applied to the houses in the study area.

#### 3.2.2.1. Removal of Some of Roof Tiles

In some of the houses, it is seen that some tiles at roofs have been removed in the study area (see Figure 53). Type of removed tiles is over&under tile (mission tile or alaturca tile) in the buildings. The number of roof tile removals in all removals places a big amount that the number of application is 14 and the total number of removals is 17. In this type of intervention, there are two different situations seen at the buildings. At first one, the roof tiles are removed and original roof is covered with corrugated metal panel. At the second one, the removal of some tiles is for a repair at a certain section at roof. According to the analyze of the removing of a part of the tiles at roofs in the study area after the evaluation of the condition of the remaining tiles, the condition of the corrugated metal sheet that is an alternative covering material under the tiles and taken information from the occupants, it is considered that type of removals have been applied in the last 5 years.



Figure 53, Removal of Some of Roof Tiles

### **3.2.2.2. Other Architectural Element Removals**

The other architectural element removals that rarely or individually seen in the study area are the removal of the timber separation wall that divides the two spaces (1), removal of a timber post from its original place (1) and removal a part of timber railings that was placed on the front façade (1).

### **3.3. Alterations**

There are 139 total alterations applied to the houses in the study area.

#### **3.3.1. Alterations of Mass**

There are 5 mass alterations applied to the houses in the study area.

### 3.3.1.1. Alteration of Whole Building

Among the mass alterations, at the 4 of all, it is seen that whole buildings have been transformed by the manner of structural system and the construction material (see Figure 54). The four houses have been reconstructed. The reasons of the reconstruction of the buildings can be classified as; the bad condition of the houses, insufficient usage of original spaces in the modern life and the demand for rebuilding the house because of the high income.

In the reconstructed buildings, the original structural systems that are timber masonry, timber frame and rubble stone masonry have been replaced with reinforced concrete framed system. Those buildings have been applied false stone covering at basement floors, new timber covering at ground floors and open spaces totally or partially at front facades. Those designs of the houses have been conducted depending on the individual sense of aesthetics of owners. The construction materials of windows and doors could be made of new timber, PVC-based material or iron. No façade order has been considered in the reconstructed buildings. Some external parametes have been adopted from the original buildings, which effect the perception in the reconstructed buildings. Those are the number of storey and the roof type. The buildings consist of two main floors and an attic floor. The two main floors are basement floor and ground floor. The roof type is gable roof that is seen at all the buildings in the district.

According to the analyze of the reconstruction of the buildings in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alteration has been applied in the last 5 years.



Figure 54, Alteration of Whole Building

### 3.3.1.2. Other Mass Alterations

The other mass alteration applied to one building in the study area is the enlargement of the boundaries of the basement floor on two sides, to the level of the side open spaces, about 1.25 meters outwards.

### 3.3.2. Alterations of Space

There are 85 space alterations applied to the houses in the study area.

#### 3.3.2.1. Alteration of Space that Woodshed Has Been Turned into a Kitchen and a Room

In the 22 of the space alterations applied to the houses in the study area, it is seen that the space, which was originally functioned as woodshed, has been divided and arranged as one kitchen and one room (see Figure 55). Exit to outside remains. The outer boundaries of the original space have been preserved.

It is seen that the space woodshed has been replaced with a kitchen that is connected to the living space (*hayat*) directly, and a bed room. The room is opening to an inner hall, where access to the outside is provided. At one house that are reflecting this type of intervention, it is seen that the outer appearance has been kept, but a brick wall has been applied as a secondary wall from the inside at the wet space. That secondary wall is plastered and finished with ceramic tile in the application process. At the intervention of the rooms, timber has been used. Windows have been put at the outer facades of the lately altered spaces depending on the demand. No façade order is considered in positioning the windows.

According to the analyze of the alteration of woodsheds that have been divided and arranged as one kitchen and one room in the study area after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 10 years.

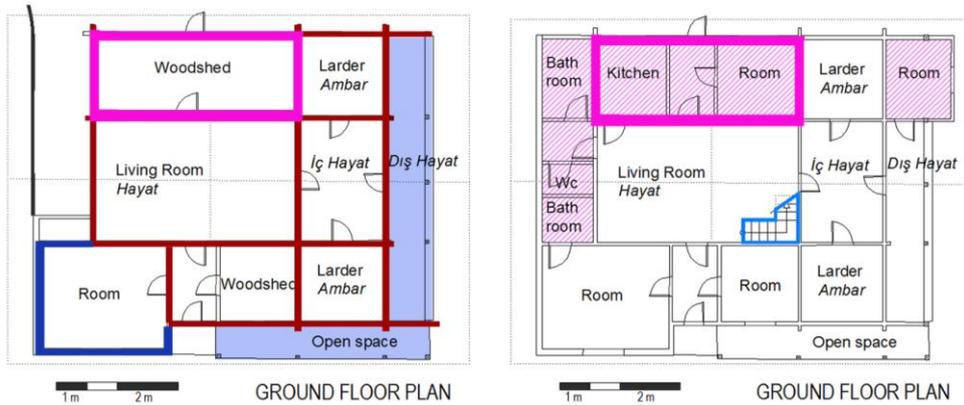


Figure 55, Alteration of the Space that Woodshed has been Turned into a Kitchen and a Room

### 3.3.2.2. Alteration of Spaces that Larder and a Part of *Dış Hayat* have been Unified and Turned to a Room

In the 8 of space alterations applied to the houses in the study area, it is seen that the space, which functioned originally as a larder, has been enlarged to *dış hayat*. This new space is arranged as a room (see Figure 56). In this type of alteration, the width of the new space is kept, while the length is increased. Originally located along the whole façade length of the front façade before, after the alteration *dış hayat* is

shortened in one dimension. Many of the altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning of the windows. According to the analysis of the space alterations after the evaluation of materials used and the structural system of the altered spaces and information taken from the occupants, it is considered that these types of alterations have been applied in the last 30 years.

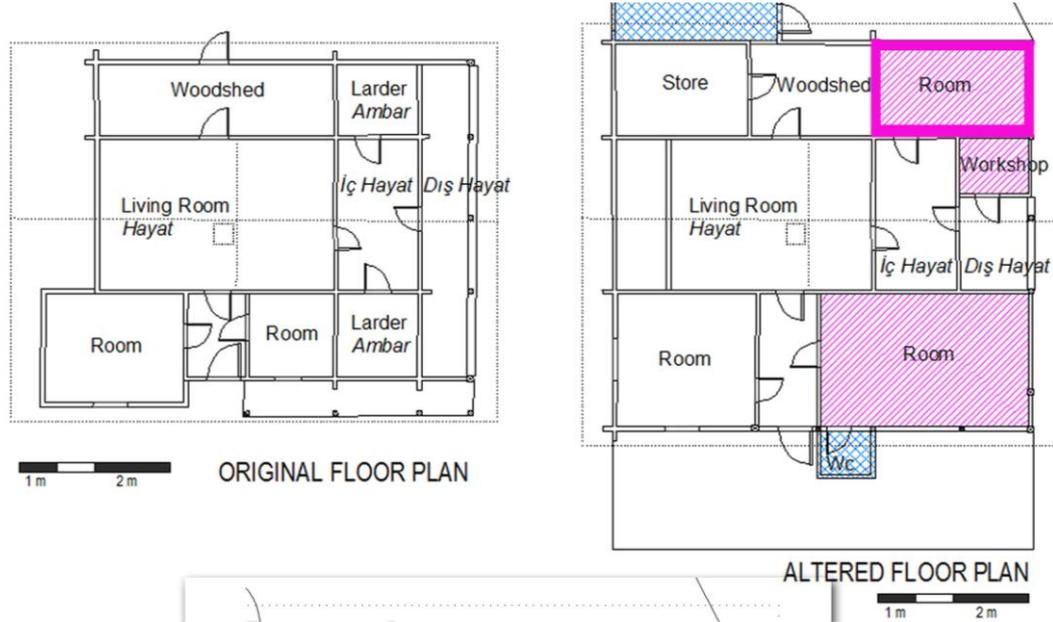


Figure 56, Alteration of the Spaces that Larder and a Part of *Dış Hayat* have been Unified and Turned to a Room

### 3.3.2.3. Alteration of Space that Living Room Called *Hayat* has been Re-arranged and Kitchen has been Added

In the 6 of the space alterations applied to the houses in the study area, it is seen that the space, which functioned originally as a living space (*hayat*), has been re-arranged and kitchenette has been added in a part of the space (see Figure 57). The open space, functioned as a kitchenette in the living space (*hayat*), is located at the whole length or one part of the backside wall of *hayat*. The kitchen has no physical separation with *hayat*. In the arrangement of the kitchen, the floor of the space is covered with cement screed. Having a kitchen in the living space (*hayat*) makes it easy to cook and eat at the same space. It is also easy to establish the piping system

of the kitchen through the empty space behind the wall, on which the kitchen sink is located.

According to the analysis of the alteration of the living spaces (*hayat*) have been rearranged and a kitchen addition in a part of the space in the study area, after the evaluation of materials used, structural system and information taken from the occupants, it is considered that type of alterations have been applied in the last 25 years.

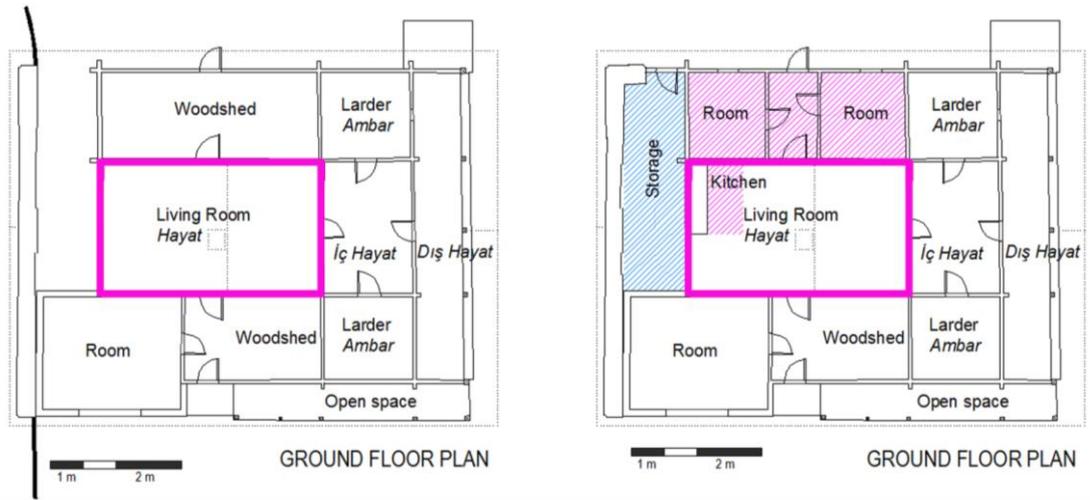


Figure 57, Alteration of the Living Space that *Hayat* has been Re-arranged and Kitchen is Added

#### 3.3.2.4. Alteration of Space that Larder, *İç Hayat* and *Dış Hayat* have been Unified and Turned to a Room

In the 4 of the space alterations applied to the houses in the study area, it is seen that the space, which functioned originally as larder, has been enlarged and unified with the parts of the adjoining spaces *iç hayat* and *dış hayat* and arranged as a room. At the alteration, larder is enlarged to two directions such as to the space *dış hayat* at the front and *iç hayat* beside, which are the adjoining spaces of the larder (see Figure 58).



Figure 58, Alteration of the Spaces that Larder, İç Hayat and Dış Hayat have been Unified and Turned to a Room

Originally located along the whole façade length of the front façade before, after the alteration *dış hayat* is shortened in one dimension. The altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning of the windows.

According to the analyze of the alteration of the space larder to be enlarged to the direction of the adjoining spaces *iç hayat* and *dış hayat* and to be unified and arranged as one room in the study area; after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 30 years.

### 3.3.2.5. Alteration of Space that Woodshed, Larder, *Dış Hayat* and Side Open Space have been Unified and Turned to Room

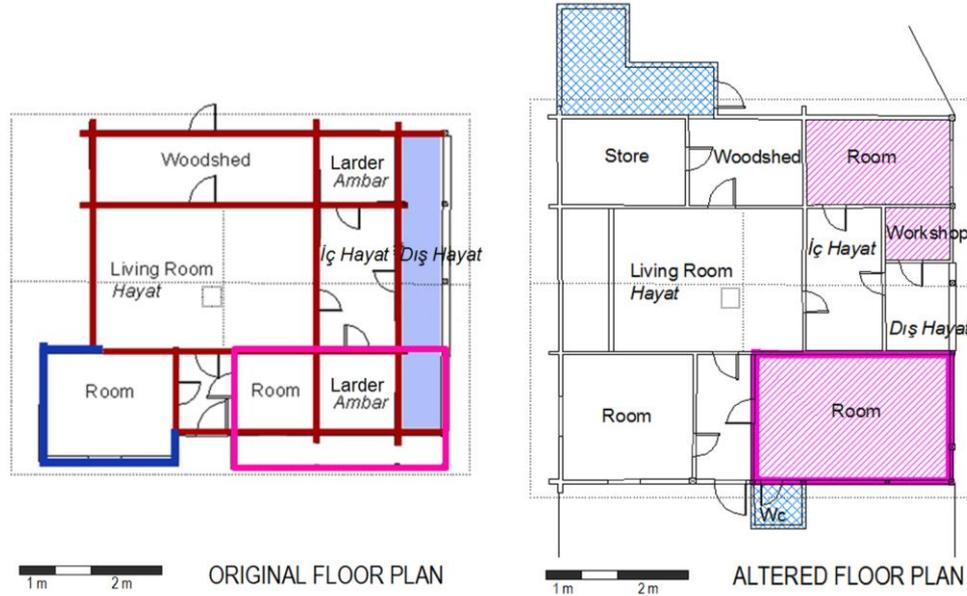


Figure 59, Alteration of the Spaces that Woodshed, Larder, *Dış Hayat* and Side Open Space have been Unified and Turned to a Room.

In the 3 of the space alterations applied to the houses in the study area, it is seen that the space, which functioned originally as larder, has been enlarged and unified with the adjoining spaces and arranged as a room (see Figure 59). Two spaces have been unified by original space dimensions kept. The unified single space has been functioned as a bed room. No change is at the outer boundaries of the building. The altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning the windows.

According to the analysis of these space alterations in the study area; after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 15-20 years.

### 3.3.2.6. Alteration of Space that Larder and *İç Hayat* have been Unified and Turned to a Room

In the 3 of the space alterations applied to the houses in the study area, it is seen that the space, which functioned originally as larder, has been enlarged by unifying with a part of the adjoining space *iç hayat* (see Figure 60). This new space is arranged as a room. The application is on the transverse axis of the larder to *iç hayat*. In this type of alteration, the length of the new space is kept, while the width is increased.

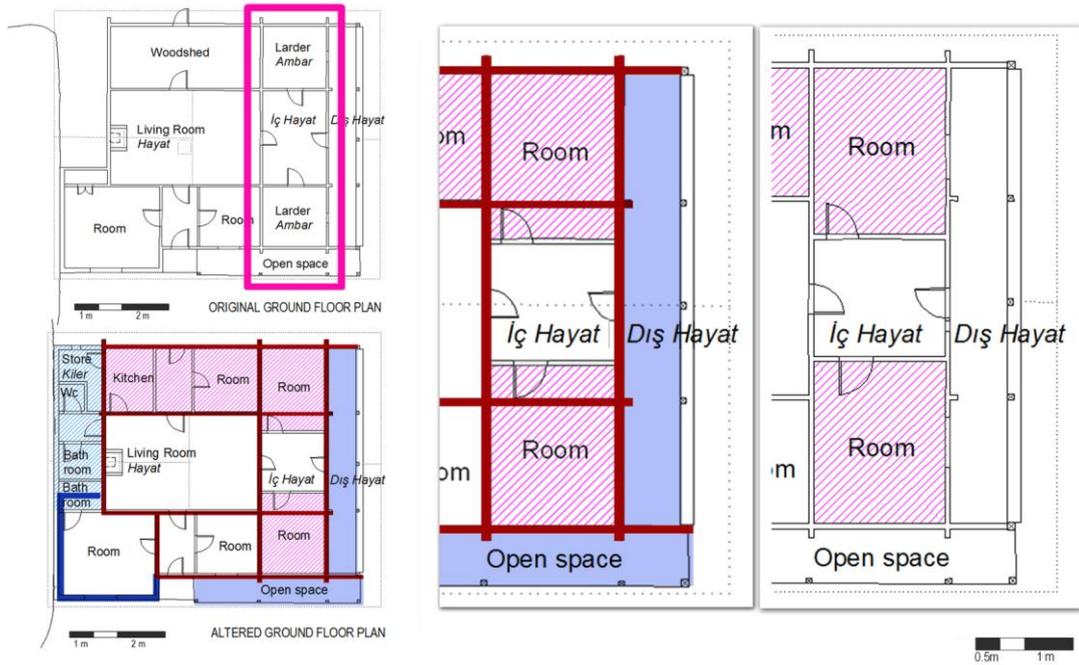


Figure 60, Alteration of the Spaces that Larder and *İç Hayat* have been Unified and Turned to a Room

No change at the space *dış hayat* that is located through the whole front facade length. The altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning the windows.

According to the analysis of these space alterations in the study area; after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 30 years.

### 3.3.2.7. Alteration of Space that *Dış Hayat* has been Divided and a Small Space (Workshop, Toilet) has been Added

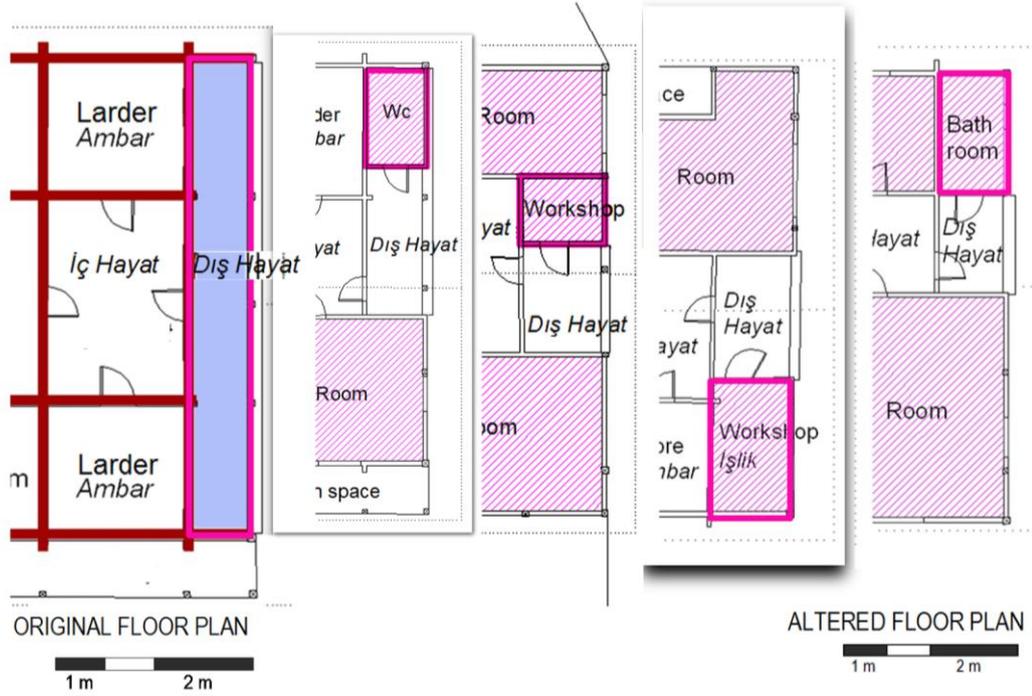


Figure 61, Alteration of the Space that *Dış Hayat* has been Divided and a Small Space has been Added.

In the 5 of the space alterations applied to the houses in the study area, it is seen that the space *dış hayat* has been partially separated in order to get a new closed space. That new space has been functioned for different purposes. Located at one side of *dış hayat*, the length of the new space is 2-2.5 meters. This small space is generally functioned as a workshop for woodwork or a wet space serving to the house (see Figure 61). The construction material of the added space is timber as it is used in the house.

According to the analysis of these space alterations in the study area; after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 20-25 years.

### 3.3.2.8. Alteration of the Space that the Basement Floor Spaces have been Re-Arranged as Living Spaces or Accommodation Units



Figure 62, Alteration of Space that Basement Floor Spaces have been Re-Arranged as Living Spaces or Accommodation Units.

In the 5 of the space alterations applied to the houses in the study area, it is seen that the spaces, which functioned originally as stable and woodshed at the basement floor, have been rearranged and turned to living spaces or accommodation units (see Figure 62). Preserved the outer boundaries of the basement floor, it is seen that the original structural system has been replaced with reinforced concrete frame at the basement floor<sup>61</sup>. At the new basement floor, the spaces have been refunctioned as additional living spaces or as accommodation units depending on the necessities. The altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning the windows. According to the analysis of these space alterations in the basement floor spaces in the study

<sup>61</sup> See Stage 3.3.3.2. – “Replacement of the Masonry System of the Basement Floor With Reinforced Concrete System Brick Wall” for Further Information

area; after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 5 years.

### **3.3.2.9. Alteration of Space that Woodshed has been Re-Arranged as Wet Spaces**

In the 3 of the space alterations that have been applied to the houses in the study area, it is seen that the space, which functioned originally as woodshed, has been rearranged as a kitchen and wc (see Figure 63). Preserved the outer boundaries of the original space, it is seen that the woodshed has been replaced with a kitchen or bathroom that opens to the entrance hall. In some of the houses that are reflecting this type of intervention, it is seen that the walls of the spaces have been plastered and finished with ceramic tile. The altered space has window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning the windows.

According to the analysis of these space alterations, after the evaluation of materials used, positioning and taken information from the occupants, it is considered that type of additions have been applied in the last 5 years.

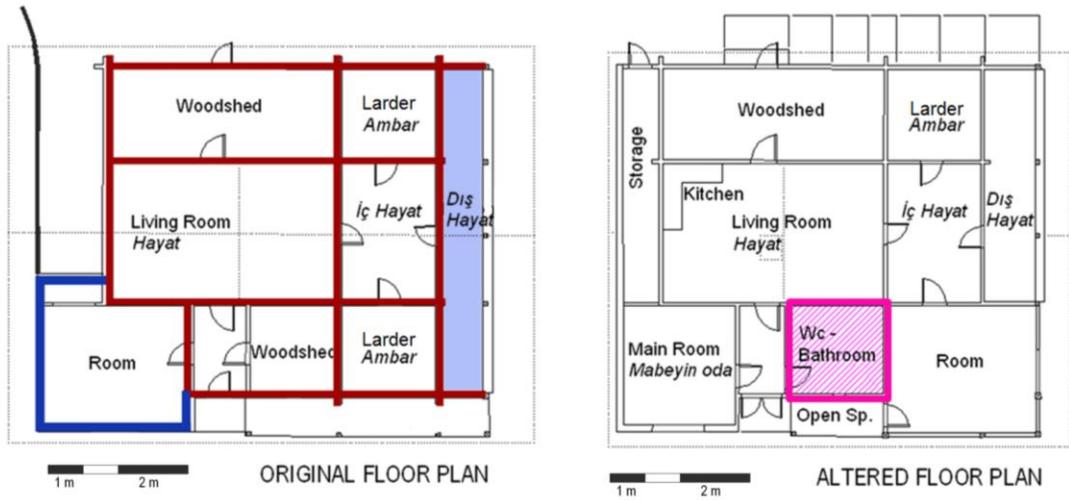


Figure 63, Alteration of Space that Woodshed has been Re-Arranged as Wet Spaces

### 3.3.2.10. Alteration of Space that Entrance has been Expanded by Moving the Wall Outwards

In the 3 of the space alterations applied to the houses in the study area, it is seen that the outer wall of the main entrance space has been moved outwards, to the level of the side open space, in order to get bigger entrance hall. Because of the expansion of the entrance hall, the access to the side open space has been provided from the inside (see Figure 64). In this type of alteration, it is seen that a door has been added between the altered entrance hall and the side open space.

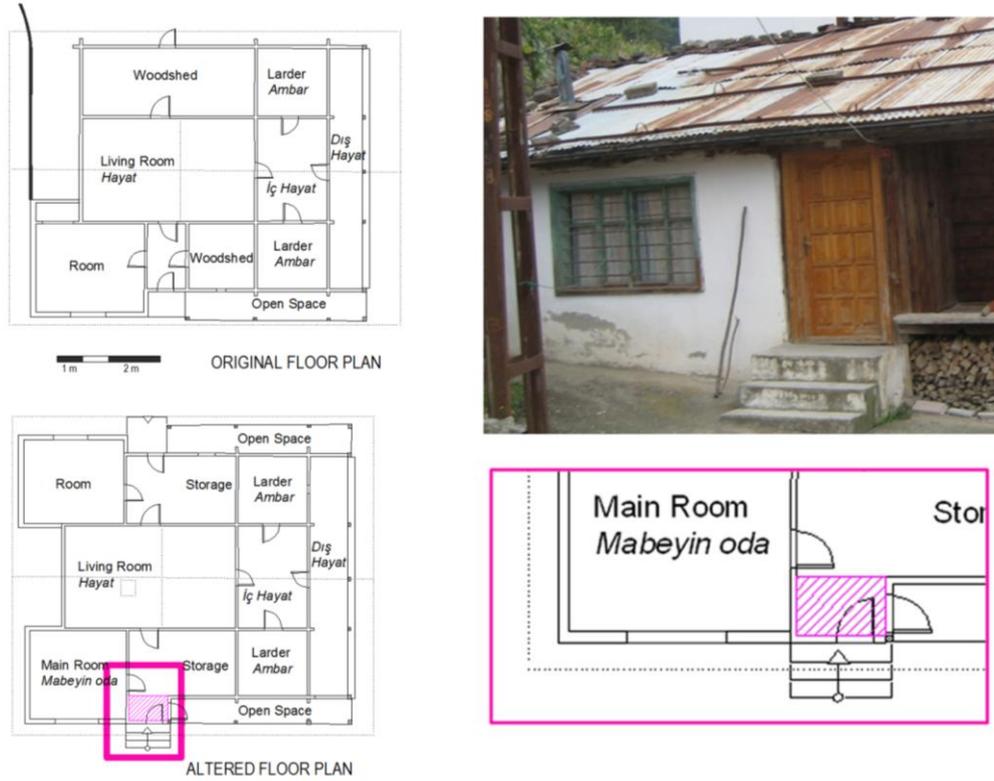


Figure 64, Alteration of the Space that Entrance Space has been Expanded by Moving the Wall Outwards.

According to the analysis of these space alterations, after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 15-20 years.

### 3.3.2.11. Alteration of Space that *Kurutmalık* has been Re-arranged and Turned to Room

In the 2 of the space alterations applied to the houses in the study area, it is seen that the space, which functioned originally as *kurutmalık*, has been refunctioned and used as a bedroom (see Figure 65). Being in the original boundaries of the building, it is seen that the space *kurutmalık* has been replaced with a bedroom. Access is from the living space (*hayat*) or from *dış hayat* with a stair. In the houses that are reflecting this type of intervention, it is seen that the inner walls of the space have been covered with new timber material. The altered space has window additions at the outer facade

walls in order to benefit from daylight. The windows are placed symmetrically on the façade.

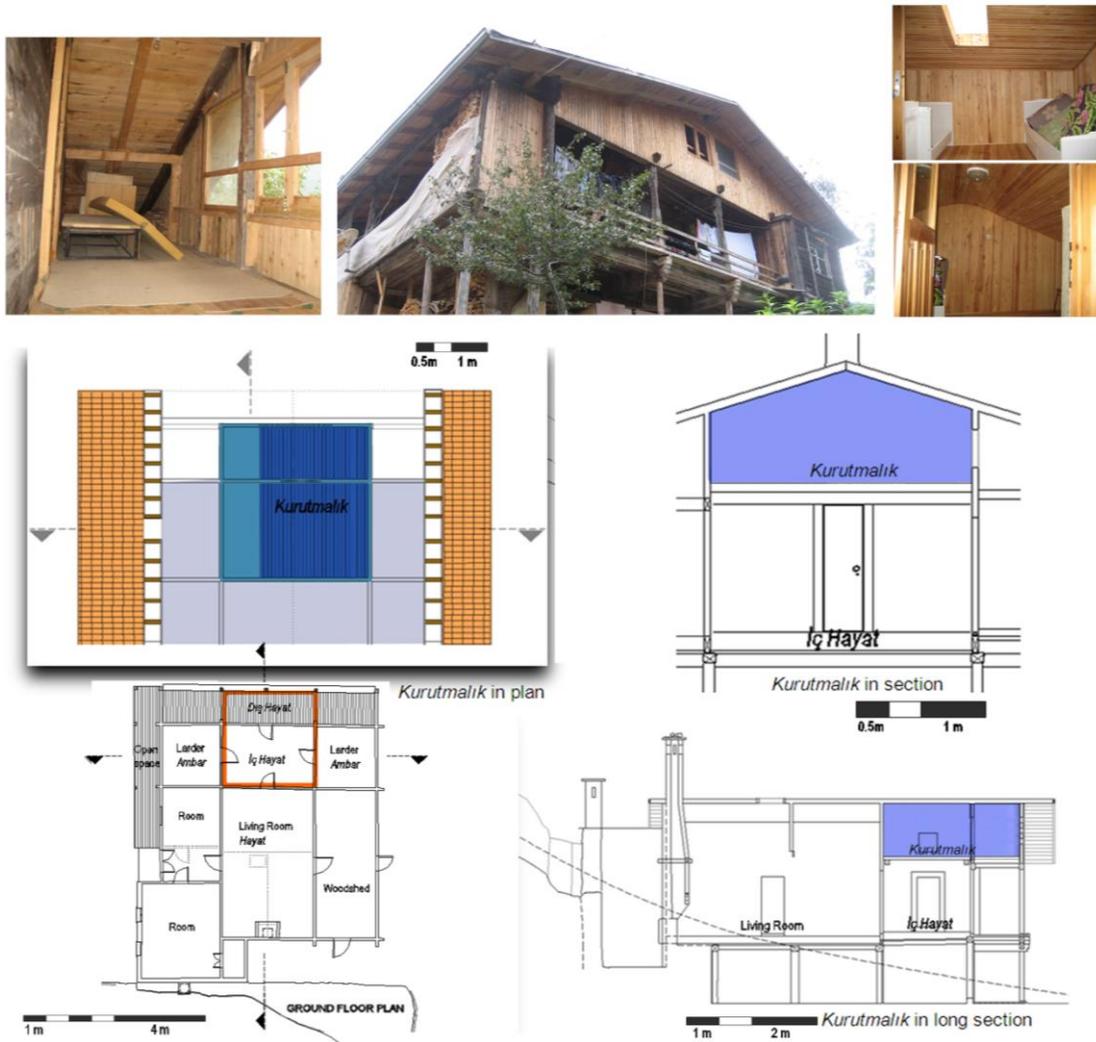


Figure 65, Alteration of Space that *Kurutmalık* has been Re-arranged and Turned to a Room.

According to these space analysis in the study area, after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 5-10 years.

### 3.3.2.12. Alteration of Space that Whole Plan Organization has been Altered

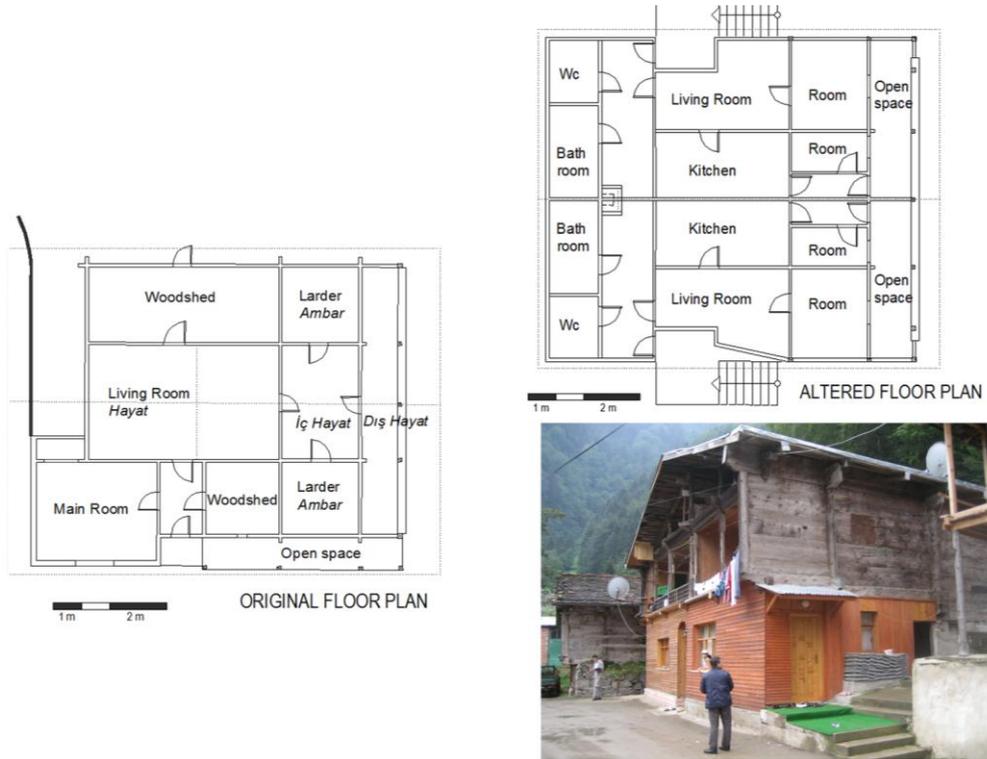


Figure 66, Alteration of Space that Whole Plan Organization has been Altered.

