AN ETHNOARCHAEOLOGICAL STUDY OF INDIGENOUS ARCHITECTURE AT OLD BUIPE, GHANA

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(10308600)

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DECLARATION

I, Zonke Dedei Guddah, hereby declare that this work is the outcome of my research carried out in the Department of Archaeology and Heritage Studies, University of Ghana, under the supervision of Dr. Wazi Apoh. All references used in this work have been fully acknowledged and no part of this work has been written for me by any other person. Any shortcomings in this study are my sole responsibility. This work has not been presented in full or in part to any other institution for examination.

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ABSTRACT

This thesis is an ethnoarchaeological investigation of indigenous buildings in Old Buipe, northern Ghana. It focuses on the types of buildings that are found in the contemporary settlement, the processes by which the buildings are constructed, used and abandoned, the layout of buildings and compounds in the settlement and how these relate to the environmental, historical, social and economic contexts of the local people.

Using an eclectic approach that includes a study of information from archaeological, written and oral historical and ethnographic sources, the work attempts to show relationships that may be found between the built environment of the contemporary settlement and the archaeological record as revealed by various archaeological surveys in the study area. The results of the study suggest that most buildings in the settlement are characterized by rectilinear forms and are constructed of daub and mud-bricks, wood and thatch. While the daub and rectilinear buildings are similar to what has been found in the archaeological context and also reported by historians, mud-brick buildings constructions that are plastered with cement and roofed with aluminium/zinc sheets, nails and other non-traditional materials, reflect transformations that have occurred over the years with changing social and economic circumstances of the people.

The results also suggest that the abandonment and collapse of buildings eventually result in the formation of what may be termed settlement mounds. The digging and use of clay from these mounds by the local people for building construction offer lessons for understanding archaeological site formation processes, as they cause distortions in the archaeological record.

DEDICATION

This work is dedicated to my son, Nyamedzi Nana Kofi Ansah for giving me the strength I never thought I had. Mummy loves you.

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I thank God for his mercies and favor upon my life, and granting me strength throughout my studies.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.1 Study Background and Research Problem

The APA Laboratory of the University of Geneva in collaboration with the Department of Archaeology and Heritage Studies, University of Ghana have been undertaking archaeological investigations at Old Buipe in the Northern Region of Ghana since 2015. The research, which is dubbed the Gonja Archaeological Project (GAP), aims at investigating the ancient lifeways of Old Buipe and the Islamization of Northern Ghana from the late 16th century. The Gonja project is meant to examine the nature of past settlements, cultural materials, mosques and other relevant settlement structures of the Gonja states (at Old Buipe site). My study complements this project by investigating the indigenous architecture of Old Buipe.

Compared to the southern regions of Ghana, limited archaeological research has been undertaken in northern Ghana (for example, Davies 1964; 1970; Shinnie & Ozanne 1962; Goody 1967; Flight 1968; York 1973; Shinnie 1981). Much of the early works in the area were part of an archaeological rescue campaign the members of the Volta Basin Research Project undertook as a result of the construction of the Volta Dam in the 1960s (Shinnie and Kense 1989). Apart from York's investigations at New Buipe (York 1973) most of the research works are yet to be fully published. Collin Flight (1968) documented many settlement mounds in Central Gonja during the Volta Basin Research Project. He claimed that these mounds were similar in structure to archaeological mounds of the Near East, though on a smaller scale and were concentrated in the confluence area of the White and Black Volta rivers (Flight 1968:97). Some of the mounds he excavated revealed relics of collapsed and demolished building structures.

