

ADDIS ABABA UNIVERSITY,
EiABC,
School of Graduate Studies

A Conservation and Adaptive Reuse
Study for Menelik II Palace in Holeta
Genet Town, Ethiopia

**A Thesis Submitted to the School of Graduate Studies, Addis Ababa University, EiABC,
for the Degree of Master of Science in Conservation of Urban and Architectural
Heritage**

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CHAIR OF CONSERVATION OF URBAN AND ARCHITECTURAL HERITAGE

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A Thesis Submitted to the **Chair of Conservation Of Urban And Architectural Heritage**
of Addis Ababa University in Partial Fulfillment of the Requirements for the
degree of Master of Science of **Conservation Of Urban And Architectural Heritage**

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June, 2017

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Declaration

I undersigned, declare that this thesis “A Conservation and Adaptive Reuse Study for Menelik II Palace in Holeta Genet Town, Ethiopia” is my original work and has not been presented for a degree in any other university. All sources of materials used for the thesis have been duly acknowledged.

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Acronyms

ARCCH	Authority for Research and Conservation of Cultural Heritage
FDRE	Federal Democratic Republic of Ethiopia
ICCROM	International Centre for the Study of Preservation and Restoration of Cultural Property
ICOMOS	International Council on Monuments and Sites
IES	Institute of Ethiopian Studies
UNESCO	United Nations Educational, Scientific and Cultural Organization

Glossary of local terms

Ber: gate

Chikka: wattle- and-daub mixture of clay, straw and water used for construction

Dejaszmach: political- military title, rank below Ras

Derg: the name of political party

Entoto: name of the mountain

Gasha: approximately equivalent to 400,000 meter square

Gebbi: a settlement consisting of a main house or palace and its outbuilding

Gibbir Adarash: banqueting hall

Itegue: title reserved for the empress

Kebele: Lowest administrative unit in urban and rural area

Ras: literally, 'head'; the most important title under the king

Sefer: a settlement and later an urban neighborhood

Tukul: traditional conical-roofed cottage

Annex

Decay pathology and map cracking

Conservation proposal

Abstract

Menelik II's Palace, a national cultural heritage site, which is found in Holeta town, is one of a very few buildings that have stood time and shouldered burdens during the changing of regimes. The beautiful appearance of the building is still found in its graceful character that outshines the effects of time. Although the building is a national cultural heritage site, it also has a significant role in the recent history of Ethiopia, in its connection to the foundation of a modern military academy as well as Holeta town's establishment and settlement. It is a living witness of the building technology and thought of the period of Emperor Menelik II. With all the precious value that the building and its compound have, it is the discovery of its present deteriorated condition which inspired this research.

The primary and secondary data resources show that, the Palace building has made a significant mark on Ethiopia's architectural history. As reviewed on the case study, the Addis Ababa Palace of Menelik II has a very similar architectural character and heritage value with the building under consideration. It has been conserved recently and shall open to the public with new function in the near future. Thus it serves as an example and the lesson what we learn should be taken to conserve and transfer such precious historic building to the next generation.

After documenting the Palace building's history and floor plan, the paper closely identifies and examines the factors contributing to its deterioration and recommends conservation options. It also identifies potential stakeholders in the process and analyzes opportunities and values as well as current challenges and threats regarding the conservation of the historic Palace building.

Despite various problems related to the building's deterioration, this study also shows the effects of abandonment and absence of ownership that have been observed on the heritage Palace. Nonetheless, the site has considerable potential for sustainable development as tourist destination and socio-cultural integration if properly managed and conserved. These findings lead to a few recommendations on valorization of Menelik II Palace building in Holeta for sustainable use.

1. Chapter I – Introduction

1.1. Introduction

Menilik II's Palace, a national cultural heritage site, located in Holeta town, in Oromia region, Ethiopia, situated about 45 kilometers west of the capital city of Addis Ababa. It is one of a very few buildings that have stood time and shouldered the burdens of the changing of situations in relation to change of administrator. The beautiful appearance of the building is still in graceful character that outshines the saddle of time. The Palace building has a certain gift for quality and timelessness that contributes to the architecture, history, community value, art, philosophy of society and culture which categorize the specific building apart from contemporary buildings.

The historic building has served for many years with little maintenance and conservation once in a while. It is observed that the operational performance decreased until it eventually fell below the requirements of the most recent user (the national military academy). Besides the depreciation of fabrics and utilities, the effectiveness of the buildings is affected by constantly changing of specific user with their specific needs. The subsequent reality after the declining performance of the historic building was critical issues that prominent user had to deal with throughout the life cycle of the buildings. Responding to declining performance has resulted in decision to leave the historical building and let it to stand with no function. The decision of abandoning the historic building is premature which ignores value and importance of the historic Palace building that could be optimized by conservation and refurbishing using the process of adaptive reuse.

1.2. Statement of the problem

The followings are the striking points that motivated this research:

First, the Menlik II Palace in Holeta is one of the essential built heritages on the list of national heritage in relation to the importance of builder and building's age with the significance of the building in the military academy history. However, the present condition of the Palace is in bad shape.

Second, though the building is national cultural heritage, have a significant role in the history of Ethiopia, foundation for the establishment of modern military academy, the reason for the Holeta town establishment and settlement, live witness of emperor Menelik II period building technology and thought, and so on. With all this precious value that the building and its compound has; its present condition is in a bad shape. Thus it initiates the necessity for conservation.

Third, it is uncommon to see such historic Palace building listed as national heritage is neglected and left to be abandoned for more than ten years and one of the main reasons is the absence of ownership.

Fourth, even if some attempts have been made to develop a conservation proposal by the ARCCCH expert, a depth investigation has required to identify and document the conservation and management problems of the palace and to recommend conservation solutions.

1.3. *Significance of the study*

1.3.1. Why do we need to conserve Menelik II Palace in Holeta?

Usually it is common to get the word heritage and conservation as related matters. The main issue is that the conservation of the built heritage requires its appreciation and acceptance by the society nearly as a starting point.

This research in raising this question we can see few points to show the significance of conservation of such heritage.

- The particular heritage building and its site is unprotected in which the building embedded values such as historical, social, cultural, political and educational, which enduring relevance to Holeta town, its society and to the country at large.
- Conserving this heritage building of historic Palace, therefore, offers the potential ways of conserving the history of the town and the country.
- Conserving the unprotected historic Palace building and its site contributes to the survival of the country's sense of place as a land mark and its very character.

1.3.2. Why adaptive reuse option?

Adaptive reuse has been identified as a process to ameliorate the financial, environmental and social performance of the buildings. (Langston et al., 2007; Bullen, 2007). It is also described as a process that changes ineffective item into a new item that can be used for a different purpose. This can occur through reusing the functionality of the building and meet the purpose of facility that is required.

There is a growing acceptance that a process of adaptive reuse can be used as a responsive strategy that can attend to the changing needs of owner or occupier (Wilkinson et al., 2009). As a national cultural heritage building, key decision that owners, occupiers or user are confronted with is how to adapt and reuse the building.

1.4. The Research Methodology

This research uses a qualitative approach that involves case study and in-depth interviews with experts and multiple stakeholders coupled with field observation and building plan appraisals. The study starts with a literature review to establish the relevant background knowledge and provide the conceptual framework that allows for the identification of the best strategies for the conservation of heritage building). The case study approach was used in this study since it is considered an effective approach in researching a variety of adaptive reuse issues.

Data collection

Interviews were chosen as the primary data collection mechanism as they are an effective tool for learning about matters that cannot be directly observed (Taylor and Bogdan, 1998; Patton, 1990; Silverman, 2000). Moreover, document review has been made in different government offices.

1.5. Scope of the research

The research is delimited to the conservation of the Menelik II Palace found in west Showa zone, Oromia regional state, Holeta Town. The research applies adaptive reuse strategy for the conservation practice and valorization of the Palace building. Moreover the conservation practice is focused on the analysis on architectural aspects, contextual setting and historic landscape of the Palace building and it's surrounding; whereas further research is required on evaluating the soundness of the historical building structure in relation to the building foundation, implication of cracks on the wall and floor and the integrity and stability of the entire building.

1.6. Limitations of the research

The lack of proper documentation on the Palace makes it difficult to trace its original features and look. However, technical drawings made thirty years ago and photographs of the building taken at different times are available in the ARCCH archives. These provided images of the general look and plan of the building in the past. Moreover, the ownership and administration of the Palace stay undefined for more than 10 years. The Palace has been owned and administered by the Holeta military campus for about 45 years. Currently the administration to maintain and use of the Palace has been transferred to the church residing nearby. During the administration of the Holeta military campus and the church, documentation of the alteration made in the building is not available in written and drawing format. This has created a difficult situation for the researcher to identify which is the original or which is altered. However, by discussing with the former management of the military academy, former secretary of the church, visual inspection on site and oral history from elders residing in the church compound, it was possible to identify the alteration made on the building to some extent.

1.7. Objectives

The General objective of this study is

- To study a conservation status of Menelik II Palace in Holeta and
- To develop an adaptive reuse strategy.

Focusing on this main target, more specifically, the study attempts to reflect on the following points:

- To analyze Stakeholders of the historic Palace building
- To assess the values of historic Palace building
- To explore the possible future of the historic Palace building
- To recommend the strategy to conserve and manage the historic Palace

1.8. The research questions

- How do stakeholders associate themselves to the historic Menelik II Palace in Holeta?

- What intangible or use values are attached to the historic Palace including historic, social, scientific or spiritual?
- What possible futures will Menelik II historical Palace in Holeta has?
- What would be the strategy to conserve the Palace?

1.9. Organization of the research (design and thesis structure)

The thesis is organized in five chapters as follows;

Chapter I: refers to the general introduction, the basic concept to the research approach, scope, limitation, objective and research question are described in this chapter.

Chapter II: describes the research method, the preparation and organization of the field work.

Chapter III: reviews the literature relevant to the study of conservation and adaptive reuse. The chapter is organized in four sections. The first section refers to the background and definition of key words. The second section refers to the historic development and general principle of conservation and adaptive reuse. The third section refers to the sample case, historic Palace conservation in the context of Menelik II national Palace in Addis Ababa and the lesson taken from it. The fourth section refers to the adaptation of appropriate model for the decision of adaptive reuse of historic Palace building.

Chapter IV: the introduction of the historical Palace building of Menelik II in Holeta Genet shall be overview and presents the data collected in the field work and classifies. It covers the study of current condition and model analysis of the Palace building.

Chapter V: analyzes and evaluates the findings of data. Conservation plan has studied as conservation proposal that depend on the deterioration of the historic Palace. Also adaptive reuse is studied as conservation strategy that depends on the data analysis and requirement of the stakeholders.

Chapter VI: presents the conclusions and recommendation derived from the interpretation of the findings of the previous chapter supported by design proposal for the new function.

2. Chapter II - Research Methodology

2.1. Research Methodology

This research uses a qualitative approach that involves case study and in-depth interviews with different experts coupled with field observation and building plan appraisals. The study starts with a literature review to establish the relevant background knowledge and provide the conceptual framework that allows for the identification of the strategy to be implemented in the adaptive reuse of heritage buildings:

2.2. Literature review

The literature review includes the current issues in conservation of heritage. Specifically, a brief outline of the history of architectural conservation and restoration aims at indicating the development of conservation theory and philosophy. Then, the overview of theories and practices of heritage conservation and management provides an insight of current debates and tendencies that influence heritage conservation principles and practices in relation to adaptive reuse. The overview of the concept and practice identifies the current issues. A historical synopsis provides information on the emergence of the concept. The broad examination of terminological, theoretical, philosophical, and technical aspects related to the specific concept becomes the starting point of the exploration of issues.

2.3. Type of data and its source

Both primary and secondary data has been used in the research. The primary data has been collected through in depth interview with stakeholder from the Church, Military Academy and also from experts in both Palace administration and ARCCH. Secondary data has been collected from ARCCH. A report that has been made at ARCCH has been used as an input and also the drawing of the Palace has been used.

2.4. Method of data collection

The research has employed different methods of qualitative data collection: first relevant information regarding the history of the building and its compound in which it is found and any conservation work done to the particular Palace has collected.

Addis Ababa University (Institute of Ethiopian Studies) and ARCCH libraries, has been searched in order to collect information needed.

Second, in depth interview has been made with officials, stakeholders and conservators' professionals who are responsible for and/or have a direct or indirect relationship with the administration of the Holeta Palace. Moreover, interviews have been also made with the users, and the community who live in the town. Oral history has been used as a cross reference to make the history clear.

Third, the document of historic Palace under this research has been reviewed from the collected data which presented in the final report of the ARCCH experts on the proposal of the historic palace building conservation.

Fourth, the heritage inventory and identification survey method has been used to collect data on the historic palace building hence the field visit and observation has been summarized by the inventory method. Moreover the building survey has supported by taking measurement and photographic record.

Fifth, format form the campus which used on the previous semester classes has implemented to collect data about the present condition of the historic building.

Finally, interview with palace administration official and book review of the selected heritage site which is the Menelik II Palace in Addis Ababa, Ethiopia and field visit under the study; Menelik II Palace in Holeta, Ethiopia was conducted. Both buildings are compared in parallel to examine the outcome of the conservation work done for the national Palace and to propose suitable conservation plan for its future use to Holeta Palace.

2.5. Data Analysis

Content analysis was used as the primary analysis technique on the collected data. The text derived from the interviews was analyzed using an organic approach to coding to develop categories of interest in the text to be and enabled the development of themes to be identified.

This process enabled to identify the key themes during the adaptive reuse decision-making process.

A comparative analysis has done on the case study and the building under this research. The case study has been selected because of its similarity of original function, construction period, original owner and most of all the necessity of conservation. From in depth study of conservation work of the study case points has

been driven as good practice of conservation and a lesson we can learn for the conservation of Holeta historical palace building.

Written and oral history has reviewed in order to make the historical palace building history complete. The data also used to cross check and balance the gap created in the reference documents. The data collected by heritage inventory and identification survey method and also by the format of the previous semester class has been analyzed in the model format adapted for developing adaptive reuse strategies for heritage building (table 3.2) in order to come up with the decision of conservation and adaptive reuse.

SWOT analysis has done from the stakeholder interview in order to determine the issue of conservation and adaptive reuse of Holeta historical palace. This analysis has summarized the stakeholder inquiry thus it shows what potential the heritage building has to be conserved.

Auto Cad software is used to map the drawing by using the measurement data and site photograph taken on site.

3. Chapter III – Literature Review

3.1. Section one

3.1.1. Background

Conservation and management of cultural heritage in today's world in which the forces of development, mass tourism, globalization, and national interests compete, is a complex undertaking. While every country now has legislation designed to protect its heritage, not all have a guiding methodology for effective implementation of conservation practice. Legislation, often prescriptive, offers little guidance to those whose responsibility it is to keep safe a nation's heritage. (Neville Agnew & Martha Demas 2002)

Debate on approaches to preservation dates back from the nineteenth century, but only from about the middle of the last century onward have been various international and national charters drawn up. Notable among these have been, at the international level, the (ICOMOS, The Venice Charter, 1964), itself based on earlier documents¹, and, at the national level, the Burra Charter of Australia (ICOMOS, Burra Charter, 1999), which sought to base its guiding philosophy on the explicit identification and preservation of the values (artistic, historical, scientific, and social) of heritage places. Increasingly this concept has been accepted as being of central importance in preserving sites and places of significance in unimpaired condition.

3.1.2. Definition of Key words

The definition of the terms has been modified to meet the expectation of the conservation practice made in the Palace at question. (1999, ICOMOS Australia, Burra charter)

Place: site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views

Cultural significance: aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its

¹ Athens charter 1931 ,

fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.

Fabric: all the physical material of the place including components, fixtures, contents, and objects.

Conservation: all the processes of looking after a place so as to retain its cultural significance.

Maintenance: the continuous protective care of the fabric and setting of a place, and is to be distinguished from repair. Repair involves restoration or reconstruction.

Preservation: maintaining the fabric of a place in its existing state and retarding deterioration.

Restoration: Returning the existing fabric of a place to a known earlier state by removing accretions or reassembling existing components without introducing new materials. It is appropriate only:

(a) if there is sufficient evidence of the earlier state of the fabric, and

(b) if returning the fabric to that state reveals the significance of the place and does not destroy other parts of the fabric.

Reconstruction: returning a place to a known earlier state and is distinguished from restoration by the introduction of new material into the fabric.

Adaptation: means modifying a place to suit the existing use or a proposed use.

Rehabilitation: The process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values.

Interpretation: all the ways of presenting the cultural significance of a place.

3.2. Section two

3.2.1. Theory and concept of heritage conservation

The history of the protection and conservation of cultural properties stressed, the eighteenth century was important for the definition of concepts including the question of original vs. copy (Jokilehto, 1999).

However, restoration of historic buildings and the emerging archaeology were conceived in relation to scientific methods and knowledge, based on objective logic and, therefore, beyond value judgments. Such ‘restoration fury’ dominated the scene from the second half of the nineteenth century, but gradually it faced increasing criticism that led to an ‘anti-restoration movement’ and modern conservation. (Feilden 1994, 2003)

The anti-restoration movement, instigated by John Ruskin in the mid nineteenth century, was directed at the fashion of stylistic restoration, criticizing restoration architects for the destruction of the historical authenticity of the buildings and fighting for their protection, conservation, and maintenance. Ruskin argued that authenticity meant a retained building should be restored to its original state and use where possible and that its age gave it historical value and interest (Nasser, 2003)

The key issue in modern conservation is the question of values. The notion of value itself has undergone a series of transformations, and as Michel Foucault has written: ‘Value can no longer be defined, as in the Classical age, on the basis of a total system of equivalences, and of the capacity that commodities have of representing one another. Value has ceased to be a sign, it has become a product’ (Foucault 1994).

The conservation movement was based on the recognition of cultural diversity and the relativity of values, forming the basis for a definition of the concept of ‘historic monument’ as part of national heritage (Fancelli 1992). In the initial phase this new consciousness was expressed in criticism against prevailing renovation tendencies to modify or even to destroy historic buildings; later, it developed parallel to stylistic restoration, emphasizing the irreversibility of time, the historicity and uniqueness of buildings and objects from the past.

As it is stated in the document of Recommendations for the Analysis, Conservation and Structural Restoration of Architectural Heritage value is expressed as follows:

- Value and authenticity of architectural heritage cannot be based on fixed criteria because the respect due to all cultures also requires that its physical heritage be considered within the cultural context to which it belong
- The value of architectural heritage is not only in its appearance, but also in the integrity of all its components as a unique product of the specific building technology of its time. In particular the removal of the inner structures maintaining only the façades does not fit the conservation criteria. (J., Jokilehto 2005)

In order to define the value of the historic Palace building it is preferable to refer the following three major headings (Feilden, 1994, 2003)

(1) **Emotional values:** wonder, identity, continuity, spiritual and symbolic.

(2) **Cultural values:** documentary, historic, archaeological, age and scarcity, aesthetic and symbolic, architectural, townscape, landscape and ecological and technological & scientific.

(3) **Use values:** functional, economic, social, educational and political & ethnic

3.2.2. Adaptive reuse; as conservation of heritage buildings

Most of the time, because heritage building are no longer suited for the original function; a new use has not been identified (Orbasli, 2008). Though adaptive reuse happened in the past simply because demolition and the construction of new buildings; after the new architectural thinking emerge of during the 1960s and 1970s, architectural conservation ensures economic, cultural and social benefits to urban communities. Therefore, the role of architectural conservation has changed from preservation to being part of urban regeneration and sustainability (Bullen & Love, 2011a).

Adaptive reuse also provides social benefits by revitalizing familiar landmarks and giving them a new life (Conejos S. C., 2011). Giving new life into heritage buildings ensures environmental and social benefits to the communities and also helps to retain

our national heritage (Shen & Langston, 2010). Society is becoming more aware of the value and necessity of heritage buildings and the loss of those heritages are now seen as the disposal of local identity, of cultural heritage and of socio-economic values (Carmer & Breitling, 2007).

An appreciation began to emerge that heritage buildings are precious and should be conserved, starting from the mid nineteenth century until today. Heritage buildings serve as cultural and heritage symbols; thus, they act as a centre of individual and community life (Elsorady, 2014).

Adaptive reuse decision-making comprises a complex set of considerations including location, heritage, architectural assets and market trends (Bullen & Love, 2011a). For a new use, the condition of the historical pattern must first be assessed and a conservation plan must be coordinated with a management plan (Yildirim, 2012). Adaptive reuse is a complex process which requires participants in the process that have a clear understanding of how to determine the most appropriate future for the building in a particular location and time (Kincaid, 2002).

Adaptive reuse can transform heritage buildings into accessible and useable places; also ensure new spaces to be lived in a sustainable manner. The most successful adaptive reuse projects add a contemporary layer that provides value for the future and also respect and retain a building's heritage significance (DEH, 2004).

3.3. Section three – sample case

3.3.1. Menelik II Palace of Addis Ababa (adapted from 'Architectural Heritage in Ethiopia' book)

3.3.1.1. Background

The construction of Menelik's *Gebbi* started in 1886-87: its foundation is at the origin of the city of Addis Ababa in a hilly area (the Tulu Finfine) was considered by the Emperor and his wife especially attractive for its views over the valley, its healthy climate and for the presence of abundant mineral water. The word *Gebbi* clearly refers to the original fence: a makeshift wall surmounted by a cover of thatch, dotted by seven gates, each with a different function (such as the *Itegue ber* or Queen's Gate, the chariot Gate, the *Fit ber* or front Gate, the Treasury Gate,

the Grain Gate, the Qidus Gabriel Gate and the Abattoir Gate) . the complex stretches over one *gassha* (approximately 400,000 sqm) of land and essentially made up of a series of pavilions, typologically quite similar to other African examples (the traditional one-room system), but evidently influenced by foreign architectural cultures ranging from srabia to the Ottoman Empire, from Armenia to Indea and actually built with the help of quite a few foreign professionals and crafts-men. (Sacchi 2012) Read from page 51-60

3.3.1.2. The conservation of Menelik II Palace of Addis

Ababa

As Livio Sacchi stated in his book about the project; because of the imperial compound history, architecture, the homogeneity and position in the urban and natural landscape, they can be considered of outstanding universal value from a historical as well as artistic point of view. As a whole the compound complex may even considered as a cultural landscape, a combination work of nature and men.

“The Imperial Palace is a masterpiece of human creative genius; they bear a unique testimony to a culture tradition and a living civilization; architectural ensembles which illustrate significant and specific stage in Ethiopian architectural history; it also meet the condition of integrity and authenticity (authenticity is expressed through a verity of attributes including: form and design, materials and substance, use and function, traditions and techniques, location and setting)”.

The design proposal, which include a scientific survey and a restoration project, aim at the most accurate conservation of the complexes prolonging the life and integrity of architectural character, built form, constituent material, original landscape.

In the project, different interventions such as preservation, rehabilitation and restoration have distinguished.