In the 2 of the space alterations applied to the houses in the study area, it is seen that the whole plan layout of the ground floor has been rearranged (see Figures 66, 67). The outer boundaries of the ground floor have been preserved, but the original plan layout can not be distinguished. In the houses that reflects this type of intervention, the inner spaces have been refunctioned as living space, bedrooms, kitchen and bathroom. The spaces have been divided with separation walls. New doors and windows have been added. The inner walls have been covered with new timber. The altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning the doors and windows.

According to the analysis of the space alterations in the study area, after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 15 years.

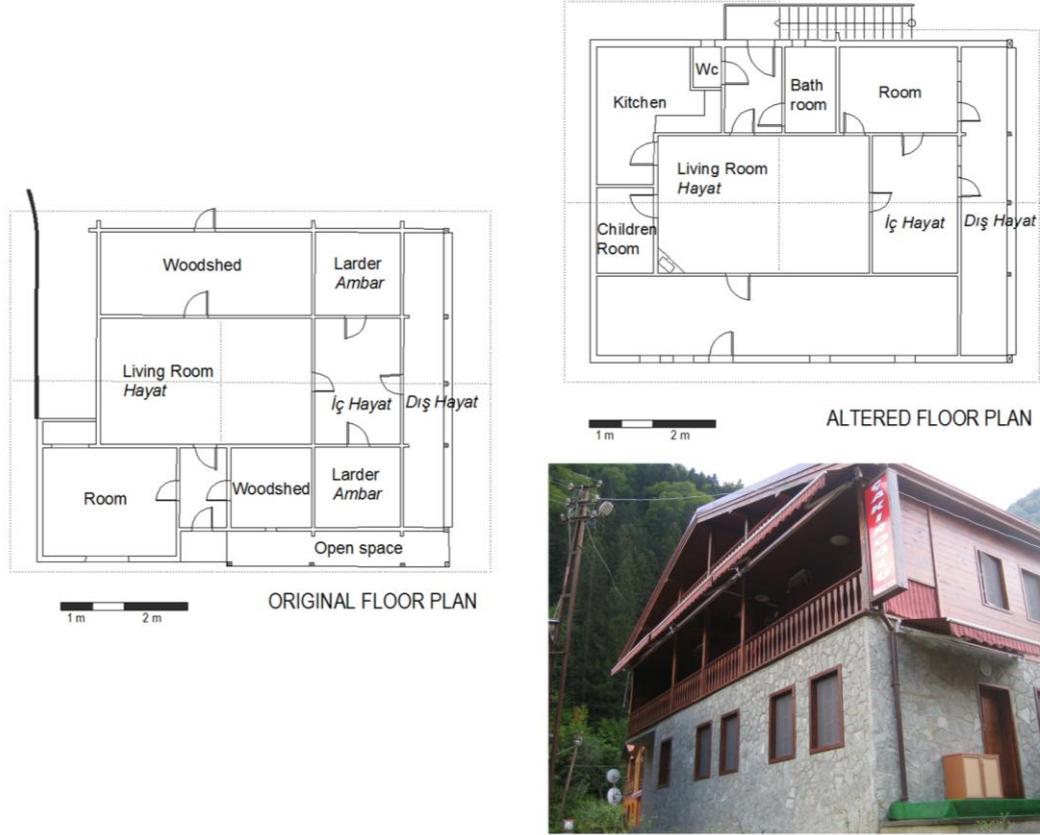


Figure 67, Alteration of Space that Whole Plan Organization has been Altered.

### 3.3.2.13. Other Space Alterations

The other space alterations, which rarely or individually seen in the study area, are the alteration of *dış hayat* that has been changed into a room (1), unification of the spaces woodshed, larder and *dış hayat* that were changed into a room (1), addition of storage into the space *iç hayat* (1), enlargement of the space larder to the direction of *dış hayat*(1), rearrangement of the woodshed as entrance hall and a room (1), rearrangement of the woodshed as open space, storage and a room (1), rearrangement of the larder as wet space (1) and the rearrangement of the living spaces as accommodation units (1).

### 3.3.3. Alterations of Architectural Element

There are 49 architectural element alterations applied to the houses in the study area.

#### 3.3.3.1. Replacement of the Original Parts With Reinforced Concrete System Brick Wall

In the 17 of the architectural element alterations applied to the houses in the study area, it is seen that some sections of the houses have been renewed with alternative construction material (see Figure 68). The outer boundaries of the renewed sections have been preserved. In some of the houses, the original structural system elements such as rubble stone masonry basement floor and timber masonry – timber frame system ground floors has been replaced with the reinforced concrete frame system. The concrete framed walls are brick infilled and cement plastered. The altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning the doors and windows.

According to the analysis of the renewals of some sections of the houses in the study area; after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 5 years.



Figure 68, Replacement of the Original Parts of the Building With Reinforced Concrete System Brick Wall

### 3.3.3.2. Replacement of the Masonry System Basement Floor With Reinforced Concrete System Brick Wall

In the 10 of the architectural element alterations applied to the houses in the study area, it is seen that the structural system and the construction material of the basement floor have been renewed with alternative materials (see Figures 69, 70). The outer boundaries of the renewed basement floors have been preserved. In some of the houses, the rubble stone masonry basement floor as the original structural system has been replaced with the reinforced concrete frame system. The concrete framed walls are brick infilled and cement plastered. The altered spaces have window additions at the outer facade walls in order to benefit from daylight. No façade order is considered in positioning the doors and windows.

According to the analysis of the renewal of the structural system at the basement floor in the study area, after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 5 years.



Figure 69, Alteration of the Masonry System of the Basement Floor With Reinforced Concrete System Brick Wall



Figure 70, Original View of the House and View During Basement Floor Alteration

### 3.3.3.3. Renewal of the Roof with New Material

In the 8 of the interventions applied to the houses in the study area, it is seen that original roof has been renewed with new material (see Figure 71). The material of the roofs has been completely changed, but no change in the dimensions of the roof surface area in the houses. These altered roofs have been covered with metal panel. Different from the original roofs, they have gutters on both sides of the eaves.

According to the analysis of the alterations of some roofs in the study area, after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of additions have been applied in the last 5 years.



Figure 71, Renewal of the Roof With New Material

#### 3.3.3.4. Replacement of the Original Fireplace With New One



Figure 72, Replacement of the Original Fireplace With New One

In the 4 of the architectural element alterations applied to the houses in the study area, it is seen that the original fireplace in the living space (*hayat*) has been renewed (see Figure 72). The original fireplaces have been completely renewed with using new material preserving original location and original dimensions. Fire places are masonry bond of brick and are covered with artificial stone. The altered fireplaces are used differently in function from the original. No cooking is at the new ones, but heating.

According to the analysis of the renewal of fireplaces in the study area, after the evaluation of materials used, construction system and taken information from the occupants, it is considered that type of additions have been applied in the last 5 years.

### 3.3.3.5. Replacement of the Original Stone Based Stair With Concrete One

In the 4 of the architectural element alterations applied to the houses in the study area, it is seen that the original steps have been renewed (see Figure 73). Steps are placed at outside open spaces that provide access from lower levels to upper levels or placed beside the entrance door. The original stone-based steps have been replaced with concrete-based ones. These new steps are applied using with cement based material and used exposed.

According to the analysis of the architectural element alterations in the study area, after the evaluation of materials used, structural system and taken information from the occupants, it is considered that type of alterations have been applied in the last 20 years.



Figure 73, Replacement of the Original Stone Based Stair With Concrete One

### 3.3.3.6. Other Architectural Element Alterations

The other architectural element alterations, which are rarely or individually seen in the study area, are the renewal of the main entrance door with new timber one (3), application of new timber covering to the outer façade of the entrance wall (2) and replacement of the construction material of the courtyard wc with briquette, which was timber before (1).

Table 3, Table of Application Chronology of Vernacular Houses in the Study Area

		TYPE OF INTERVENTION		
PERIOD OF INTERVENTION	1980 - 2012	 LARDER, İÇ HAYAT AND DIŞ HAYAT WERE UNIFIED AND TURNED TO A BEDROOM.		
	1985 - 2012	 TIMBER FRAME STRUCTURE WAS ADDED TO THE SIDE OF THE BUILDING, WHICH IS AN EXTRA WOODSHED  CHIMNEY WAS ADDED	 LIVING ROOM WAS DIVIDED AND KITCHEN WAS ADDED  LARDER WAS ENLARGED BY ADDING A PART OF THE DIŞ HAYAT  ORIGINAL FIREPLACE WAS REPLACED WITH A KITCHEN/COOKSTOVE	
	1990 - 2012	 TIMBER OR STONE SINGLE SPACE WAS ADDED TO THE BUILDING  WET SPACES WERE ADDED IN CONNECTION WITH ROOMS  THE SPACE, WHICH WAS EMPTY BEFORE, HAS BEEN TURNED TO STORAGE AT THE BACK SIDE OF THE BUILDING.  A NEW SPACE WAS ARRANGED UNDER THE INCLINED TERRAIN	 WOODEN PLATES WERE ADDED TO THE SIDE OF THE BUILDING OR TO THE SIDE OF BASEMENT FLOOR FAÇADE  A WORKSHOP OR A TOILET WAS ADDED ON A PART OF DIŞ HAYAT  THE SPACE USED AS WOODSHED OR LARDER BEFORE WAS TURNED TO A BEDROOM OR TWO ROOMS AND A HALL BETWEEN  STONE BASED STAIRS WERE REPLACED WITH REINFORCED CONCRETE ONES	
	1995 - 2012	 MASS ADDITION IS SEEN THAT THE SPACE IS USED AS HAYLOFT OR WOODSHED  SERVICE SPACE WAS ADDED INTO THE COURTYARD  NEW TIMBER COVERING WAS ADDED TO THE TRIANGULAR TOP FAÇADE	 CEMENT PLASTER ADDED TO THE ORIGINAL WALL SURFACE  THE SPACE USED AS KURUTMALIK BEFORE WAS TURNED TO ROOM  THE SPACE MAIN ENTRANCE WAS ENLARGED BY CHANGING THE POSITION OF ENTRANCE DOOR	
	2000 - 2012	 REINFORCED CONCRETE STRUCTURE WAS ADDED TO THE BUILDING  WET SPACES ADDED TO THE EMPTY AREA BEHIND THE BUILDING  NEW TIMBER COVERING WAS ADDED TO THE FAÇADE OF BUILDING  NEW STAIR WAS ADDED TO THE LIVING SP. PROVIDING ACCESS TO LOFT FROM INSIDE THE BUILDING	 THE SPACE USED AS WOODSHED/STORAGE BEFORE WAS DIVIDED AND TURNED TO KITCHEN, ROOM AND WET SPACES  THE ORIGINAL PLAN ORGANIZATIONS WERE COMPLETELY CHANGED  ENTRANCE THE DOOR WAS RENEWED/ REPLACED WITH NEW ONE  THE CONSTRUCTION MATERIAL OF THE COURTYARD WC WAS REPLACED WITH BRICK  THE ROOF WAS RENEWED WITH METAL PANEL	
	2005 - 2012	 MASS ADDITIONS ARE SEEN THAT THE REINFORCED CONCRETE SYSTEM WAS ADDED TO THE BUILDING  METAL SHEET WAS ADDED TO THE SIDE OF THE BUILDING FOR WATERPROOFING  INNER ORIGINAL TIMBER WALL WAS COVERED WITH NEW TIMBER MATERIAL  A SIGN BOARD WAS ADDED TO THE FAÇADE  SOME ROOF TILES WERE REMOVED  THE WHOLE BUILDING WAS CONSTRUCTED WITH REINFORCED CONCRETE SYSTEM	 THE SPACES USED AS HAYLOFT AND STABLE BEFORE WERE TURNED TO LIVING SPACES  THE FIRST AXIS OF THE BUILDING, WHICH WAS TIMBER MASONRY BEFORE, REPLACED WITH REINFORCED CONCRETE FRAMED BRICK WALL  TIMBER WALL OF THE FAÇADE REPLACED WITH REINFORCED CONCRETE FRAMED BRICK WALL  ORIGINAL TIMBER WALL OF THE BASEMENT FLOOR WAS REPLACED WITH BRICK  ORIGINAL FIRE PLACE REPLACED WITH NEW ONE  STONE BASED STAIRS WERE REPLACED WITH REINFORCED CONCRETE ONE	
LEGENT	ADDITION	<p>Mass </p> <p>Space </p> <p>Architectural Element </p>	<p>REMOVAL</p> <p>Mass </p> <p>Space </p> <p>Architectural Element </p>	<p>ALTERATION</p> <p>Mass </p> <p>Space </p> <p>Architectural Element </p>

### 3.4. General Evaluation of the Interventions Applied to the Houses in the Study Area

#### 3.4.1. Application Chronology of Interventions

According to the application periods of the total interventions, it is considered that the listed interventions have been applied to the buildings in the last 30-35 years. The applications of interventions are listed chronologically (see Table 3).

Period of Intervention: 1980-2011

Type of Intervention:

- Space alterations are seen at the buildings that the spaces used as larder, iç hayat and dış hayat were unified and turned to a bedroom.

Period of Intervention: 1985-2011

Type of Intervention:

- Mass additions are seen that timber frame structure was added to the side of the building, which is an extra woodshed.
- Architectural element addition is seen that chimney was added.
- Space alterations are seen that the space living room was divided and kitchen was added.
- Architectural element alteration is seen that the original fireplace was replaced with a kitchen/cookstove.
- Space alterations are seen that the space larder was enlarged by adding a part of the dış hayat.

Period of Intervention: 1990-2011

Type of Intervention:

- Space additions are seen that the space, which was empty before, has been turned to storage at the back side of the building.
- Mass additions are seen that timber or stone single space was added to the building.

- Mass additions are seen that wet spaces were added in connection with rooms.
- Space additions are seen that a new space was arranged under the inclined terrain.
- Architectural element addition is seen that wooden plates were added to the side of the building *or* to the side of basement floor façade.
- Space alterations are seen that a workshop or a toilet was added on a part of *diş hayat*.
- Space alterations are seen that the space used as woodshed or larder before was turned to a bedroom or two rooms and a hall between.
- Architectural element alterations are seen that some stone based stairs were replaced with reinforced concrete ones.

Period of Intervention: 1995-2011

Type of Intervention:

- Mass addition is seen that the space is used as hayloft or woodshed.
- Space addition is seen that the service space was added into the courtyard.
- Architectural element addition is seen that new timber covering was added to the triangular top façade
- Architectural element addition is seen that cement plaster added to the original wall surface.
- Space alterations are seen that the space used as *kurutmalık* before was turned to room.
- Space alterations are seen that the space main entrance was enlarged by changing the position of entrance door.

Period of Intervention: 2000-2011

Type of Intervention:

- Mass additions are seen that reinforced concrete structure was added to the building extensionally. (There are living spaces such as kitchen, bathroom, wc and extension of living spaces in the newly added part of the building).
- Space additions are seen that wet spaces added to the empty area behind the building.

- Architectural element additions are seen that new timber covering was added to the facade of building.
- Architectural element addition is seen that new stair was added to the living space providing access to loft from inside the building.
- Space alterations are seen that the space used as woodshed/storage before was divided and turned to kitchen, room and wet spaces.
- Space alterations are seen that the original plan organizations were completely changed.
- Architectural element alterations are seen that entrance the door was renewed/replaced with new one.
- Architectural element alteration is seen that the construction material of the courtyard wall was replaced with brick.
- Architectural element alterations are seen that the roof was renewed with metal panel.

Period of Intervention: 2005-2011

Type of Intervention:

- Mass additions are seen that the reinforced concrete system was added to the building.
- Architectural element addition is seen that metal sheet was added to the side of the building for waterproofing.
- Architectural element addition is seen that inner original timber wall was covered with new timber material.
- Architectural element addition is seen that a sign board was added to the facade.
- Architectural element removals are seen that some roof tiles were removed.
- Architectural element alterations are seen that the first axis of the building, which was timber masonry before, was replaced with reinforced concrete framed brick wall.
- Architectural element alterations are seen that timber wall of the facade was replaced with reinforced concrete framed brick wall.
- Architectural element alterations are seen at the basement floors that the original timber wall of the floor was replaced with brick.

- Space alterations are seen at the basement floor that the spaces used as hayloft and stable before were turned to living spaces.
- Mass alterations are seen that the whole building was constructed with reinforced concrete system.
- Architectural element alterations are seen that the original fire place was replaced with new one.
- Architectural element alterations are seen that the stone based stairs were replaced with reinforced concrete one.

### 3.4.2. Evaluation of the Interventions in the Study Area

At 55 different vernacular houses, the **total number of interventions** is **253**. Among total number of interventions, 95 of all are additions, 19 of all are removals and 139 of all are alterations. Displaying in percentages, additions are %37,5, removals are %7,5 and alterations are %55. It is seen the more than half of the interventions are **alterations** and big amount of them are **additions** (see Figure 74).

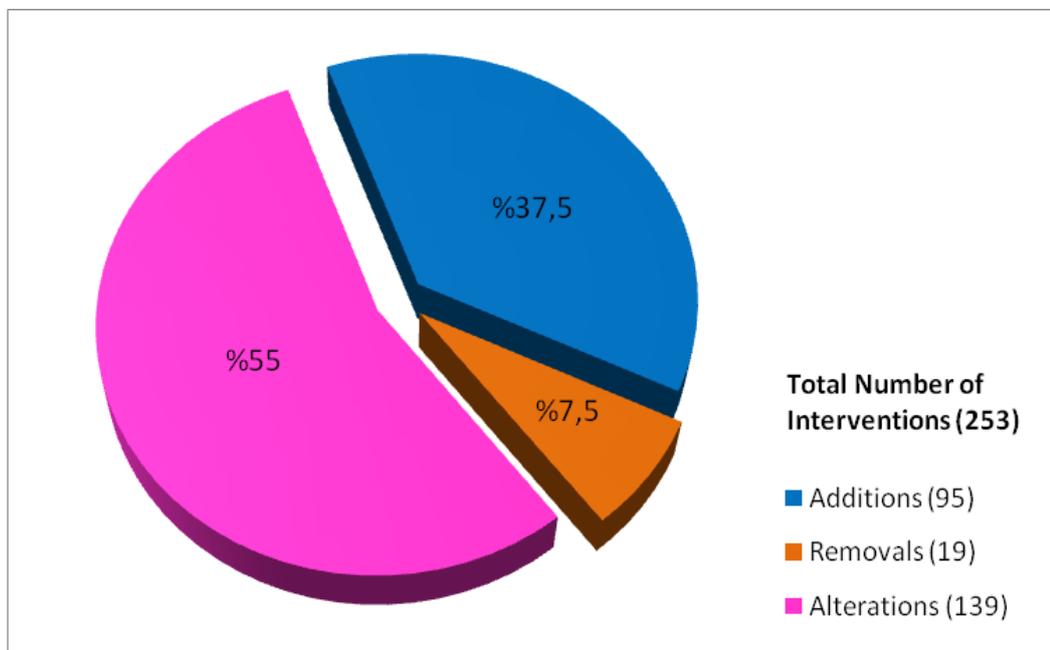


Figure 74, Percentage of Interventions

### 3.4.2.1. Evaluation of Additions

Among additions, it is observed that more than half of the additions are architectural element additions such as addition of new openings, addition of new material to the facades as covering material (see Figure 75). Other additions are mass additions to the original structure and space additions at the empty space behind the building<sup>62</sup>.

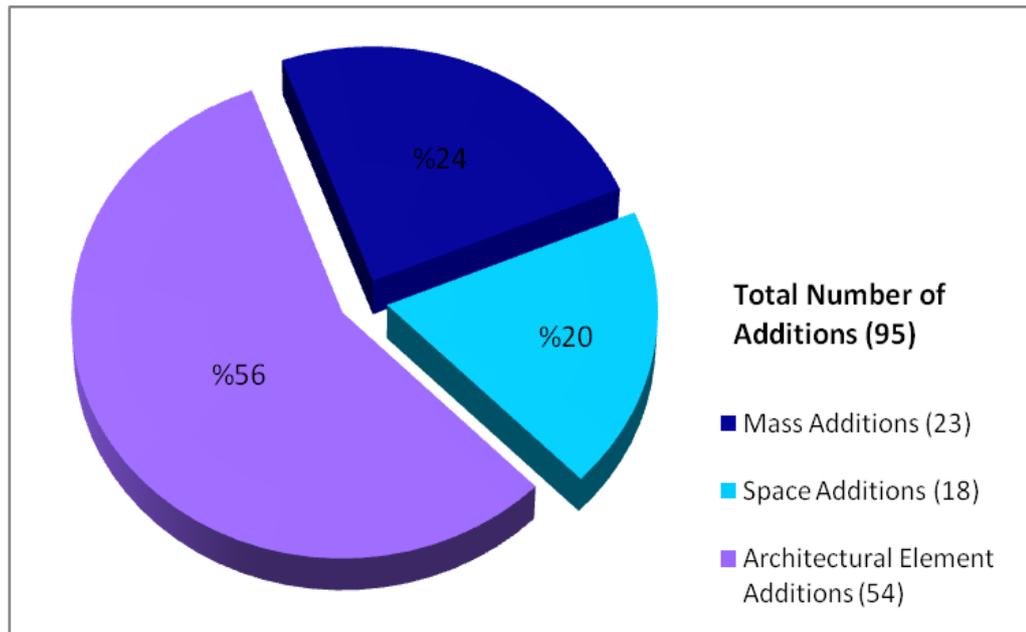


Figure 75, Percentage of Additions

In the application of additions, which are estimated to be started about 25-30 years before, it is seen that traditional building materials has been used in the interventions such as timber and stone. Simple timber and stone structures have been added to the buildings with the uses of various fuctions such as storage, woodshed and wet space. The empty space behind the building has been functioned as storage or woodshed by surrounding the space with a timber wall. Wooden plates have been added partially to sides. There has been no new material usage in the study area. Original façade organization could be perceived at those period additions.

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<sup>62</sup> See Stage 3.1.-“Additions” for further information

In the application of additions, this is estimated to be done about 15 years before, it is seen that new materials such as cement based plaster and new timber siding materials started to be used beside traditional materials in the study area. Some sections at the building have been plastered with cement plaster or covered with new timber material.

In the last 10 years of additions it is seen that new structural system has been used beside the use of new building material. Reinforced concrete frame system and brick infilled masses have been added to the side of the buildings with the functions of new living spaces and wet spaces. The empty space behind the building has been functioned as bathroom and wc by arranging the whole space with new construction system and new material. At some sections in the buildings, inner and outer wall surfaces have been covered with new timber materials. At the buildings, there has been new material usage in the study area is seen. Although the original boundaries of the mass are perceived, the original façade organizations are hardly perceived with the last period additions.

#### 3.4.2.2. Evaluation of Removals

The removals have small amount in the total interventions. Almost all removals are architectural element removals that some roof tiles have been removed from their original place (see Figure 76).

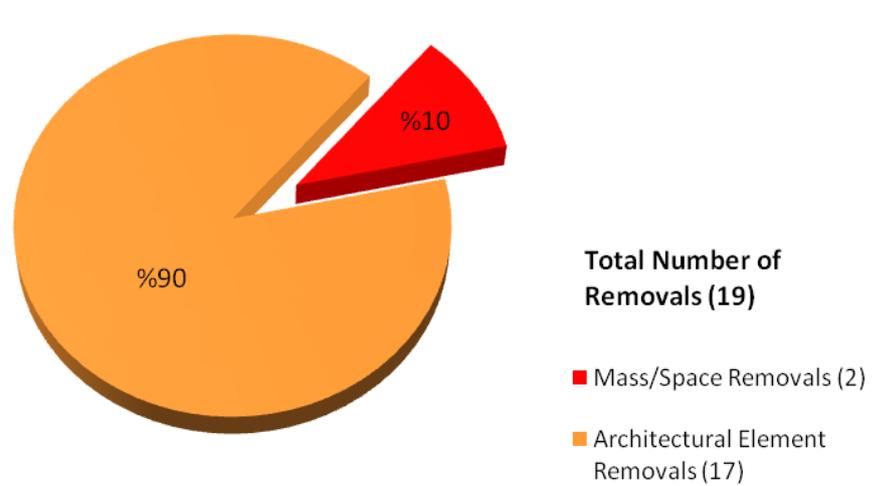


Figure 76, Percentage of Removals

In the last 5-10 years of removals, it is seen that with the use of corrugated metal sheet under tile, removal of some of roof tiles is seen at some buildings in the study area.

### 3.4.2.3. Evaluation of Alterations

Among the alterations, it is seen that more than half of the alterations are space alterations. Original spaces have been altered to give new functions, mostly living spaces and wet spaces at the houses. The other big amount of alterations are architectural element alterations. It is seen that original architectural elements or original sections at the houses have been altered with new material. Small amount of alterations are mass alterations that 4 original structures have been reconstructed in the study area (see Figure 77).

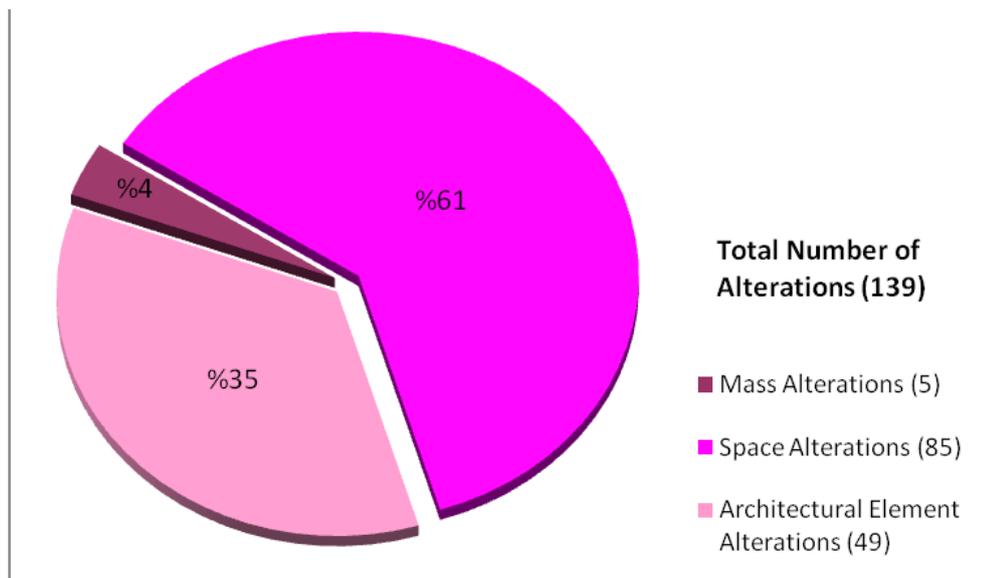


Figure 77, Percentage of Alterations

In the application of alterations, those are estimated to be started about 30-35 years before, it is seen that new rooms have been arranged by unifying the spaces used as larder, *iç hayat* and *dış hayat* before. The kitchen has been functioned in a part of the living space (*hayat*). The function of fire place has been cancelled and cook stove added.

In the application of alterations, those estimated to be done about 15-20 years before, it is seen that some spaces were refunctioned and arranged as rooms, some service spaces have been altered, concrete has been used at steps at the outside of the buildings in the study area.

In the application of alterations, that estimated to be done about 5-10 years before, it is seen that some spaces partially or some floors totally have been rearranged at buildings in the study area. Renewals have been applied on some architectural elements. New structural systems have been started to be used that some sections partially or some floors totally were rebuilt with reinforced concrete frame system and brick infill. New construction materials such as brick, cement, new timber, metal, pvc based materials were used. Although the original boundaries of the mass are perceived, the original façade organizations are hardly perceived with the last period alterations.

## CHAPTER 4

### GENERAL EVALUATION AND PROPOSALS FOR CONSERVATION

#### 4.1. Value Assessment

It can be useful to mention all value groups before defining the values of the vernacular houses in the study area. Values of a cultural heritage resource can be classified in two groups as *cultural values* and *socio-economic values* (Feilden, Jokilehto: 17). Cultural Values can be listed as ‘identity value’, ‘artistic and technical value’ and ‘rarity value’. Socio-economical Values can be listed as ‘economic value’, ‘functional value’, ‘educational value’, ‘social value’ and ‘political value’<sup>63</sup>. Only related value groups will be displayed in the chapter.

According to related value groups, *Cultural Values* are 1) Identity Value, 2) Artistic–Technical Value and 3) Rarity Value, while *Socio-economical Values* are 1) Economical Value and 2) Functional Value for the buildings in the study area.

##### 4.1.1. Cultural Values

The vernacular houses in the study area had been built at a certain time that both reflects the artistic/functional house construction trends of its period and contributes to these trends<sup>64</sup> (Feilden, Jokilehto: 16). Among vernacular houses, there are some houses that remain original in the study area.

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<sup>63</sup> The value groups mentioned are taken from the book *Management Guidelines for World Cultural Heritage Sites*.

<sup>64</sup> In the book *Management Guidelines for World Cultural Heritage Sites* the subject is explained in a wider perspective under the title *Historical Time Line*.

Those original vernacular houses have authenticity<sup>65</sup>. Authenticity can be jeopardized by various interventions, such as additions, removals and alterations<sup>66</sup>. A heritage resource that is having authenticity can be defined as to maintain its original integrity, as created or as it has evolved through its historical time line. In authenticity, four aspects should be considered such as authenticity in design, materials, workmanship and setting according to the *Operational Guidelines* (Feilden, Jokilehto: 17).

### Identity Value:

Unlike scattered settlement generally seen in the Eastern Black Sea region, a **collective settlement** is seen in the study area. This settlement can be conceived as a whole that is an assembly of component parts. This collectiveness forms *a potential unity*, in which each part can be described and defined in reference to the original intention (Feilden, Jokilehto: 14) (Figure 78). Settlement has an identity in the district having these physical properties.

Inharmonious mass additions that woodshed and/or hayloft additions, reinforced concrete extensional mass additions, inharmonious window/door additions to facades, inharmonious façade coverings are seen in the study area, which cause visual unity of the settlement not perceived. Those interventions are threats for identity value of the region.

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<sup>65</sup> According to Feilden and Jokilehto:

*“Authenticity is a crucial aspect in the assessment of heritage resources and authenticity is ascribed to a heritage resource that is materially original or genuine (as it was constructed) and as it has aged and changed in time.”* Feilden, B. M., Jokilehto, J., *Management Guidelines for World Cultural Heritage Sites*, ICCROM, Rome, 1998, pg. 16.

<sup>66</sup> See Stage 3- “Interventions in the Study Area” for further information.



Figure 78, General View of the collective settlement that reflects a potential unity.

### Technical Value:

Vernacular houses in the study area are constructed with composite structural system. More than one structural systems<sup>67</sup> are used at buildings such as:

- The ground floors are constructed with timber masonry system with *kurtboğazi geçme*<sup>68</sup> construction technique.
- The basement floors are constructed with rubble stone masonry walls on the back side and partially on both sides.
- The whole front façades of the buildings are constructed with timber skeleton system (see Figure 21).

Beside structural system, at the specific part of the building, which is called *mabeyin oda*, *gözdolma* construction technique is used as a vernacular construction type<sup>69</sup> (see Figure 28). *Gözdolma* technique is a special construction technique that is seen at the Eastern Black Sea Region commonly. Having those properties, vernacular houses have technical specialties in their structural systems and construction techniques.

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<sup>67</sup> See Stage 2.3.2.-“Material and Structural System” for further information

<sup>68</sup> See Stage 2.3.2.2.-“Structural System” for further information

<sup>69</sup> See Stage 2.3.2.2.-“Structural System / *Gözdolma Construction System Outer Wall*” for further information

Some unconscious interventions that replacement of stone masonry basement floors with reinforced concrete system walls, replacement of *gözdolma* construction system outer walls with reinforced concrete system walls, addition of new façade covering materials and rebuilding of whole structure with new building materials are seen in the study area, which cause original structural systems and construction techniques not perceived. Those interventions are threats for technical value of the region.

#### Rarity Value:

Vernacular houses in the study area have rare architectural features (see Appendix B-Figure 142).