Recent archaeological and ethnographic studies in northern Ghana have generated a significant amount of additional information (Gabrilopoulos 1995, 2002), Insoll (2003), Kankpeyeng (2003), Insoll, Kankpeyeng & MacLean (2006), Eyifa (2007), Nkumbaan (2015) and Genequand et al. (2015, 2016). The results of preliminary studies at Old Buipe, which a group of archaeologists, including Denis Genequand, Wazi Apoh and Zakaria Jobila initiated in 2014, suggest that building practices and architectural styles of this settlement have gone through changes since the 16th century (Genequand et. al. 2016). The built environment and social context of the settlement appear to be undergoing rapid transformation due in part to emigration of inhabitants to New Buipe, a new settlement they had since the 1950s established and to the effects of contemporary constructional processes and land management. However, there is yet to be a detailed study of contemporary indigenous buildings and building practices of the settlement in relation to their social contexts and their relationship to those of the past. There is the need for a study that will inform on current building practices and styles at Old Buipe, how these connect to the past, variables that influence these practices and styles, and any continuity and changes that may be observed in the practices and styles within the settlement.

1.2 Research Aim and Objectives

This study seeks to investigate the indigenous architecture of Old Buipe. It explores the impact of human activities and transformational processes on the architectural landscape of the settlement. The main objectives of the study include the following:

1. To investigate the character and layout of contemporary buildings and processes of building construction in the settlement in order to identify links that may be found between these and the archaeological record of the Old Buipe settlement.

2. To identify how the nature and layout of buildings relate to social and ideological structures within the Old Buipe settlement.

In order to achieve the above stated objectives, I sought information on variable architectural styles and building techniques, compound layout and factors that influence how buildings are constructed in the settlement.