Preservation was initiated by the owner thus it was also one of the main tasks of the owner which is the Palace administration (stated by the Palace administration official’s on the interview with the author of this research) and the starting point

of every development policy, aiming at raising public awareness and enjoyment of the built heritage.

During the project to overcome the economic difficulties experienced by many central government and local administration for the enhancement of cultural heritage, it requires the generous support of private organizations, institutions and individuals. The media impact of this support was high on the majority of the citizens.

The project also provides an opportunity to narrow the widening gap between training and profession in which craftsmanship and operational practice is more important than theory. It is also important to stress the increasing need for the cooperation between different specialists (geologist, technicians, chemists, engineers, historians, architects, surveyors, craftsmen and restorers of wood, stone, etc.)

The design proposal also includes the guide line for the future life of the historic compound, in the belief that the architectural ensembles of the past request a contemporary role in order to fulfill new function that respect the original design and at the same time guarantee its survival to the advantage of future generations.

Opening the compound to the public, transforming the compound into the active focus of the cultural, political and touristic life of the city and showing in its newly restored interiors the lavish collections of imperial memorabilia now hidden into archives and warehouses will provide the noblest future for the magnificent architectural ensembles.

3.3.1.3. Lesson taken from the conservation of Menelik II Palace of Addis Ababa project

After review of the conservation project of Menelik II Palace of Addis Ababa, the following points are driven by the researcher as lesson which can be implemented in the case of Holeta Palace under the study.


- The driven value of the heritage,
- The process of conservation approach and the involvement of professionals,
- The identification of interventions,

- The involvement of different professionals,
- Knowledge transfer and practice opportunity,
- Owner engagement on the conservation of heritage
- Raising public awareness and enjoyment of the built heritage
- Participation and support of private organizations, institutions and individuals.
- The positive impact of media
- Concern of design proposal on the future life of heritage
- Selection of new function

3.3.2. Other examples on adaptive reuse of historic heritage building

As the Menelik II Palace in Addis Ababa has studied as a case on the above there are lots of cases that can be mentioned as practical examples in adaptive reuse project. Whereas the following two examples are selected from national cases which registered as historic heritage buildings in Addis Ababa, constructed in different period. The buildings are adapted in different function than the original use.

The cases are selected by considering the age of the building in which the Palace under consideration is in between the two building and they were puts in various functions in the history of time. Yet, the cases shows that how adaptive reuse conserve and valorize the historic buildings.

SELECTED ADAPTIVE REUSE EXAMPLES (National Case)	
General Information	Photo of the building
<p>Name: Ras Biru residence</p> <p>Location: Addis Ababa, Ethiopia</p> <p>Date of construction: around 1890's</p> <p>Date of renovation: 2012/13</p> <p>Original function: Ammunition store</p> <p>New function: Museum</p>	


<p>Name: Lij Eyasu adarash</p> <p>Location: Addis Ababa, Ethiopia</p> <p>Date of construction: 1910's</p> <p>Date of renovation: 2005</p> <p>Original function: Residence for crown prince</p> <p>New function: Cultural center</p>	
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Table 3.1 SELECTED ADAPTIVE REUSE EXAMPLES (local Case)

3.4. Section four

3.4.1. Development of appropriate model for adaptive reuse of historic Palace building

A holistic approach of model of adaptive reuse has developed that can be applied to any kind of heritage building, which is abandoned, inappropriately functioned or disused (Mısırlısoy, Damla., & Gunce, Kagan.,, 2016). In this study, the model has been used with contextualizing to the local matters.

Despite the fact that, the model has been developed based on the examples in the Europe, the proposed model can be adapted and used to develop adaptive reuse strategies for Menelik II Palace in Holeta in its context by considering the policy and planning issues of the town.

The model is used to propose new strategies for the Palace building. It can also used in order to evaluate the appropriateness of the options of new function proposal, which the adaptive reuse project is not successful, and identify the problems in decision-making. There are five steps that must be taken from the current state of the Palace building until developing new strategies phase.

The model proposes a qualitative approach; however, final decision depends on variables such as the decision makers, actors in the adaptive reuse project, context of the Palace building, policy issues of the related context, etc. The final decision can be interpreted and then decided considering these variables.

ADAPTIVE REUSE STRATEGIES FOR HERITAGE BUILDING

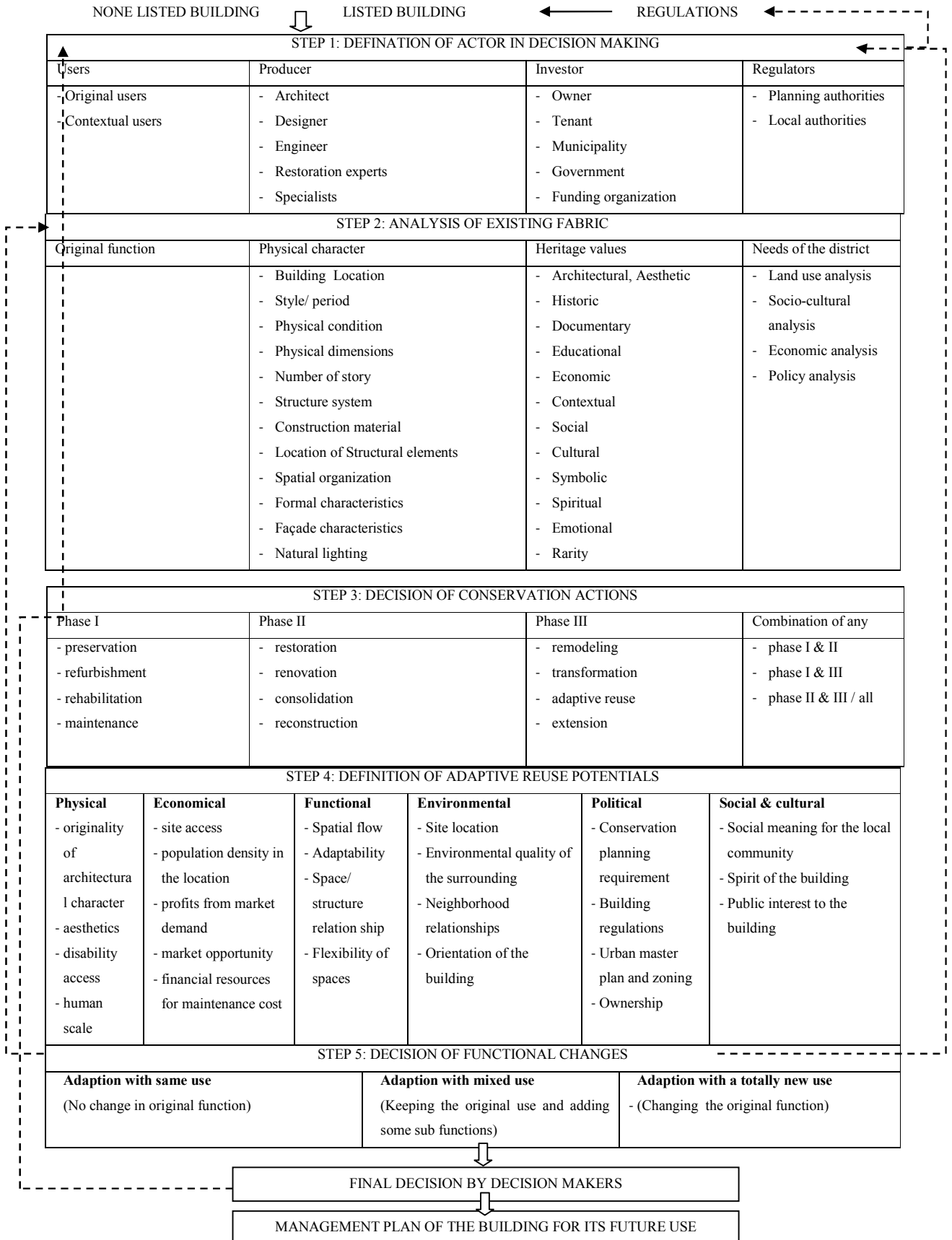


Table 3.2 A model for developing adaptive reuse strategies for heritage buildings (adapted: ADAPTIVE REUSE STRATEGIES FOR HERITAGE BUILDINGS)

4. Chapter IV – The Historic Palace of Menelik II in Holeta Genet Town

4.1. Background to the study area

4.1.1. A short history of Holeta Genete town

Holeta, located west of Addis Ababa, was founded about a decade after Addis Ababa. Genete literally mean paradise or Holeta, so called an account of its proximity to a river of that name, some kilometers east of Addis Alem was established immediately after Menelik's decision to abandon that settlement. The foundation of Holeta Genet was directly related to the development at Addis Alem, for it was while the emperor workers were building the church at Addis Alem in 1902 that the emperor first arrived at Holeta. Not long after wards, having decided to leave Addis Alem , wishing to improve the supply of wood and other articles at Addis Ababa.

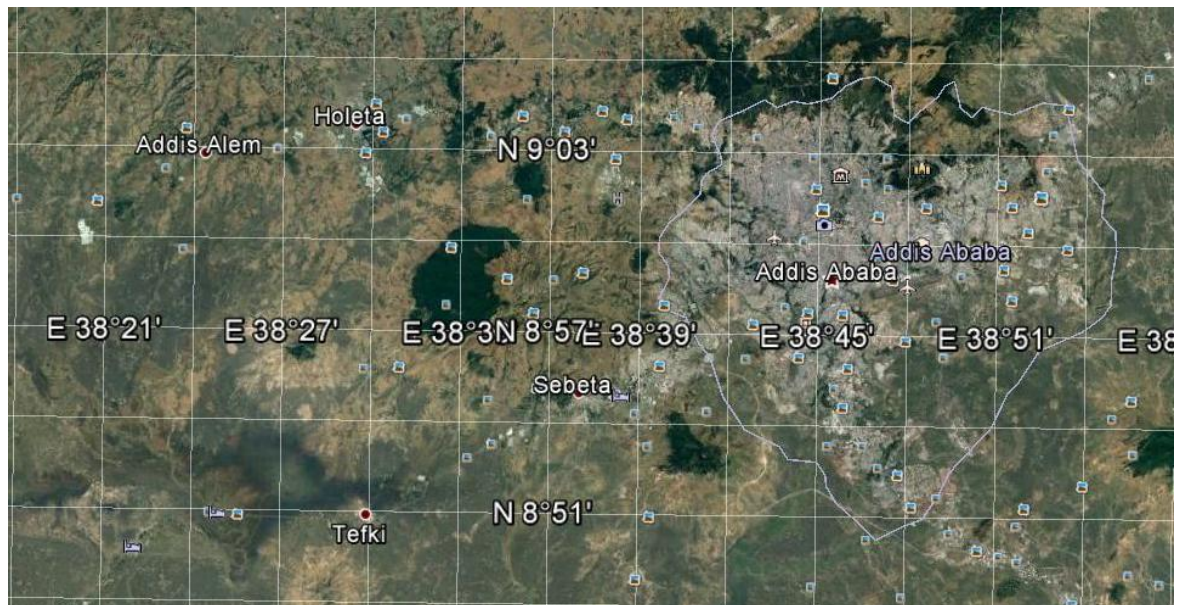


Figure 4.1 - Aerial view of Addis Ababa and Holeta town (Google Earth, 2017)

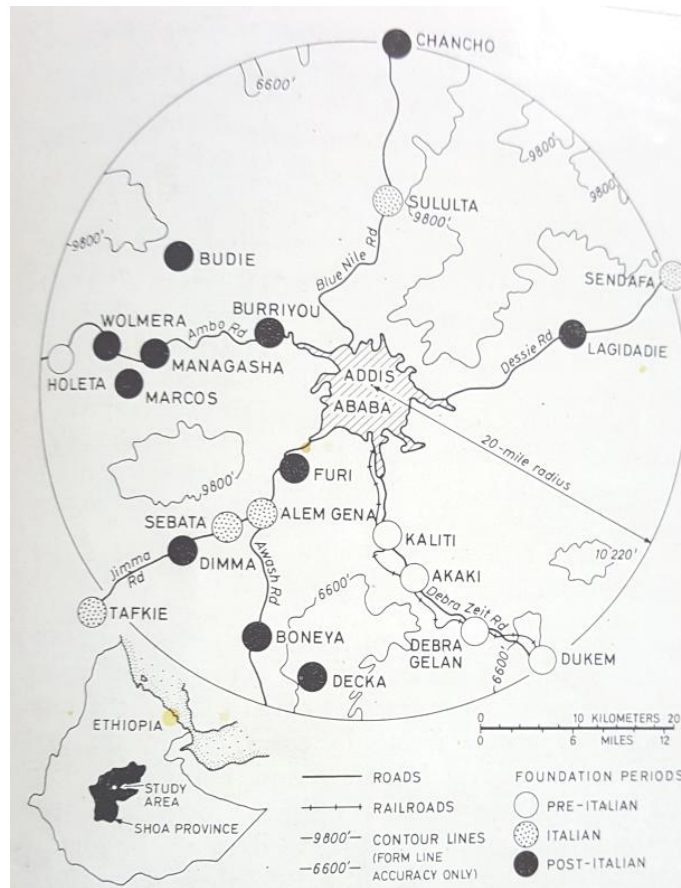


Figure 4.2- map of town in relation to Addis Ababa (source: Town of Ethiopia, p. 45)

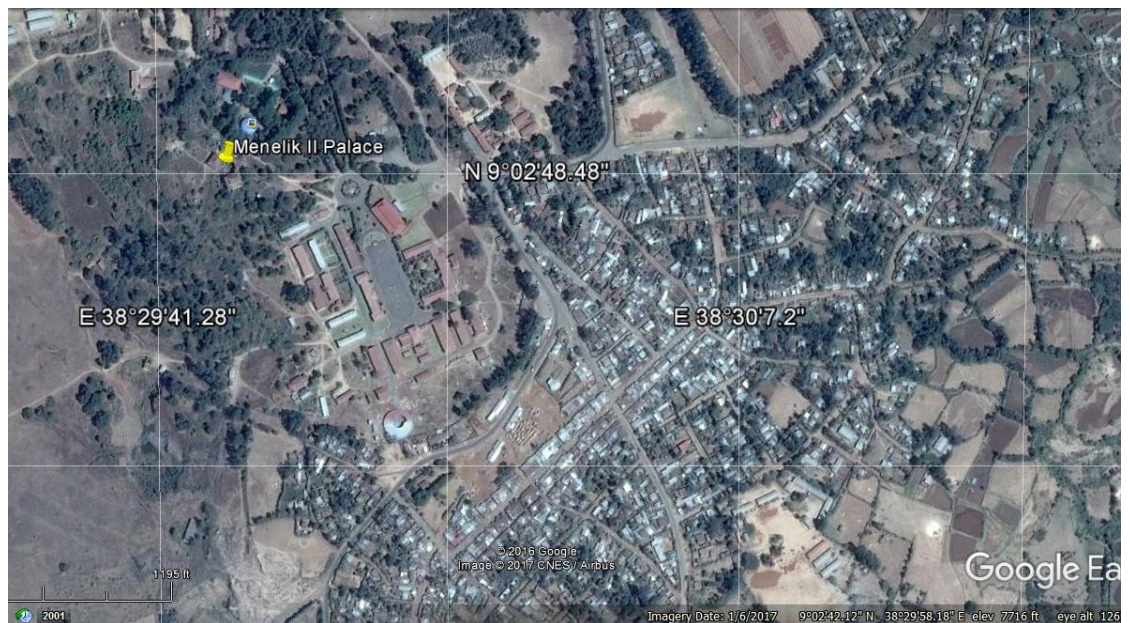


Figure 4.3 - aerial view of the early settlement of Holeta town (Google Earth, 2017)

Shortly after 1902, Menelik build a summer Palace at Holeta because the general vicinity was thought to have more pleasant summer weather than Addis Ababa. During the Menelik's reign Holeta grew to a settlement of perhaps hundred houses. The base of the support of early Holeta was the Palace. Menelik had a permanent staff of freemen and slaves who performed the varying needs of the emperor while he was in residence. There was a clear division of labor, and reportedly there were 44 occupational groups, some of which were carpenters, fence makers, guards, and blacksmiths. These people were reimburses by being given parcels of land (on which they grew crops), annual salary, and periodic feasts in the Palace. (Pankhurst 1985)



Figure 4.4- a waver making a cotton cloth (source: Town of Ethiopia, p. 48)

Holeta's population early in the century was estimated by the Rosen at from 12,000 to 15,000. Though the original population of the area was Oromo, Amhara, and other ethnic groups and others mainly employers of the emperor. (Ronald J. 1968)

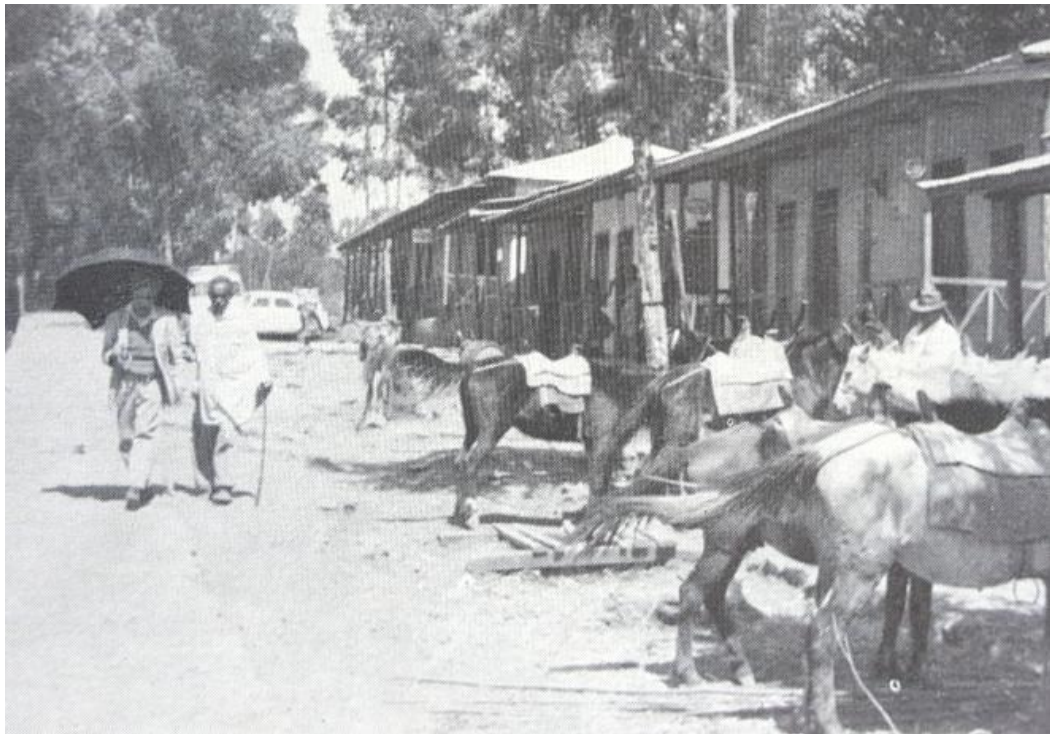


Figure 4.5- a side street in Holeta (source: Town of Ethiopia, p.48)

The division of labor in Holeta was manifested in the town's territorial divisions. The emperor allotted each occupational group an area known as "sefer" such as carpenter's sefer or the guard's sefer. Very soon after Holeta was established, because of the considerable population Holeta was unusual in having a daily market and then Saturday market was founded. The market met both the needs of the town and the surrounding peasants, and it becomes one of the important markets of the region (in the provenience of Shoa). Merchants who traded in the market were attracted to the town and in many cases established residences. Nevertheless, until approximately 1930 the town depends almost exclusively on the Palace. (Ronald J. 1968)



Figure 4.6 - market scene (source: Town of Ethiopia, p.48)

The town settlement declines after Menelik's death in 1913, however, the town gained some new prominence in 1935 when Emperor Haile Sellase selected it as the site for a military academy which was established with the help of Swedish officers, in the Menelik's old Palace at the beginning of the year, the eve of the Italian invasion.

4.1.2. Holeta town at the present time

4.1.2.1. Location

The location of the project is situated in the town of Holeta, a town found 45 km to the west of Addis Ababa in Oromia special zones surrounding Finfinne in Oromia Regional State. It has a latitude and longitude of 9°04'N 38°30'E and an altitude of 2,450 m A.S.L. The focus of the study, Holeta Genet Palace is found in the compound of Holeta Military Academy, the first modern military academy in Ethiopia. (Ronald J. 1968)

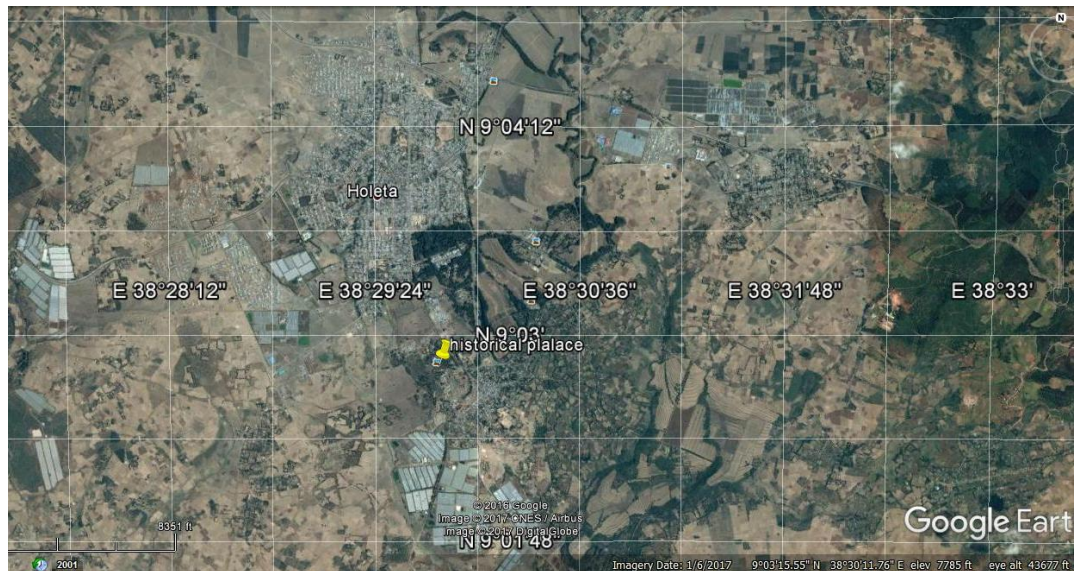


Figure 4.7- aerial view of Holeta town (Google Earth, 2017)

4.1.2.2. Administration

As it is described by one of the expert in the town administration office during the interview, the town has been administered under the town municipality at the year of 1956 with a sub division area named kebele 01, kebele 02 and kebele 03. On the reform of the Oromia region in 2004, by adding 5 more kebeles' the town grew to 8 kebeles' sub division.