As construction technique, *gözdolma* construction technique is a special technique that is seen only in the Eastern Black Sea Region (see Figure 79). Central spaced plan layout and some architectural plan elements such as fire place, hanging separation wall in the middle (*aşhane perdesi*) and top roof window are rare architectural features.

Some renewals and unconscious interventions that replacement of *gözdolma* construction system outer walls with reinforced concrete system walls, addition of inharmonious façade covering, renewal of original fire place with new one in another style in terms of material, form, texture and colour are seen in the study area, which cause rare architectural elements of houses not perceived. Those interventions are threats for rarity value in the region.

#### **4.1.2. Socio-Economical Values**

##### Economic Value:

There has been physical and functional changing process of vernacular houses recently seen in the study area. With the increasing demand in tourism sector,

vernacular houses have started to be refunctionalized and turned to pensions. Although the number of refunctionalized houses is less today, the study area has an economic potential.

*Functional Value:*

The settlement defines a unity, which is the assembly of vernacular houses as component parts. Almost all buildings in that compact unity have been serving as houses until quite recently. Now there are both houses and pensions exist in the study area. Located close to the center of the district, the settlement is a separate functional zone for accommodation and residential purposes.



Figure 79, General View from a Vernacular House in the Study Area

## 4.2. General Evaluation

Vernacular timber houses of Uzungöl have unique physical and architectural features with their settlement properties, structural system, construction technique and construction material, façade organization and plan organization representing a conserved rural life style in the Eastern Black Sea Region.

Up to the present, there has been no distinct change in the boundaries of the settlement, which is forming the study area. The total area of the settlement has been preserved with the restrictions of the Environmental Plan and Regulatory Plan decisions (see Figure 9). The ratio of built areas and open areas has substantially been preserved (see Figure 15). This preservation in site scale has contributed to provide unity of the settlement.

Addition to its vernacular houses and conserved life style of the district, Uzungöl is an attraction point for having natural landscape elements, preserved geography and climatic features. Getting bigger in *Uzungöl*, tourism sector has caused a rapid change in the district. Remaining incapable of touristic facilities and infrastructure, vernacular houses in the district have been overloaded with raising activity.

Contrary to change in site scale, changing process seems different in building scale: As mass scale, original boundaries of the buildings are perceived, although there are mass additions on various sides of buildings. Some added masses are simple structures, while others are reinforced concrete or stone masonry. The original boundaries of masses have been preserved, which is important for conservation of the settlement tissue.

As facade organization scale and external architectural element scale, general physical features in terms of number of storey, settlement properties, orientation and roof type have considerably been preserved in the buildings, which is important for conservation. On the other side, there have been some changes, which reach to severe degrees at some buildings, that the original facade organization is not perceived. The arrangements of new rooms have brought door and window additions

on facades. The unconscious door and windows additions on facades have created deterioration on facade order. At some vernacular houses, original open spaces on sides and on front facade (*dış hayat*) have been turned to closed service spaces that affects the perception of the original facade organization in negative way.

As structural system and construction material scale, replacing the original structural system with reinforced concrete frame and brick infill, use of cement based, pvc based, iron based materials at some sections/at whole floor have been inharmonious with the original facade organization. There have been big amount of alterations applied with new material, most of which are inharmonious in terms of construction technique, shape, texture and colour with the original at vernacular houses. The reason of choosing the cement based materials is for material and structural system have more rigidity and requires less maintenance. Alterations applied with new structural system and new material has lead to elimination in perception of the original structure.

As plan organization scale, there have been new arrangements in both inner spaces and open spaces. At some houses, original plan layout can not be perceived by the unconscious space alterations. It is seen that some original service spaces have been turned to rooms and wet spaces by unifying or dividing original spaces. Inserting new functions into also open spaces have made deterioration on both plan and façade organization. On the other side, these space alterations indicate the necessity of new living spaces and wet spaces at vernacular houses.

According to the analysis, it is observed that recent interventions, which have been applied **in the last 10 years**, seems inharmonious to the original structure and more deteriorating than the former interventions. Interventions applied with incompatible materials at buildings have lead to elimination in the evidences of original facade and plan organizations at the buildings. As a result, the authenticity and most of the documentary values of the buildings have been under threat to be lost.

### 4.3. Proposals for Conservation

Existing in a compact built up environment, vernacular houses in the study area represent a unity, which gives an identity value to the settlement<sup>70</sup> (see Figure 78). So settlement boundaries and open area-built up area distribution of the study area should be preserved without any expansion.

Physical properties and external architectural elements of the vernacular houses such as location in the inclined terrain and orientation, number of storey, mass proportions, mass dimensions, original façade organization, original plan organization and roof type at the buildings have largely been preserved in the study area. Physical properties and external architectural elements of the vernacular houses should be protected in order to provide keeping their presence.

Simple or complex, reversible or irreversible, all mass additions should be removed, so original mass boundaries can be perceived. Added façade covering materials should be compatible with original structure in terms of shape, texture and colour.

Alterations on the original building should be controlled. All construction materials used at the applications should be selected from the material that is compatible with the original physical architectural features in terms of form, technique and material. Renewals of the original architectural elements should be applied with compatible materials in terms of construction technique, shape, texture and colour.

Arrangements of new spaces in original structure should be planned without causing any disorder at the plan layout. New space insertions to structure should be controlled. Newly functioned spaces should be compatible with the original space boundaries. Addition of openings to the facades, with the arrangements of new inner spaces, should be harmonious with the original façade order. Space insertions with new functions to open spaces should be prevented. The original dimensions and position of open spaces should be kept and open spaces (*dış hayat*) should be used

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<sup>70</sup> See Stage 4.1.1. – “Cultural Values / Identity Value” for further information.

only for its original function without any arrangement. The removed sections and removed materials of the buildings should be completed in accordance with the original structure.

All applied alterations should be conducted with restoration projects approved by the “*Trabzon* Regional Conservation of Cultural and Natural Properties Council”. The applications should be done in accordance with those restoration projects and under the control of the Council.

## CHAPTER 5

### CONCLUSION

*Uzungöl* has been settled for years and the vernacular timber houses in the district have been used and survived. There is a compact environment representing a composition of settled and natural areas.

Composing a considerable part of settled areas, timber structures have always been changing somehow, even in maintaining process. This situation is the same in *Uzungöl*. In the thesis, to be able to display the character of physical changing process in vernacular houses in terms of causes and results, a limited representative area was selected and the study was carried out by surveying almost all houses in that study area. ‘*Büyükköy* Quarter’ was selected as study area. The Quarter is a settlement, where many of registered buildings exist together. Different from other settlements, the important feature of the district is locating on a land slope that overlooking the lake. In the thesis study, 56 buildings were surveyed in the defined study area.

The study area has been analysed in terms of geographical characteristics, historical features, settlement pattern and building characteristics. General physical character of the buildings in the study area have been analysed in terms of structural system/ building material, facade organization and plan organization scale. Structural and architectural features of vernacular houses in the study area were displayed after three-time study at site. It would be useful to study more at site and prepare 1/100 scaled projects of registered buildings in the district. It would also be useful preparing conservation and renewal projects for the buildings in the study area.

All applied interventions at the buildings were listed and main types of interventions were displayed in the study area. It would be useful to carry out a further study on intervention types and prepare conservation proposals to any type of intervention. The proposals should be also harmonious with the original character and should allow houses using with different functions. Any of further studies or further analysis can be carried out with using the list of interventions.

It is seen that increasing tourism sector has caused sharp effects in Uzungöl. With raising activity, vernacular houses have been overloaded in usage. The study of the thesis is a base study for analysing overall situation of the built up environment in the changing process. Effects of tourism, its reflections at vernacular houses in the study area and possible reasons have been determined. By conducting further studies, site conservation plan decisions would be taken in order to control possible effects of tourism in the district. The thesis study can be the first leg of a site conservation work.

The thesis study is focused on physical changing process of built up environment. It would be useful to conduct a study on social change and preservation of social body in the district.

It would be also useful to study on tourism policy in *Uzungöl*. Contribution of local people in preparing environmental plans, rapid change in local people's life in terms of economic, social cultural growth, raising the value of the district by bringing natural landscape to forefront, developing infrastructure of the district, increasing the quality of local people's life and acquainting local people with values of the district effect tourism policy in a positive way.

Environmental problems caused by tourism, abuse of natural resources, destruction of natural areas, unequal distribution of tourism receipts, water-air-noise pollution, visual pollution and aesthetical disorder caused by inharmonious structuring, discharging problems of any kind of wastes, ecological degradation and causing loss of biodiversity effect tourism in a negative way.

Preserving flora and fauna and the natural properties of river and the lake is vitally important in the district. For this purpose, it would be useful to carry out a series of studies such as filling danger of the lake by carried material with the river and danger of avalanche in the region.

In order to prevent visual pollution and aesthetical disorder that caused by inharmonious structuring in residential and touristic areas, decisions in regional scale should be taken. One of the important subjects is discharging problems of any kind of wastes in the district, which can be a threat for Uzungöl tourism.

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## **APPENDIX A**

### **BUILDING SHEETS IN THE STUDY AREA**

Figures 80-134 are given in the following pages.