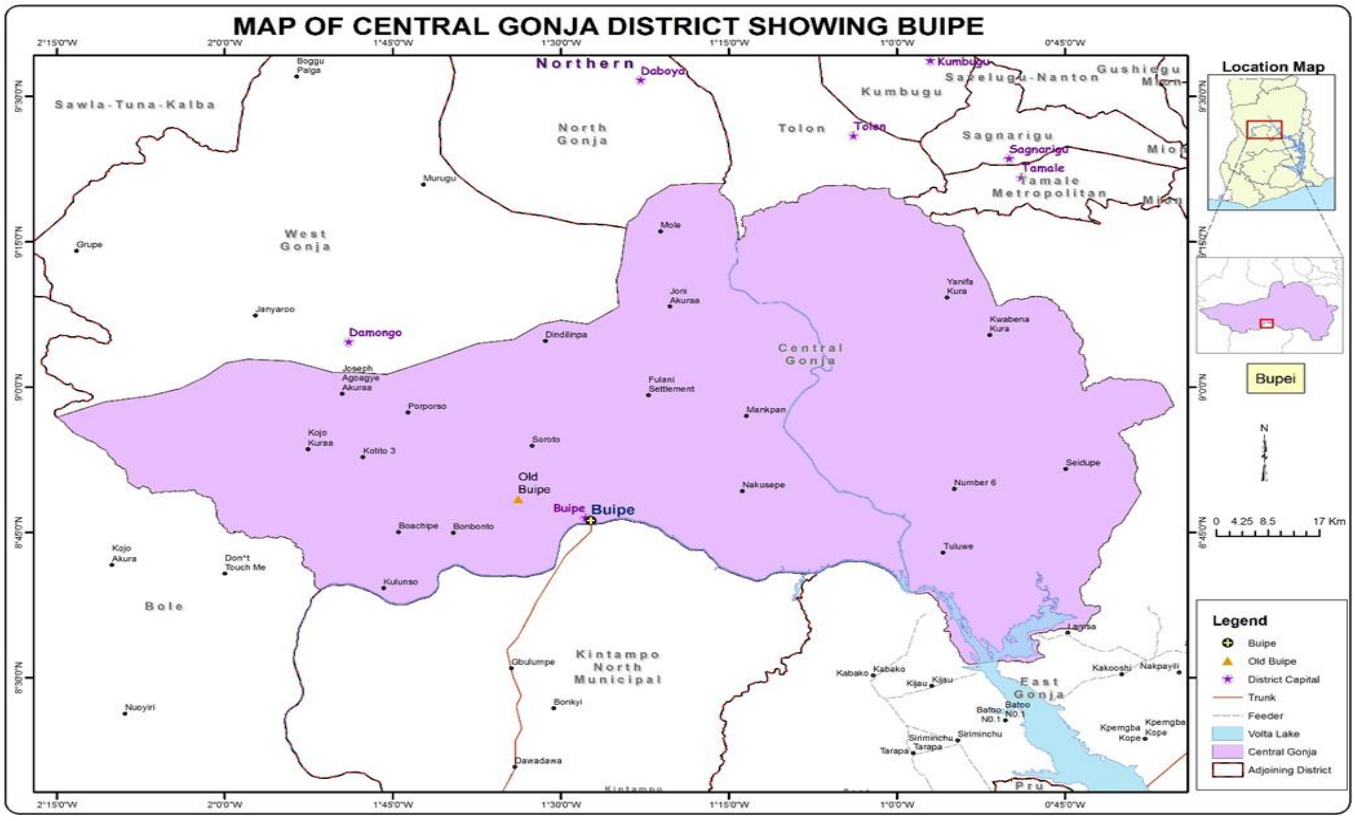
1.3 A Background to the Study Area

Buipe is a relatively small settlement and capital of the Central Gonja District of the Northern Region of Ghana (Map 1). It comprises an earlier and a newer settlement, that the local people refer to as Old Buipe and New Buipe respectively. Old Buipe, the focus of this study, is located about 10 kilometres north of the lower course of the Black Volta (Map 2) (Genequand et. al. 2016) within the geographical coordinates of 8°4'83.0" N and 1°3'33.0" W.

Old Buipe is part of the Gonja kingdom which consists of twelve (12) divisions or states today. According to Goody (1967) the kingdom had fifteen (15) divisions in the 19th century. The settlement is a historical site that once linked several ancient towns such as Begho and Akan states to the northern regions of Ghana and beyond. Its location on an ancient trade route appears to have facilitated its development into a settlement that was relatively larger than the contemporary village. The village had a dispersed settlement with compounds that extended farther east of its present location. Previously occupied areas of the settlement are now characterized by mounds and vegetation. Old Buipe became depopulated in the mid twentieth century when most of the villagers migrated a few kilometres south-east of the village to found New Buipe (Genequand et. al. 2016, York 1973). According to local informants, recent emigrations of some inhabitants were due in part to the construction of a major road that connected Kumasi and Takyiman in the south to Tamale and Bolgatanga across the Black Volta River to the north (see Wetcher 2016). Today,

Old Buipe has become the hinterland of New Buipe and is hence referred to locally as "*Buipe Dada*" which literally means 'Old Buipe.'

Both New and Old Buipe are ruled by a chief, the Buipewura, whose palace is situated in New Buipe. The *Buipewura*, however, has assigned a custodian to *Buipe Dada* whom the people refer to as 'Chairman.' He serves as the symbolic figure of authority on the land and executes the rule and orders of the *Buipewura*. The people of Buipe celebrate the annual Damba festival where they perform the Damba dance, amongst others. The rituals and dances are performed at the gathering of elders and the community in the chief's palace in the presence of the *Buipewura* (Adu-Gyamfi, 2016). The Gonja people are largely Muslims though some are traditional believers. This religious practice is equally represented at *Buipe Dada* where the people are mostly Islamic practitioners with few of them believing and practicing indigenous religions. Though the settlement history of Gonja is immense, only limited documentations exist about it.



Map 1: Map showing Both Old and New Buipe
(Source: Dept. of Geography; Courtesy Christopher Wetcher, 2016).

1.3.1 Climatic conditions

The settlement lies in the southern savannah climatic belt which is characterized by a single rainfall season and a single dry season (Dickson & Benneh 1970; Prussin 1969:9). The mean annual rainfall during the rainy season is between 800mm and 1,100mm. The rains begin towards the end of May, intensifying through June and July and subsiding in August before reaching their highest point in September. The dry season is characterized by relatively high temperatures which exceed 35 degrees centigrade during the day and decrease to about 20 degrees centigrade at night and dawn (Dickson & Benneh 1970; Prussin 1969:9). This season lasts from mid-October to mid-May and reaches its highest peak in April. Between November and February, the Harmattan season sets in with the dry and dusty north-easterly winds that flow from the Sahara.