4.1.3. History of the building

Holeta Genet Palace was built around 1902 by Emperor Menelik II and was used as a kind of retreat country house for the Emperor and the Empress Taytu. The location was selected by the emperor after he had abandoned the plan to relocate the capital from Addis Ababa to Addis Alem. Fascinated by the beautiful landscape and the Holeta River that watered the locality, Emperor Menelik decided to build his Palace on elevated site. It was around his Palace that the town Holeta named after the river developed (Pankhurst 1968).

Because of the town of Holeta and his residence Palace appealed very much to the Emperor whom he called genet (paradise), hence the name Holeta Genet Palace, he frequented his stay there even though his main residence was in Addis Ababa. Holeta Genet Palace was thus nicknamed by the then German visitors as “Postdam of Ethiopia” (Getahun 1997).

After the death of Emperor Menelik, the use of the Palace declined, but it was made as headquarter of the first modern military academy which was established in 1935 and was called Holeta Military Academy. The Military Academy was closed after the Italian invasion in 1936, to be again reopened in 1960 (Pankhurst 1968). From that period onward until it was handed over to the Debre Genet Kidane Meheret Church in 2013, it was also used as headquarter or administration office building by the Ministry of Defence. Nowadays for since almost three years back the building is abandoned and no one is using it.

This historic site has been identified by ARCCCH as having important historical values to the region and that of nation with its exceptional masonry work and elaborate decoration adorning the Palace.

4.1.4. Description of the Holeta Genete Palace

4.1.4.1. Architectural context of the house

Unlike the ordinary buildings in which common people dwelt, the Holeta Genet Palace is one of the finest examples of Menelik's era architectural treasures that elaborate both in terms of material use and method of construction.

In this study the researcher could not find any records that provide information about the identity of the builders and architects of the Palace. However, some available documents mentioned that Addis Alem Mariam church that found in Addis Alem town, to the west of Holeta, might have been built by Ethiopians under the supervision of Armenian and Indian experts. Though this assumption needs further research and detail analysis, it is possible to argue that the Holeta Genet palace was constructed by similar fashion and builders as it is a contemporary building of Addis Alem Mariam church.

... the first Armenians in Ethiopia, Dikran Ebeyan, was invited by emperor Yohannes IV specifically for the task of making a golden crown. He left Ethiopia after he completed his work, but Menelik requested that he and his family return to Addis. According to Bahru Zewde the most famous Armenian buildings contractor was Minas kherbekian, who came to Ethiopia in 1881 and designed a great number of churches, roads, bridge and houses from 1895. The use of cut stones, round arches and pyramidal domes are some of

the Armenians to the architecture of the country at that time. (Fasil Giorgis and Denis Gerard 2007)

The Palace consists of three blocks/ units with one story building connected with each other by bridge and a few meters to the west. For the purpose of this research and document analysis, the three different blocks named as Block A, B and C.

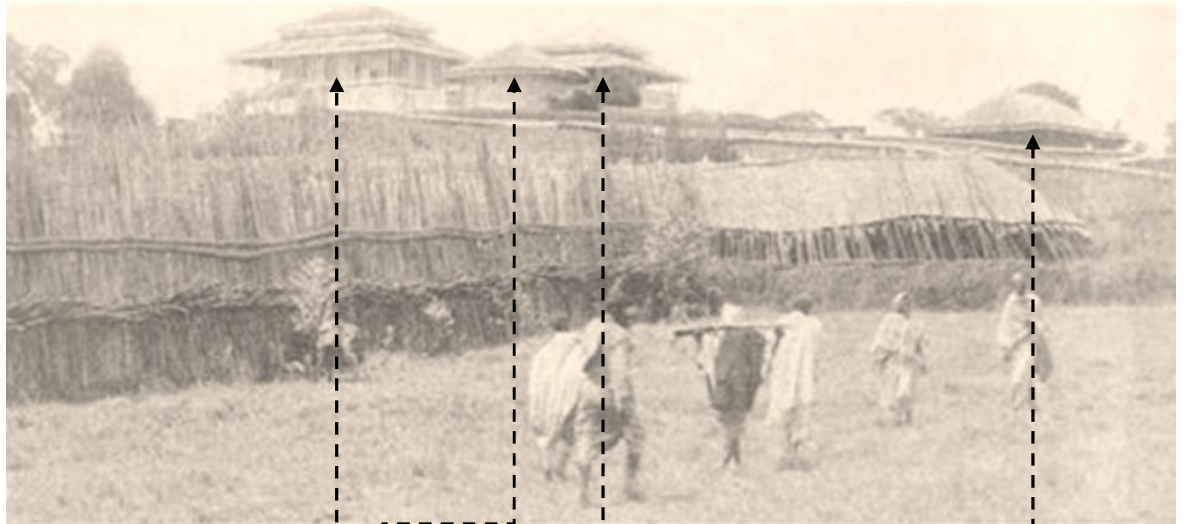


Figure 4.8- view towards the compound of Holeta Genet Palace around 1910 (Source:- Encyclopedia Aethiopia, Vol. III)

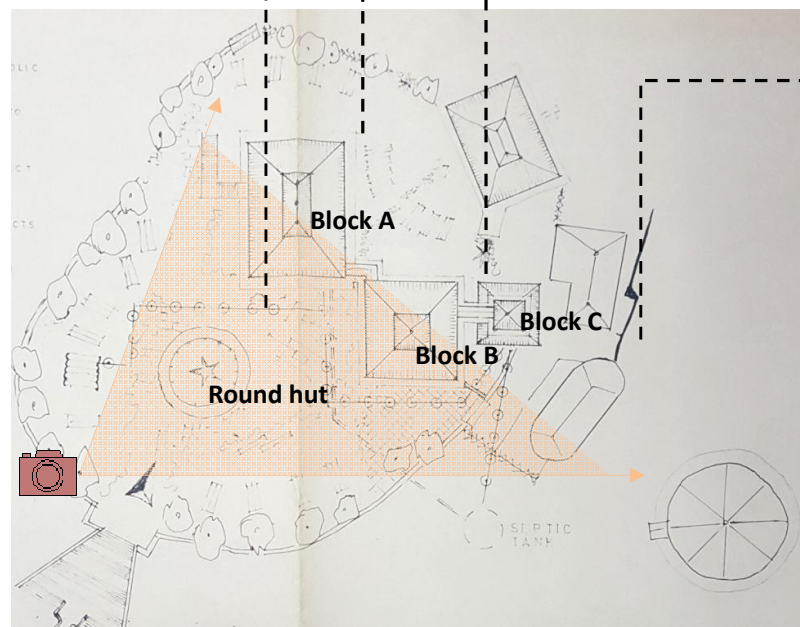


Figure 4.9 –site plan drawing of the Palace compound with photo angle estimation by the author for fig. 4.8 (Drawn by –Fisseha Kebede, Measured by- Tamerat Simegn and Ashagere Gebere, checked by Tamerat s., approved by- Solomon wk., September 1988)

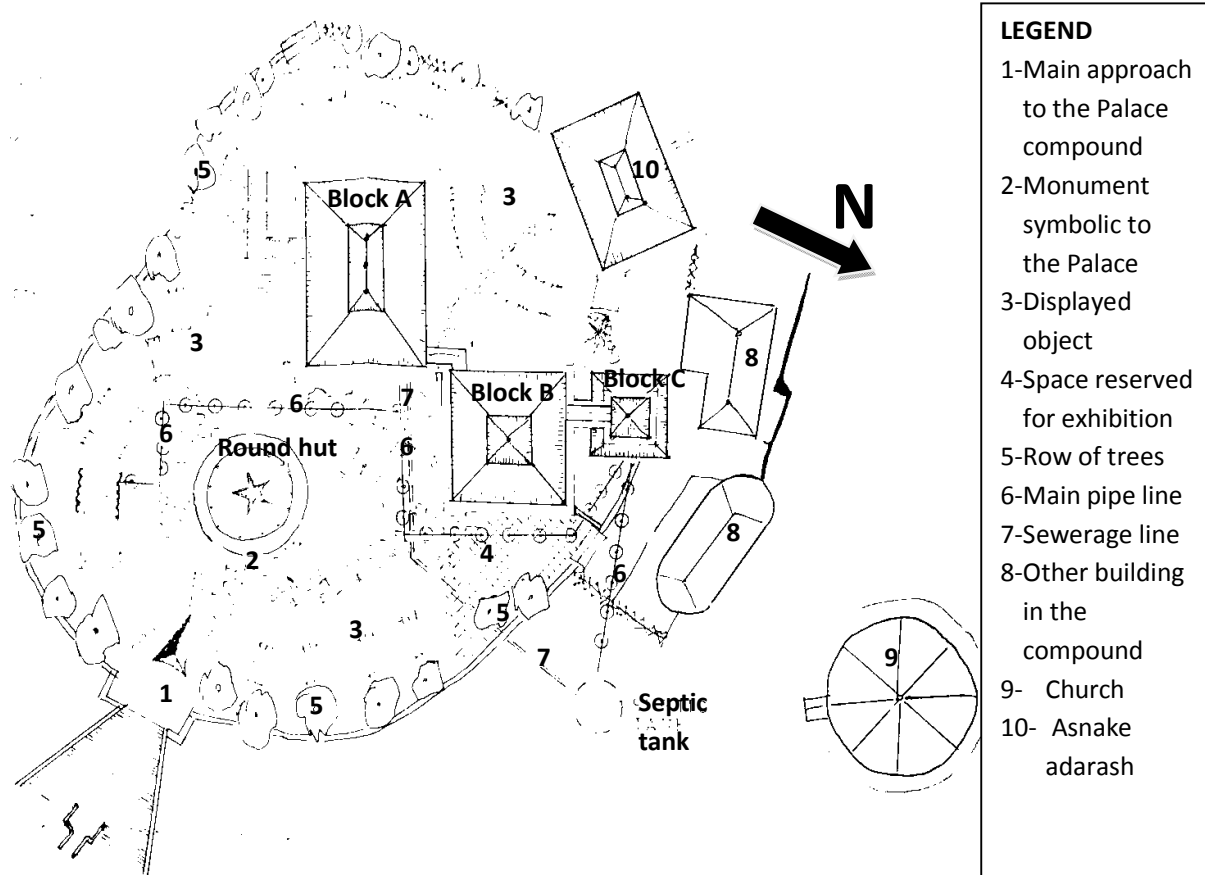


Figure 4.10 – site plan drawing of the Palace compound (Drawn by –Fisseha Kebede, Measured by- Tamerat Simegn and Ashagere Gebere, checked by Tamerat s. , approved by- Solomon wk., September 1988)

In terms of internal and external decoration, the three buildings that make up the Palace are adorned differently. The building that is the southernmost part of the Palace is the largest in term of size.

The interior of the ground floor consist of big rectangular in between two smaller rooms and a verandah in southern part of the building. The interior of the upper floor is also made up of large room with beautifully decorated wall painting as well a smaller room whose walls are also decorated and a corridor surrounding encircling the large room. There is an external staircase connecting the ground floor with the upper floor.

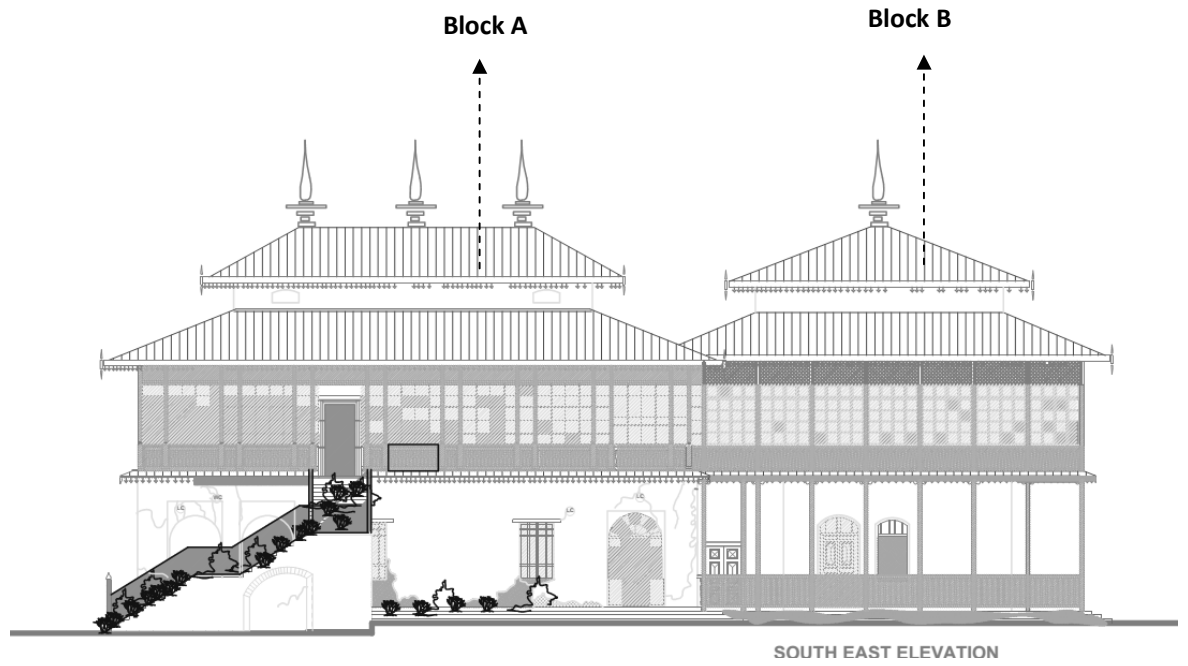


Figure 4.11– South East elevation drawing of the Palace building (Drawn by – the author August 2017)

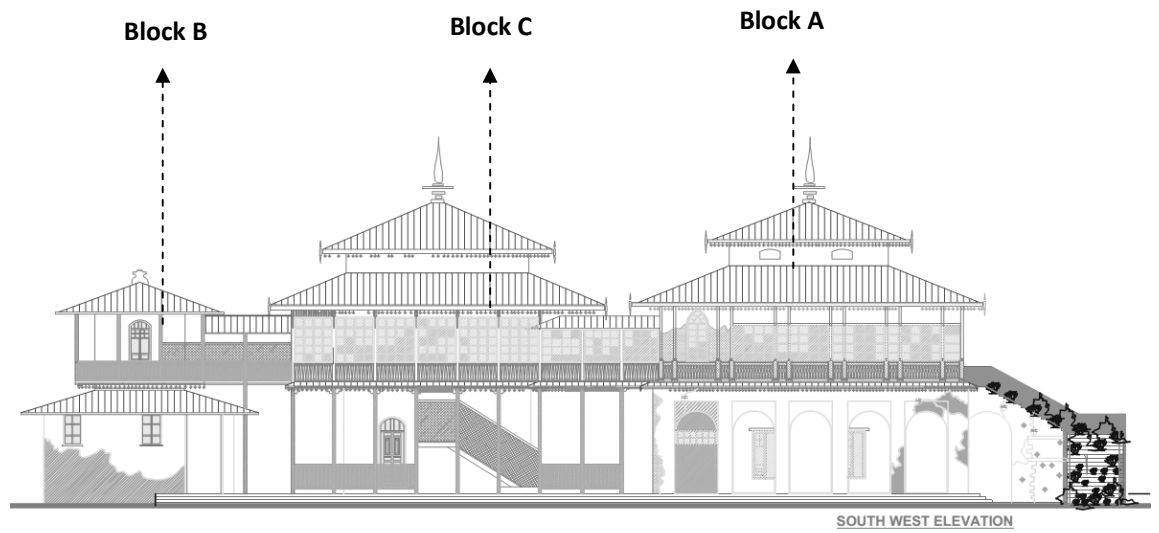


Figure 4.12 – South West elevation drawing of the Palace building (Drawn by –Rahel lemma August 2017)

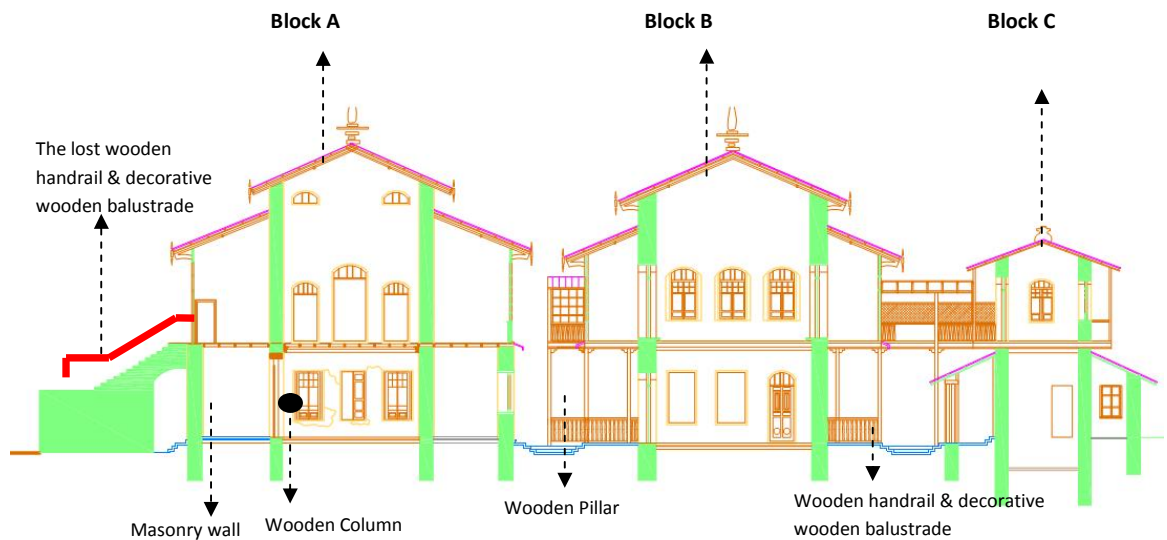


Figure 4.13 – section drawing of the Palace building (Drawn by –Rahel lemma August 2017)

In addition to the Palace building there are other buildings standing in the compound which are witness and best model of architecture of that time, some of the buildings are described below.

4.1.4.2. *The round hut (Genet)*

It is assumed that this particular building is the first building of Menelik II at Holeta. According to oral information the name genet / paradise was also given to this royal hut. It was full of decoration and wall painting. This royal hut endured for about three decades and lost as a result of fire hazard during the Italian occupation. At the present time the ground floor of the royal hut is raised and kept as a symbolic monument to the compound. (Site observation, drawing and picture correspondence)

4.1.4.3. *Asnake Adarash*

The rectangular shaped by hall located some 300 meters to the south west side of Genet and the Palace itself. At the present time the building is occupied by the military academy staffs as a residence, in which three household families live in it. During the Emperor time while the academy established lots of building were constructed and one of the buildings named as asnake adarash which is serving as a meeting hall for the academy today.

4.1.5. Blocks of the Palace building

4.1.5.1. Block A

It is the largest with two story level building in the site. The ground floor has one big rectangular room surrounded by the other rooms and verandah. The original thatched covered roof was replaced by corrugated iron sheet on the original structure. The wall of this building is made of masonry structure for all ground floor walls and the central wall of the upper floor. Highly decorated timber- framed glass wall was used to cover the external wall of the upper floor. The beautiful masonry made external stair case is connecting the two floors of this building. The original mud plastering of the masonry wall was removed and replaced by a very thick cement plastering probably during the Italian occupation. This block is connected with block B with bridge.



Figure 4.14 – masonry stair case to Block A upper floor , view from North East side of the Palace



Figure 4.15 – masonry stair case to Block A upper floor, view from the corridor of block A at South West side.



Figure 4.16 – timber framed glass wall of the upper floor of block A and connecting bridge to block B

4.1.5.2. Block B

It is a two story building. A square shaped masonry central wall which is running from the ground to upper floor is surrounded by a timber glass external wall on the upper floor and verandah on the ground floor. Like block A the original thatch roof cover was changed by corrugated iron sheet roofing.

The original structure of the central square shaped room is covered with a painted timber ceiling. The original structure of the roof, covering the timber framed glass walled rooms is clearly seen from its under part. The timber stair case located on the Northern side of this block provides vertical communication within the building.



Figure 4.17- Block A and B with connecting bridge

4.1.5.3. Block C

Unlike the other two blocks, this block does not have a stair case that provides a vertical connection. It maintained its original mud plastering. The surrounding verandah is protected by wooden balustrade with wood pillars in which most of the balustrades are lost.



Figure 4.18- Block C North East side view



Figure 4.19- Block C North West side view

4.1.6. Functional analysis on blocks of the Palace building

The planning and construction claimed the best skill in the realm to guaranty durability and beauty. In this respect the three blocks are designed and fitted to the site to serve the desired function. The location of this blocks in relation to the church and other buildings in the site, the sizes and the relation between blocks, the horizontal and vertical connection within the blocks, together with the information from the local community and historians; the following assumption is generated in order to describe the original function of the three blocks as follows:-

Block A – used as a place where the emperor and his wife had discussion entertainment and reception with the higher officials.

Block B – used as a place where the emperor and his family dwell and entertain.

Block C – the ground floor used as a prison and the upper floor part for prayer house.

4.1.7. Construction method and materials

The Holeta Genet Palace's roof rested on a wooded bed used lavishly and firmly thatched of a good quality grass but is now replaced by corrugated iron sheet. Below it we find the ceiling made of small bundle of split bamboos which give both strength and beauty as they are decorated to the roof section.

The masonry work that build the walls follow the traditional techniques of building construction in Ethiopia consisting of different size of stones and blend of grass and *chiqa* (earth) used as mortar and the plastering using the mixture of sand and lime (Getahun 1997). The consistency of the masonry wall is kept for all blocks of the Palace, yet the plastering is different for block C which is *chiqa*.

The walls of the southernmost part of the Palace, block A, at the ground level and the interior part of the upper floor of the building are made of masonry structure while the external wall of the upper floor is covered by highly ornamented wood walls with design of posts, balustrades and window frames.

Block B is smaller building than block A with two story connected with the latter with a bridge to block A and C. The walls at the ground level and the interior part of the upper floor of the building are made of masonry structure while the external wall of the upper floor is covered by timber framed square windows at the top and wood wall in the design of balustrades at the bottom. The ground floor is surrounded in all direction with a large verandah with posts and balustrades. At the verandah, there is a staircase made of timber that takes to the upper floor.

To the north of block B, there is block C which is the smallest and square shaped building with two story. Unlike the other two building all the walls of the building both the ground and the upper floor are made of masonry structure. It is connected to the second building by a bridge and does not have staircase that provide vertical communication within the building. The upper floor have verandah in all its side complete with posts and balustrades.

4.1.8. Structure

Though there is no record whether a static design method was implemented or not, the economical use of the traditional building materials shows that a well developed concept of dimensioning the structural member by proportion was used as the Emperor has developed the experience after the construction of Palaces in Addis Ababa and Addis Alem. Arch and lintel were used on the top of the openings to transfer load. Hipped roof was developed and applied in the architecture of the Palace. Beams and bracings' are not used in this roof formation.

4.1.9. Paintings

The wall paintings are assumed to be painted by the foreign artists and designers during the replacement of the original chiqa /mud plastering with lime.