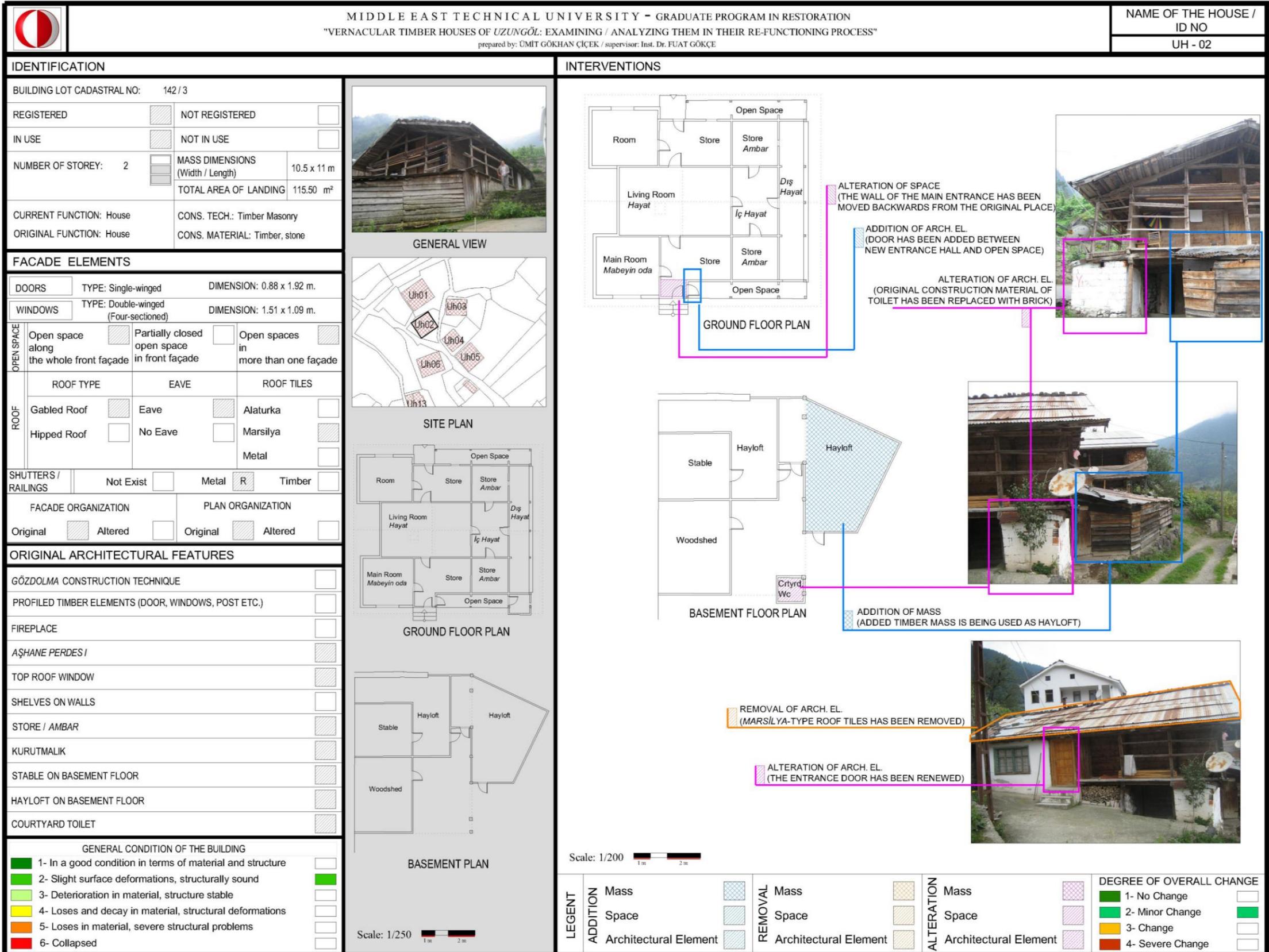


Figure 81, Building Sheet UH 02











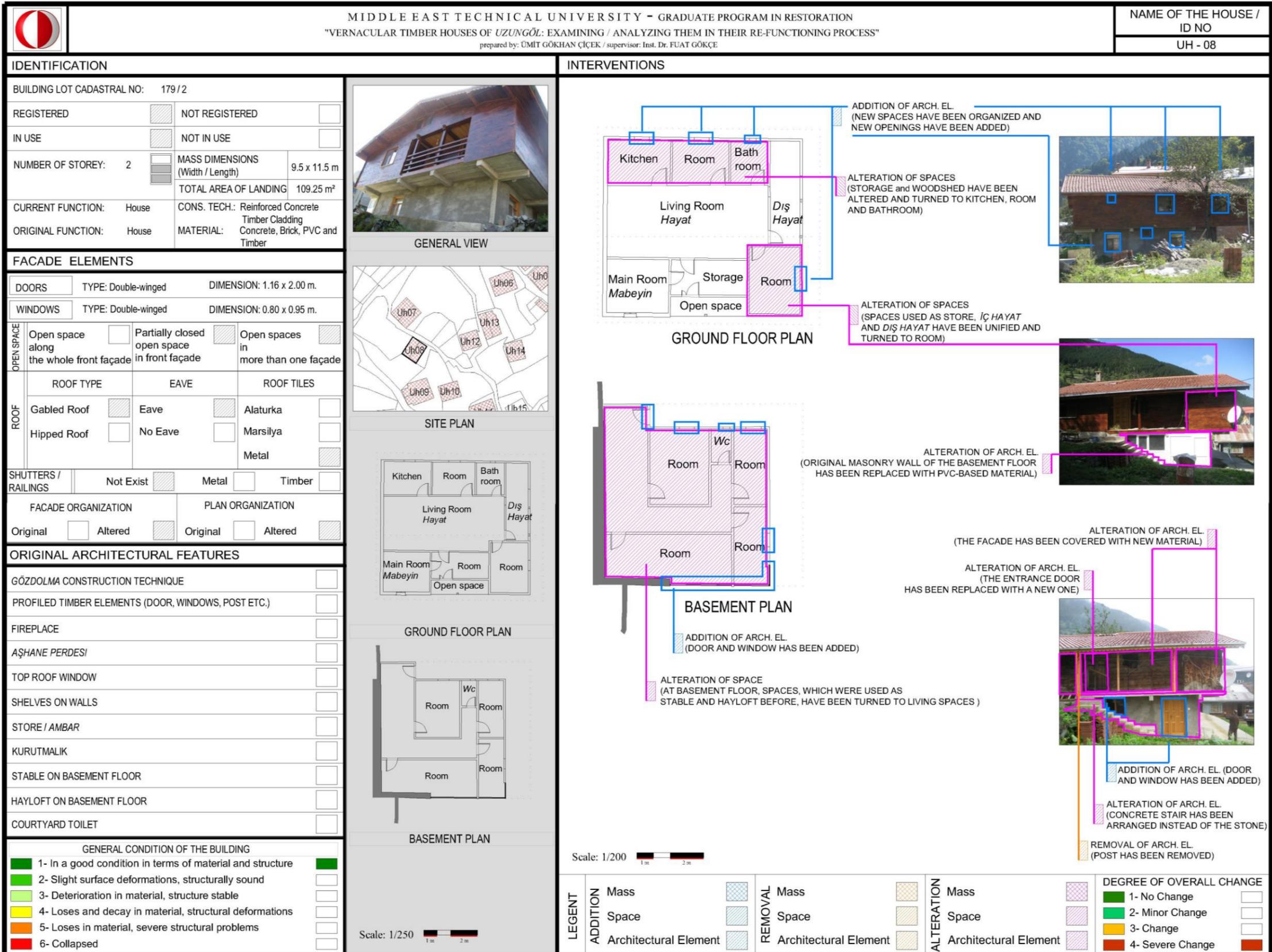


Figure 87, Building Sheet UH 08

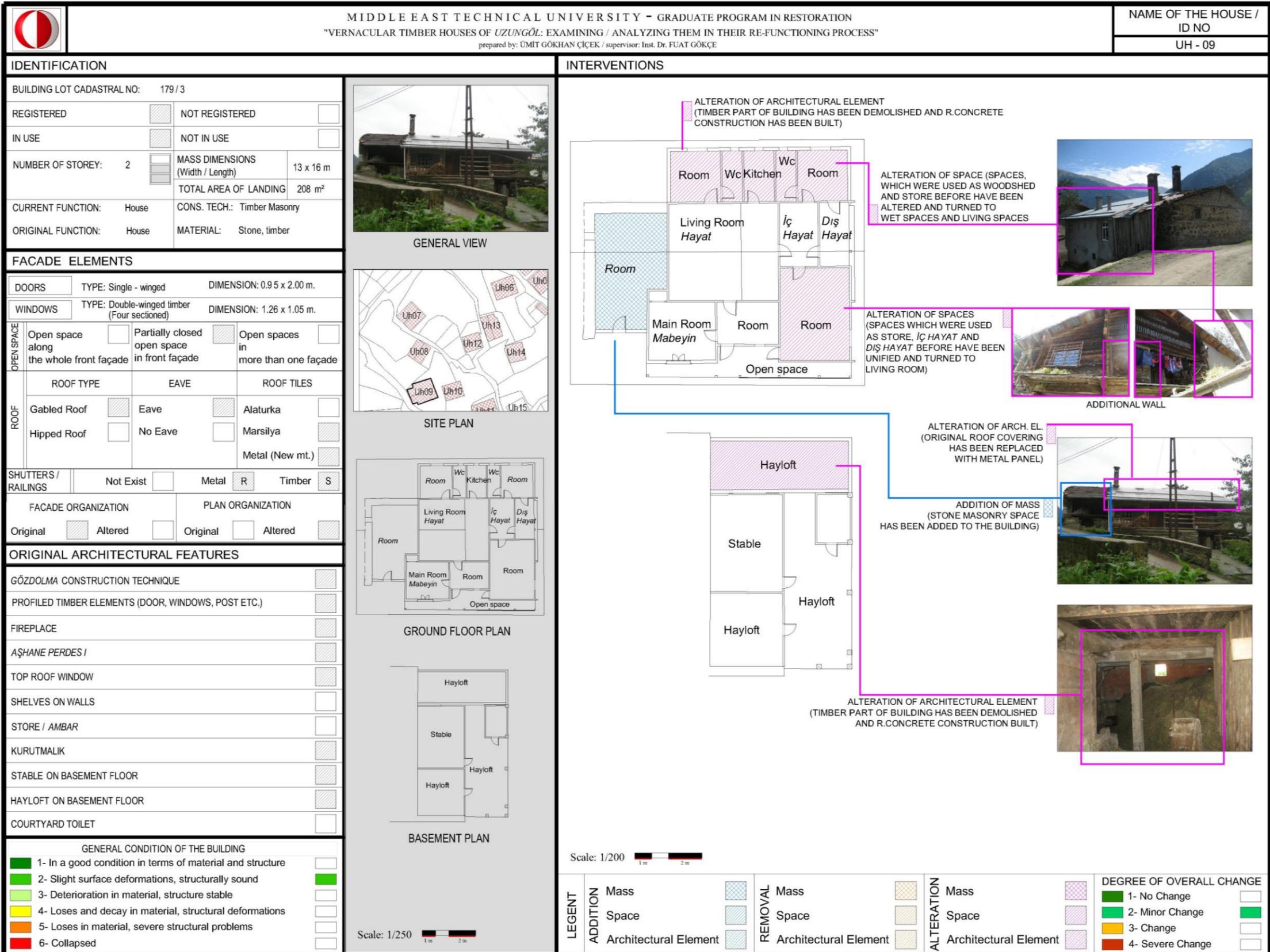


Figure 88, Building Sheet UH 09

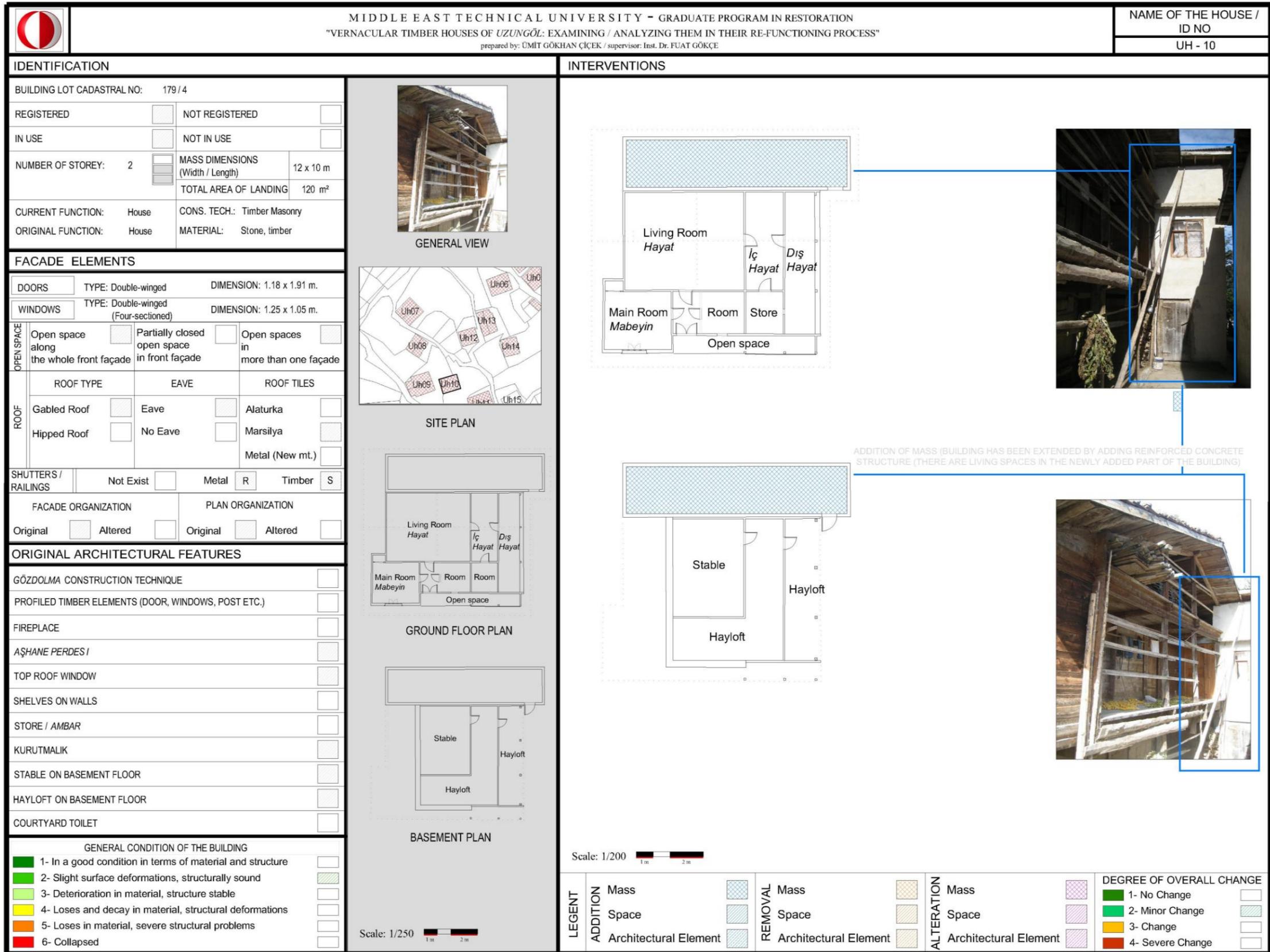


Figure 89, Building Sheet UH 10

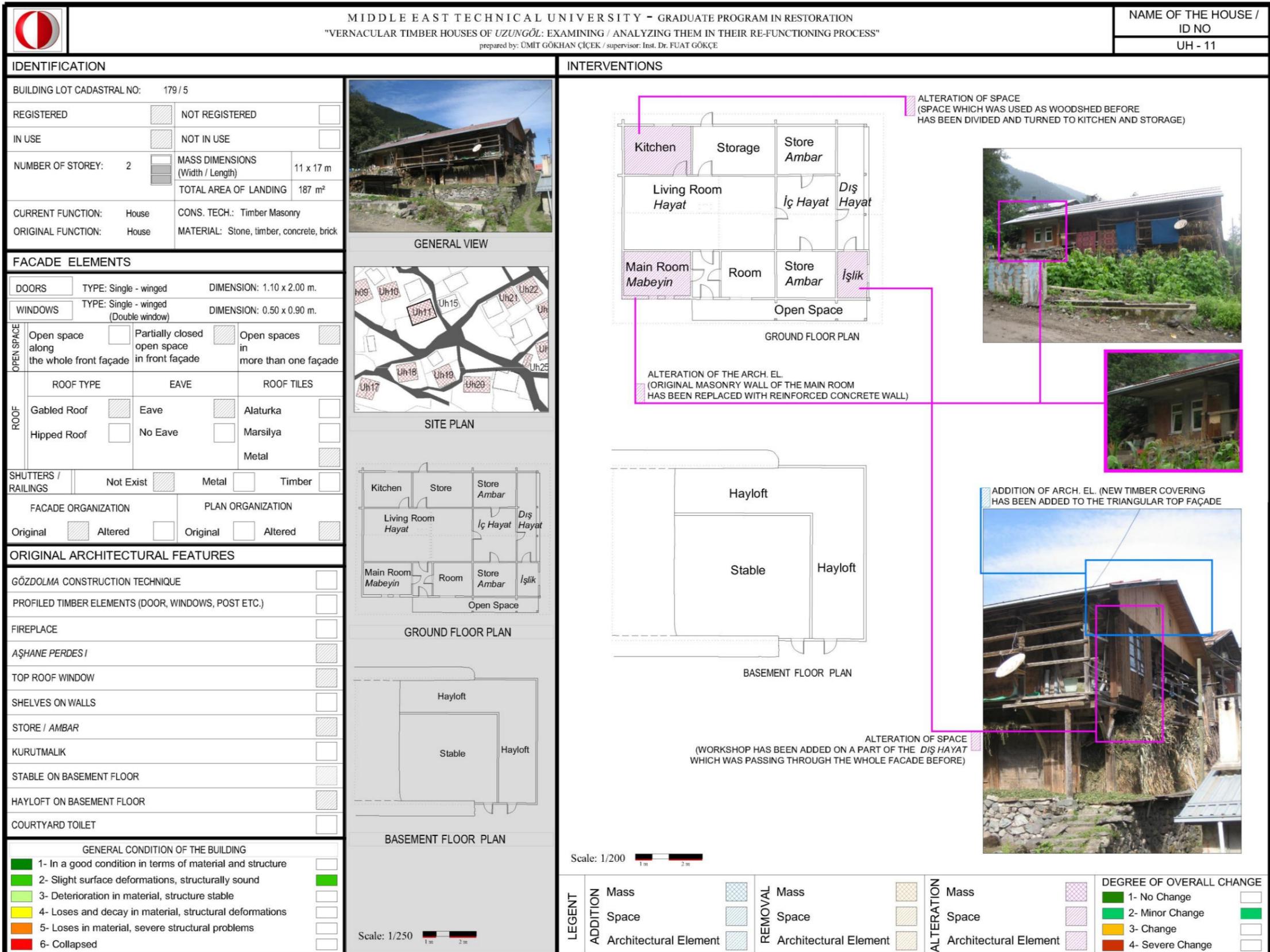


Figure 90, Building Sheet UH 11

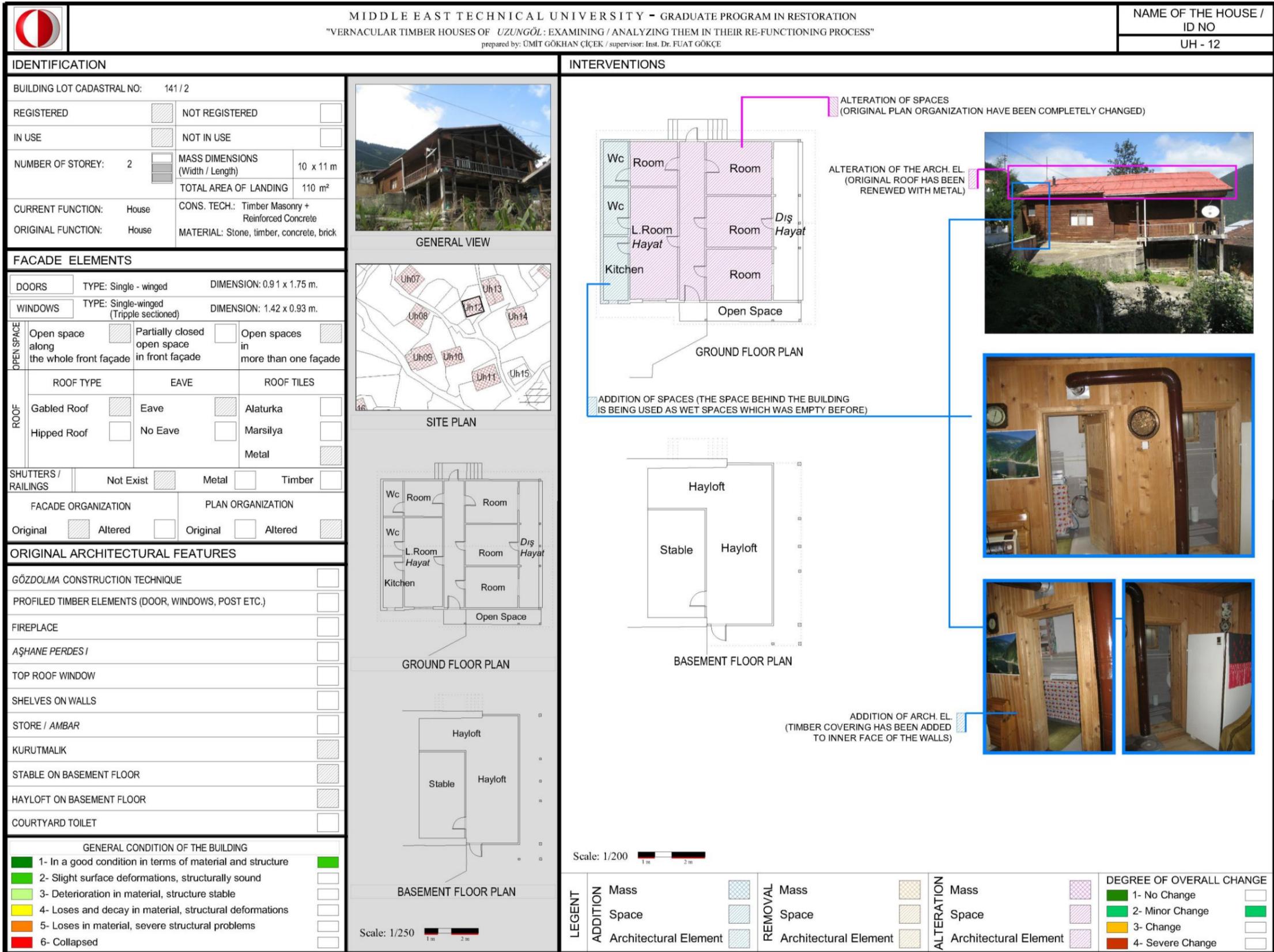


Figure 91, Building Sheet UH 12

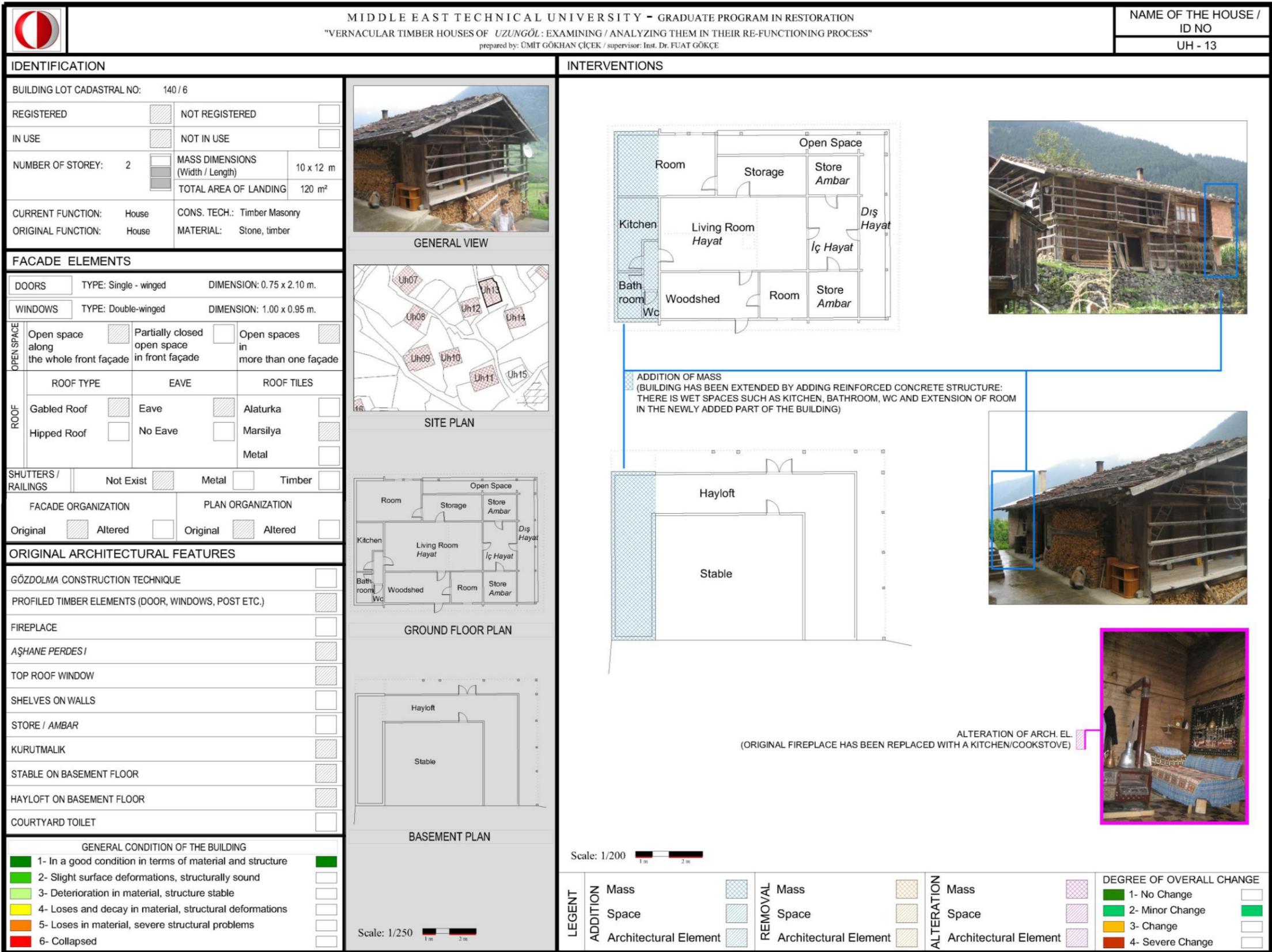


Figure 92, Building Sheet UH 13



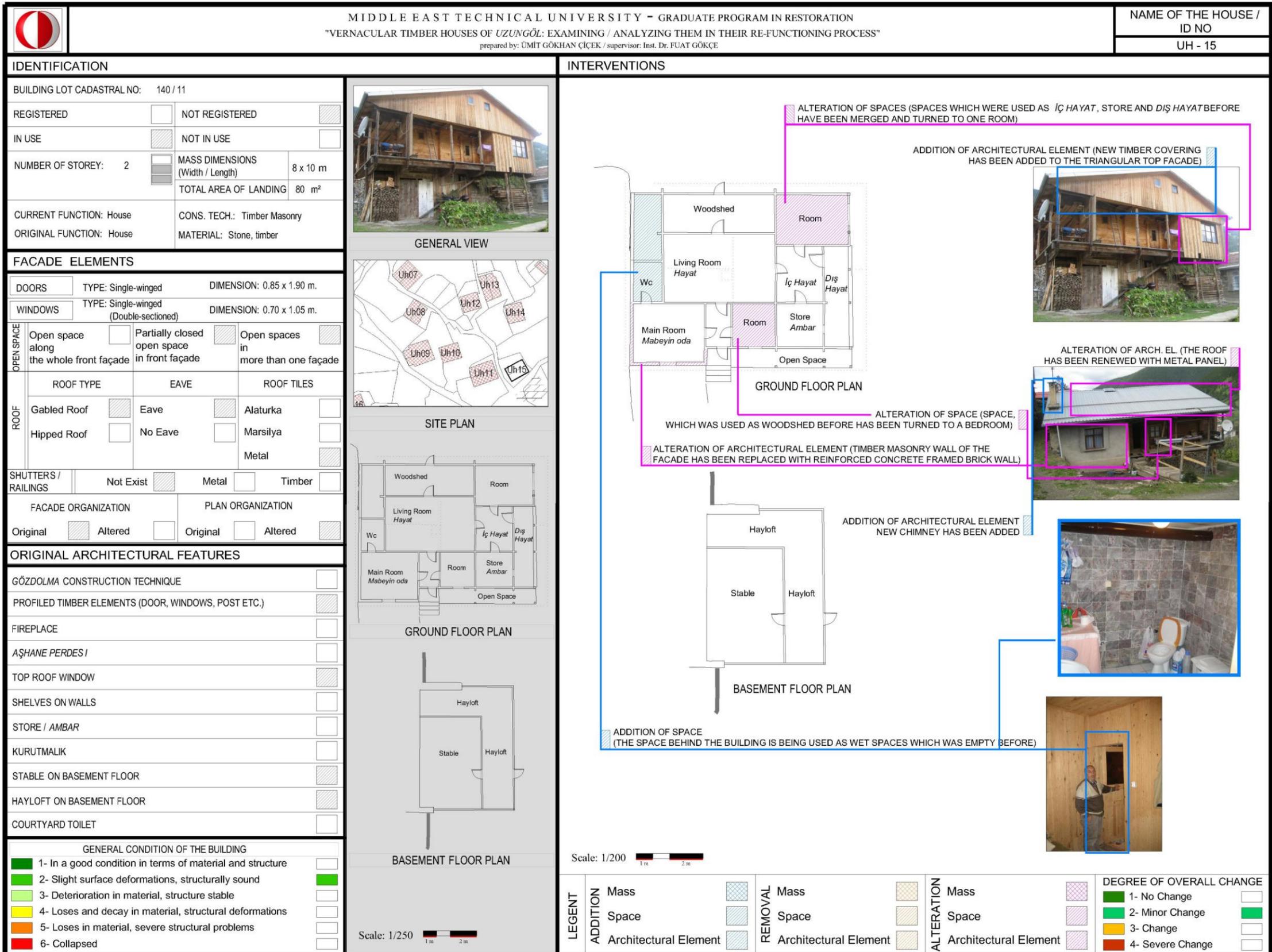


Figure 94, Building Sheet UH 15