1.3.2 Vegetation

The vegetation of the Buipe area is currently characterized by short, scattered drought-resistant trees and grasses, although it may have been heavily wooded in the past. Intensive agricultural practices like bush burning and other human activities including the felling of trees for charcoal and firewood have modified the natural vegetation. Trees found in the area include Shea (*Butryros permumparkii*), Baobab (*Adansonia digitata*), Dum palm (*Hyphaene thebaica*) and Kapok (*Ceiba pentandra*) (Prussin 1969:9). These trees are of economic value to the people in terms of the provision of food, medicinal plants, building materials and other resources.

1.3.3 Geology

Located in the Volta Basin, the Buipe area is covered by granites and sandstone soils. The Voltaian Basin which is filled with sandstone extends over a larger part of the area. This basin is surrounded by the western Gonja, Wa and northern Mamprusi plateaus (Prussin 1969:10). The soils of the area fail to retain water during the rainy season due to its granitic nature. This results in water shortage towards the end of the dry season. In spite of the nature of the soils, the area is however, drained by the Black Volta and its tributaries which often flood the land during the wet season. There are also a few ponds.

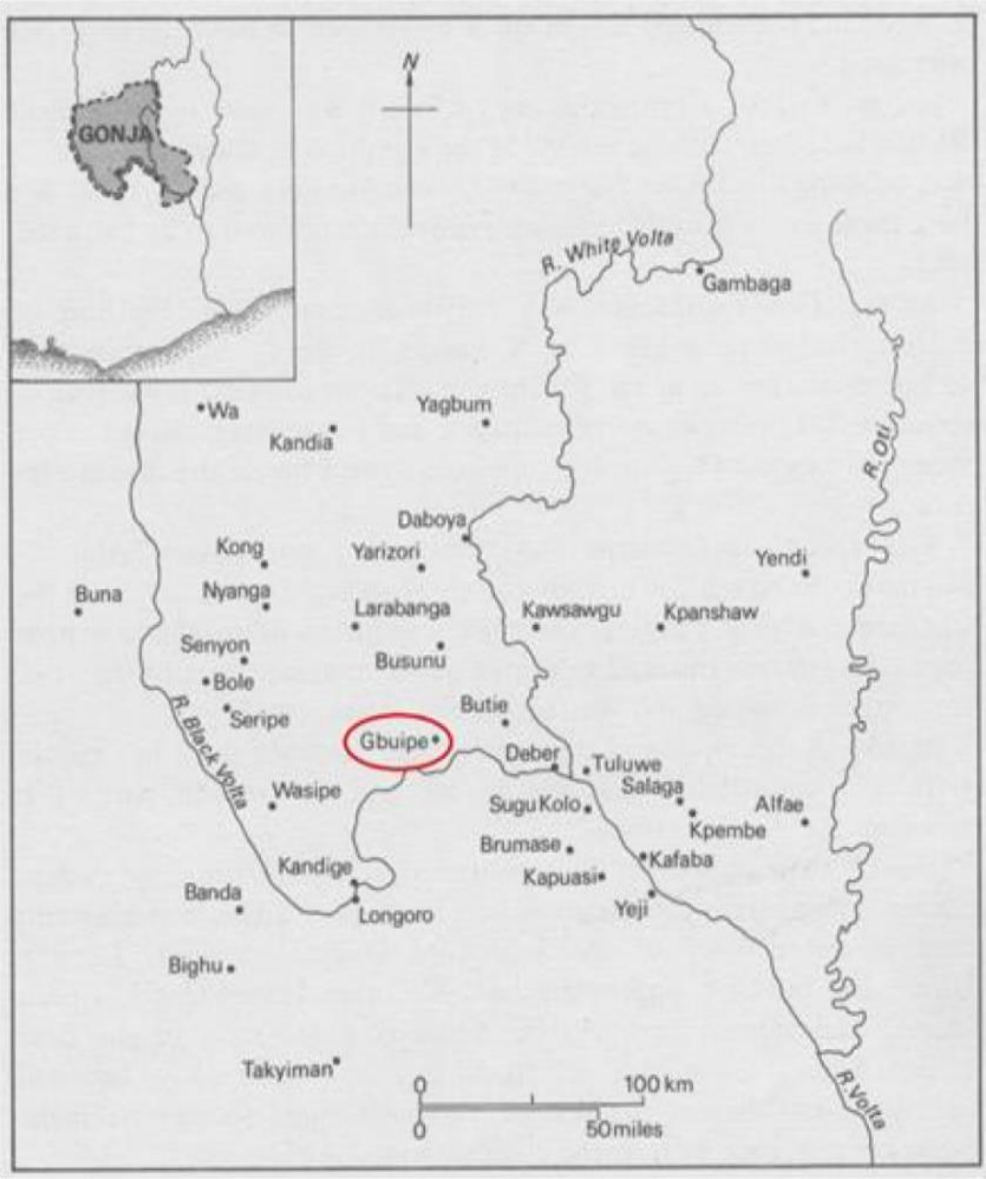
Map 2: A map of Ghana indicating Old and New Buipe.
(Source: Dept. of Geography; Courtesy Christopher Wetcher, 2016).