The technique applied is the color directly executed on the surface of the plastering of the internal and external wall and on the unidentified canvas and wood on the ceiling. They are painted for decorating the rooms and to create different impression. The

painting of canvas on the ceiling and solid wall of block A can be taken as an example.



Figure 4.20 – decorated ceiling of the ground floor of Block A



Figure 4.21 –decoration on the upper floor interior wall of Block A



Figure 4.22 –decoration on the ground floor interior of Block A

4.2. Current condition of the Palace

4.2.1. Interior Wall:

Block A – Ground floor



Figure 4.23 – Block A, ground floor interior wall condition

Block A – First floor



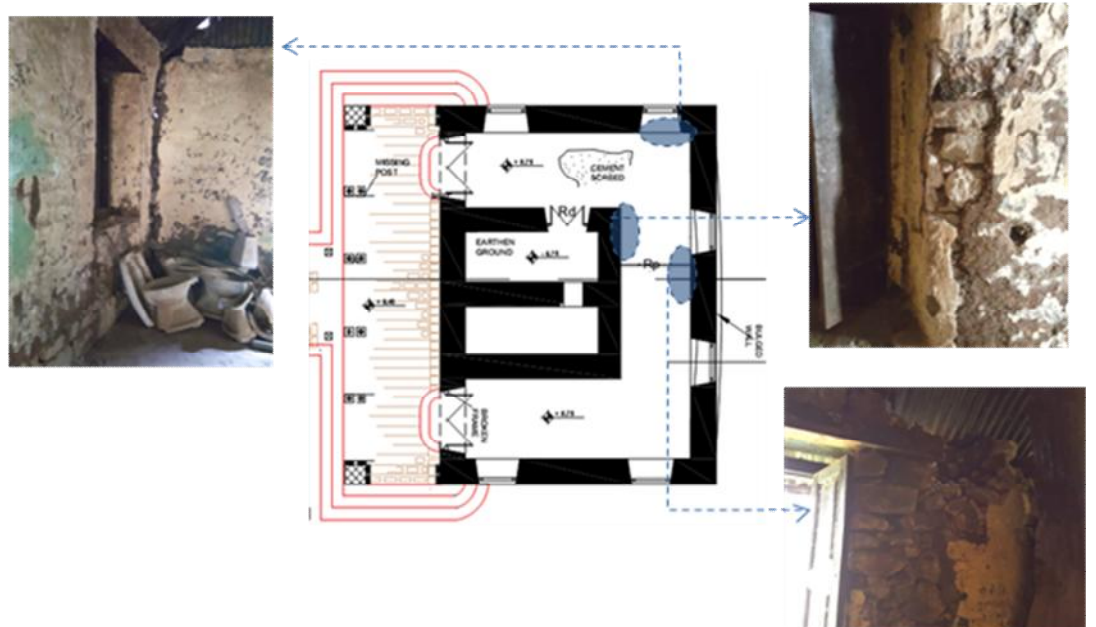
Figure 4.24 –interior wall condition first floor of Block A