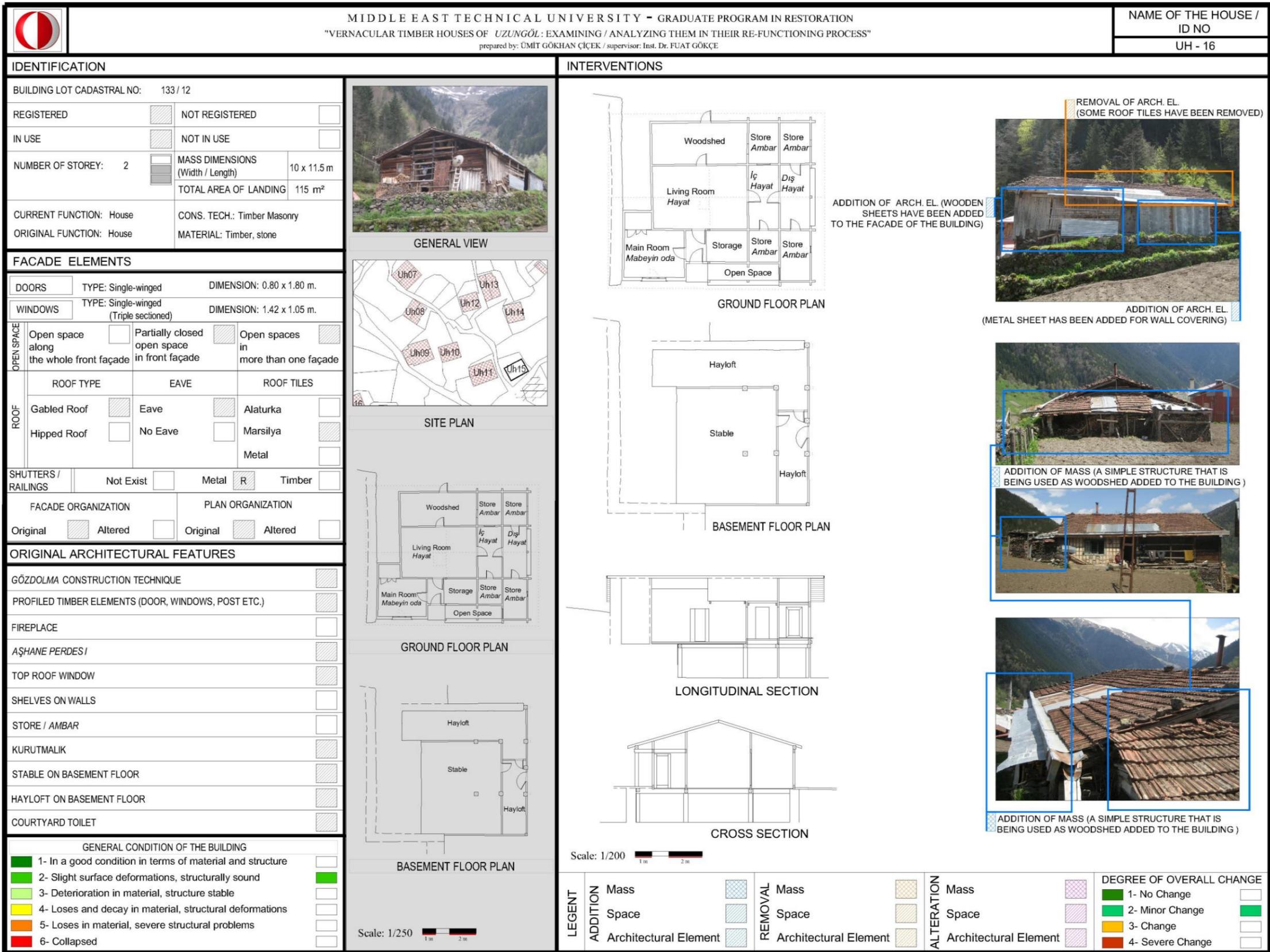


Figure 95, Building Sheet UH 16

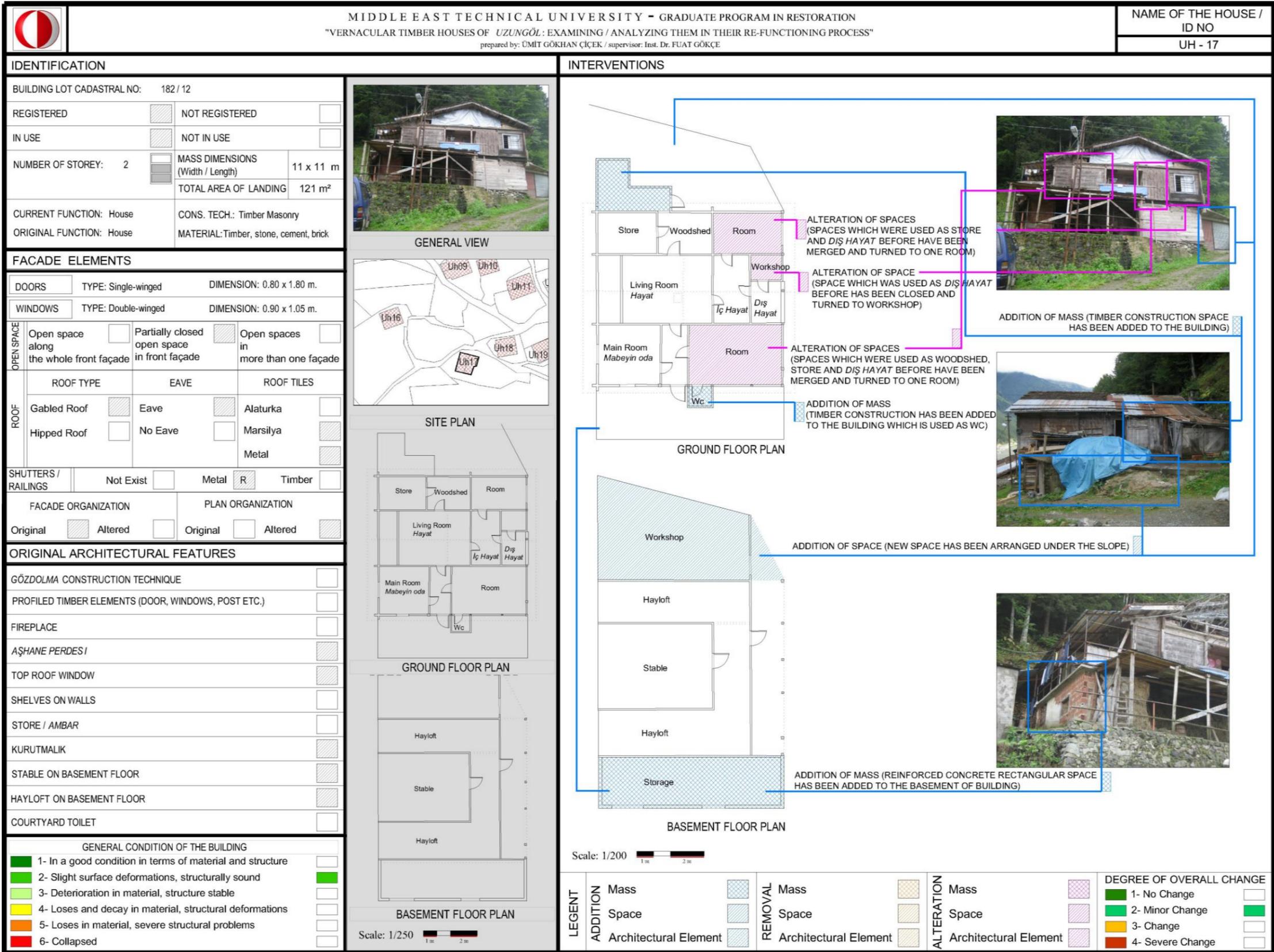


Figure 96, Building Sheet UH 17

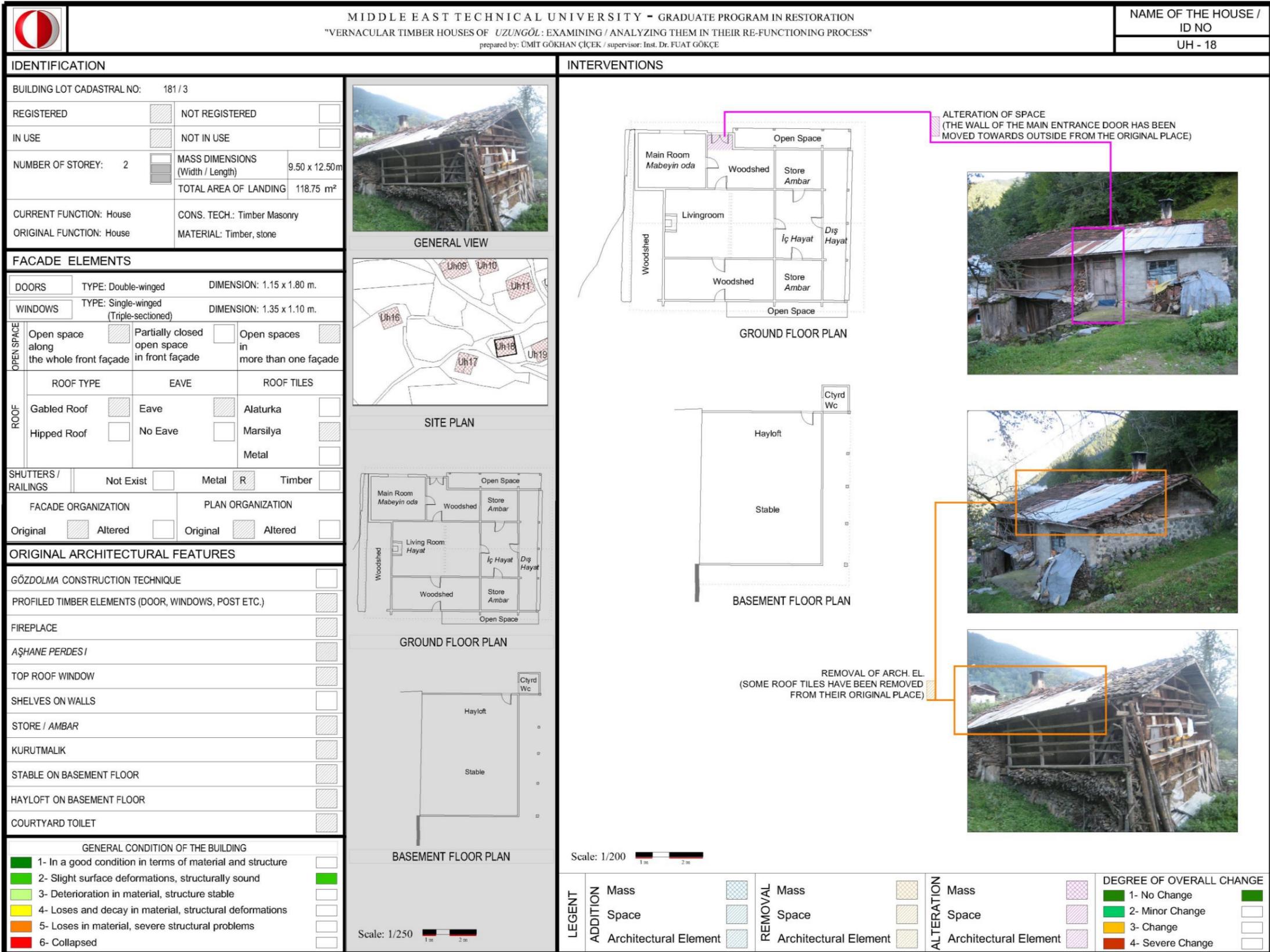


Figure 97, Building Sheet UH 18



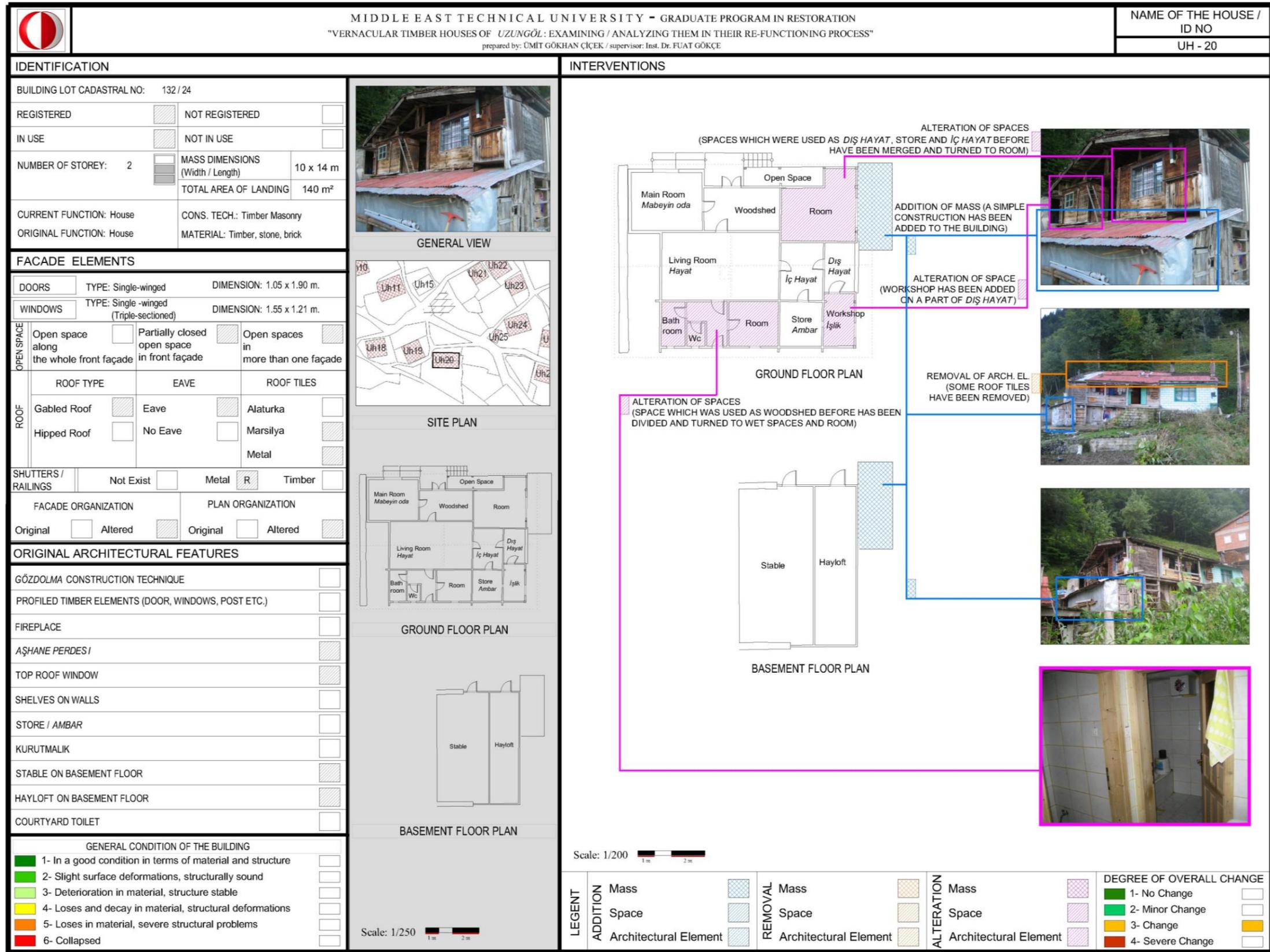


Figure 99, Building Sheet UH 20

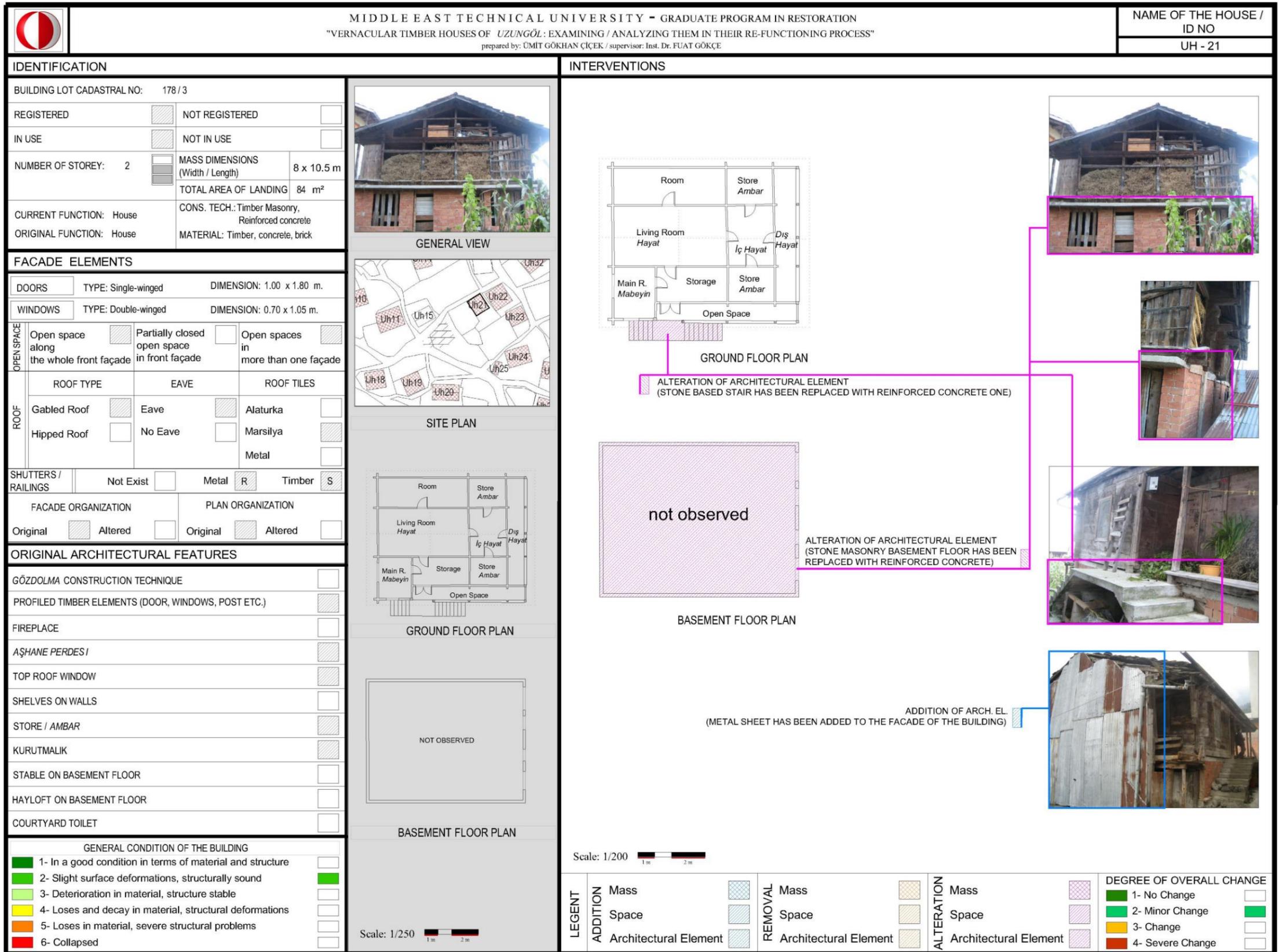


Figure 100, Building Sheet UH 21

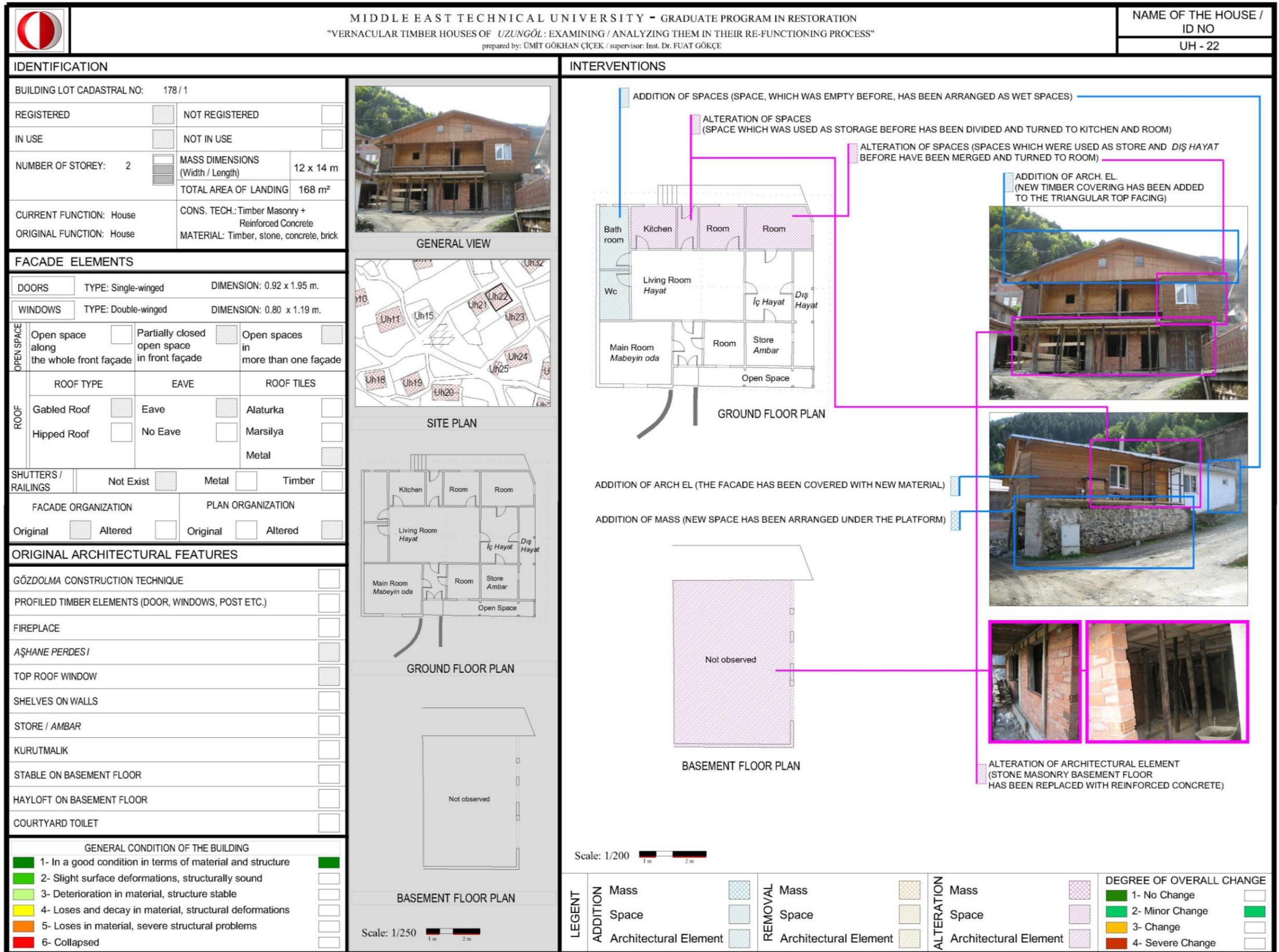


Figure 101, Building Sheet UH 22

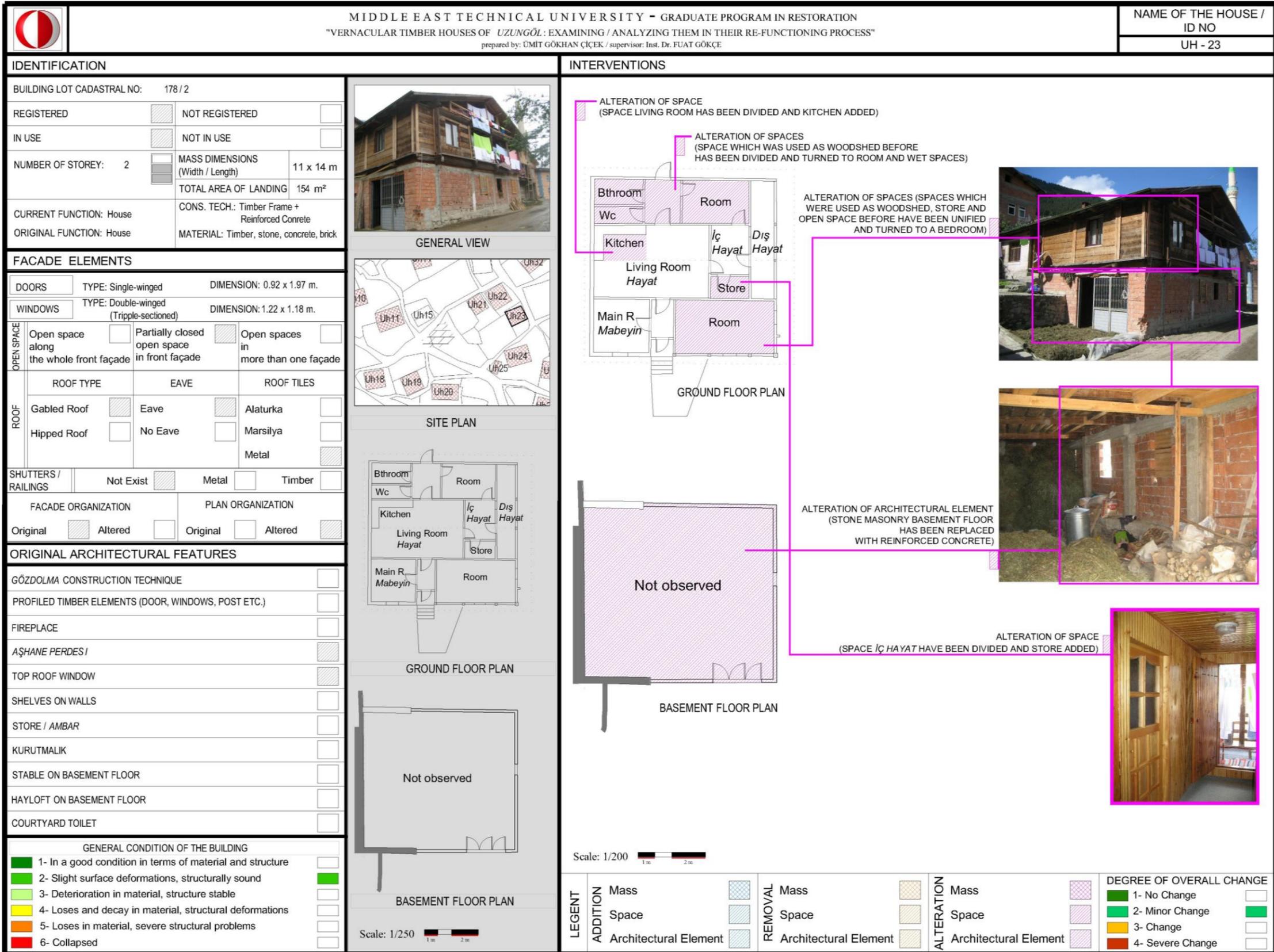


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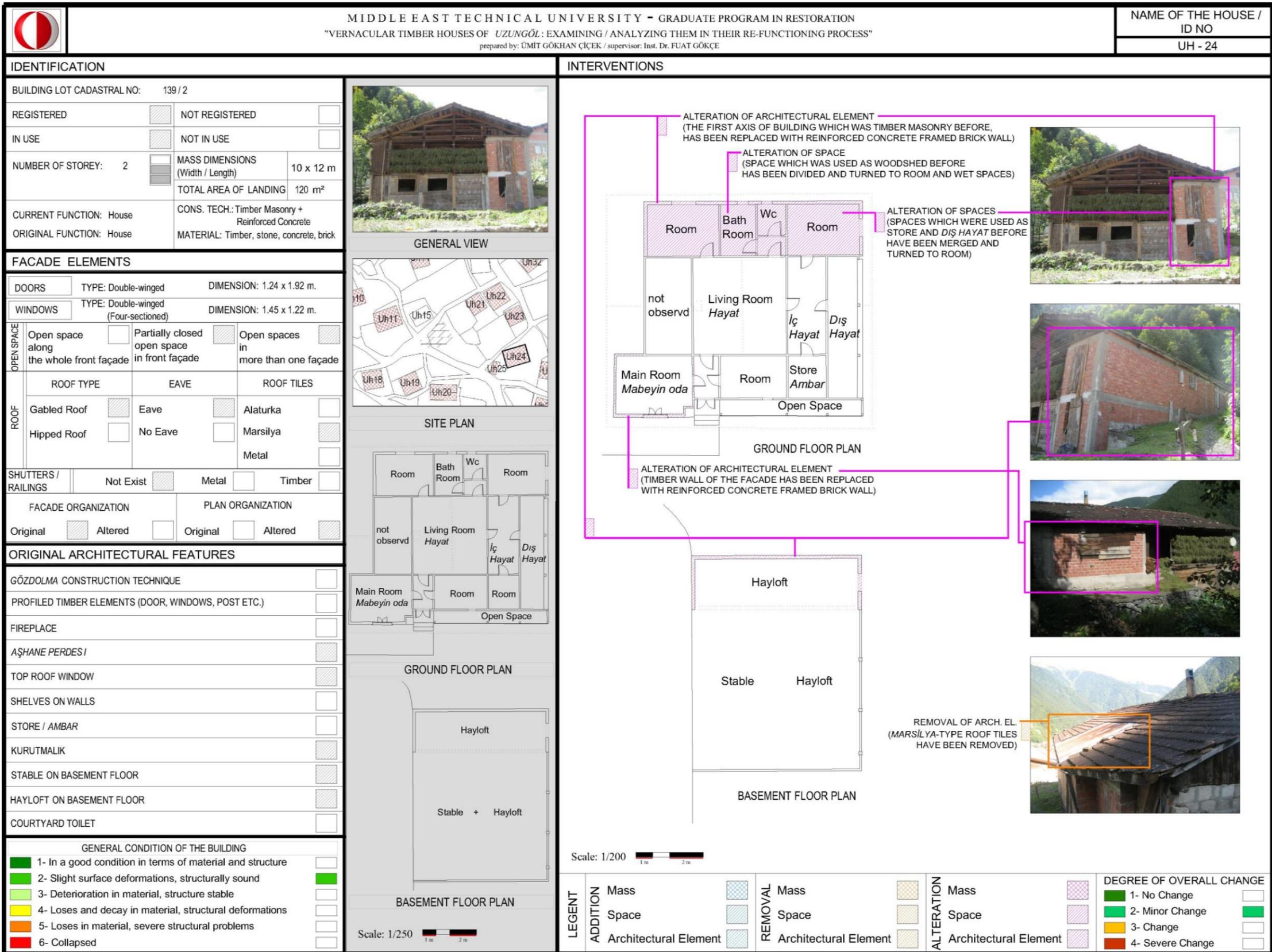