1.3.4 The People and their Settlement History

Buipe, also referred to on ancient maps as 'Gbuipe', comprises peoples of different cultural and language backgrounds, including the Guan, the Vagalla and the Tampolense (Prussin 1969:8) who currently speak a common dialect of Gonja that is known as Gbanyito (Shinnie & Kense 1989:2; Wilks et. al. 1986:199). The town and its people as well as the Kaffaba and the Tuluwe were part of a larger group, referred to as 'Gonge' (Delisle 1722; d'Anville 1749) that played active roles in

the Trans-Saharan and Mediterranean gold and other trading activities in the late sixteenth and seventeenth centuries (Wilks et. al. 1986:2). Due to its geographical location along the Black Volta, Old Buipe became a critical 'cross-road' at the southern extremity of the sub-Saharan trade routes between the Niger and the tropical forest area (see Maps 2 & 3). Its people traded salt and manufactured products they acquired locally from the Daboya, for example, (Shinnie & Kense 1989) and from regions north of the area with their southern counterparts, while trading kola nuts and gold from the tropical forest area with their northern and north-eastern counterparts (Anquandah 1982; Genequand et al. 2016).

According to the settlement history of the Buipe people as gleaned from their oral accounts and the published literature on the area (for example, Anquandah 1982; Goody 1967; Levtzion 1994; Prussin 1969; Wilks et. al. 1986), the Gonja state emerged as a result of trade and conquest by the Mande in the mid-sixteenth century. Prussin (1969:8) suggests that Mande speaking migrants from Mali who might have left Timbuktu through Jenné, Bobo-Dioulasso to Bonduku, Kong and Begho formed the state. The immigrants probably encountered and fused with earlier occupants of the area such as the Guan, Vagalla and Tampolense (Prussin 1969:8; Wilks et.al. 1986) and Dagomba (Wetcher 2016). The link of Old Buipe to its Mande origins is expressed in local traditions which claim that the remains of Ndewura Jakpa, leader of the Mande group that founded the town was interred there (Samsiwura Yakubu, per. comm. 13/01/2015). The historical origin of the Gonja state could be attributed to two major events; the first is the emergence of imperial Mali and the Wangara trade at Begho, and the second is the rise of Akan polities and the Portuguese trade at Elmina in the Gold Coast (Prussin 1969; Wilks et. al. 1986).