Block B – First floor



Figure 4.25 –interior wall condition first floor of Block B

Block C - ground floor



Block C - first floor

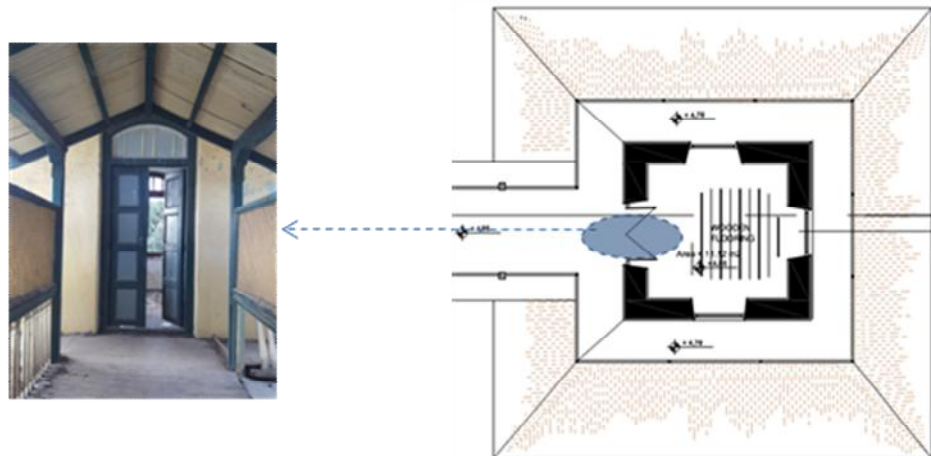


Figure 4.26 –interior wall condition ground & first floor of Block C

4.2.2. Interior Wall:

South east elevation

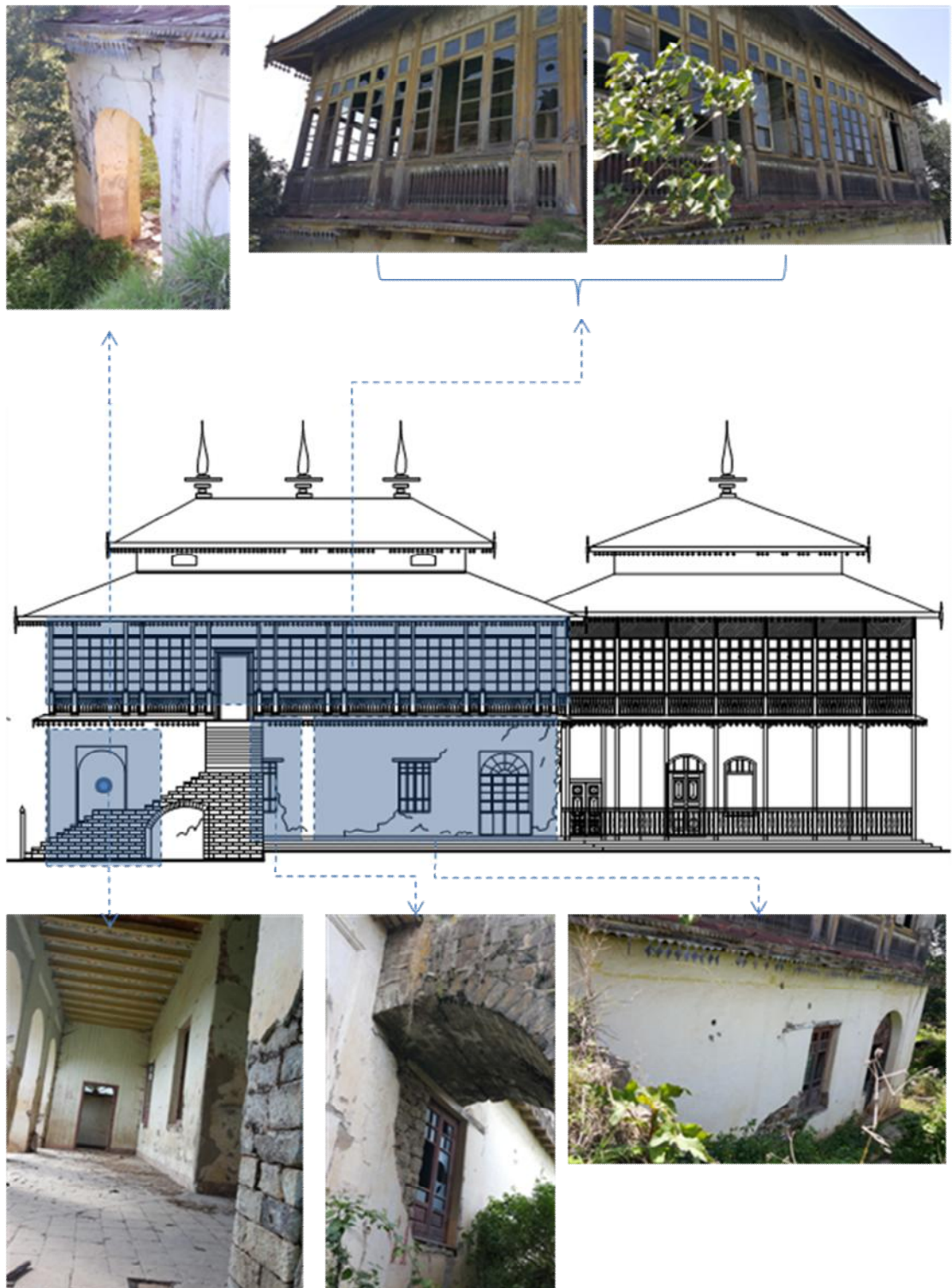


Figure 4.27 –exterior wall condition on south east elevation

South West elevation

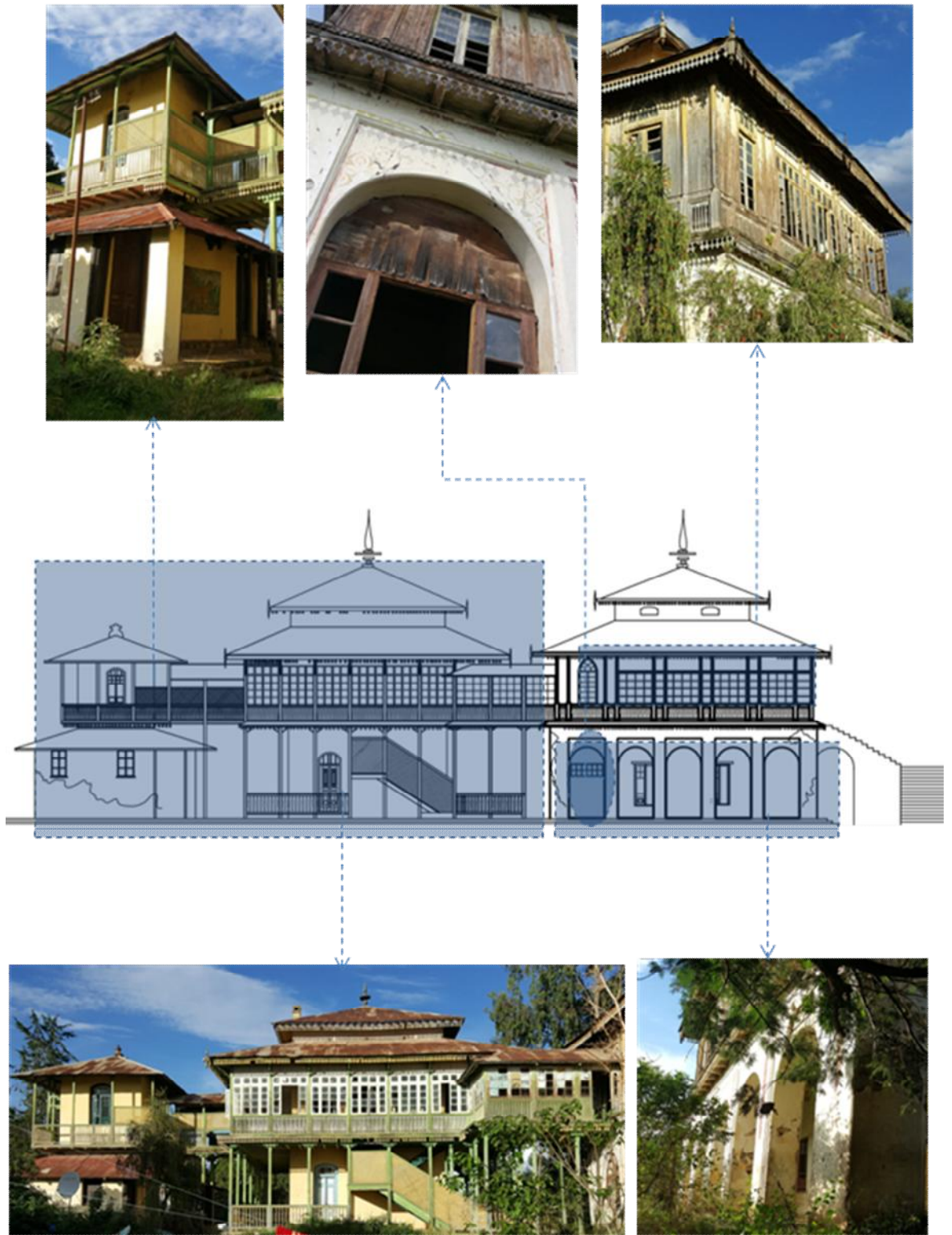


Figure 4.28 –exterior wall condition on south west elevation

North West elevation

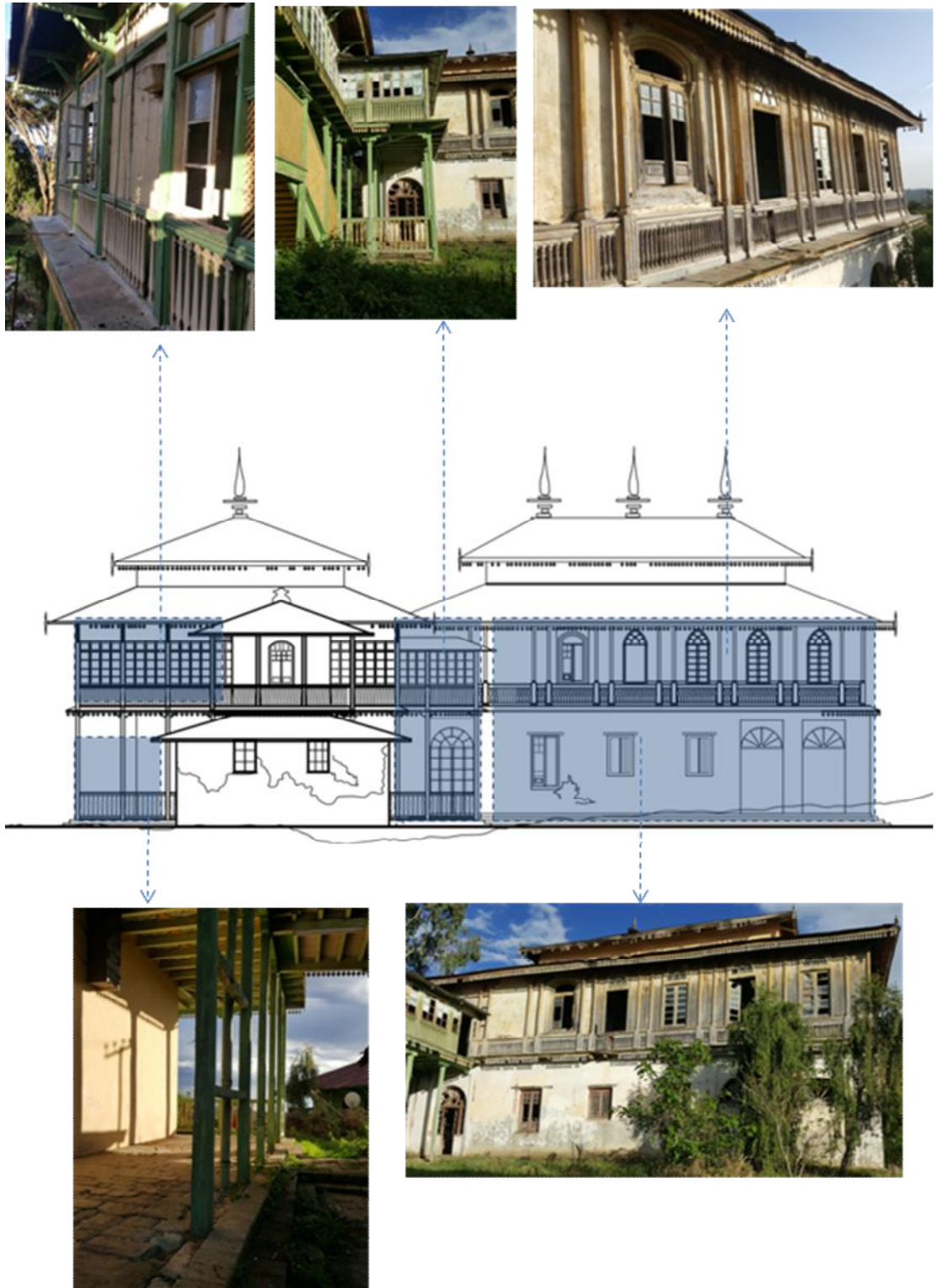


Figure 4.29 –exterior wall condition on North West elevation

North East elevation



Figure 4.30 –exterior wall condition on north east elevation

4.2.3. Roof and drainage system

Roof

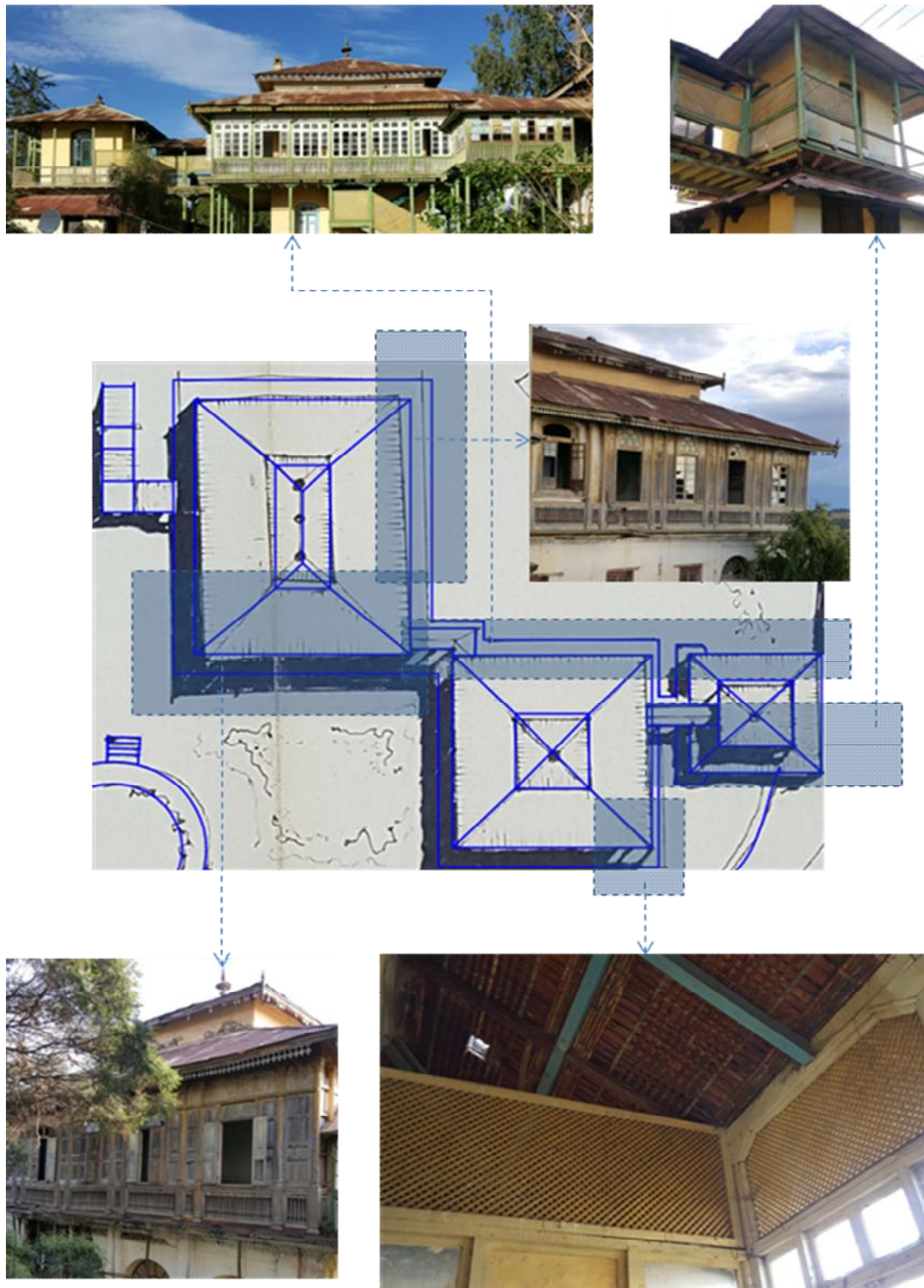


Figure 4.31 –roof and drainage system of the building

Eaves

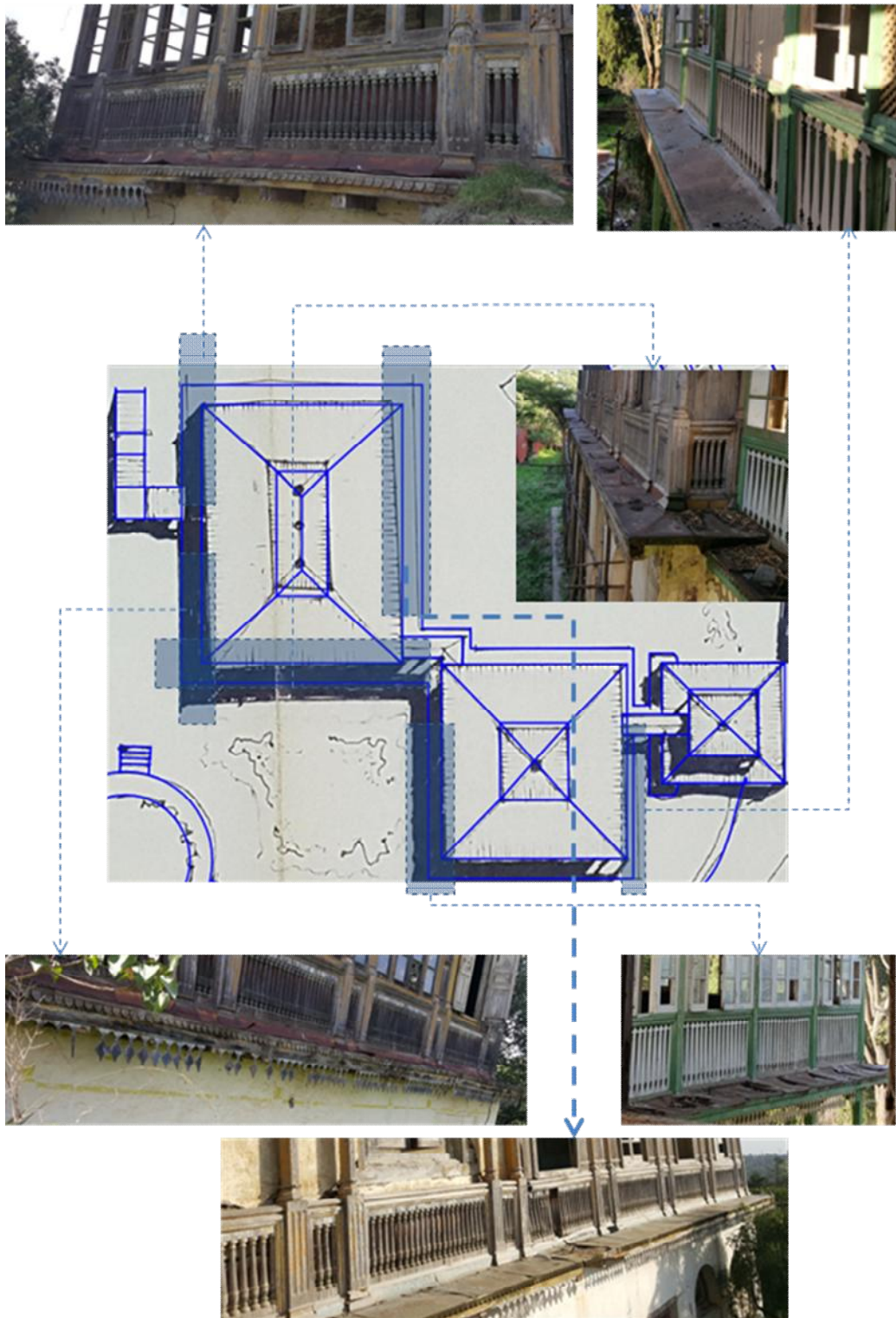


Figure 4.32 –eaves and drainage system of the building

4.2.4. Doors and windows

Ground floor



Figure 4.33 –doors & windows at ground floor level

First floor



Figure 4.34—doors & windows at first floor level

4.2.5. Floor finish

Interior space of the building at ground floor

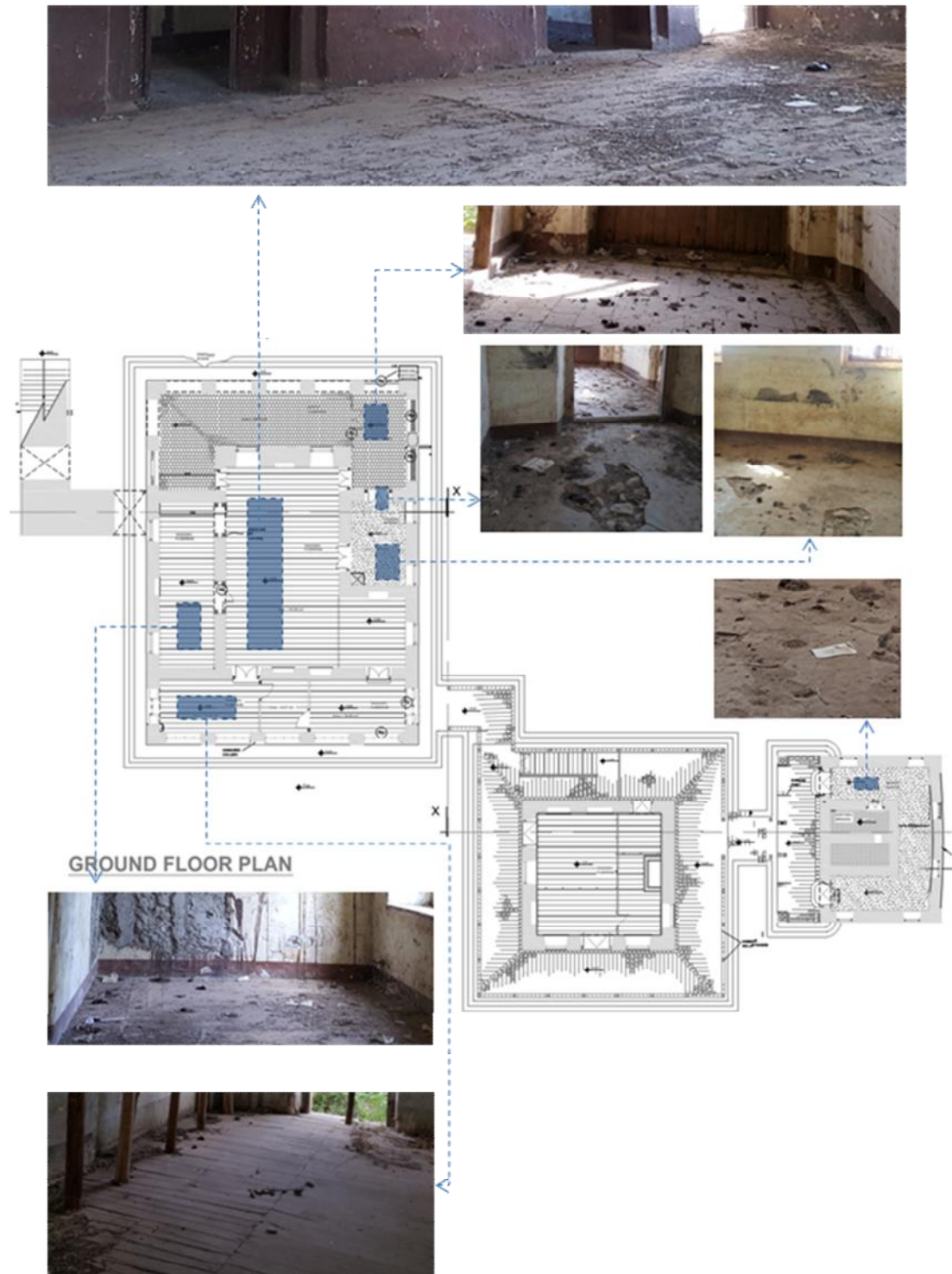


Figure 4.35 –floor finish at ground floor level

Interior space of the building at first floor

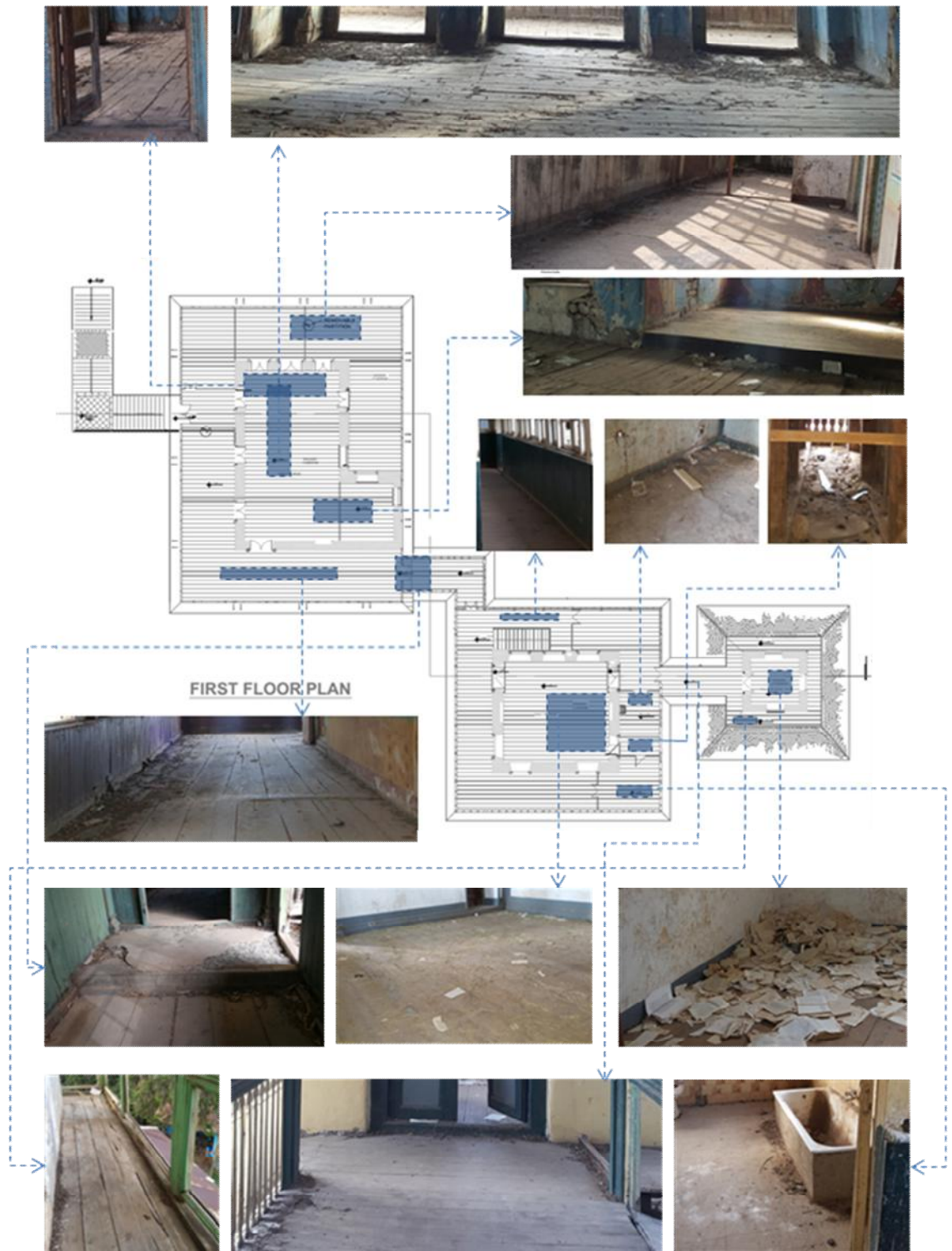


Figure 4.36 –floor finish at first floor level

Exterior space of the building

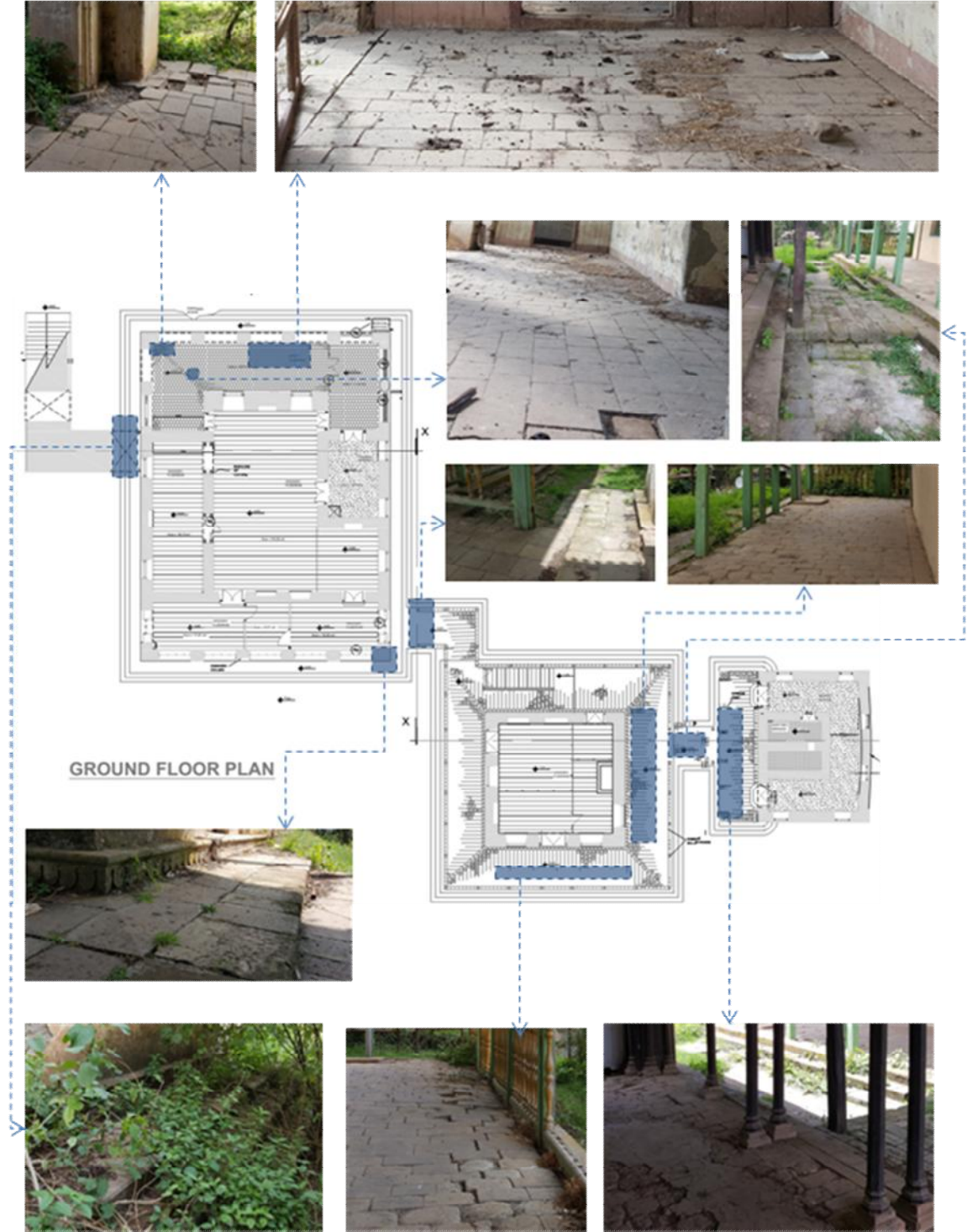


Figure 4.37 –exterior floor finish of the building

4.2.6. Ceiling

At ground floor

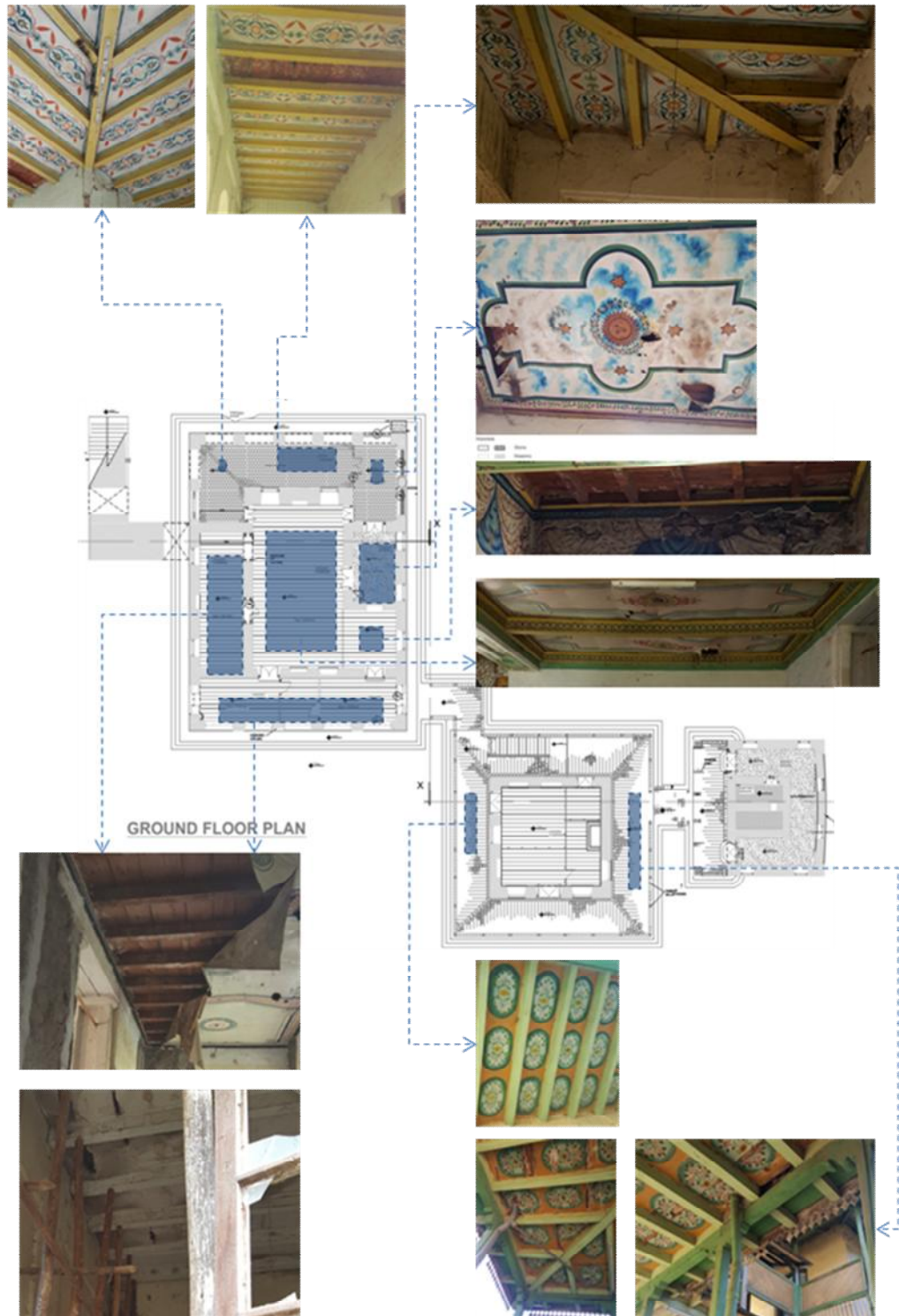


Figure 4.38 –ceiling at ground floor level of the building

4.2.7. Stair and steps

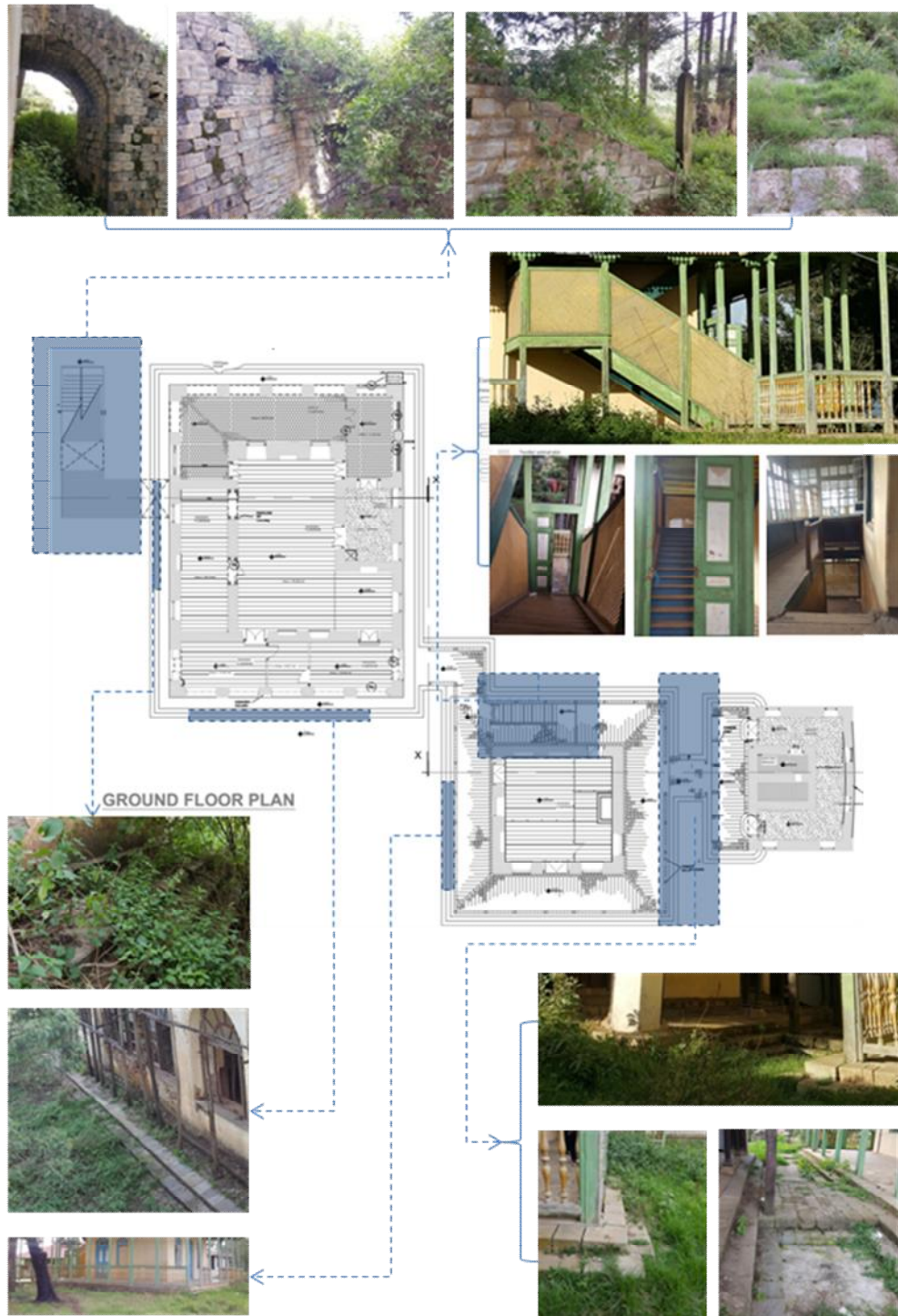


Figure 4.40 – stair and steps of the building

4.2.8. Structure of the building

Columns, beams, posts and balustrades

The entire masonry wall of the building at the ground and first floor react as a vertical structural element which transfer load to the ground. The covered beam at the first floor level is important at the caring of the wooden floor slab of the upper level.

At the ground and upper level , the wooden post are also important structural element to support the stair case, the upper level verandah and the roof together with its truss system.

Further study is needed to understand the foundation of the building.



Wooden post and balustrades at block B



Masonry wall at ground level and wooden post at the upper level at block A



Masonry wall Wooden post and balustrades at block B and C



Wooden post as roof support at block A



Masonry wall at ground level and wooden post at the upper level at block A



Column at block A



Column and Wooden post at block C

Figure 4.41 – structures of the building

4.2.9. Paint

Wall and ceiling paint



Figure 4.42 – wall and ceiling paint

4.3. Model analysis of Menelik II Palace of Holeta

STEP 1- Definition of the actors: The first step is concerned with the actors in decision-making process. The actors can be defined as the stakeholders that will contribute in decision-making process and affect the decision for the new use of the building. These actors have been grouped in four categories as: users, producers, investors and regulators. In decision-making process, the actors of this heritage are defined. After the identification of the actors', interviews have done with them.

User can be grouped into two as original users and contextual users. The user contribution in decision- making is very important, however it is mostly ignored in adaptive reuse projects. Originals users are the users of the initial function of the building. Contextual users are the current stakeholders of the district and they are also the possible users of the building. An open ended interview has done with users and their opinions and ideas about future use of the related building have been asked.

Producers are the actors in preparation and application of the conservation project which includes architect, designer, engineer, restoration expert and specialist. Mostly investors hire the producers after decision of the new use; however their ideas should be asked since they are the experts of the issue.

Investor can be a private owner, company, tenant or government, municipality and funding organizations.

Regulators include planning and local authorities who decide the regulations on the conservation and restoration projects also give approval before the application and control the projects and their contribution is important in decision-making process in order to prevent unnecessary interventions to the buildings.

STEP 2- Analysis of existing fabric: The second step is analysis of existing building stock, which includes identification of original use of the architectural heritage, its physical characteristics, heritage value and needs of the district.

The identification of original use is important in terms of making an appropriate decision. The functional classification of the heritage buildings has been categorized

in 11 headings as: residential, industrial, commercial, religious, military, agricultural, governmental, cultural, educational, health and office buildings.

Analysis of physical characteristics of architectural heritage is crucial in order to find the most appropriate new use for the heritage building. It includes location, physical dimension, structure system and location of structural elements, construction techniques and materials, number of story, style/period, physical condition, spatial organization, formal/ façade characteristics and natural lighting. All these factors should be analyzed in depth before decision of new use.