Figure 103, Building Sheet UH 24

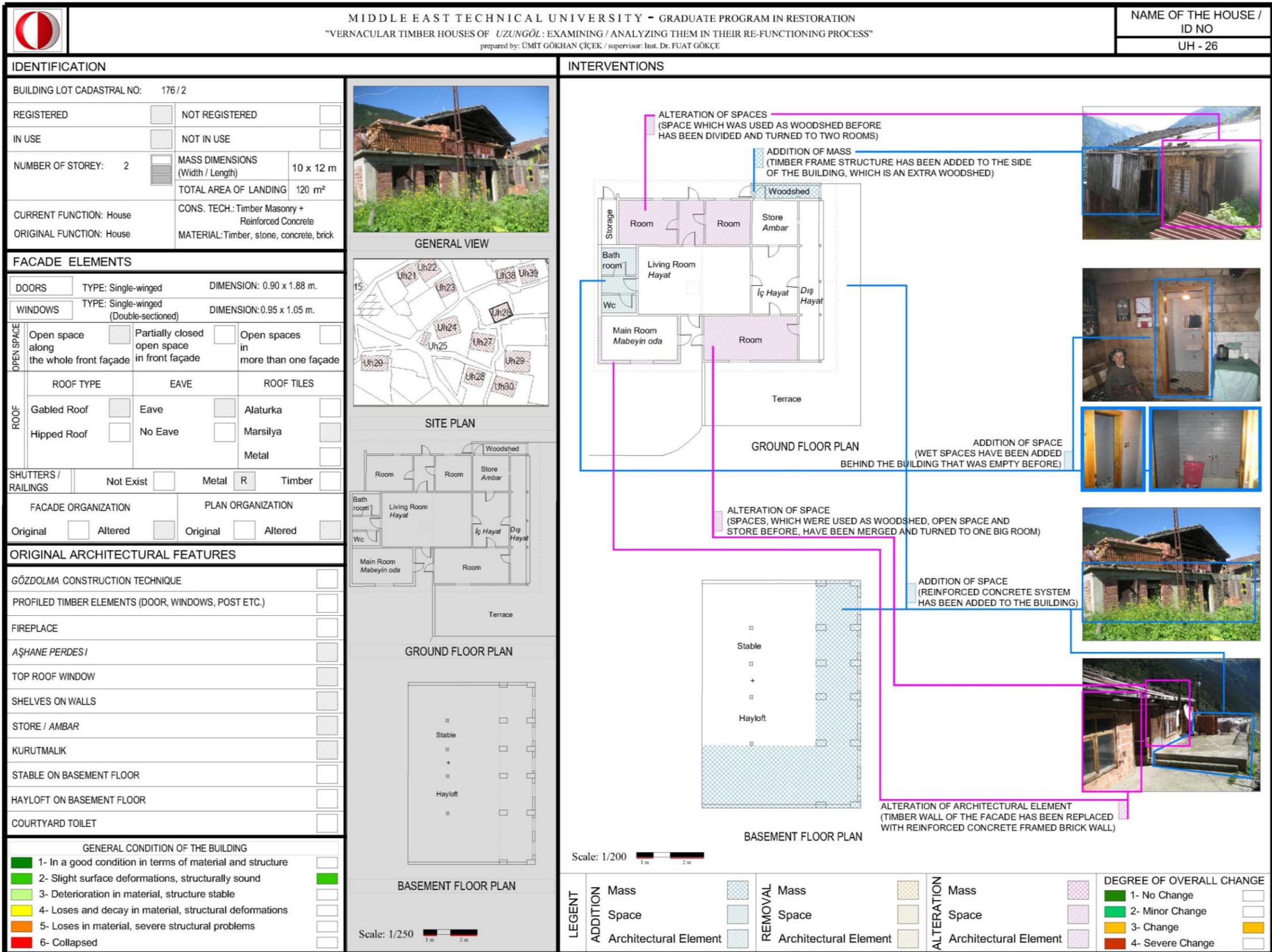


Figure 104, Building Sheet UH 26

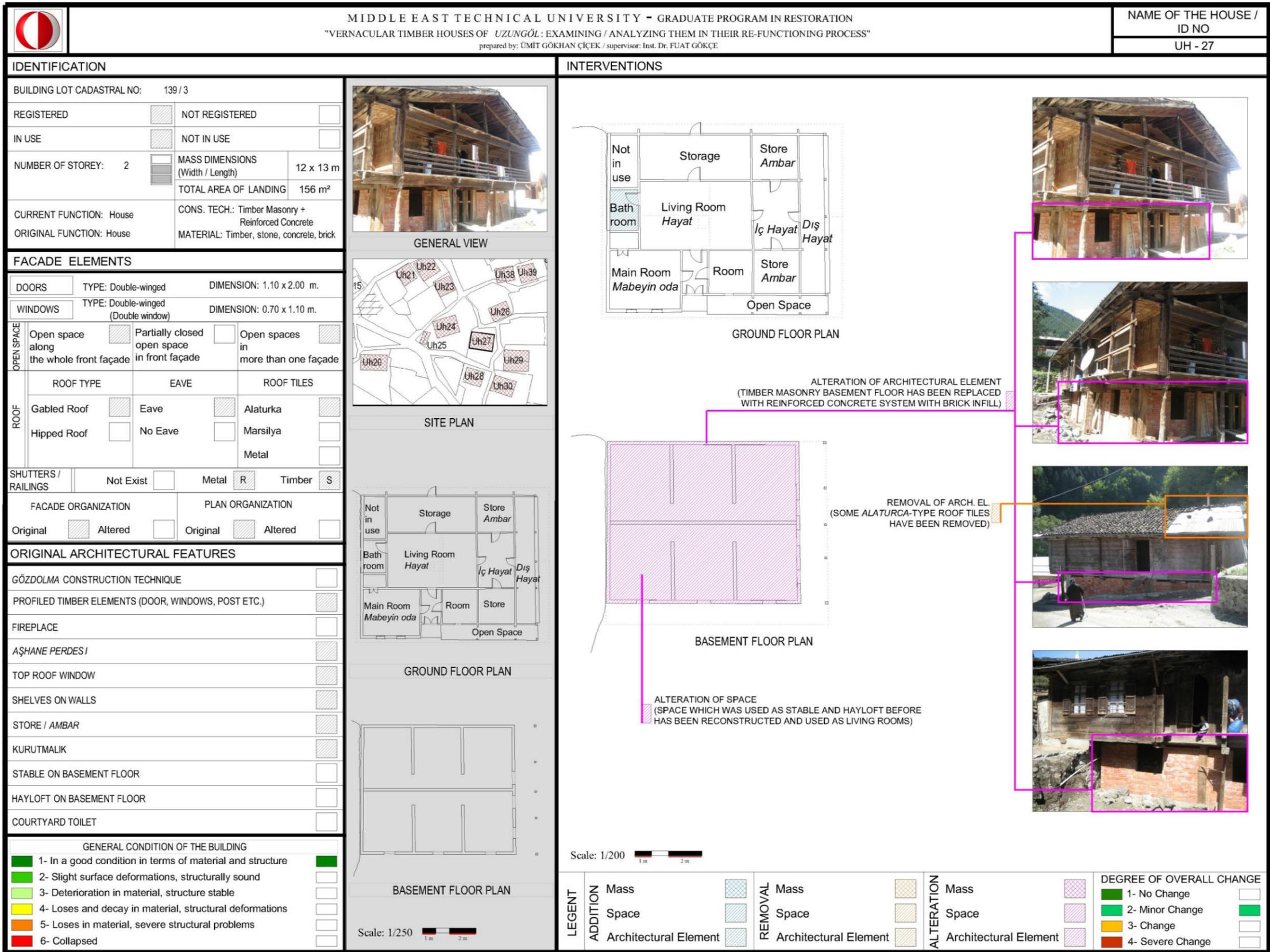


Figure 105, Building Sheet UH 27

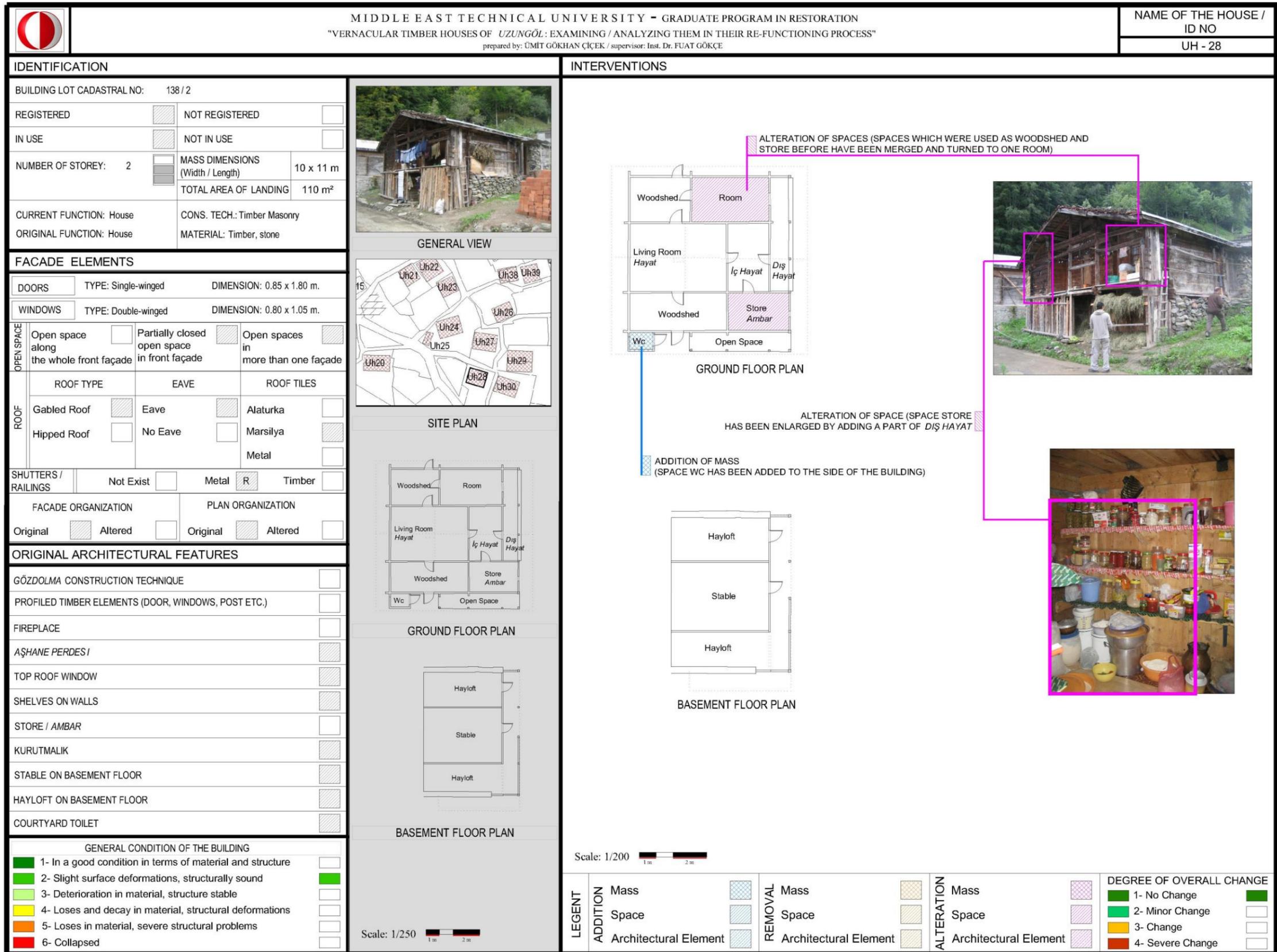


Figure 106, Building Sheet UH 28

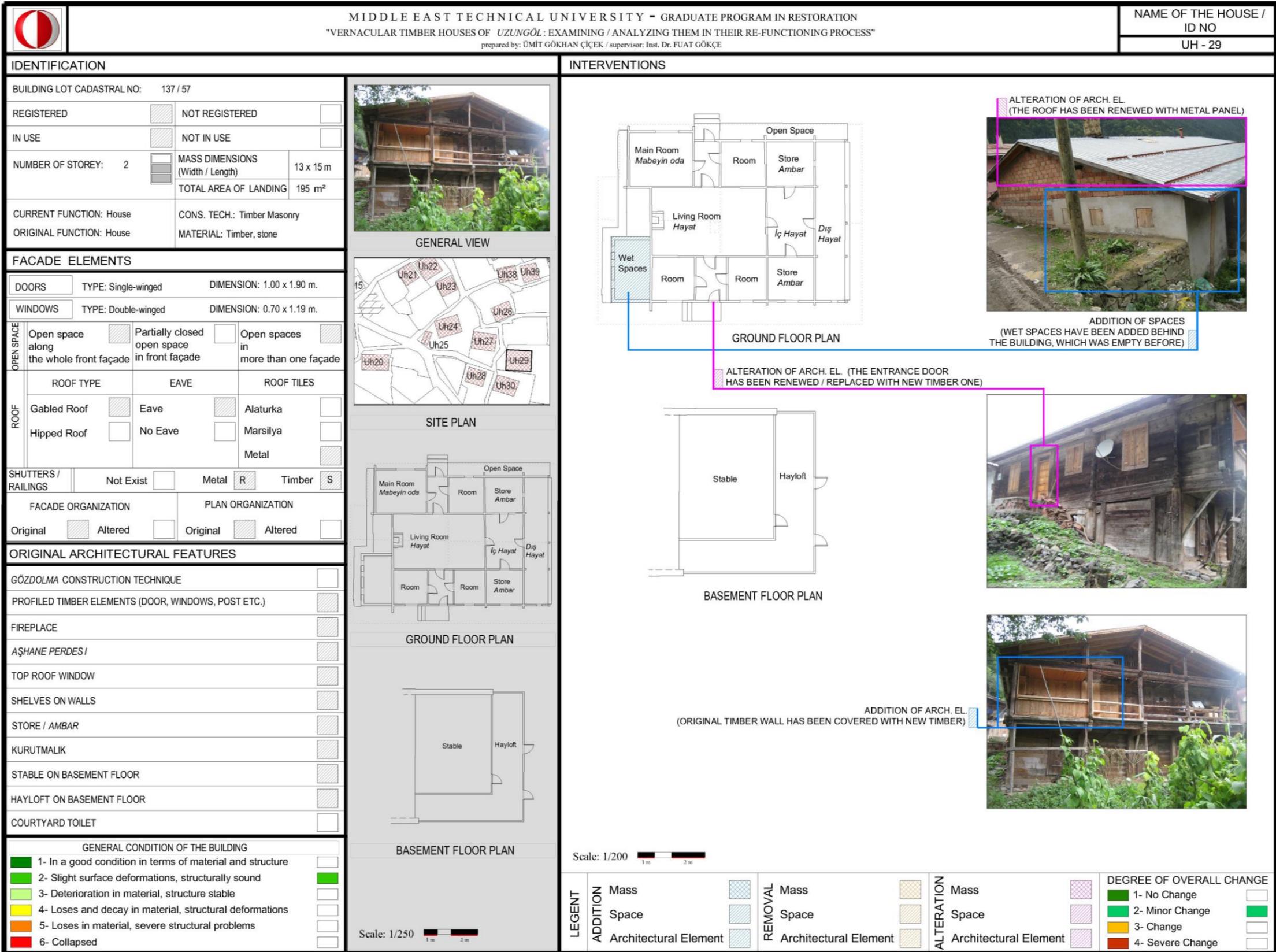


Figure 107, Building Sheet UH 29

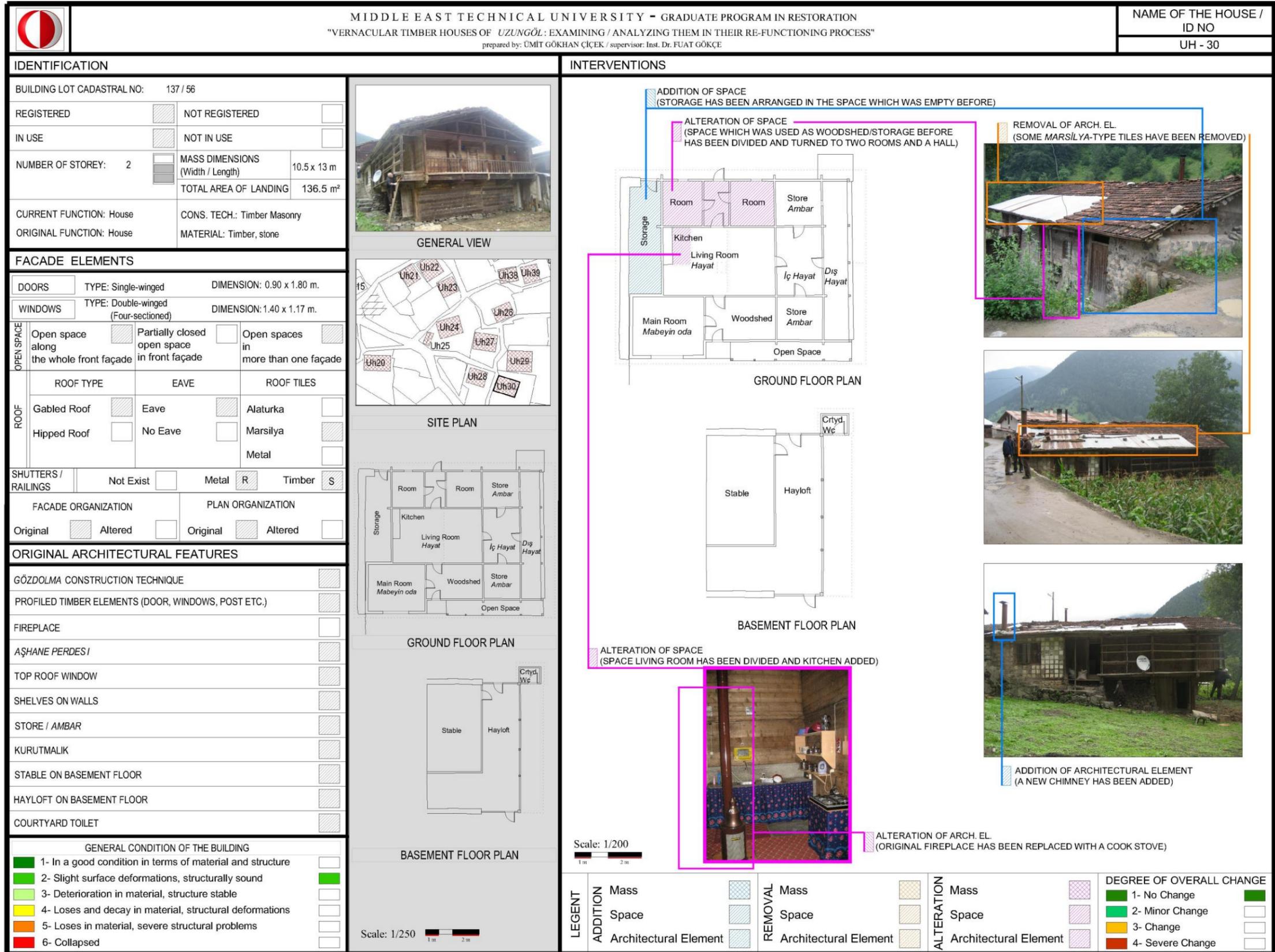


Figure 108, Building Sheet UH 30

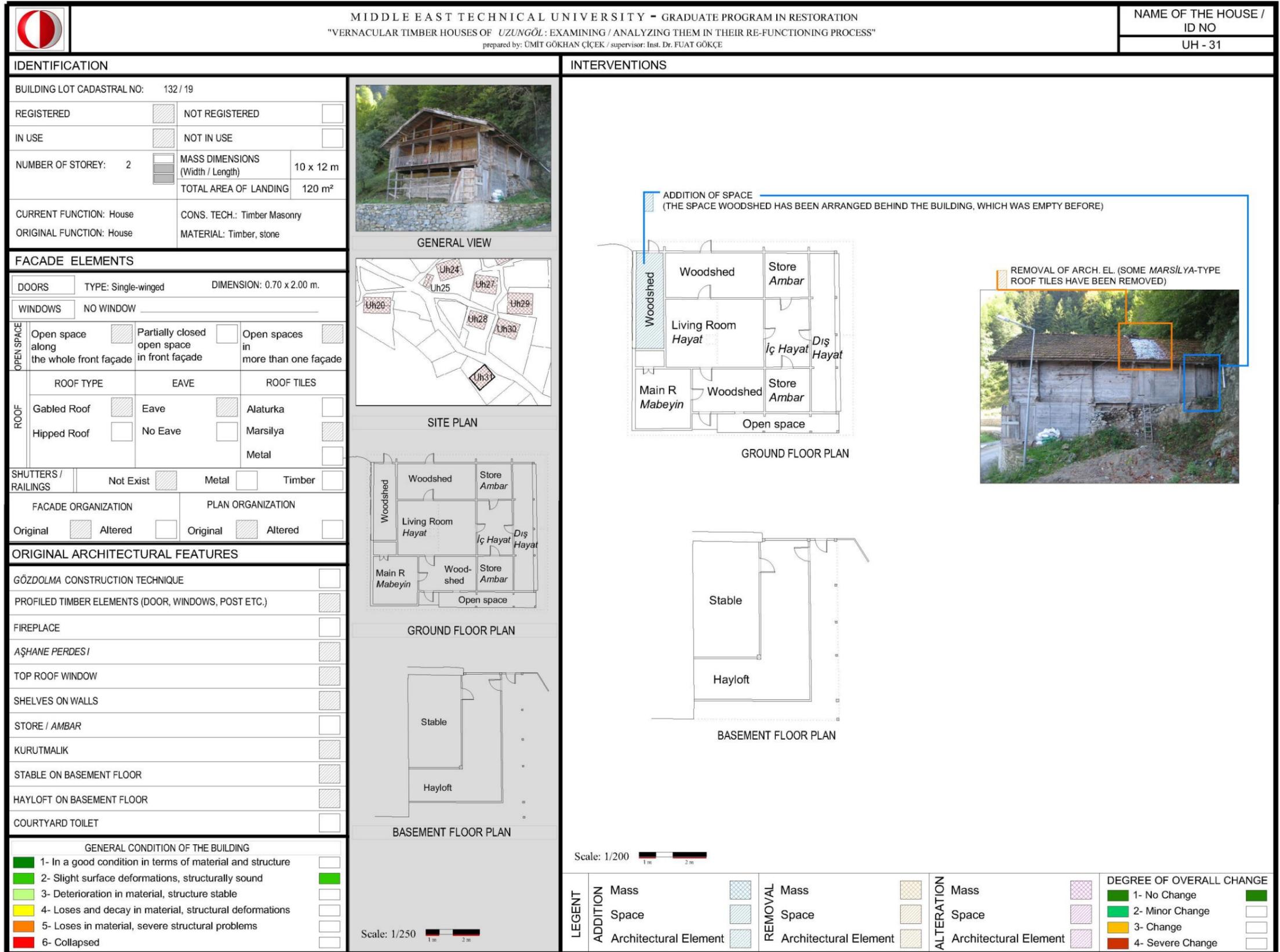


Figure 109, Building Sheet UH 31

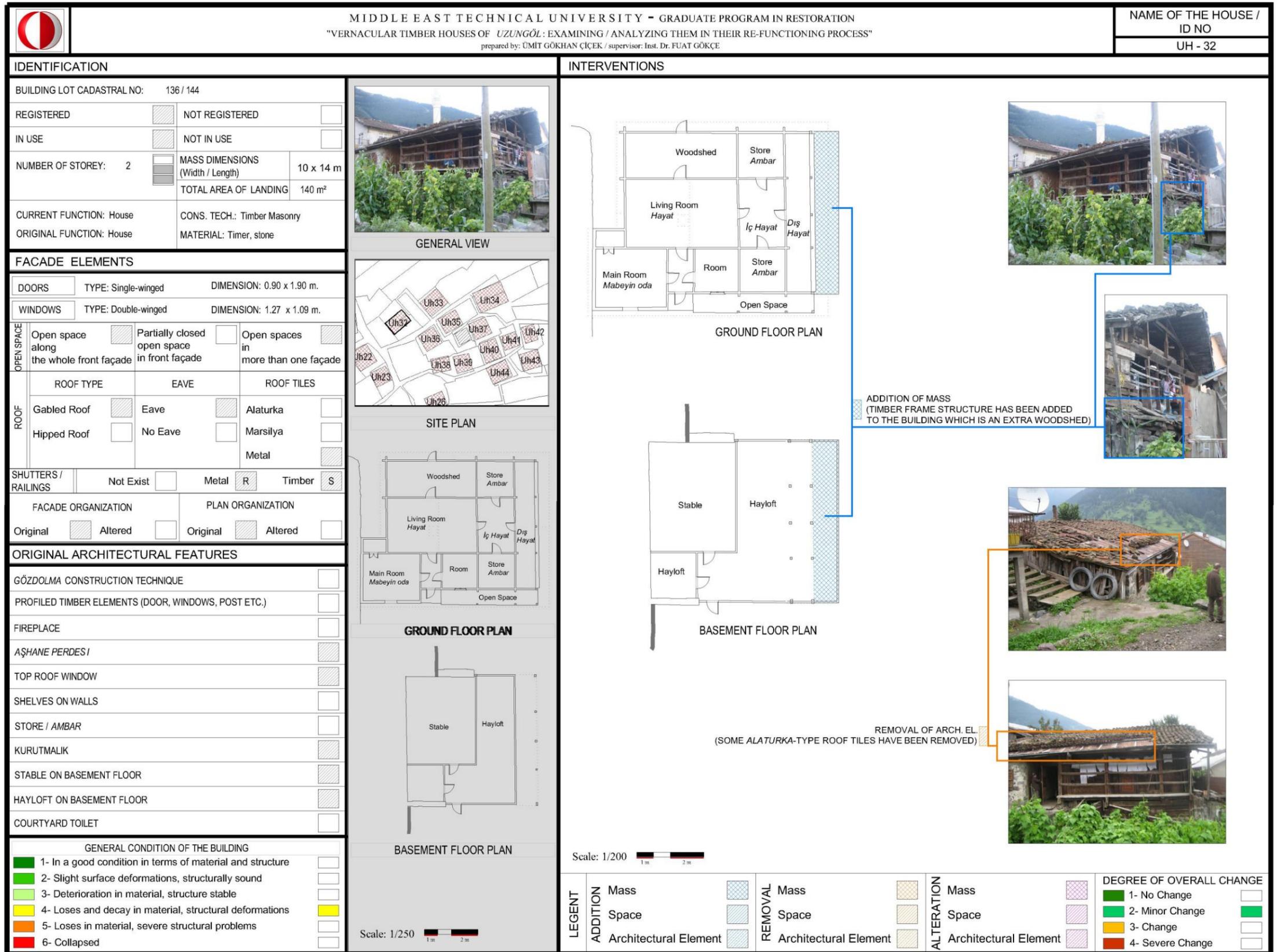


Figure 110, Building Sheet UH 32



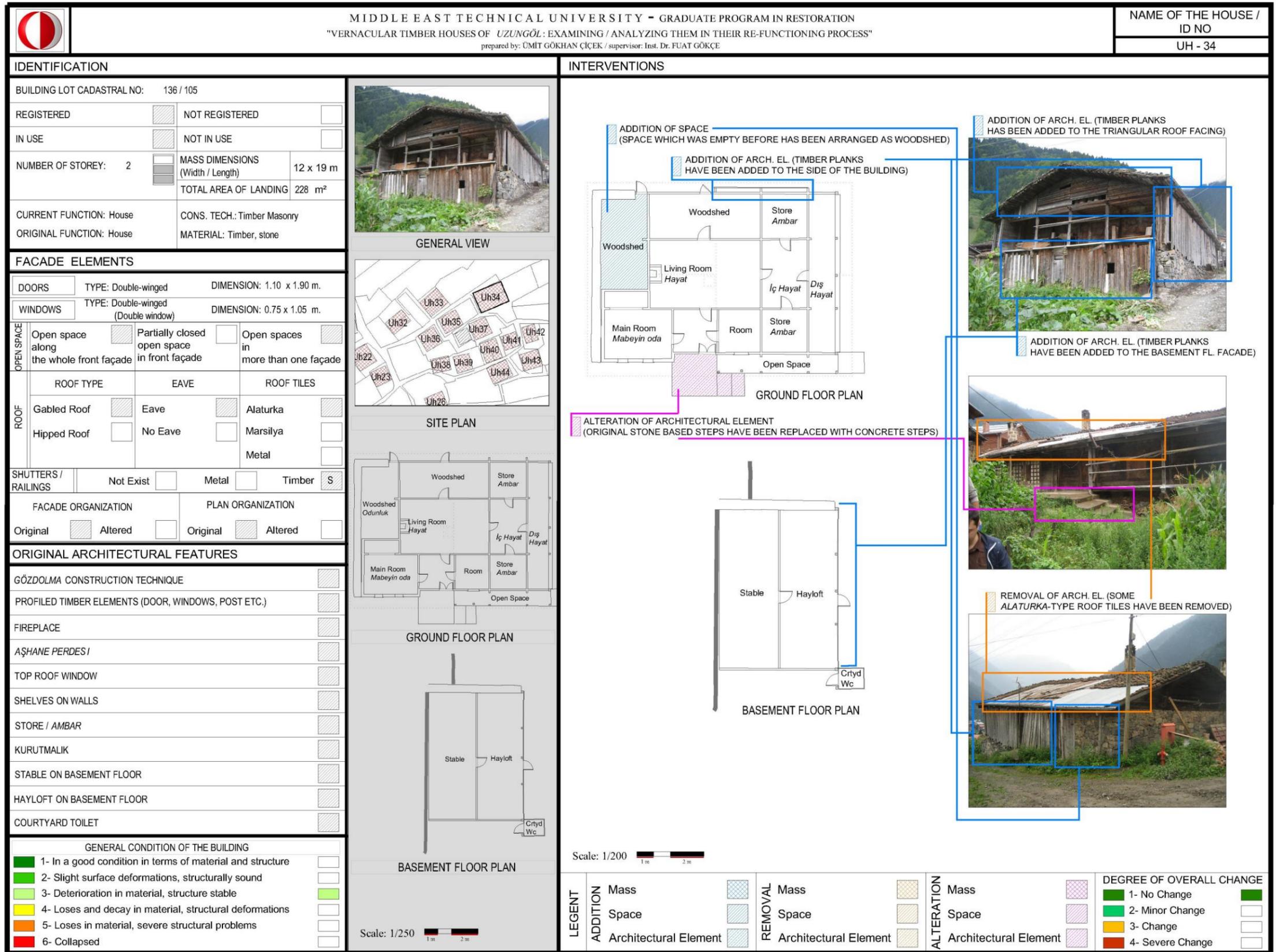


Figure 112, Building Sheet UH 34

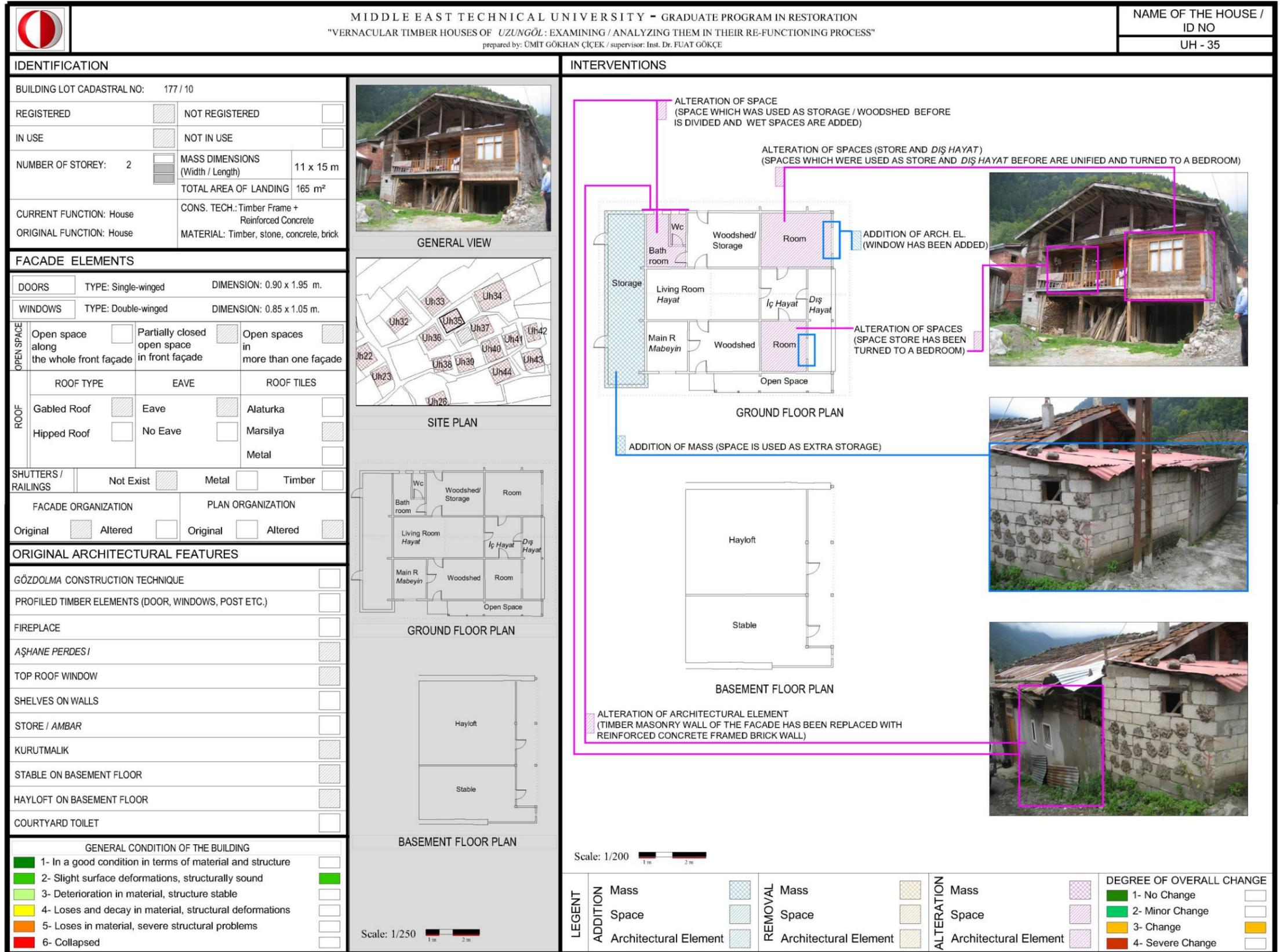


Figure 113, Building Sheet UH 35

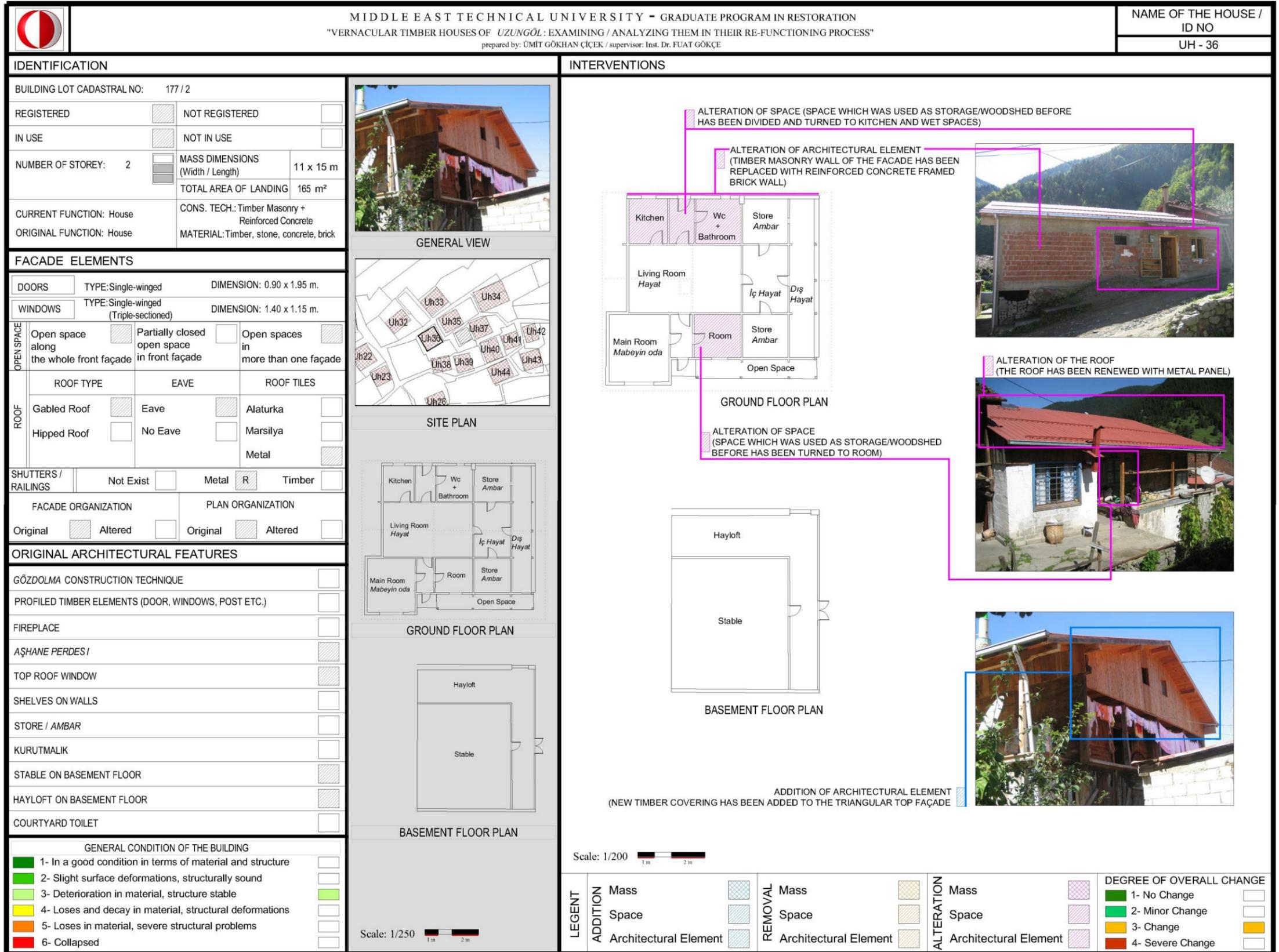


Figure 114, Building Sheet UH 36