Identification of heritage values is another important factor in decision-making, which directly affect decision of new function.

Lastly, needs of the town is defined in order to define the most appropriate function for the heritage building. The heritage buildings should not be accepted as a single object and it should be evaluated in framework of the whole town. This is connected to the concept of the cultural heritage landscape and the interconnectedness of different components – natural and cultural.

STEP 3- Deciding conservation actions: In the third step, necessary interventions that will be applied to the heritage buildings have decided. This action has been defined as the third step since it should be decided just after the analysis of existing fabric since it is a factor that will affect decisions in further steps. The observation of the existing physical condition of the building will directly affect the decision of the new use.

The Palace is neglected and can be reused by just some maintenance and rehabilitation works. The building wall is partly demolished that it needs consolidation works. All these considerations have a direct affect on the decision of the new use so it has observed and necessary decision regarding with the intervention to the building has taken from the beginning of the process.

STEP 4- Definition of adaptive reuse potentials: The fourth step is identification of adaptive reuse potentials of the heritage buildings. Adaptive reuse potential means to realize benefits when adaptive reuse is implemented. Realization of potentials of the building is important in terms of developing suitable strategies for the

building for a sustainable adaptive reuse. These potentials can be defined as: physical, economic, functional, environmental, political, social and cultural potentials

STEP 5- Decision of possible new function: After the evaluation of all steps in decision-making, decisions on the new use strategies has done. There are 3 options in new use alternatives for an adaptive reuse project.

1. First option is to use the building with the original function with some necessary adaptation to fit the building for today's requirements. This approach is chosen when the all heritage values of the building are very important and changing the function may harm the originality of the heritage building.
2. The second approach is adaption of the building with mixed use. In this approach, the original function of the building is kept as it is and it is supported by additional functions for the sustainability of the heritage building. And
3. The third approach is the adaptation of the building with totally new use. However, this strategy cannot be applied for all kind of heritage buildings since it depend on the values of the heritage building. If the building is a listed building, certain authorities will control its interventions.
4. After the final decision of the new use, as the final step, a management plan has recommended by the expert. The preserved building shall make its profits for the maintenance and rehabilitation works of the structures in the future. The main aim is preserving the values and originality of the building and its context; however the economic sustainability of the building is important for the future of the built heritage.

STEP 1: DEFINATION OF ACTOR IN DECISION MAKING			
Users	Producer	Investor	Regulators
- Original users: Emperor Menelik II & family, country's higher officials of the time	- Architect - Designer - Engineer - restoration expert	- Owner: not defined - Tenant: military academy (but not at the present time) - Government	- ARCCCH - Town Planning authorities - Local culture

-Contextual users: Military academy, staffs of military academy, the church, tourists and diasporas visitors	- specialist	- Funding organization: (future possibility) - Kidane Meheret Church - Community of the town - Persons	and tourism office - Town Municipality
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STEP 2: ANALYSIS OF EXISTING FABRIC

Original function	Physical character	Heritage values	Needs of the district
Palace	<ul style="list-style-type: none"> - Building Location: Holeta town, Ethiopia - Style/ period : constructed in 1902 - Physical condition: good and it is structurally viable - Physical dimensions: refer to the drawing - Number of story: two - Structure system: masonry foundation with load bearing masonry wall and columns, wood pillars and posts to carry the roof on the upper floor and wooden floor of the upper level - Construction material: masonry with earth mortar, lime plaster, earth plaster, wood, glass, cement, ceramic, brick, stone, metal roof - Location of Structural elements: at the external and internal wall (refer to the drawing) - Spatial organization: wide space 	<ul style="list-style-type: none"> - Architectural - Aesthetic - Historic - Documentary - Educational - Economic - Contextual - Social - Cultural - Symbolic - Spiritual - Emotional 	<ul style="list-style-type: none"> - Land use analysis: the area is marked as restricted and reserved area - Socio-cultural analysis - Economic analysis - Policy analysis

	<p>organized at the center bounded by semi internal space of veranda or small rooms, each blocks are connected horizontally and vertically</p> <ul style="list-style-type: none"> - Façade characteristics: lime plaster, earth plaster, decorated wood framed glass wall, wood balustrade with wood post - Natural lighting : all room have natural light except the inner space of block C at ground floor 		
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STEP 3: DECISION OF CONSERVATION ACTIONS			
Phase I	Phase II	Phase III	Combination of any for the Palace building
<ul style="list-style-type: none"> -preservation -refurbishment -rehabilitation -maintenance 	<ul style="list-style-type: none"> - restoration - renovation - consolidation - reconstruction 	<ul style="list-style-type: none"> - remodeling - transformation - adaptive reuse - extension 	<ul style="list-style-type: none"> - all

STEP 4: DEFINITION OF ADAPTIVE REUSE POTENTIALS	
Physical	<ul style="list-style-type: none"> -originality of architectural character: is well kept -aesthetics: the integrity of the building with the site and the combination of building block is well thought -disability access: no access -human scale: the building and the site compound fits human scale
Economical	<ul style="list-style-type: none"> -site access: with access of asphalt and few meters walk: main entry to -population density in the location: as the building is located in the military academy the compound is in enclosure but early settlement and the dense population is located around the Palace

	<p>site</p> <ul style="list-style-type: none"> -profits from market demand -market opportunity: the building is registered national heritage, the distance from the capital city, support of the stakeholders -financial resources for maintenance cost: church, town community, heritage conservation organizations, cultural centers, celebrity
Functional	<ul style="list-style-type: none"> -Spatial flow refer the drawing -Adaptability: open and wide room space, flexible to accommodate functional need -Space/ structure relationship: interdependent block building
Environmental	<ul style="list-style-type: none"> -Site location: Holeta in 45 km radius from Addis Ababa -Environmental quality of the surrounding: covered with old trees -Neighborhood relationships: detached from residential neighborhood and locate in the military academy compound -Orientation of the building: refer to the drawing
Political	<ul style="list-style-type: none"> -Conservation planning requirement -Building regulations -Urban master plan and zoning: town land use plan recognize the site as a restricted and reserved area -Ownership: <ul style="list-style-type: none"> -Since 2005 the military require the authority to overtake and administrate the Palace building, the church claim to use the building, the national Palace administration has no authority to manage the building, the lok8cal tourism office doesn't record the owner of the building, the community believes the Palace building is owned by the church,
Social & cultural	<ul style="list-style-type: none"> -Social meaning for the local community: the Palace building is the reason for the town establishment, the first modern academy established here, significant evolvment f the academy in the war between Ethiopia and Italian at the Italian occupation period in the name of <i>Black Lion army</i> -Spirit of the building: has a strong character and beauty which

<p>survived in years, the ability to show the philosophy and thought of the builder, has calm and natural setting together with the surrounding environment</p> <p>-Public interest to the building: the community respects the Palace as heritage and aggrieved of the neglecting of such building out of use.</p>		
<p>STEP 5: DECISION OF FUNCTIONAL CHANGES</p>		
<p>Adaption with same use (No change in original function):</p>	<p>Adaption with mixed use (Keeping the original use and adding some sub functions)</p>	<p>Adaption with a totally new use -(Changing the original function)</p>
<p>STEP 6: MANAGEMENT PLAN</p>		

Table 4.1 – Model analysis of Menelik II Palace of Holeta

5. Chapter V – Discussion

5.1. Cultural heritage policy, Ownership and Stakeholder

The historical Palace that registered as national cultural heritage has faced a question of ownership and proper management in which that affect the future wellbeing of such precious heritage. Cultural Policies of the country which has a direct relation with the specific historic building over viewed as follows:

- The constitution of the Federal Democratic Republic of Ethiopia, Proclamation No. 1/1995, issued on 21st August 1995 in Article 39-2 declares that “Every Nation, Nationality and People in Ethiopia has the right to speak, to write and develop its own language; to express, to develop and to promote its culture; and to preserve its history.” And further on Article 91-2 it is stated that “Government and all Ethiopian citizens shall have the duty to protect the country’s natural endowment, historical sites and objects.”
- National cultural heritage is defined by Ethiopia law under proclamation No. 839/2014, a proclamation provided for the classification of cultural heritage into national and regional cultural heritage, as it is a place, memorial stelae, structure or other infrastructure associated with major historical or cultural event that represent Ethiopian people.
- The management of national cultural heritages is given to the ARCCH by proclamation No. 209/2000. It also gives a mandate to the regional states of safeguarding, conserving and preserving cultural heritages at the regional state level and they can establish their own regional cultural heritage classification council.
- As the Palace administration establishment proclamation, proclamation 459/2005 states under “the power and duties of the administration” section that it administer the national Palace and all other Palaces that remained under its control up to the effective date of this Proclamation and other Palaces which will be establish by the federal government.

As listed on the above the policies give assurance for the safeguarding of historic Palace building whereas the ownership is not clearly defined in the particular case. In

the process of the historic Palace conservation the stakeholders has a major impact and their involvement has to be carefully managed in the process of decision making. The stakeholder analysis is summarized as follows:

Stakeholder analysis of Menelik II Historic Palace in Holeta	
Stakeholder	Likely impact on the conservation of the historic Palace
Primary stakeholder	
Military academy	Positive and supportive
Military academy staff resident in the site compound	Positive and supportive
Kidane-meheret church	Positive and supportive
Holeta town culture and tourism bureau	Positive and supportive
Holeta town community	Positive and supportive
Secondary stakeholders	
ARCCH	Positive and supportive
The ministry of Culture and tourism	Need to be discovered
Holeta town administrator	Positive and supportive
Oromia region administrator	Need to be discovered
People of Ethiopia	Positive and supportive
Holeta town Diaspora community	Positive and supportive
Tour agencies in the town and Addis Ababa	Need to be discovered
Ethiopia orthodox church	Positive and supportive
Palace administration	Positive and supportive
Cultural centers	Need to be discovered
Different association on national heritage	Need to be discovered

Table 5.1 – stakeholder analysis

5.2. Interview data analysis

As the information gathered on the interview held with the previous and current higher officials of the military academy, the administrator and deacons of Kidane-meheret church, the previous secretary of the church, Holeta tourism office expert, engineer from Holeta town land administrator, conservators, architect and officials of ARCCCH, Palace administration official, native local resident, together with the document review, the historic Palace has served the academy in history which summarized as follows .

Function and use at different period of time and conservation history

- At 1935 the Holeta modern military academy has established and the historic Palace building has given to the academy during Emperor Haile Selassie
- From 1935 to 1936 as Holeta modern military academy –pre Italian Occupation period.
- From 1936 - 1941 serve for the Italian – during Italian Occupation period
- After 1960 - 1973 the modern academy reopened and continue to serve as administration office together with other additional building during the Emperor regime - post Italian Occupation period
- From 1974 – 1990 continue to serve the military academy during the Derg regime as follows

Block name	Function of the building at Ground Floor level	Function of the building at First Floor level
Block A	Printing and duplication room	Main hall, conference hall, different offices
Block B	Different offices, radio operator room	Artillery store, display gallery for weaponry and related objects
Block C	Store room	Documentation room

Table 5.2 – function of the building during 1974-1990

- From 1991 – 2005 serve the military academy under EPRDF regime
- From 1991- 1997 as military academy administration office
- From 1998 – 2001 the military academy were closed due to Ethio-Eretria war.

- At 2002 the military academy reopened and due to the deterioration happened on the building and the aspiration of the military administration to preserve the historic palace, they have requested to the president office for the permit and allocation of budget for the conservation of the building. The request has been accepted with the budget allocation. With the follow up of the president office the conservation of the historic Palace has done with the involvement of professionals. The conservation work has also done for the surrounding buildings in the compound that the residents who stayed there for years during the gap from 1998-2001 were evacuated.
- Till 2004 the building around the Palace has serve to the military as a recreational lounge and cafeteria and kitchen. Block A of the Palace building has no prominent function, ground floor of block B is used as book store and as gallery on the upper floor.
- At the year of 2005 the prominent military academy has moved to Addis Ababa and the cadet military academy has substitute the former one and named as Major General Hayelom Araya military academy.
- At the year of 2008 due to the complain of the community on its distance from the academy and the pressure imposed on the heritage building ,the cafeteria has moved to the military compound near to the administration office and the staffs of military start to live in the three blocks of building near to the Palace building. Currently there are about 9 household lives in these three houses.

Ownership and heritage management/ administration

- Since 2008 the Palace building has no use. In addition to other related factors, being abandoned has amplified the deterioration of the building. Afterward the military academy has an initiation to conserve the building and has invited professionals and the estimated cost has been much that the military academy has no budget for such purpose thus the idea of conservation has omitted. At the time the military has request the heritage authority to overtake the administration and ownership of the Palace building.

- At 2012 after years of request for claim of ownership on the historic Palace, the church received a letter that permit to do the historic Palace conservation and usage of the building from the military academy and ARCCH. As the deacons of the church explained that the church has asked for the collaboration of the community for the conservation fund raiser and they said that all are responsive; whereas, the question is about the ownership of the building, as the church administrator explained that unless they got the ownership delegation over the historic Palace, it is hard to collect money from the church community for the conservation purpose while they have no guarantee. But as stated by the deacon the support work has done by the time of previous church administrator in collaboration with professionals at the north east side wall of block A.
- On the field visit, the entry to the Palace is through the academy compound and one has to explain himself to the guardian for the sake security and they insist to have the church permission.
- As the expert of the tourism office explains that the building is a recognized historical heritage with its social value related to the development of the town. And yet the building ownership is not registered by their office but they address the church as owner of this particular historic Palace building.
- An interview held with the Palace administrator official indicated that the specific historic Palace has never been under this administration. As she explains that the proclamation 459/97 has given the authority to administer any Palace throughout the country if the building still can serve as a Palace or any related functions that goes along with Palace. Whereas, she added, the government and her office is curious on conservation of such historic Palace that in a very recently the conservation of two national imperial Palace, Yohannes IV Palace in Mekele and Menelik II Palace in Addis Ababa, has done and adapted to the life time museum.

Value respected and community opinion

- As the engineer of the Holeta town land administrator says that the historic Palace building and the entire compound of the military academy is located as special function which means reserved and restricted area in the Holeta town structure plan land use which has been planned for ten years and shall be revised in next year. For the specific question of ownership of the historic Palace he has responded that such documents have not been compiled by his office but for any heritage related matters in Holeta town are either owned or regulated by the town tourism office.
- As conservators, architect and officials of ARCCH says that the historical building has been registered and the ownership is not indicated clearly that for years the building has been under the military administration and before three years the usage of the building has been given to the church based on their claim. During this period of time a primary study proposal has been done for the conservation work initiated by the church but it has not gone further because of the undefined ownership.
- The native local resident at the age of 28 of the town has been asked if she has visited the historic building and she responded that though she has heard about some history of the building from others, she has never been in the historic Palace building the fact that she attends the regular programs of the church occasionally. She has information that the church owned the building but as it is in the military compound it is not much inviting for her to visit the historic building because of the military academy security issues.

5.2.1. Strength, Weakness, Opportunity and Threats analysis on the conservation and adaptive reuse of Menelik II historic Palace in Holeta

Issues	Conservation of the historic Palace building
Strength	<ul style="list-style-type: none"> - The building is built from different construction material that survive the last 115 years - Starting from 1960 up to 2005 the building has served only the military academy and this helps the building to maintain the authenticity and integrity of the site. - In addition to Figures and written documents, buildings with similar characteristics which constructed in similar period of time exist in the country. - ARCCH registered the historic Palace as national heritage
Weakness	<ul style="list-style-type: none"> - Absence of defined regulatory body - Lack of conservation policy and strategy - Integration of the stakeholders - Lack of local institutional capacity - Lack of regular maintenance - Limited public awareness on the need to address problems - Limited public access due to the security issue of the military academy
Opportunity	<ul style="list-style-type: none"> - The government has an interest to conserve such national heritage, even once the president office follow up the conservation work on the building. - The town land use plan recognize the building and its surrounding as a restricted and preserved site - Each stakeholder support the conservation and protection of the historical building - The attraction found within 45 kilometer away from the capital city - The combination of building material of the Palace gives an opportunity to study the possible diversified material conservation.

	<ul style="list-style-type: none"> - The Palace building is the cause for the Holeta town establishment - The Palace building and Kidane – meheret church has interconnected historical back ground that can be used as additional attraction
Threat	<ul style="list-style-type: none"> - Absence of defined ownership - The Palace building deterioration which affect the structural stability of one side of upper floor of block A - The resident leave near to the Palace - The wrong intervention on the function allocation, application of new element and building material restoration - Nature of Palace building material - Abandonment of the Palace building
Issues	Adaptive reuse of the historical Palace
Strength	<ul style="list-style-type: none"> - The structural viability of the building - The space of the building and the integrity of the compound - Natural light and ventilation of the building - Has its own compound that can be fenced and controlled - The Palace building has different blocks that could be proposed for different function from block to block
Weakness	<ul style="list-style-type: none"> - Functions are limited to assure the well being of the Palace building and the security of the military compound
Opportunity	<ul style="list-style-type: none"> - Heritage value of the building support the economical value of new use - To be one of the destination to be visited by the tourists - Accessibility from the capital city
Threat	<ul style="list-style-type: none"> - The demand or the interest of the owner or the user - The infrastructure development to access the site

Table 5.3 – SWOT analysis

5.2.2. Study for conservation and adaptive reuse of the historic Palace building

After the SWOT analysis of the conservation of the historic Palace building, it is concluded that the conservation study has to implement.

5.2.2.1. Possible cause of damage/ deterioration of the building

a. Human intervention

- Due to the change of historic Palace building original function to military academy starting from 1935; there are additional elements on the building. During the time when the military academy starts to use it, only the accommodation of desired function was important than to keep the authenticity and integrity of the original Palace fabrics. And thus some of the additions are the cause of deterioration to the original building material and for the art works of wall and ceiling paint.



Figure 5.1 – human intervention on the building

- There are attempt of intervention on the building for certain deterioration which some of them are considered as *a life saver of the building* by the author. Whereas, other interventions are even worse than the deterioration itself.



Figure 5.2 – consolidation intervention on the building

- The hammering of nails on the wall surface of the plaster damage the wall paint and also the plaster.



Figure 5.3 – hammering of nails on the wall surface

- The damage on ceiling cover in different rooms of block A is happened neither due to age nor any other factor beyond control; but it is ruptured with sharp objects.



Figure 5.4 – ceiling cover damage

- There are missing parts of the building due to dismantle by humans for specific purpose at the interior side of the building and for undefined purpose at the exterior side of the build.

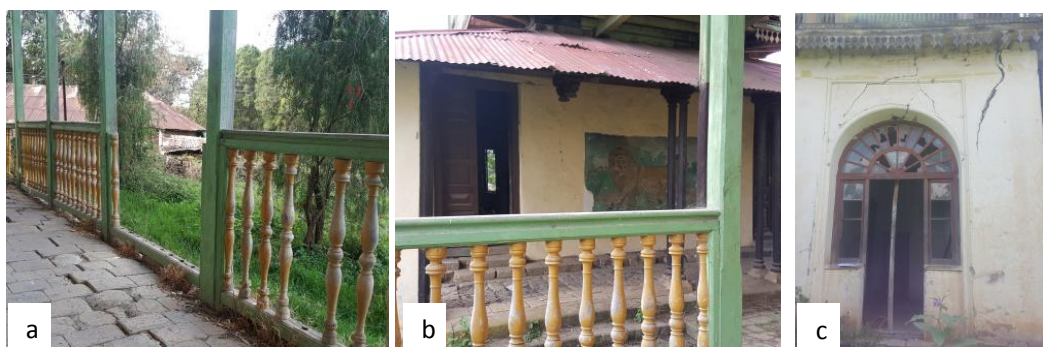


Figure 5.5 – missing parts of the building element

b. Nature of material

- As the building is constructed from masonry walls with earth mortar and wood post and balustrade, the weak property of the mortar and wood have their significant role for the deterioration.
 - Earth (*chiqa*) mortar - used to construct the masonry wall of the building and cover with lime plaster for block A and B. At the point where the wall plaster is detached which caused by any deterioration factor, the earth mortar is washed out and the wall loss its structural strength as a result of weak adhesion.



Figure 5.6 – earth mortar

- Earth (*chiqa*) plaster - used as wall plaster from interior and exterior side of block C. It is observed on the site that the exposed exterior wall of this block is washed out and crack has seen at the corner of the wall at the ground floor level. Though further laboratory test is required for the specific characteristics of material property; the durability of the plaster has been maintained by applying wall paint.



Figure 5.7 – earth plaster

- Wood – used for the construction of floor, wall, ceiling, rafter, posts, doors, window frame, lintel, stair, handrail, baluster and decorative. In related to its property, the exposed wooden parts of the building are deteriorated. Though some of doors and window frames are missed or dismantled and some window frames loss connection the majority can be maintained with miner intervention.

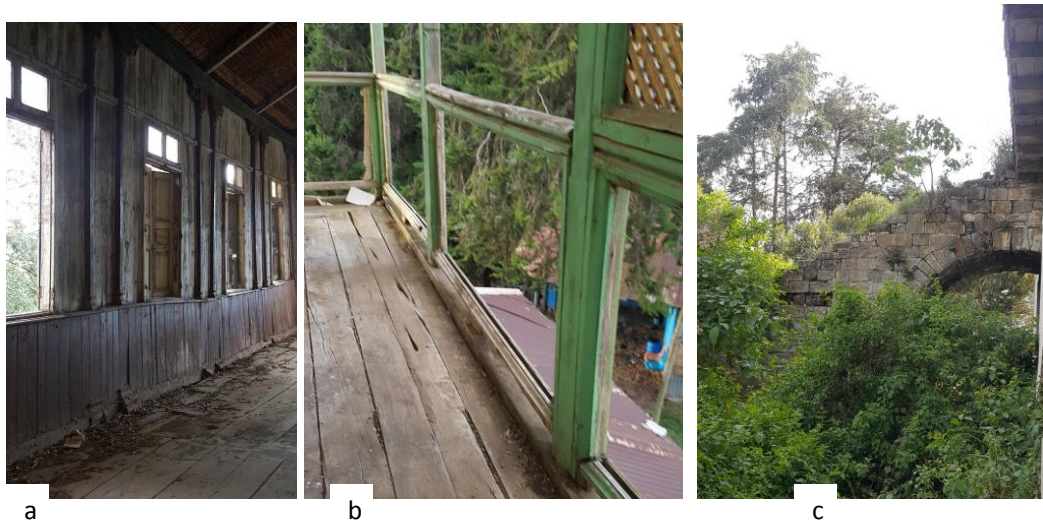


Figure 5.8 – wood

- Glass – is used as window and parts of door. In the entire building lots of window glasses are broken in which each cause is not identified yet.



Figure 5.9 – glass

c. Misuse of the building

- In general, the historical Palace building has passed through a lot in the past period of time. It has served as different functional purpose in a very different administrative. The stakes has been interchanging with the change of government though it is under similar name as military academy. During its service time starting from its beginning up to the current time, it has been interrupted many times and left to be unused. At the current time while the field has been conducted, it has been observed that the building is dirty that people and animals used the interior space especially block A ground floor for the purpose of defecate.
- The change of the interior space of block B upper floor for the WC purpose was wrong that it has an impact on the wall due to the overlap of ceramic tile in the interior side of the wall. The fact that the WC is a wet area proper water proof has to be done in order to protect the wooden elements and more importantly the painting located at the lower side of the floor slab.

d. Environment and climate (water, biological growth, impact of animal)

- Water has play great role for the deterioration of the building elements i.e. exposed wooden posts and balustrade, the exposed window frame and decorative elements due to the surface washed out of protective paint and expose it to the direct sun light, rain and bugs that deteriorate the building material rapidly.
- Biological growth has identified in few places of the building that the major impact is observed on the stone stair that located at the south east side wall of block A.
- Impact of animal is major and very serious on the painting of interior walls on the first floor of block A. also the impact of those birds on the breaking of the window glass is not negligible.
- Efflorescence has observed on the stone stair which is the access of block A first floor and at the wood ceiling under the WC room at block B.

5.2.3. Conservation & adaptive reuse strategies for the historic Palace building

5.2.3.1. General guiding principle for the conservation and adaptive reuse of Menelik II historic Palace in Holeta

1. The historic Palace building shall be used for its historic purpose or be placed in a new use that the owner demand which requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a historic Palace shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each building character shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as additional room by sub dividing the existing space, partition wall, covering or alteration of doors and windows, shall be removed.
4. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
5. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
6. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
7. Significant archeological resources affected by any future intervention shall be protected and preserved. If such resources must be disturbed, prior to the commencement any interventions (conservation and adaptive reuse) project, archeological or cultural impact assessment study should be conducted by professional archeologist under the supervision of the ARCCH, and if any resource must be impacted, appropriate mitigation measures shall be undertaken; a management plan and a monitoring system shall be established.

In addition to the guideline it is important to follow the principles of conservation and ethics (Feilden, 1994, 2003):

1. The condition of the building must be fully recorded before any intervention is begun;
2. The materials and methods used during treatment must be documented
3. Historic evidence must not be destroyed falsified or removed ;
4. Any intervention must be the minimum necessary. It should be reversible – or at least repeatable, and not prejudice possible future interventions;
5. Any intervention must be governed by unswerving respect for the aesthetic, historical and physical integrity of cultural property.

5.2.3.2. Proposed intervention for the historic Palace building

- Floor work
 - Wooden floor (internal and semi external spaces of block A, B, C)
 - Element revision followed by added element removal or demolition
 - Rotten and damage element integration
 - Cleaning and sandpapering existing paint or surface
 - Surface consolidation
 - Original element fixing
 - new painting
 - new or restored element fixing
 - cement screed
 - Element revision followed by added element removal or demolition (block A ground floor, block B upper floor)
 - New continuous concrete floor installation (block c ground floor)
- Roofing and ceiling work (block A, B, C)
 - Roof
 - Element revision
 - Removal of damaged roof and new metal sheet roof installation
 - thatch roof installation over the metal sheet roof of each block
 - eave

- Element revision
- Removal of damaged roof and new metal sheet roof installation
- Ceiling
 - added element removal or demolition
 - cleaning
 - renovation and consolidation of wooden finish
 - restoration of damaged paint art work
 - new or restored element fixing
- Plastering
 - External lime plaster for the external wall with no paint art work on it (block A, B)
 - Element removal or sandpapering the existing paint
 - Biological layers removal
 - New plaster of similar property with the existing one
 - New painting
 - External lime plaster for the external wall with paint art work on it (block A)
 - Clean the surface with caution not to damage the paint art work
 - Consolidation of plaster taking the paint art work safety under consideration
 - Internal lime plaster (ground and first floor of block A)
 - Clean the surface with careful caution not to damage the paint art work
 - Demolish and remove the later addition plaster with caution
 - Replace lime plaster on the damaged part which has a weaker material property than the original existing plaster
 - Earth (*chiqa*) plaster (block C, ground and first floor)
 - Damaged element removal or demolition
 - Apply new external and internal plaster with similar material property of existing one

- Masonry
 - External masonry wall (north east side elevation of block A, ground floor)
 - Original element fixing
 - Wall demolition partially and new wall construction with the dismantled masonry and new plaster installation with similar material property with existing
 - External masonry wall (block C, ground and first floor)
 - Original element fixing
 - Masonry wall consolidation and *chiqa* plaster installation
- Decoration and paintings
 - On ceiling
 - Original element fixing
 - Clean and restore the canvas
 - Consolidation , renovation, replacement and new installation
 - Repaint or restore paint as per the original work documentation
 - On wall
 - Water and brush cleaning
 - Plaster integration
 - Filler and patching of plaster surface
 - added element removal or demolition
 - new plaster which integrated with the existing plaster and confirm to be a good media for the restoration of paint art work.
- Door and window
 - Original element fixing
 - Add element removal or demolish
 - Sand papering the existing frame painting,
 - Cleaning and Protection of frame element
 - Rotten and damage elements integrations
 - Apply new paint

- New or restored element fixing
- Wooden posts, stair, handrail and balustrade
 - Structural element fixing
 - Element revision
 - Original element fixing
 - Add element removal or demolish
 - Sand papering the existing frame painting
 - Cleaning and Protection of frame element
 - Rotten and damage elements integrations
 - Apply new paint
 - New or restored element fixing
- Stone steps and stair
 - Damaged element removal
 - Bad grass and various material elimination
 - Water and brush cleaning
 - Biological layers removal
 - Rotten, decay, stained, damaged elements integration
 - Surface consolidation
 - New or restored pavement installation

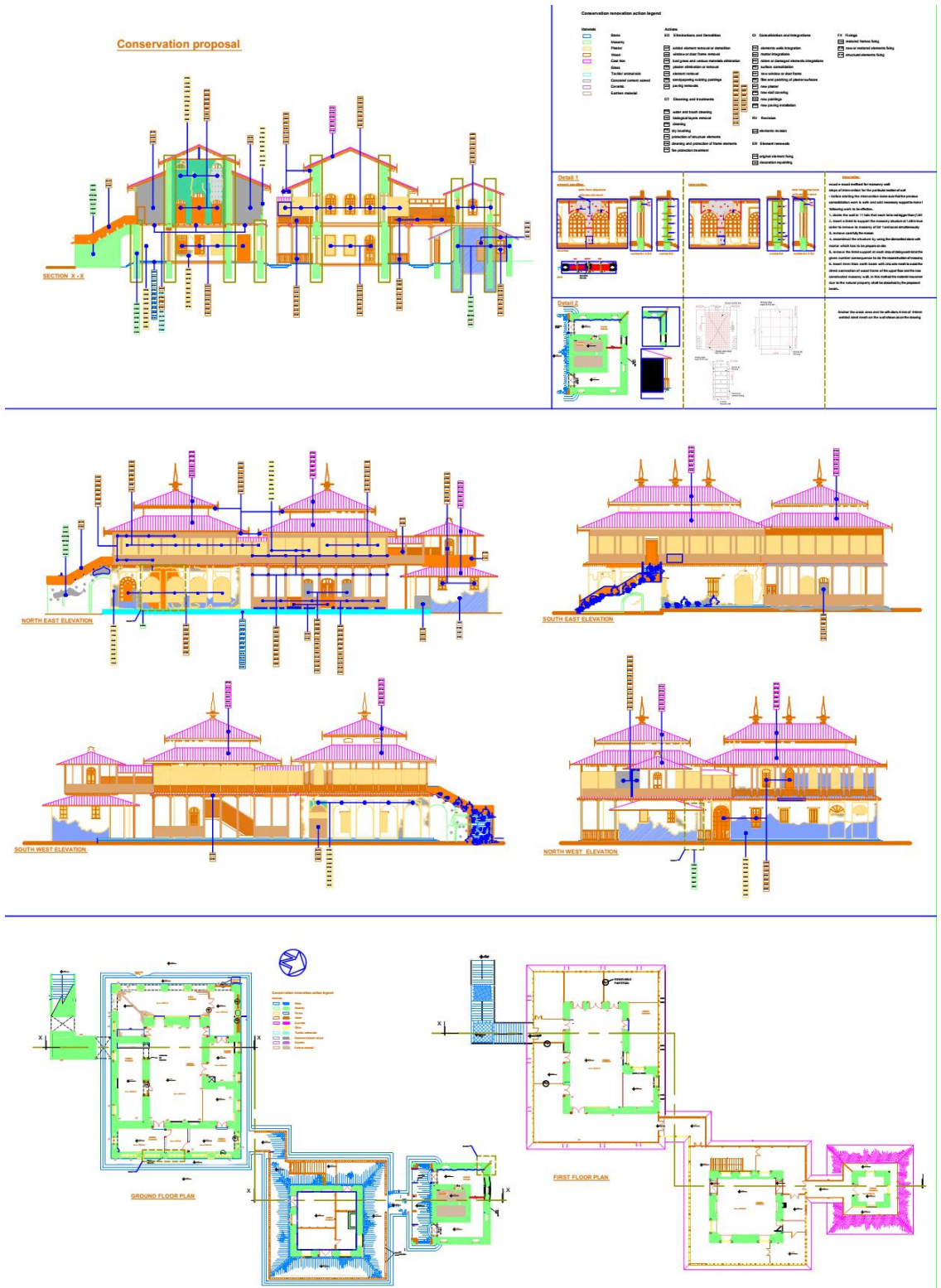


Figure 5.11 – conservation proposal

5.2.3.3. Proposed Adaptive reuse plan

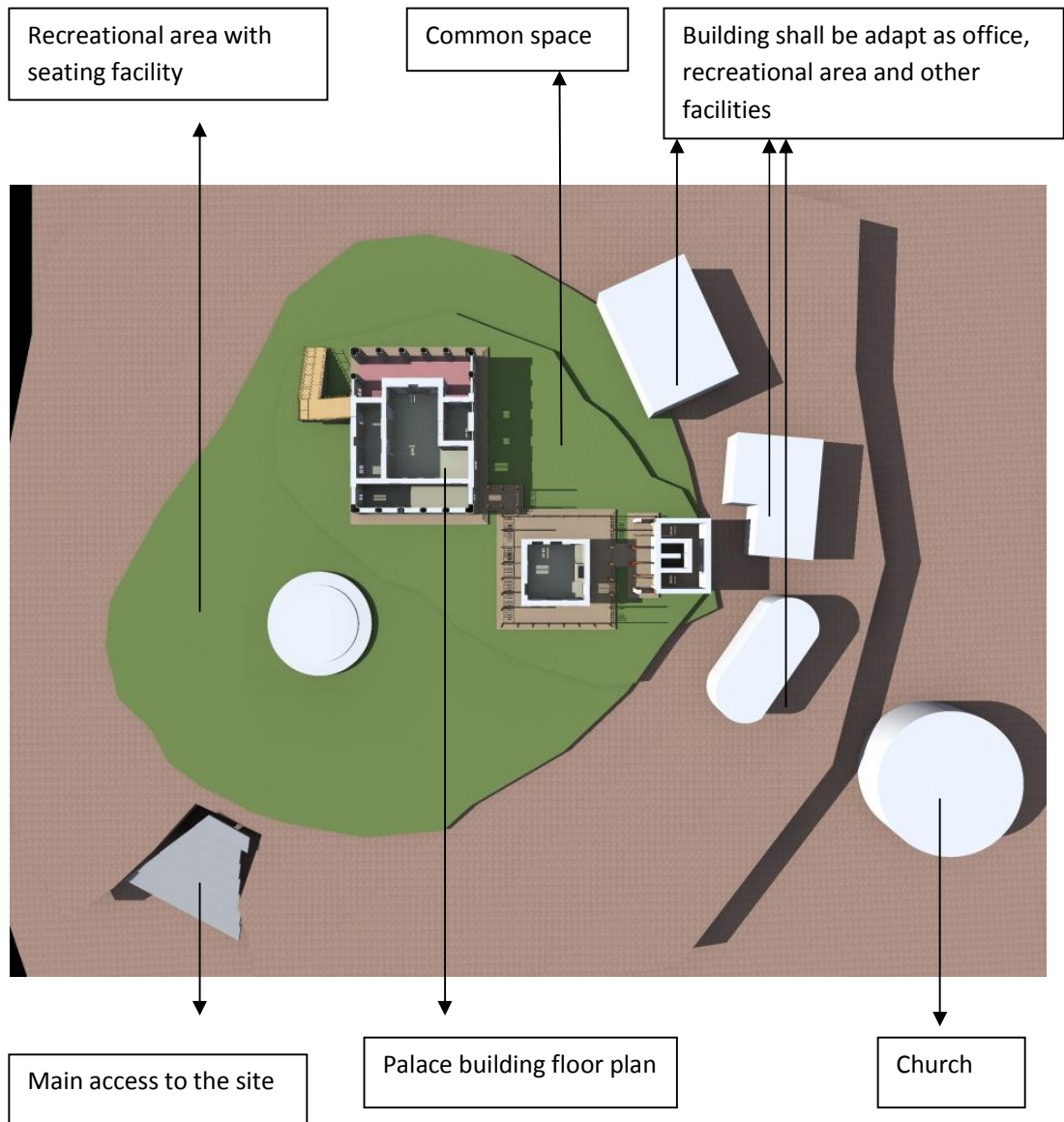
After the conservation of the historic Palace building, as it is described in chapter IV, a new use is given for the adaptive reuse of the historic Palace in a way that the new function shall add value to the building and let visitors to come to the site. The potential uses are listed below after the discussion made with the stakeholders. The final decision has to be made with contentious bilateral discussion of the stakeholder in each level after setting a defined ownership.

- Life time museum: museum of the history of Palace in the period of time since its establishment.
- Church museum: museum of church and related history of emperor Menelik II and other historical objects kept by the Kidane-meheret church
- Military museum: museum of the history of modern military academy and army in Ethiopia.
- Ethnographic museum: museum of ethnography of Oromia region
- Cultural center of Holeta
- Research and experience center for the conservation of historic building

In order to enhance the Palace building new function the entire compound must be organize in such a way to satisfy the necessary requirement of users and visitors.

Proposal for upgrading the new use facilities

- Create an outdoor space for interaction with free seating area
- Improve circulation in the building by proper design for entry, circulation inside and exit for the disables
- Incorporate ramps to access the site and to move around the compound
- Create office facilities, storage capacity, WC, Guard house in the compound
- Create recreational area with seating facility
- Incorporate internet facilities like Wi-Fi in the compound
- After studying the landscape character of the compound at its establishment time, reconstruct or design the appropriate landscape that fit to the grace of the historic building and satisfy the upcoming new use. While doing this care has to be taken on the preservation of old and endemic plants.



6. Chapter VI – Conclusions and Recommendation

The findings on the study shows that the historic Palace of Menelik II in Holeta Genet, is a national cultural heritage which has values and significances and worth to preserve and conserve to future generation is facing difficulties which threaten its existence in the future unless possible solutions are taken to deal with the problems.

On the basis of the finding of the study, this study has forward the following recommendations:

- Conservation of the architectural heritage of the historic Palace of Menelik II is essential.
- Creating awareness of its significance among all stockholders. Involve them in the renovation and promotion of these heritages as tourist attraction site financially or professionally.
- The local development and land use plans for the specific site location of the town shall be kept as reserved area thus the heritage site is safe from the impact of new intrusion. Therefore the situation shall guarantee to the authenticity and integration of the heritage site.
- Broaden the scope of the investigation of the heritage site as a cultural heritage landscape; i.e., discuss the entire site related to the palace, i.e. its immediate surroundings (other buildings, structures, ruins, walls, cisterns, etc. and vegetation occurring on the site, including naturally occurring trees and other plants and designed gardens)
- Local governments in collaboration to the local culture and tourism bureau have a major role to play in the protection of Menelik II Palace, as they work most closely with heritage as it is given by law. Therefore the gap created with all stakeholders and the heritage shall be eliminated and thus a close follow up on the site shall be maintained.
- Rules and regulations concerning protection of the historic building are the necessary components of the heritage conservation but only rules and

regulations cannot protect heritages however it gives framework and guidelines within which protection can be achieved with a stakeholders' active engagement and commitment to conservation. Hence all are aware of anything about the heritage site and shall stay alert for any required duty to protect it. Also engage the community in the development of plans to conserve and utilize the palace and its compound in an appropriate way

- In addition to the conservation of the historic building a function needs to be given so that the building stay active in time, whereas the new function has to be decided with a bilateral discussion of each stakes at each level so that the conservation of the historic building to be effective and economically viable.
- The church of Kidane- meherete is historically connected with the construction of the historic Palace, it has a potential to expand the heritage site to be visited to the church compound so that the history of the Palace building architecture shall be completed and it shall give a chance to protect the entire art work of the church. Thus Document the surrounding areas, such as the church associated with the palace, the military academy and its historical contributing features and Holeta town and the surrounding area to understand how the area around the site developed before and after the building of the palace.
- Addis Ababa city and other town tour operator should involve in the promoting of the historic Palace in their web-sites and should bring visitors as the town which is located within 45 km radius from the capital by creating linkages with other heritage sites in the region – within 50 kms in all directions (Addis Ababa, Addis Alem, Wenchi Crater, Ambo, etc.)
- Finally and for most, all the conservation of the heritage, well being of the historic building and aspiration of transferring such national heritage to the next generation shall be realize by the stakeholder coordination, regulation of responsible authorities and town administration land use planning. Thus, the major decision of assigning responsible custodian to somebody is mandatory for the successful and fruitful conservation and management of Menelik II historic Palace in Holeta Genet.

References

- Amare Dawit and Fasil Giorghis. "Early Architectural Development in Addis Ababa." *Proceedings of the International Symposium on the Century of Addis Ababa*. Addis Ababa: Addis Ababa council, 1987. 65-89.
- Bullen, P. A., and P.E D Love. "Adaptive reuse of heritage buildings." *Structural Survey*, 29(5), 2011a: 411-421.
- Bullen, P. A., and P.E D Love. "Residential regeneration and adaptive reuse: learning from the experiences of Los Angeles." *Structural survey*, 27 (5), 2009: 351-360.
- Bullen, P.A. "Adaptive reuse and sustainability of commercial buildings." *Facilities* 25 (1/2), 2007: 20-31.
- Cantell, S. F. *The adaptive reuse of historical buildings: regulation barrier, best practices and case studies*. Virginia Polytechnic Institute and State University: Unpublished Master Thesis, , 2005.
- Carmer, J, and S Breitling. *Architecture in existing Fabric*. London: Birkhauser, 2007.
- Conejos, S., Langston, C., and Smith, J. "AdaptSTAR model: A climate-friendly strategy to promote built environment sustainability." *Habitat International*,37, 2012: 95-103.
- Conejos, S.,Langston, C., and Smith, J. "Improving the implication of adaptive reuse strategies for historic buildings." *Paper presented at Le Vie dei Mercanti S.A.V.E. HERITAGE: Saveguard of Architectural, Visual, Environmental Heritage*. Naples, Italy, 2011.
- D., Strange I. and Whitney. "The changing roles and purposes of Heritage conservation in the UK." *Planning, Practice and Research* 18 (2-3), 2003: 219-229.
- DEH. *Adaptive reuse: Preserving our past, building our future*. Commonwealth of Australia 17: ACT: Department of Environment and Heritage, 2004.
- Department of Environment and Heritage. *Adaptive Reuse*. Canberra: Commonwealth of Australia, 2004.

- DHR, Velthuis K. and Spennemann. "The future of defunction religious buildings: Dutch approaches to their adaptive re-use." *Cultural Trends* 16 (1), 2007: 43-66.
- Ellison L., Sayce S. and Smith J. "Socially responsible property investment: qualifying the relationship between sustainability and investment property worth." *Journal of Property Research* 24 (3), 2007: 191-219.
- Elsorady, D.A. "Assessment of the compatibility of new uses for heritage buildings: The example of Alexandria National Museum, Alexandria, Egypt ." *Journal of Cultural Heritage*, 15, 2014: 511 - 521.
- Fasil Giorgis and Denis Gerard. *The City & Its Architectural Heritage, Addis Ababa 1886-1941*. Addis Ababa, Ethiopia: Shama Books, 2007.
- Feilden, Bernard M. *Conservation of Historic Buildings*. Great Britain: Architectural Press, An imprint of Elsevier, 1994, 2003.
- Flemming A. *Master plan for preservation and Presentation of cultural heritage*. Report prepared for the government of Ethiopia by UNESCO, Paris: UNESCO, serial No. FMWCLT/CH/85/13, 1985.
- Foucault, M. *The order of things, and archaeology of the human science*. New York: Vintage Books, 1994.
- Haakinen T. "Assesment of indicators for sustainable urban construction." *Civil Engineering and Environmental Systems* 24 (3), 2007: 247-259.
- ICOMOS, Burra Charter. "The Charter for Places of Cultural Significance." 1999. http://australia.icomos.org/wpcontent/uploads/BURRA_CHARTER.pdf (accessed 8 12, 15).
- ICOMOS, The Venice Charter. "International charter for the conservation and restoration of monuments and sites. Second International Congress of Architects and Technicians of Historic Monuments, Venice, Italy." [www_icomos.org/venice_charter.html](http://www.icomos.org/venice_charter.html). 1964. (accessed 08 30, 15).
- J., Jokilehto. "Defination of Cultural Heritage." *ICCROM Working group 'Heritage and Society'*, 2005: 38-39.

- J., Pendlebury. "Conservation and regeneration: complementary or conflicting processes? the case of Grainger Town Newcastle Upon Tyne." *Planning, Practice and Research* 17 (2), 2002: 145-158.
- Jokilehto J. "Authenticity in restoration principles and practices." *APT Bulletin*, 1985: 17-20.
- Jokilehto, J. *A History of Architectural Conservation*. Rome: ICCROM, 1999.
- Kincaid, D. *Adapting Buildings for changing uses: Guidelines for change of use refurbishment*. London: Taylor and Francis, 2002.
- Kohler N. and Yang W. "Long term management of the building stocks." *Building Research and Information* 35 (4), 2007: 351-362.
- Kurul E. "A qualitative approach to exploring adaptive re-use process ." *Facilities* 25 (13/14), 2007: 554-570.
- Langdon c., Wong FKW., Hui ECM and Shen Li-Yin. "Strategic assessment of building adaptive reuse opportunities in Hong Kong." *Building and environment* 43 (10), 2007: 1709-1718.
- Neville Agnew & Martha Demas. *Principles for the conservation of Heritage Sites in China*. Los Angeles: The Getty Conservation Institute, 2002.
- Orbasli, A. *Architectural Conservation*. London: Black well Publishing, 2008.
- Pankhurst, Richar. *History of Ethiopian towns from the mid- nineteenth century to 1935*. Stuttgart: Steiner- velag- wiesbaden, 1985.
- Petersdorff C., Boermans T. and Harnish J. "Mitigation of carbon dioxide emissions from EU-15 building stock. Beyond the EU directive on the energy performance of the buildings." *Environmental Science and Pollution Research* 13 (5), 2006: 350-358.
- Sacchi, Livio. *Architectural Heritage in Ethiopia, Two Imperial Compounds in Mekele and Addis Ababa*. Italy: Skira Editore S.p.A, 2012.
- Schittich, C. *In Detail Interior Spaces*. Berlin: Birkhauser, 2003.
- Shen, L. Y., and C Langston. "Adaptive reuse potential: An examination of differences between urban and non-urban projects." *Facilities* 28 (1), 2010: 6-16.