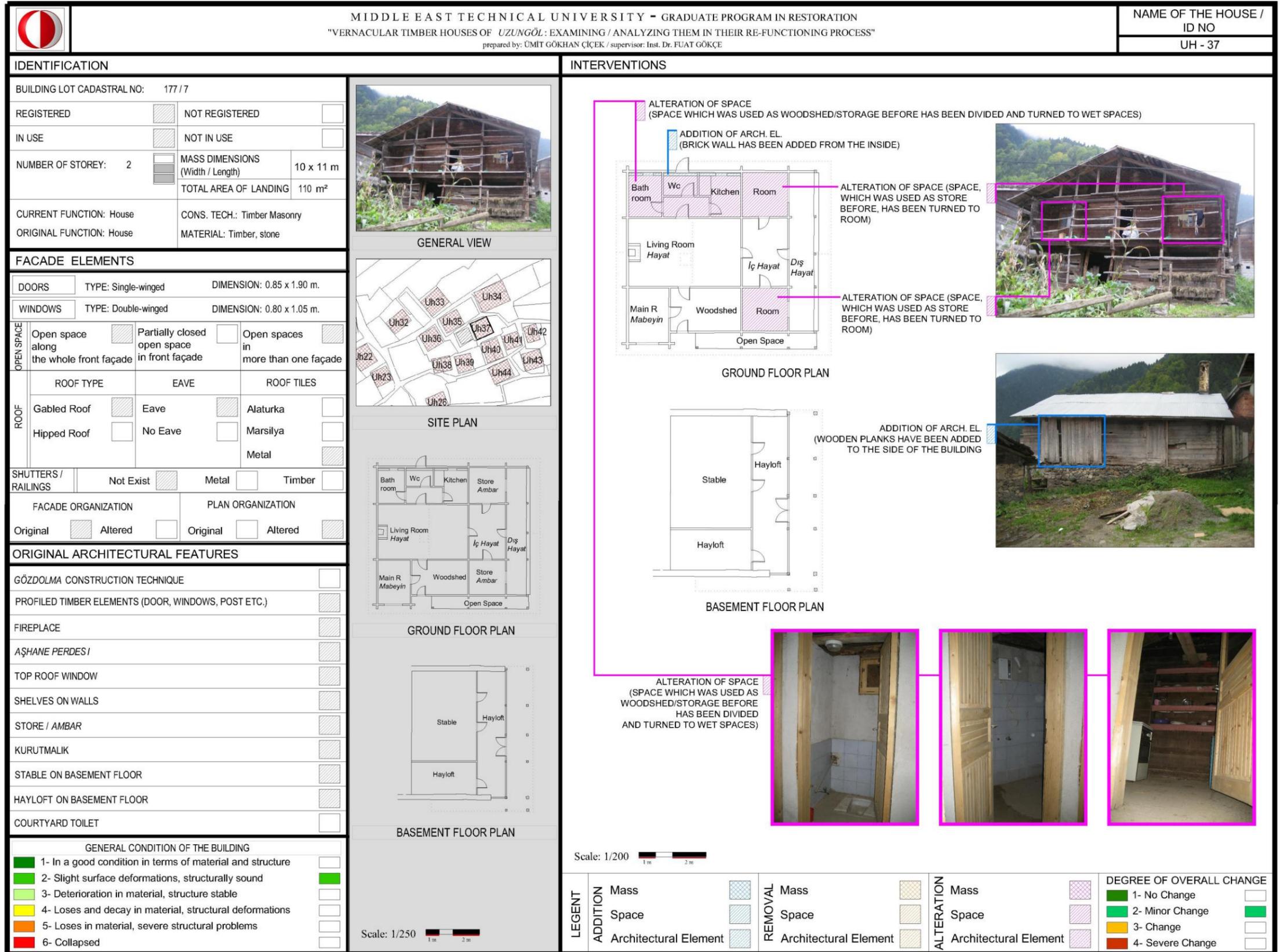


Figure 115, Building Sheet UH 37

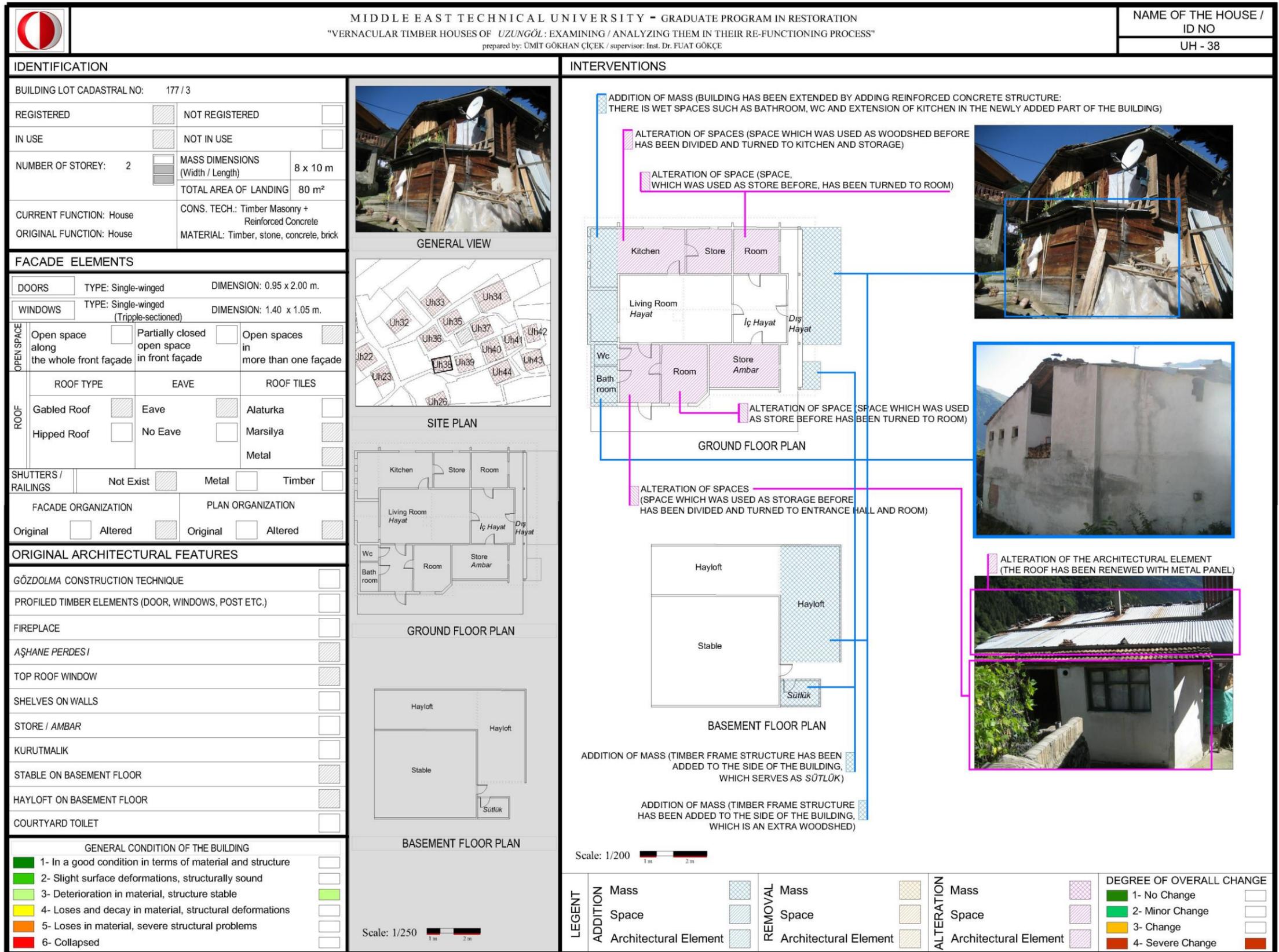


Figure 116, Building Sheet UH 38

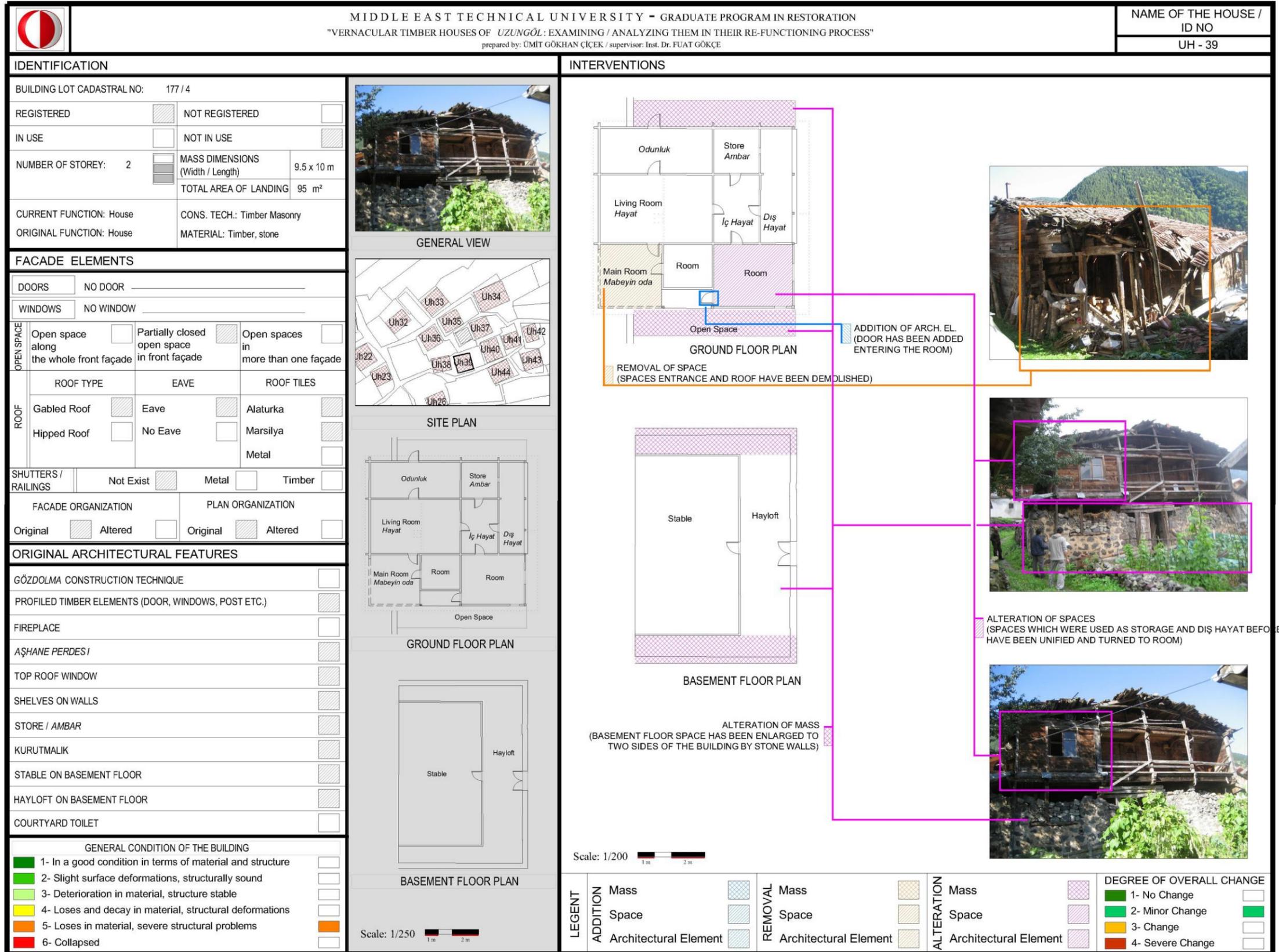


Figure 117, Building Sheet UH 39

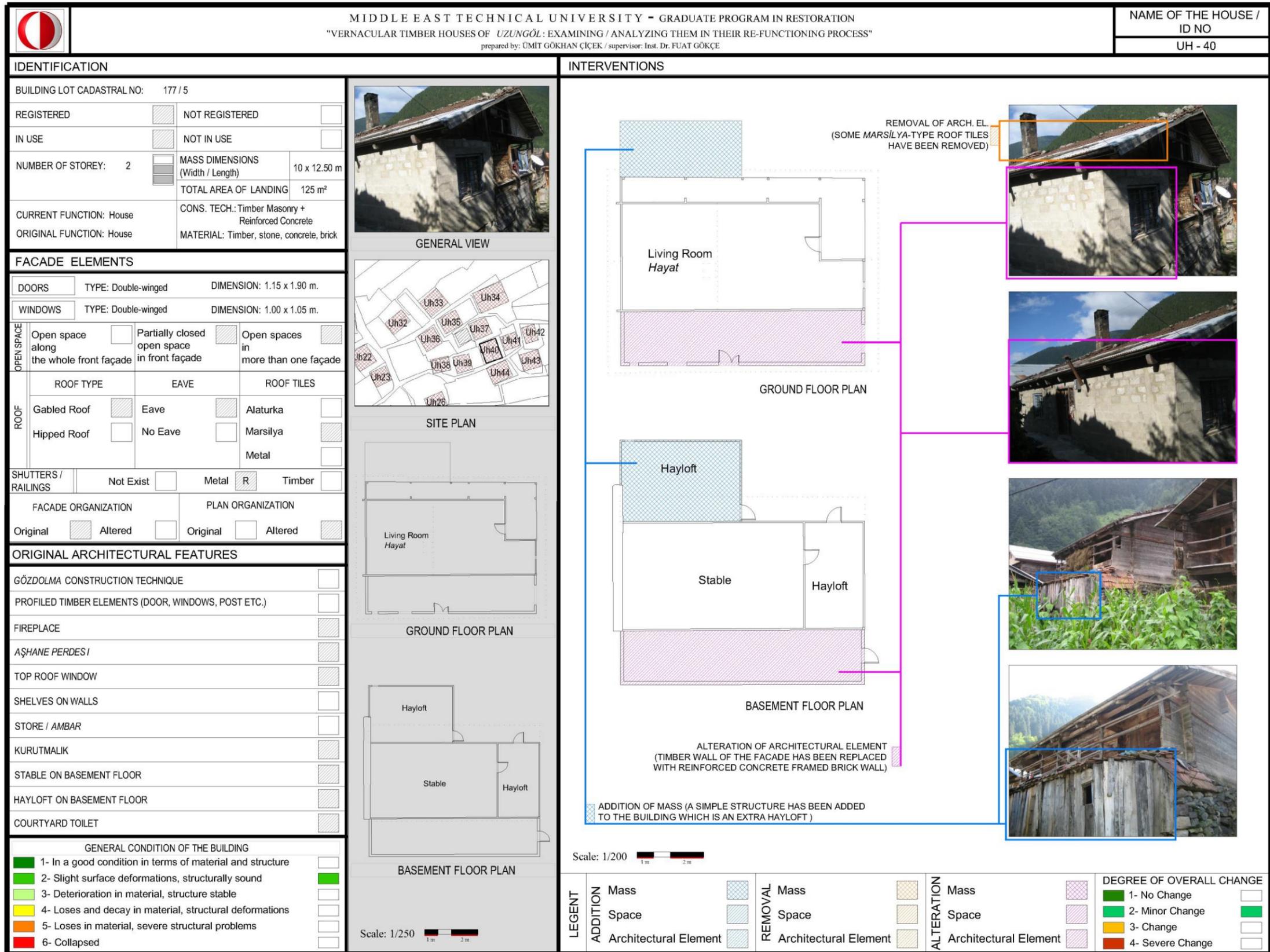


Figure 118, Building Sheet UH 40





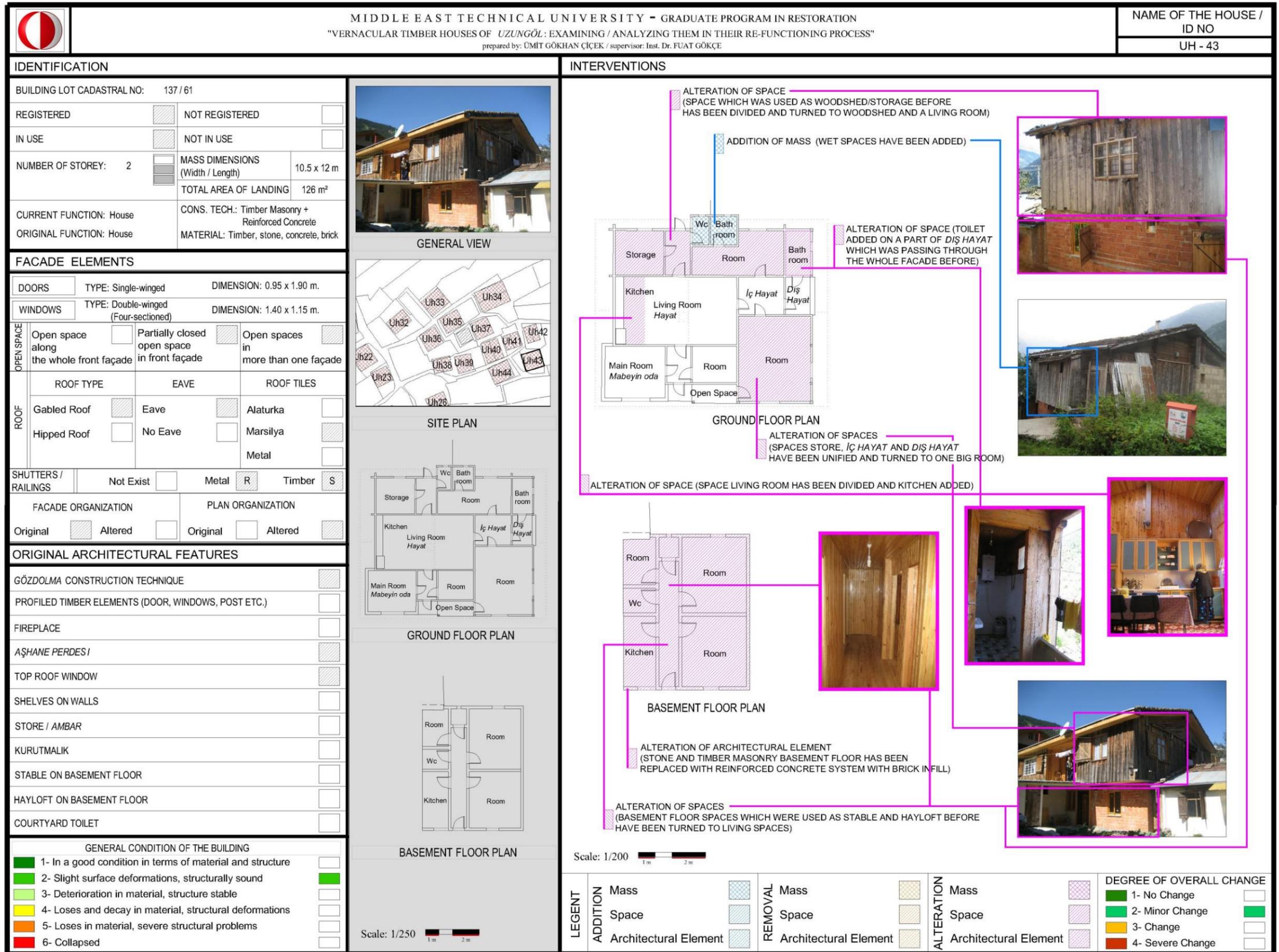


Figure 121, Building Sheet UH 43

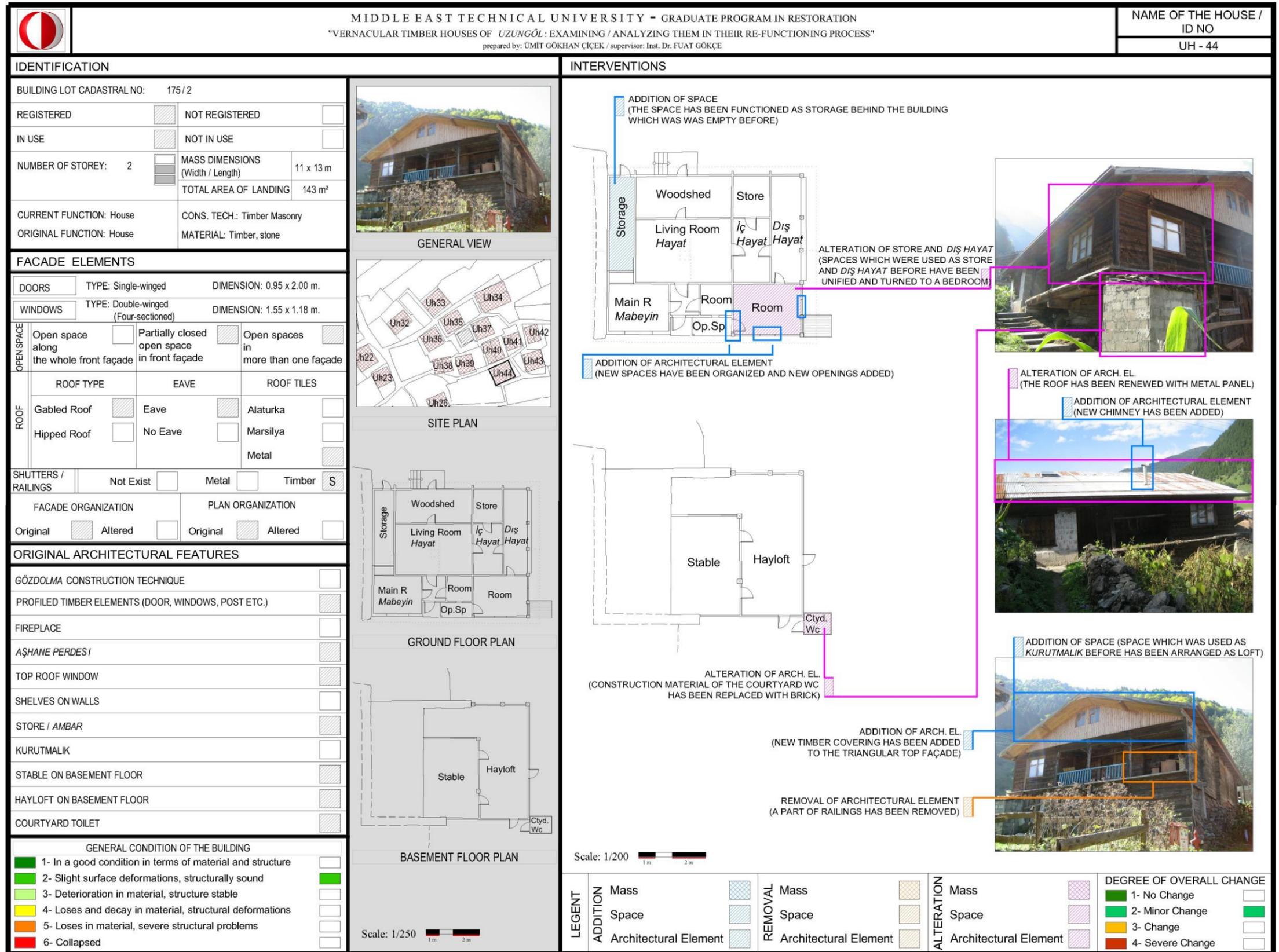


Figure 122, Building Sheet UH 44

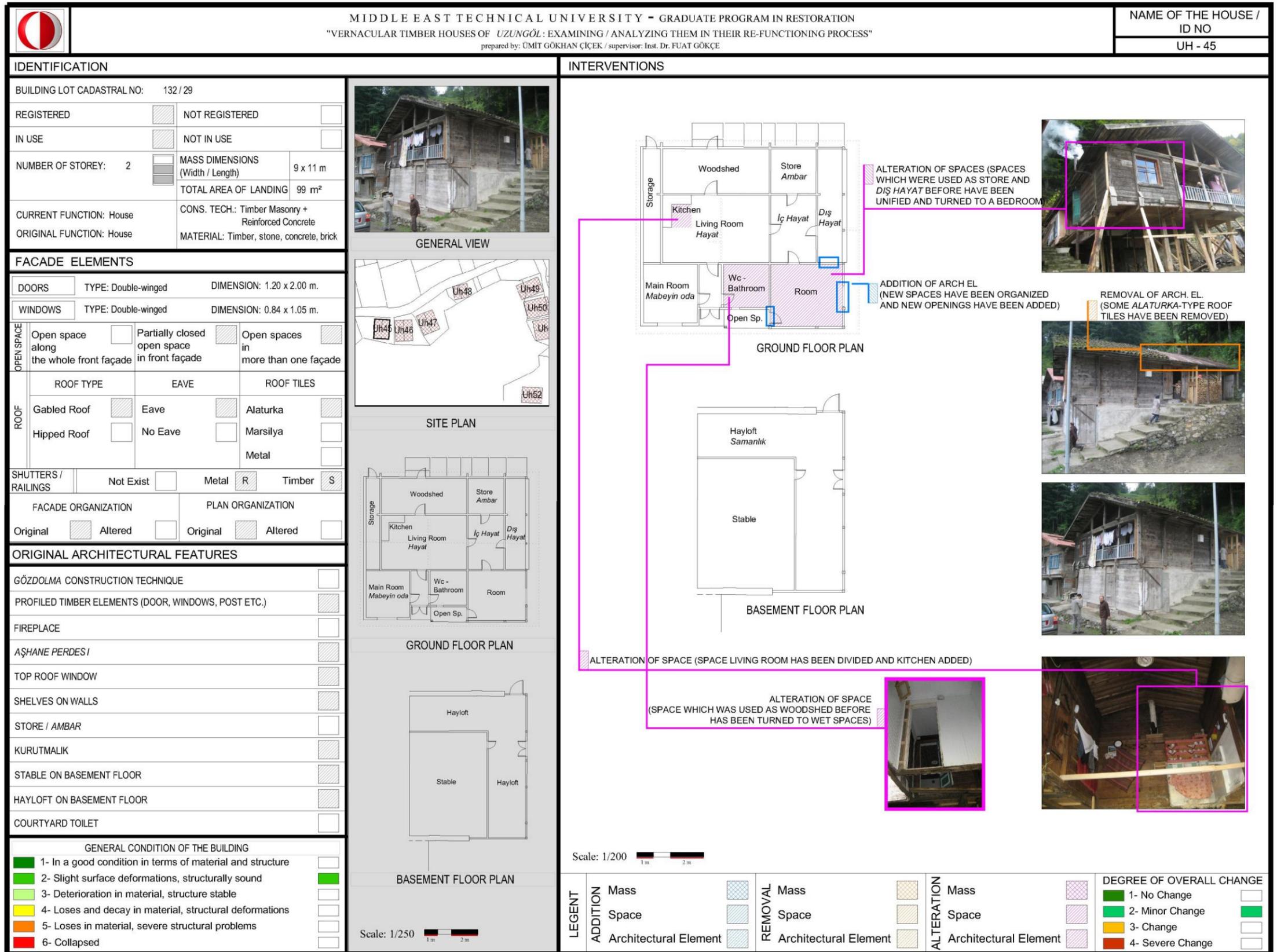


Figure 123, Building Sheet UH 45

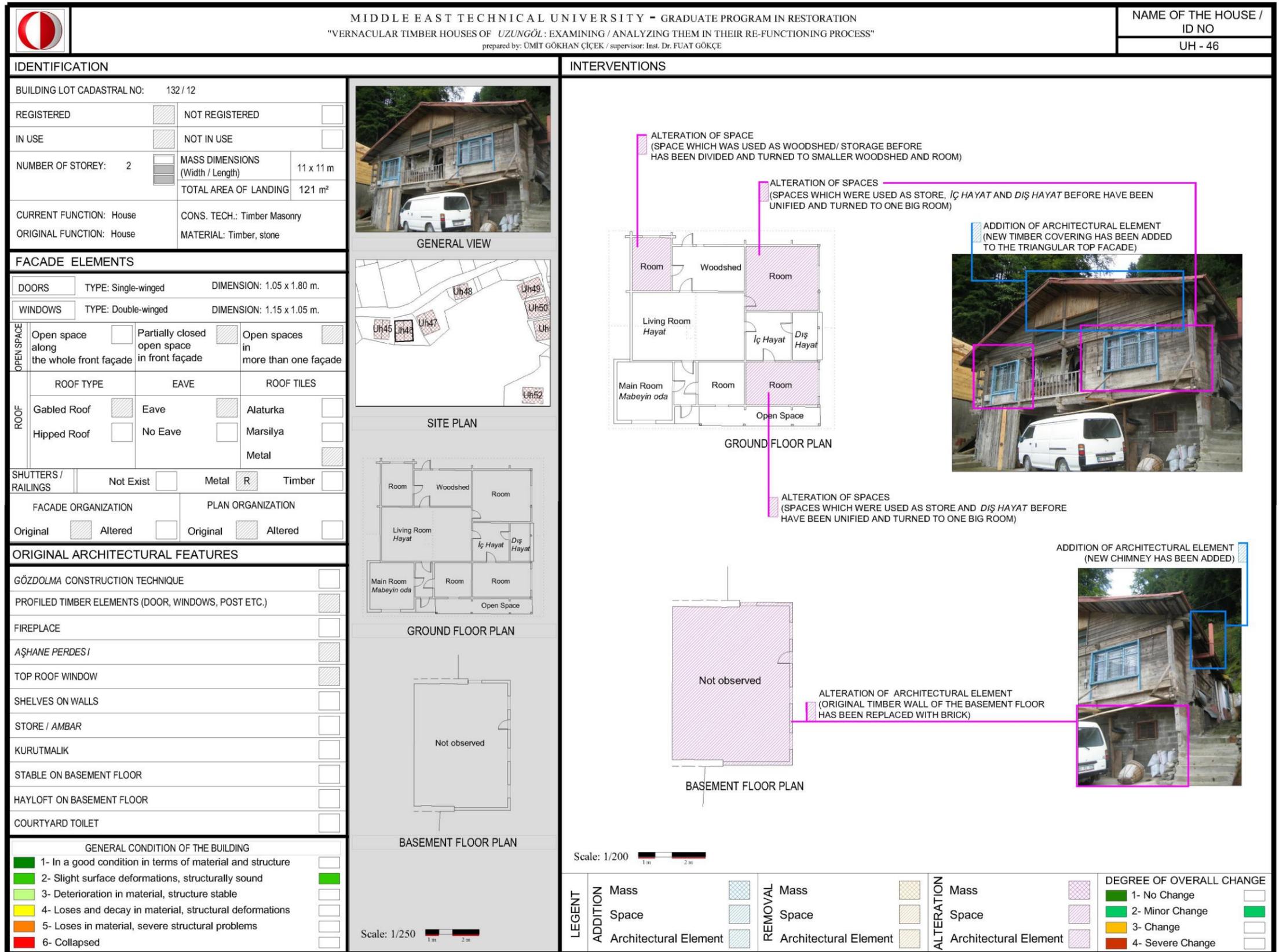


Figure 124, Building Sheet UH 46



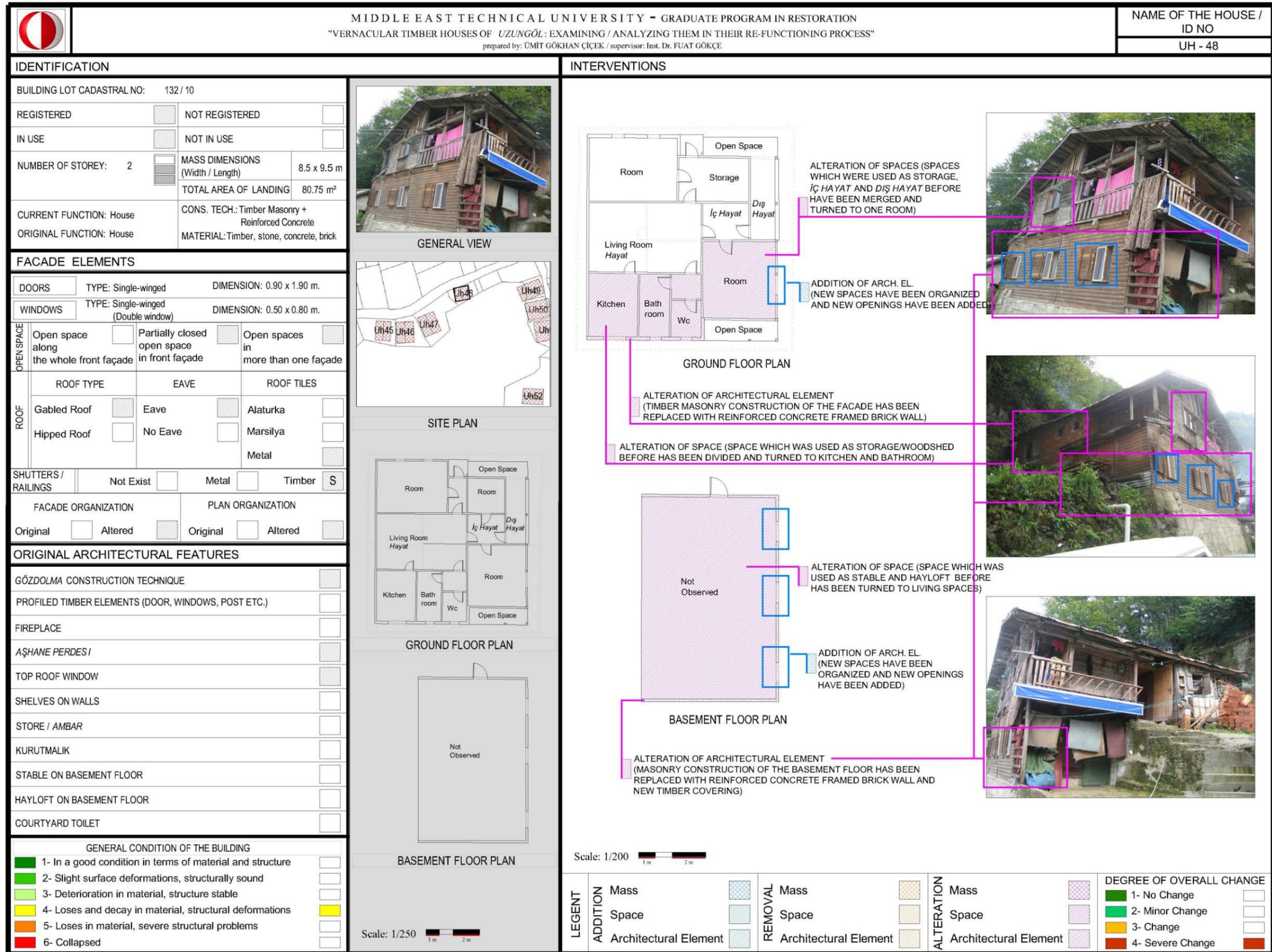


Figure 126, Building Sheet UH 48

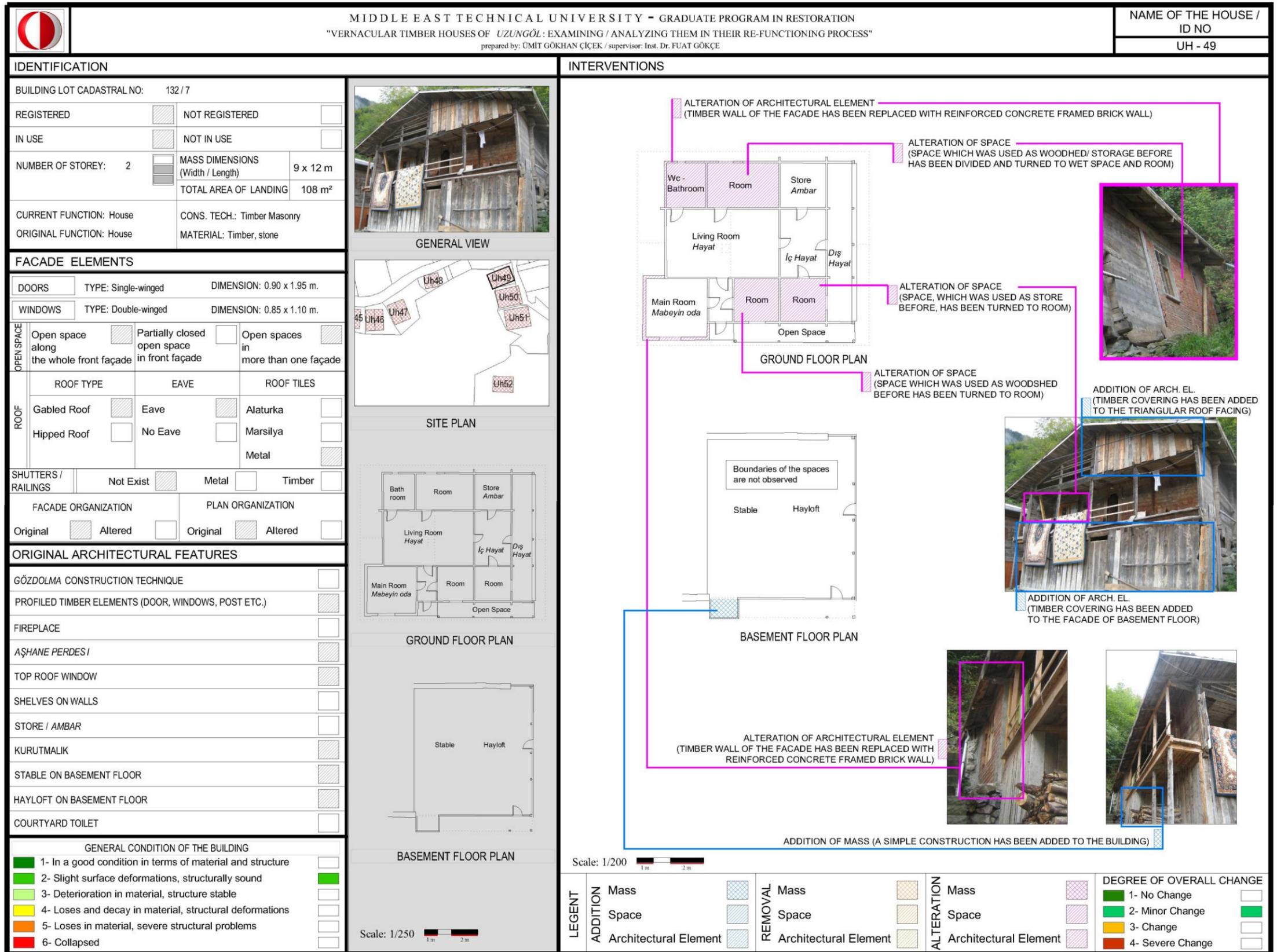
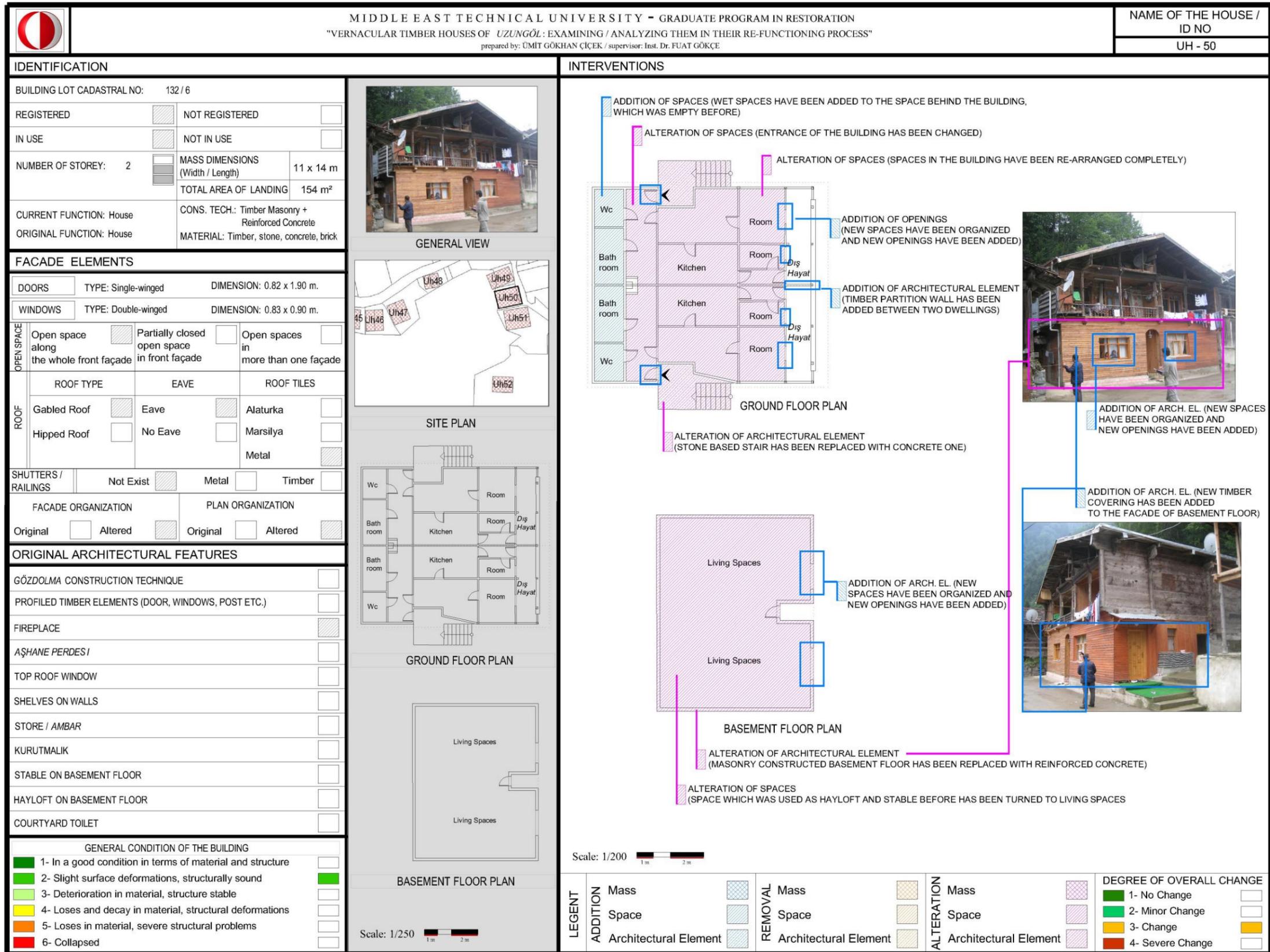