- Shipley R., Utz S. and Parsons M. . "Does adaptive reuse pay? A study of the business of the building renovation I Ontario,Canada." *International Journal of Heritage Studies* 12 (6), 2006: 505-520.
- Thomsen A. and Van der Flier K. "Life cycle of dwellings;a conceptual Model Based on Dutch Practice." *XXXIV IAHS, World congress on Housing, Sustainable Housing Design*. Naples: IAHS, September 20-23, 2006.
- TJM, Remoy HT and Van der Voordt. "A new life: conversation of vacant office buildings into housing." *Facilities* 25 (3/4), 2007: 88-103.
- Velthuis, K., and Spennemann, D.H.R. "The future of defunct religious buildings: Dutch approaches to their adaptive re-use." *Cultural trends*, 16 (1), 2007: 43-66.
- Wilkinson S., Kimberely J. and Reed R. "Using adaptation to deliver sustainability in Australia." *Structural survey* 27 (1), 2009: 46-61.
- Yildirim, M. "Assessment of the decision-making process for re-use of a historical asset: The example of Diyarbakir Hasan Pasha Khan, Turkey." *Journal of Cultural Heritage*13 (4), 2012: 379-388.

Decay pathologies & map cracking

Decay Pathologies

Color	Decay Pathology
Dark Blue	Moisture
Light Blue	Rotting and delamination
Dark Green	Moisture path
Light Green	Washed out surface
Yellow	Wet/dry decay
Orange	Paint cracking
Red	Spall
Purple	Displacement

Material Pathologies

Color	Material Pathology
Dark Blue	Red glass on surface
Light Blue	Wood rot & decay
Dark Green	Crack width
Light Green	Moisture
Yellow	Moisture decay and rotter surface
Orange	Stone erosion
Red	Surface joint erosion
Purple	Plaster delamination
Light Purple	Plaster decay

Wood

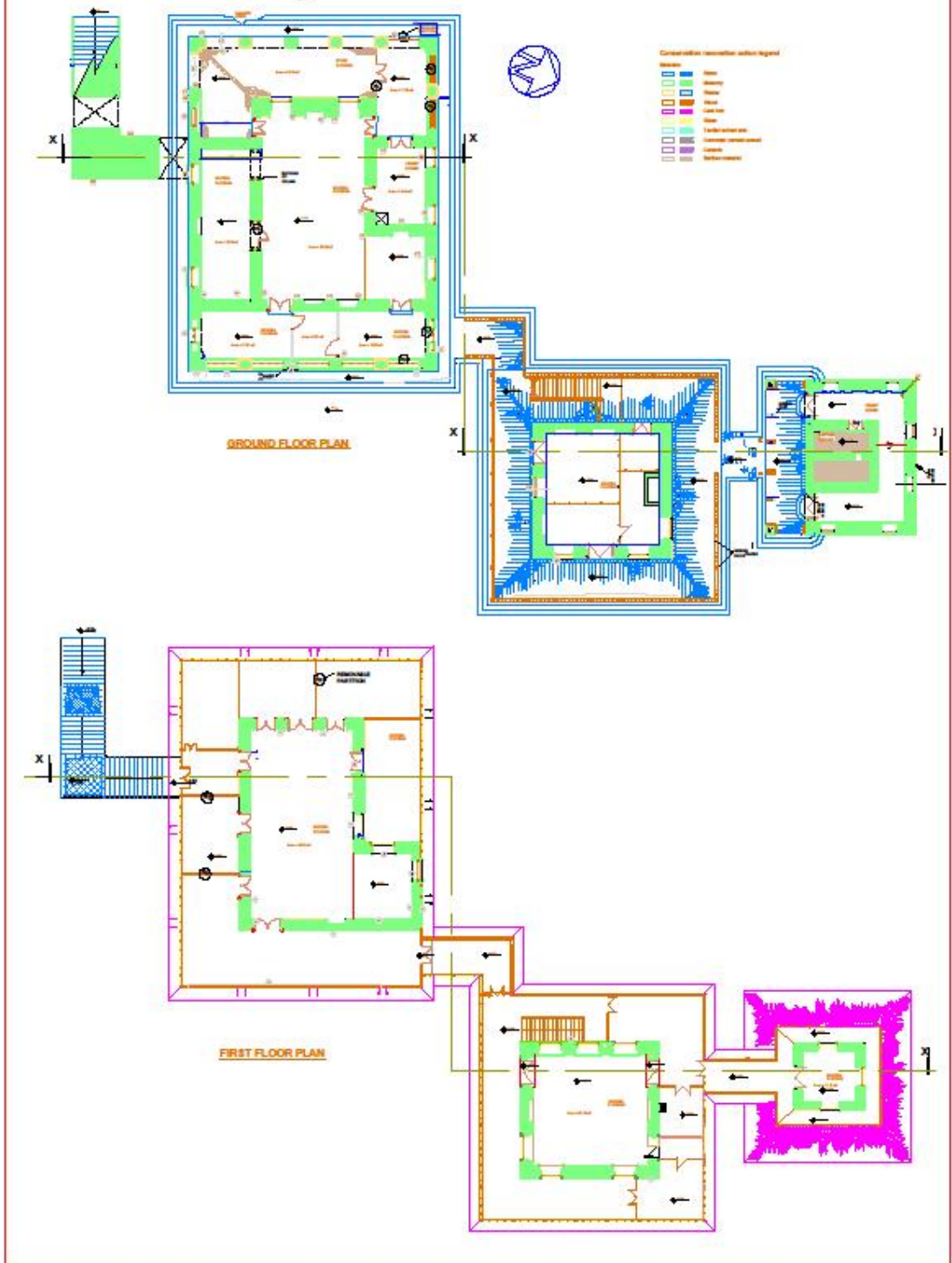
Color	Wood
Dark Blue	Wood decay and rotter surface
Light Blue	Wood rotter decay
Dark Green	Structural rotter

Map cracking

Color	Map cracking
Dark Blue	LC = light plaster crack
Light Blue	MC = severe structural crack
Dark Green	WC = wall joint crack (horizontal)
Light Green	CC = ceiling structural crack separation



Decay pathologies & map cracking



Decay pathologies & map cracking

Decay Pathologies

- General Pathologies**
- Missing
 - Rotting and delamination
 - Incomplete patch
 - Peeling out surface
 - Flaking layer
 - Paint cracking
 - Blister
 - Discoloration

Material Pathologies

- Bad plaster on surface
 - Bad wood & base
 - Brick work
- Masonry**
- Necessary decay and rotten surface
 - Stone erosion
 - Surface joint erosion
 - Plaster delamination
 - Plaster decay

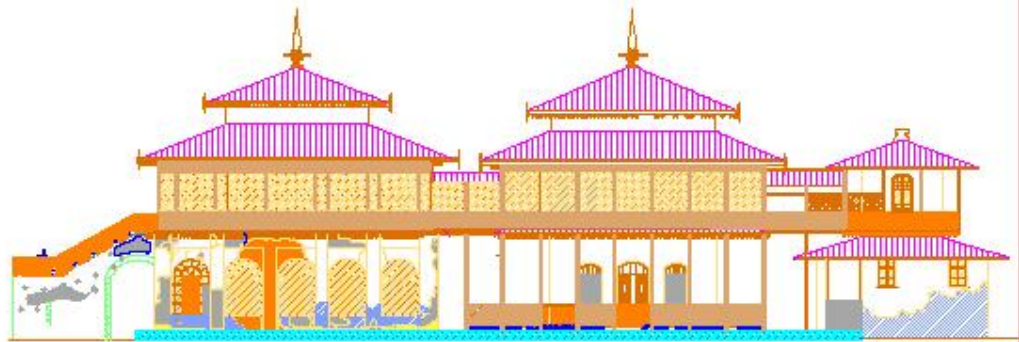
Wood

- Wood decay and rotten surface
- Wooden window frame
- Structural rotting

Map cracking

- LC = light plaster crack
- MC = severe structural crack
- SC = severe structural crack

- WC = wall joint crack (horizontal)
- CC = ceiling structure crack separation



NORTH EAST ELEVATION



SOUTH WEST ELEVATION

Decay pathologies & map cracking

Decay Pathologies

- General Pathologies
- █ Missing
 - █ Rotting and delamination
 - █ Incomplete patch
 - █ Peeling out surface
 - █ Flaking layer
 - █ Paint cracking
 - █ Stain
 - █ Discoloration

- Material Pathologies
- █ Hard grain on surface
 - █ Wood rot & termite
 - █ Brick rot
- Masonry
- █ Necessary decay and other surface
 - █ Stone erosion
 - █ Surface joint erosion
 - █ Plaster delamination
 - █ Plaster decay

Wood

- █ Wood decay and rotting surface
- █ Wooden window frame
- █ Structural rotting

Map cracking

- CC = light plaster crack
- MC = severe structural crack
- SC = minor structural crack
- WC = wall joint crack (horizontal)
- CC = ceiling structural crack separation



Conservation proposal

Conservation renovation action legend

Materials	
[Blue box]	Stone
[Green box]	Masonry
[Yellow box]	Plaster
[Orange box]	Wood
[Red box]	Cast iron
[Light blue box]	Glass
[Light green box]	Textile/ animal skin
[Light yellow box]	Concrete/ cement screed
[Light purple box]	Ceramic
[Light pink box]	Earthen material

Actions

BC Rehabilitation and Conservation

- [Icon] added element removal or demolition
- [Icon] window or door frame removal
- [Icon] lead glass and various materials elimination
- [Icon] plaster elimination or removal
- [Icon] element removal
- [Icon] sandpapering existing paintings
- [Icon] painting removal

CT Cleaning and treatments

- [Icon] water and/or acid cleaning
- [Icon] biological layers removal
- [Icon] cleaning
- [Icon] dry brushing
- [Icon] protection of structure elements
- [Icon] cleaning and protection of frame elements
- [Icon] fire protection treatment

PS Platings

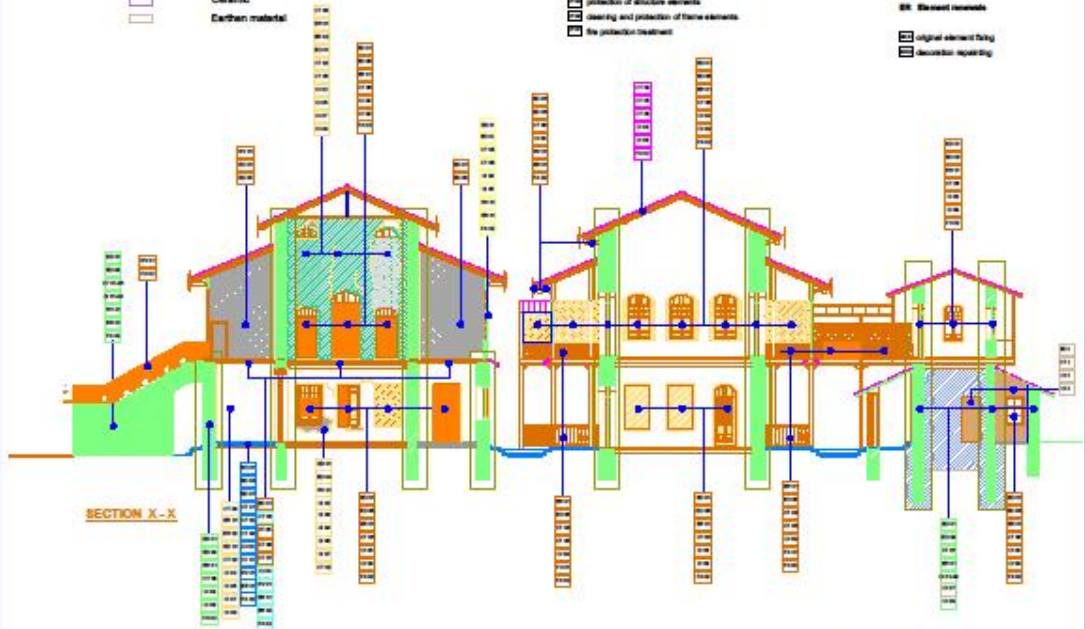
- [Icon] restored frames plating
- [Icon] new or restored elements plating
- [Icon] structural elements plating

CI Consolidation and Integration

- [Icon] elements walls integration
- [Icon] masonry integration
- [Icon] masonry or damaged elements integration
- [Icon] surface consolidation
- [Icon] new window or door frame
- [Icon] fill and patching of plaster surfaces
- [Icon] new plaster
- [Icon] new roof covering
- [Icon] new paintings
- [Icon] new painting installation

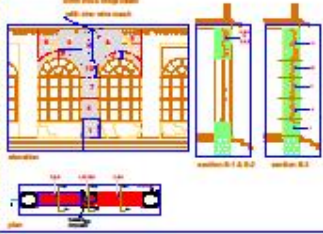
RW Reinforce

- [Icon] elements reinforce
- [Icon] element reinforce
- [Icon] original element fixing
- [Icon] decoration squaring

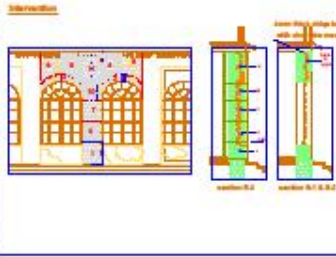


Detail 1

placement condition



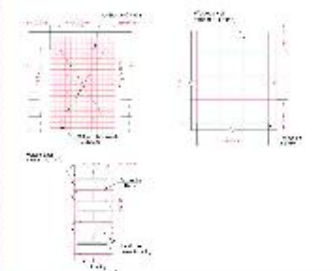
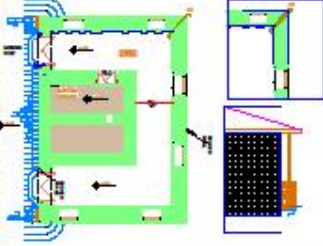
Rehabilitation



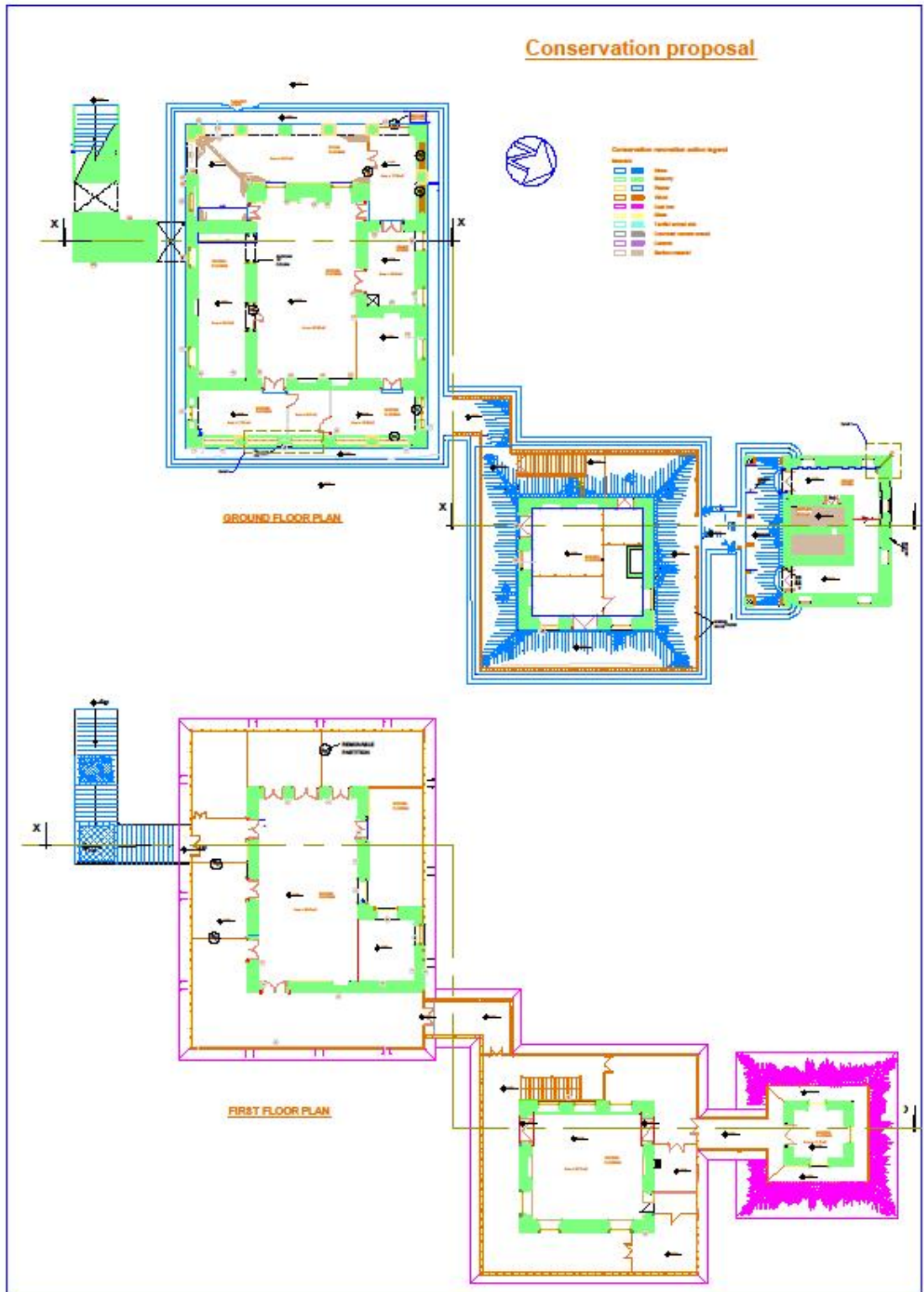
Description

brick masonry method for masonry wall
 steps of intervention for the particular section of wall
 - before starting the intervention make sure that the previous consolidation work is safe and add necessary support to make the following work to be effective
 1. divide the wall in 15 cm thick that each lot is not bigger than 0.50m² in
 2. insert a steel to support the masonry structure at 1.00 m level in order to remove to masonry of lot 1 and so on subsequently
 3. remove carefully the masonry
 4. reconstruct the structure by using the described above with a clip mortar which has to be prepared on site
 5. remove the steel support at each step of rising each lot at the given number corresponding to do the reconstruction of masonry
 6. insert steel reinforcement bar with clip mortar to avoid the direct connection of steel frame of the upper floor and the new reconstructed masonry wall. In this method the masonry movement due to the natural property shall be identified by the proposed beam.

Detail 2



Anchor the steel area and fix with steel. If iron of fabric installed steel mesh on the wall where iron on the drawing



Conservation proposal

Conservation renovation action legend

- Materials**
- Stone
 - Masonry
 - Plaster
 - Wood
 - Cast iron
 - Glass
 - Textile/ animal skin
 - Concrete/ cement screed
 - Ceramic
 - Earthen material

Actions

BC Elimination and Demolition

- added element removal or demolition
- window or door frame removal
- cell glass and various materials elimination
- plaster elimination or removal
- element removal
- recoiling existing paintwork
- painting removal

CF Cleaning and Sealwork

- water and brush cleaning
- biological layers removal
- cleaning
- dry brushing
- protection of structure elements
- cleaning and protection of frame elements
- in situ protection treatment

FI Fittings

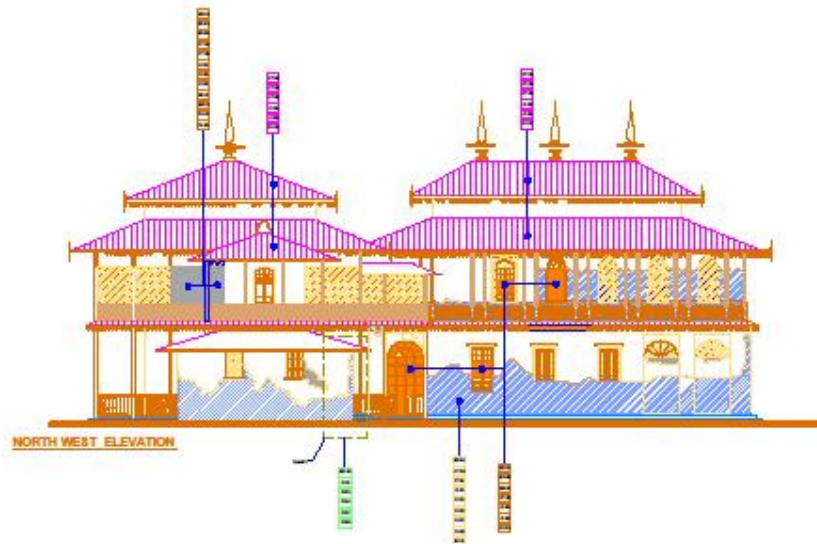
- restored frames fitting
- new or restored elements fitting
- structural elements fitting

CI Conservation and Integration

- elements with integration
- order integration
- other or damaged elements integration
- surface consolidation
- new window or door frame
- fill and patching of plaster surfaces
- new plaster
- new roof covering
- new paintwork
- new painting installation

RV Revision

- elements isolation
- Element removal
- original element fitting
- decoration reapplying



Conservation proposal

Conservation renovation action legend

- Materials**
- Stone
 - Masonry
 - Plaster
 - Wood
 - Cast Iron
 - Glass
 - Textile/ animal skin
 - Concrete/ cement screed
 - Ceramic
 - Earthen material

Actions

ED: Elimination and Description

- ED added element removal or demolition
- ED structural steel frame removal
- ED lead glass and window sash/valve elimination
- ED plaster elimination or removal
- ED element removal
- ED landscaping/ existing path/grade
- ED paving removal

FI: Fixings

- FI restored frame fixing
- FI new or restored elements fixing
- FI structural elements fixing

CT: Cleaning and Treatments

- CT water and brick cleaning
- CT biological layers removal
- CT cleaning
- CT dry brushing
- CT protection of structure elements
- CT cleaning and protection of frame elements
- CT the protection treatment

CI: Consolidation and Integration

- CI elements with integration
- CI masonry integration
- CI masonry of damaged elements integration
- CI surface consolidation
- CI new window or door frame
- CI fill and patching of plaster surfaces
- CI new plaster
- CI new roof covering
- CI new path/grade
- CI new paving installation

RV: Revisions

- RV elements revision

SR: Structural works

- SR original element fixing
- SR demolition repairing