Figure 127, Building Sheet UH 49



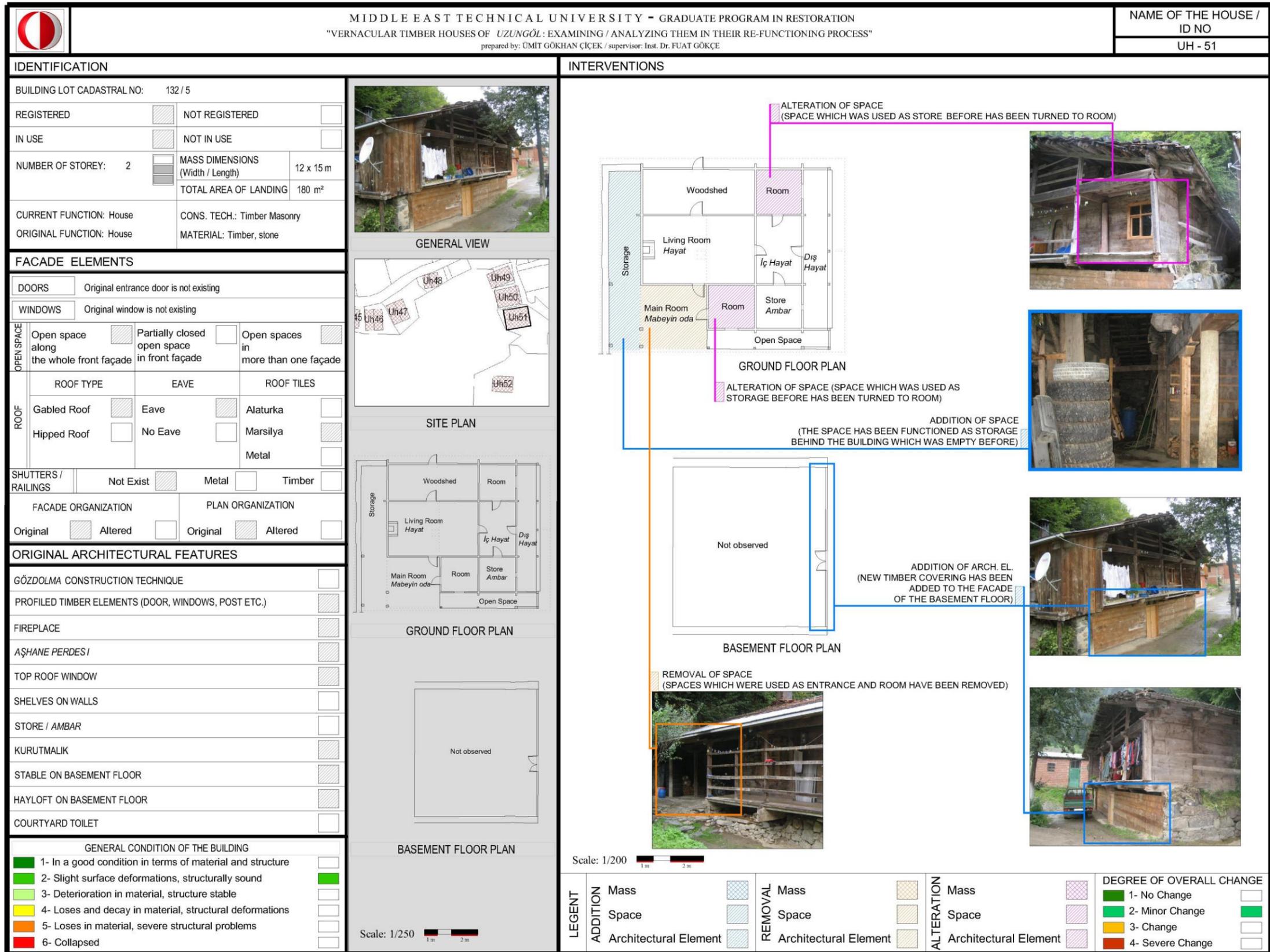


Figure 129, Building Sheet UH 51

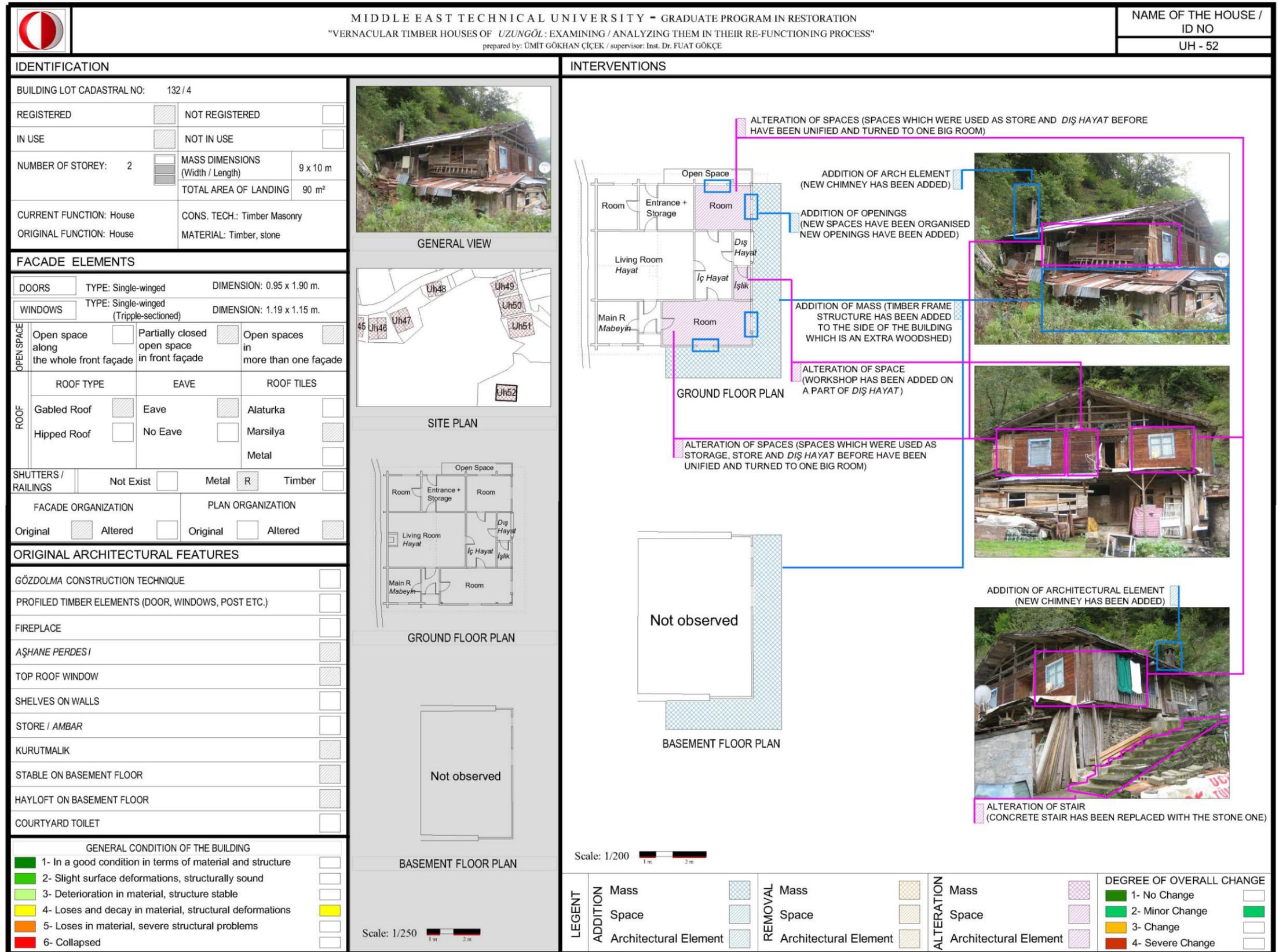


Figure 130, Building Sheet UH 52

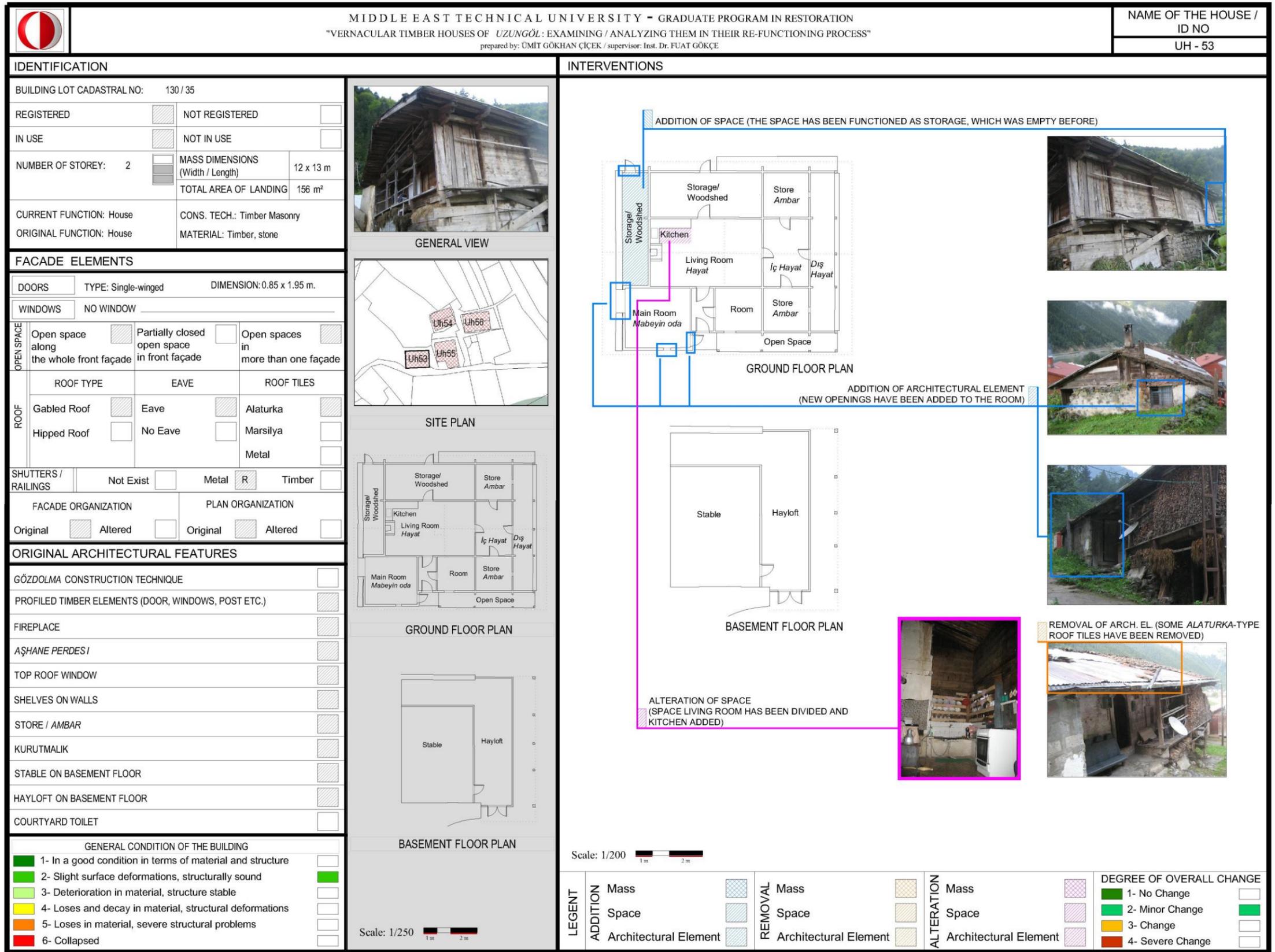


Figure 131, Building Sheet UH 53

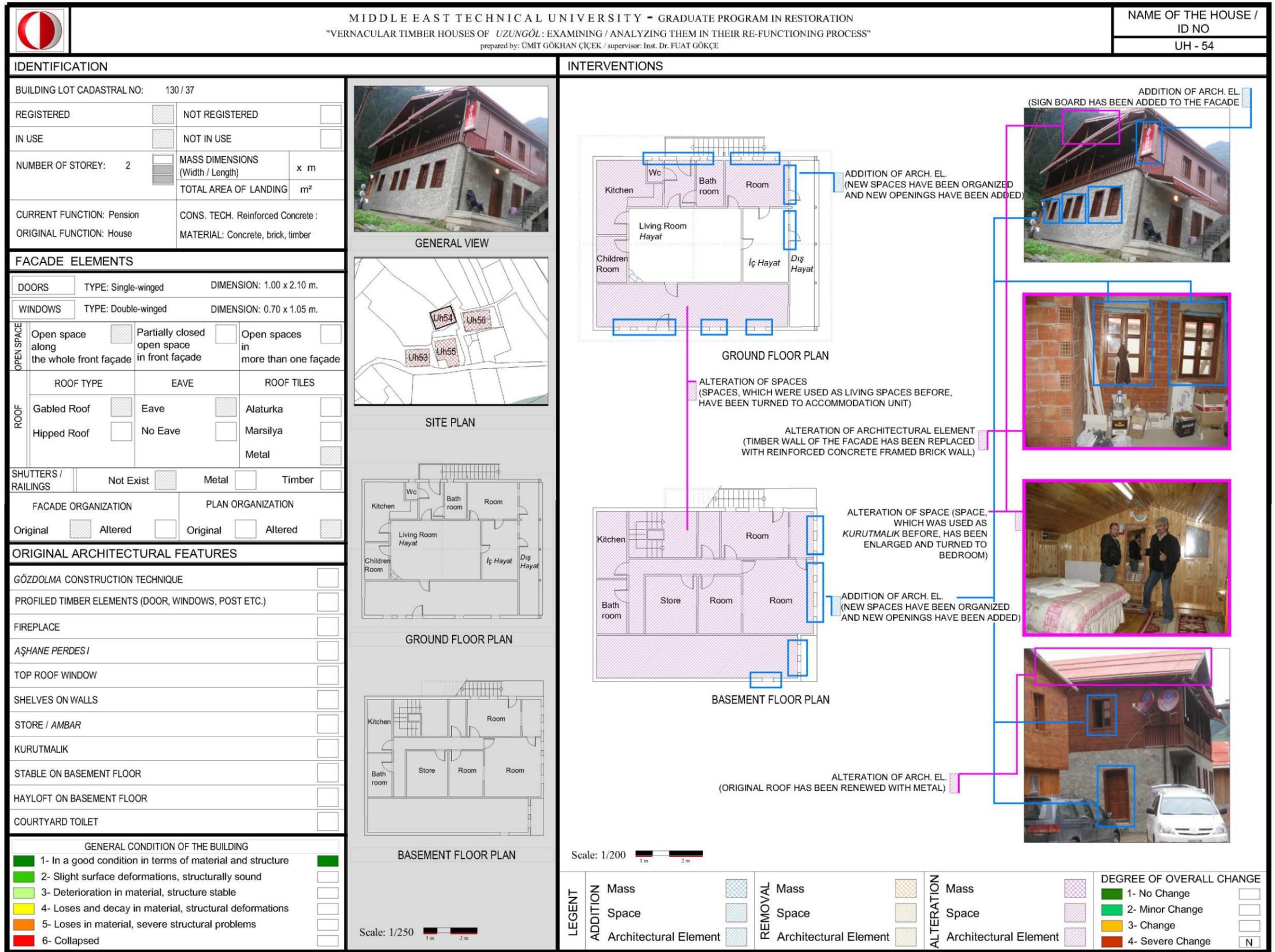


Figure 132, Building Sheet UH 54

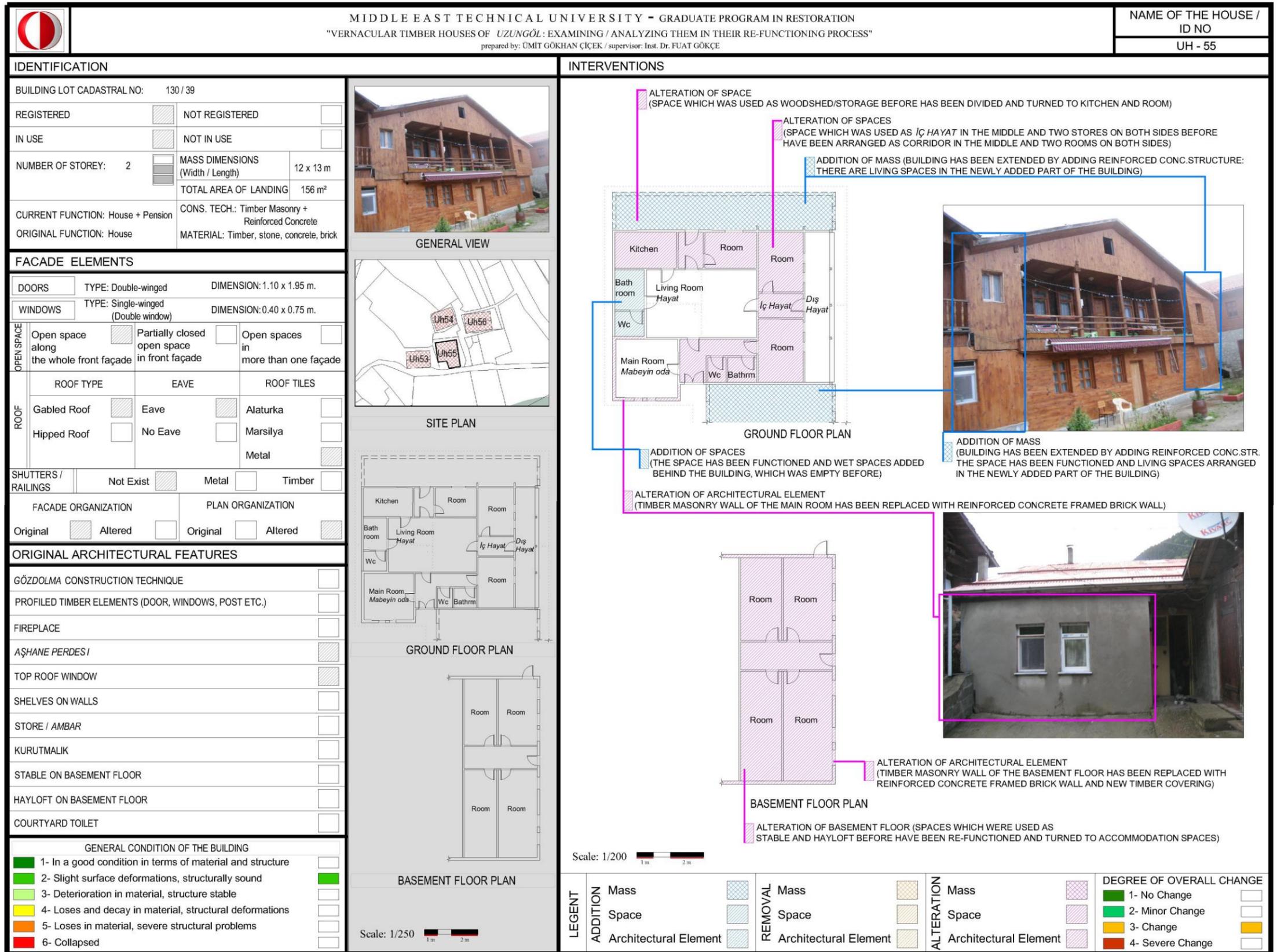


Figure 133, Building Sheet UH 55

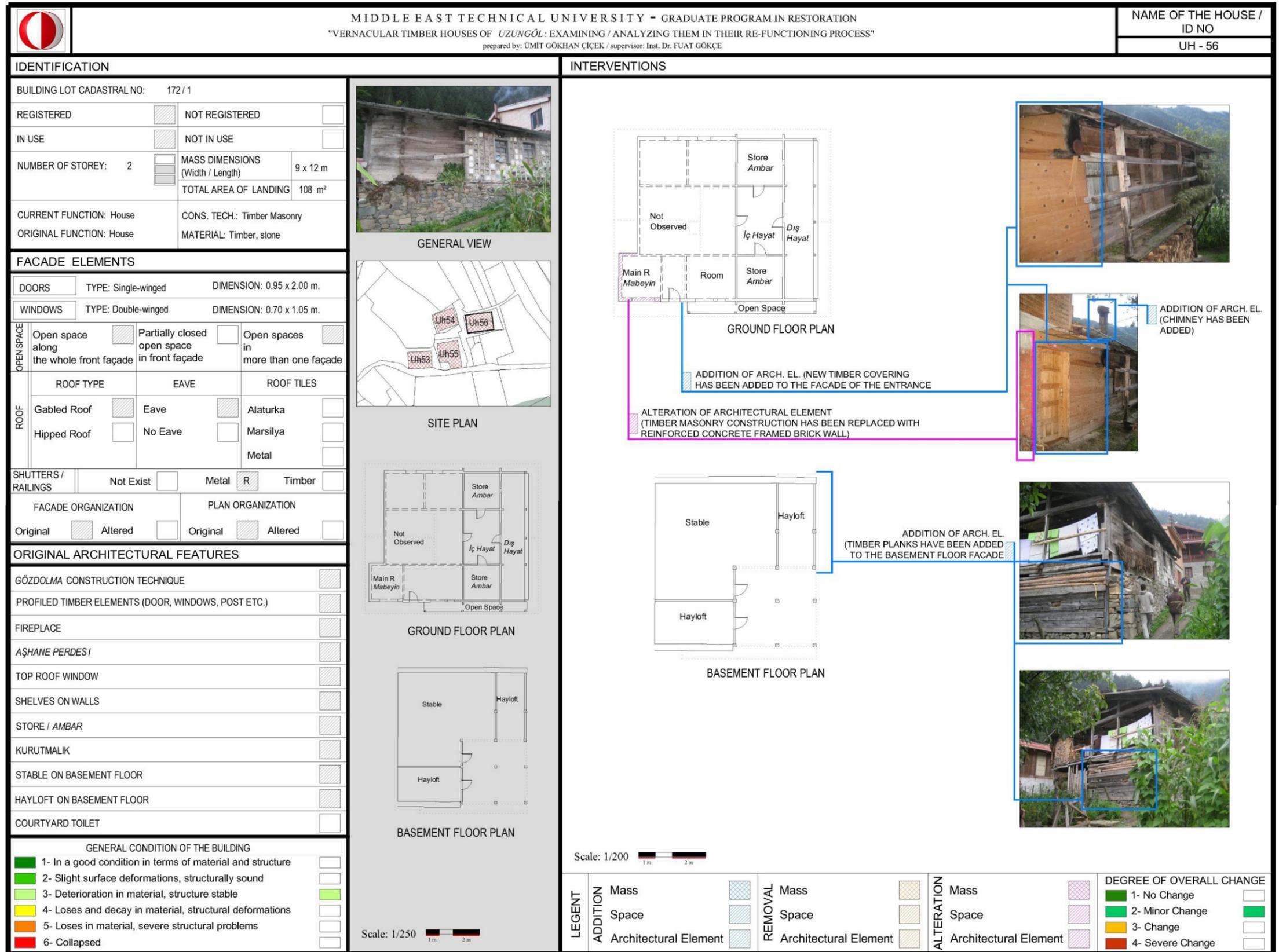


Figure 134, Building Sheet UH 56

## **APPENDIX B**

### **DRAWINGS OF SITE ANALYSIS**

Figures 135-142 are given in the following pages.

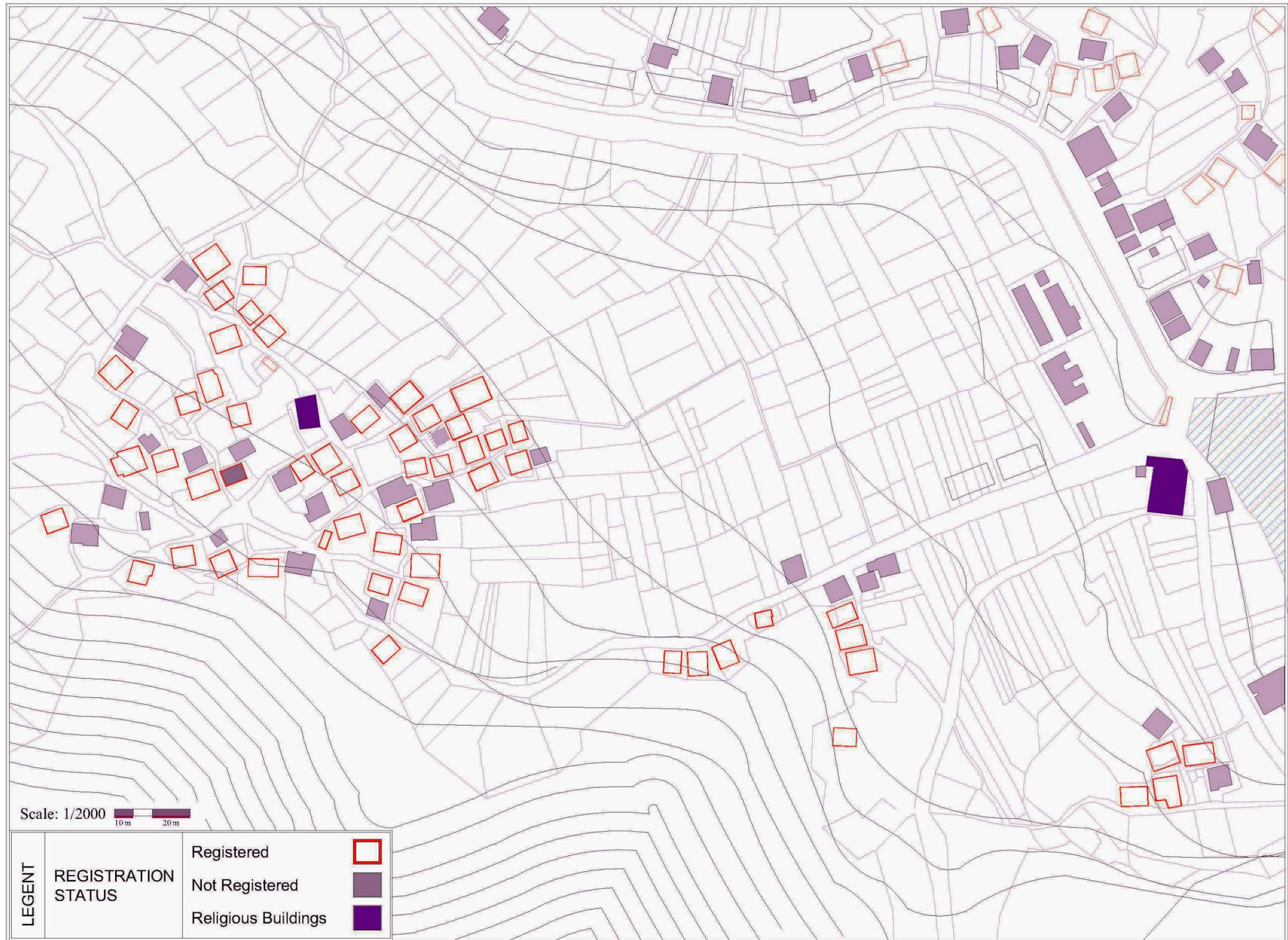


Figure 135, Registration Status of the Buildings in the Study Area

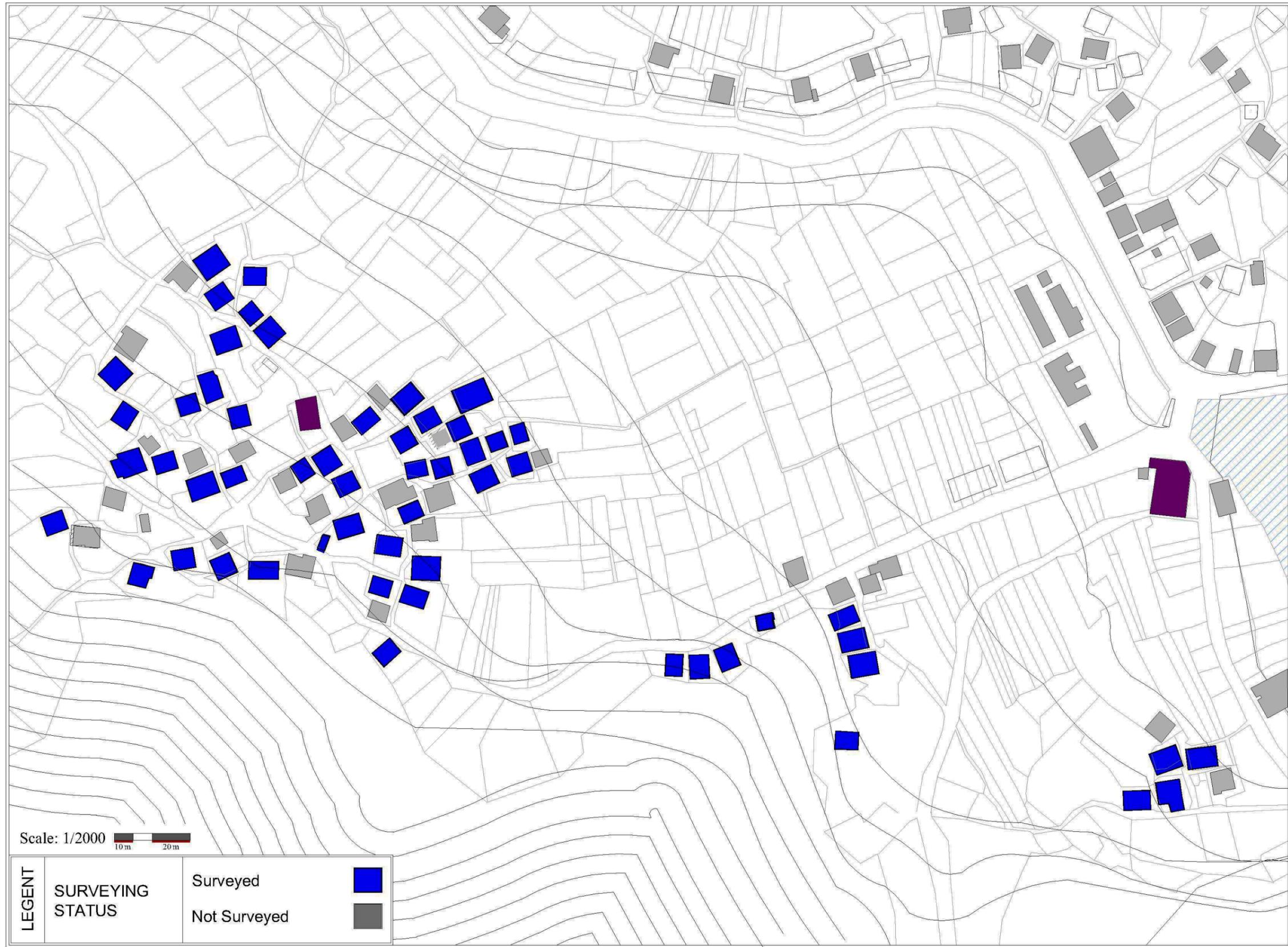


Figure 136, Surveying Status of the Buildings in the Study Area



Figure 137, Current Function of the Buildings in the Study Area

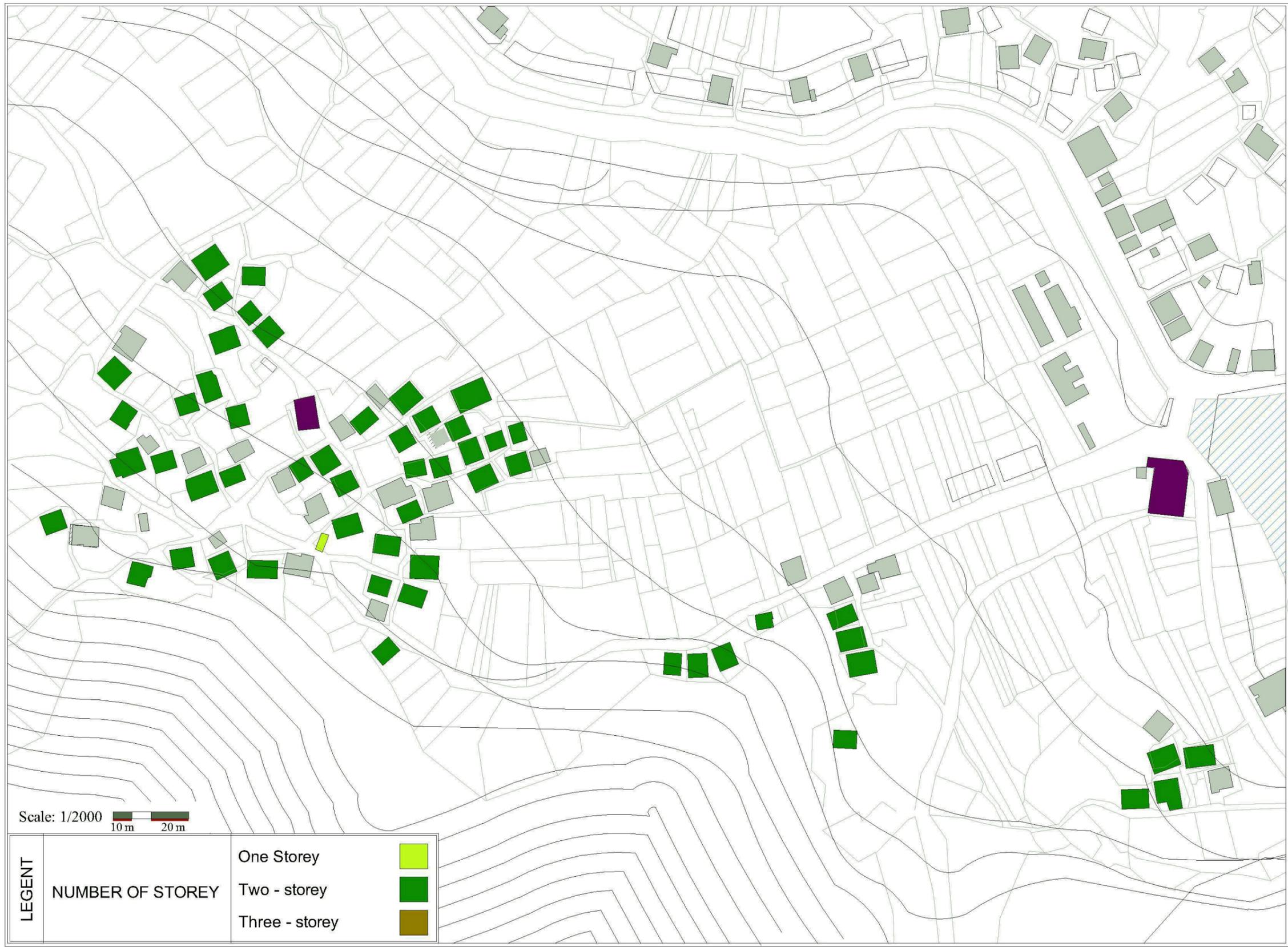


Figure 138, Storey Number of the Buildings in the Study Area



Figure 139, Construction Technique of the Buildings in the Study Area

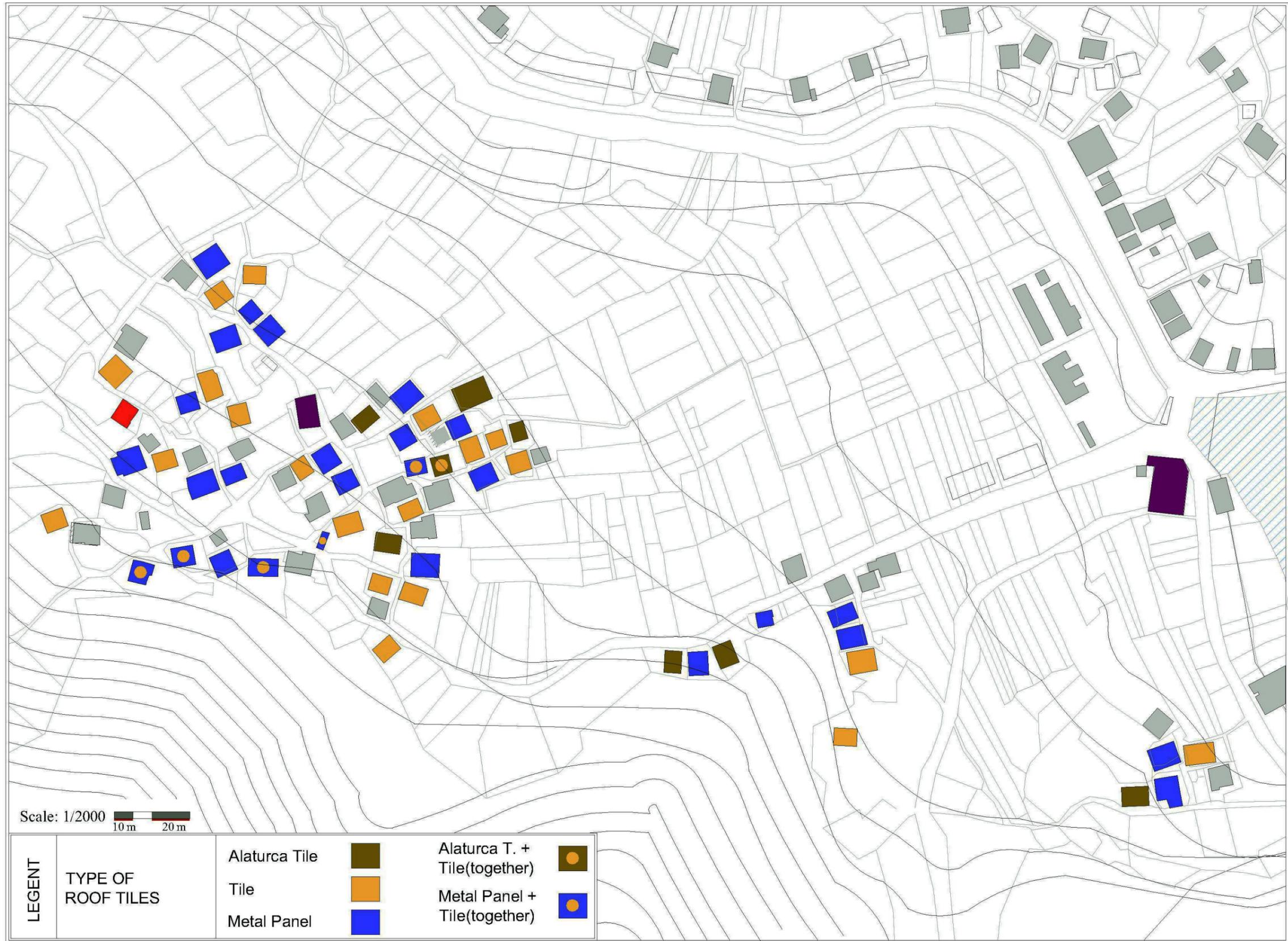


Figure 140, Roof Type of the Buildings in the Study Area

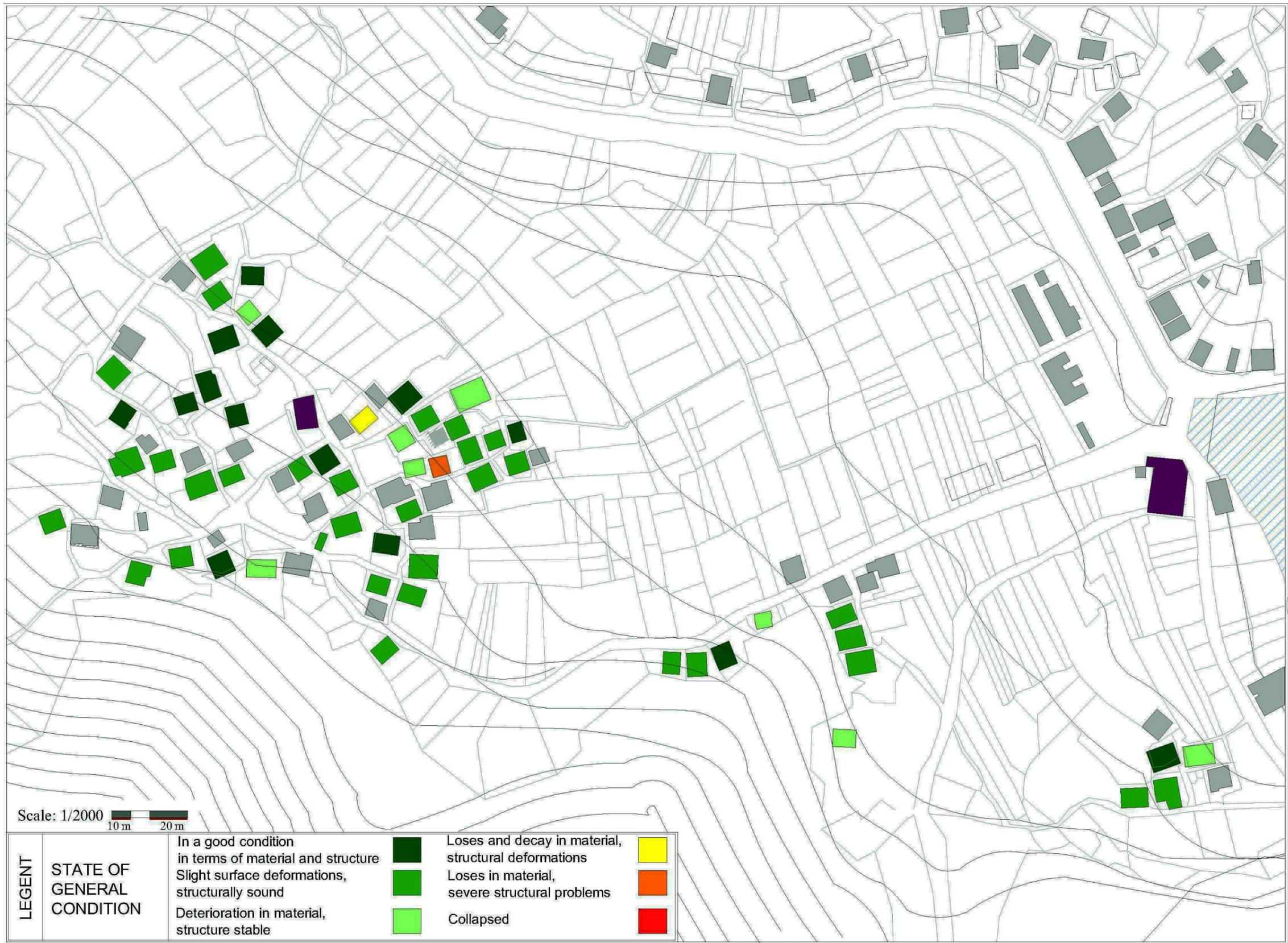


Figure 141, General Condition of the Buildings in the Study Area

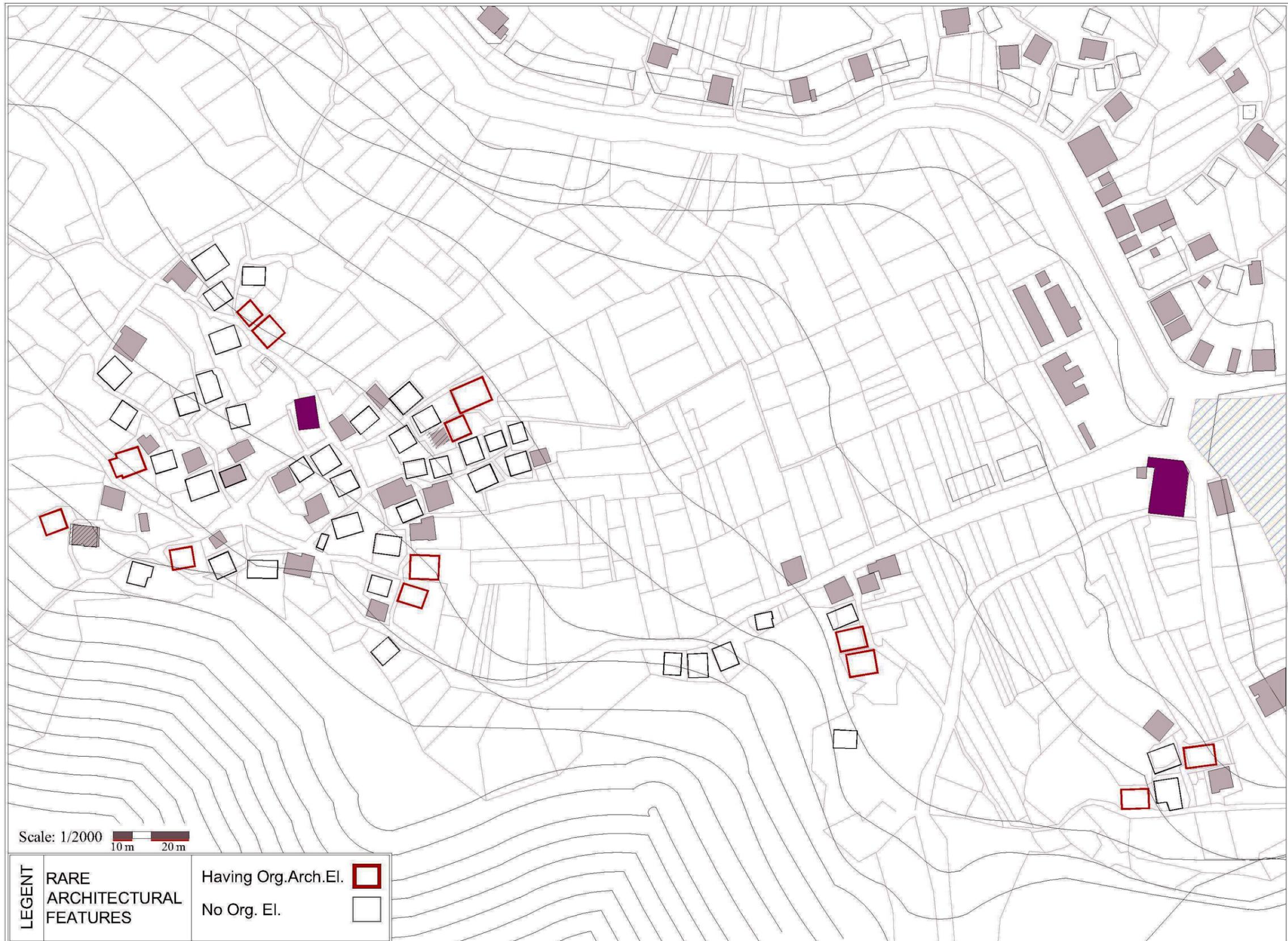


Figure 142, Buildings in the Study Area Having Rare Architectural Elements