Map 3: An Old map showing Buipe and other main settlements mentioned in the Gonja Chronicles (Wilks, Levtzion & Haight 1986; courtesy Genequand D. University of Geneva)

1.3.5. Subsistence Practices and Economic activities in Old Buipe

Agriculture is the main subsistence activity of the Old Buipe people and is undertaken by 97% of its inhabitants (Central Gonja Report 2014). The people cultivate food crops such as maize, millet, pepper, white-seed melons and okra in compound and backyard gardens and in farms for domestic consumption. They also cultivate yam, millet, groundnut, beans (cowpea), cassava, and in recent

times, cashew for commercial purposes. Wild plants and edible herbs, including '*polipoli'* are also harvested for both domestic and commercial purposes.

Individual and family farmlands range from five to fifty acres and are found further to the east and west of the settlement about three to five kilometres (3km- 5km) away. Farmers commute between their homes and farms by foot, bicycles and motorbikes. The size of one's farmland depends on his capacity to cultivate.

According to local accounts farms were owned by men only, although women and children served on the farm during planting and harvesting of crops. It was against customary practices for women to own farms or land. This situation has changed in recent times, however, as women do own farms for domestic and commercial purposes today.

Hunting of wildlife and the keeping of livestock for domestic and commercial reasons are part of the subsistence activities of the people. Hunting is undertaken mainly by men and by young males (ages 12-15) to whom the skills have been transmitted by their fathers. In present times small wild animals like bush rats, squirrels, or grass-cutters are hunted, while bush bucks, kobs, antelopes and monkeys were hunted in the past.

Many Old Buipe women engage in charcoal production, while several men and women trade in farm produce, livestock and charcoal which they transport on Sundays and early Monday mornings to the New Buipe market where they encounter people from different towns (Genequand 2015; Wetcher 2016).

1.3.6 Old Buipe Social and Political Organization

The people of Old Buipe have close family ties with the inhabitants of New Buipe. Families are organized in a patrilineal system, around varying lineages each of which claims descent from a common ancestry. Family members who claim to be of common lineage constitute a clan (*Pe*). According to informants, the major clans of Old Buipe include the *Kyinkyanko-Pe, Jinnapor-Pe, Biadese-Pe* and *Yafa-Pe, Fuwa-Pe* (*Kramo), Kaba-Pe,* and *Kanti-Pe*. The members of these clans settle close by each other at particular locations of the settlement.

Their political system is structured around identifiable lineages or clans which are locally referred to as 'gates.' There are four major gates which constitute the royal families from which leaders or chiefs are nominated and installed (see Goody 1966b, 1967; Shinnie & Kense 1989), including the chief of Buipe, *Buipewura*. These gates are '*Kyinkyanko-Pe*', '*Jinnapor-Pe*', '*Biadese-Pe*' and '*Yafa-Pe.*' The chiefs of all Gonja settlements are chosen based on the gates they have and are responsible to an overlord, *Yagbonwura* (see Goody 1966b, 1967; Shinnie & Kense 1989). The current chief of Buipe is from the '*Jinnapor-Pe*'. According to oral accounts, this political structure was established a few centuries ago. The people recall eleven successive chiefs whose selection followed a cyclical order (Table 1). They claim, however, that this order has not been followed in recent years as lack of adequate financial resources have prevented some gates from selecting prospective chiefs.

Table 1: The historical order of Buipewura's succession

Names of Chiefs	Gate *(Pe)*	Date
Buipewura Adam	*Kyinkyanko*	Before independence
Buipewura Adjei	*Yafa*	
Buipewura Adangba	*Kyinkyanko*	

Buipewura Swale	*Jinnapor*	
Buipewura Musah	*Biadese*	
Buipewura Saaka Konkonte	*Kyinkyanko*	
Buipewura Jinnapor Mahama	*Jinnapor*	
Buipewura Bikunutu Konkonte	*Kyinkyanko*	
Buipewura Niprema Atakura	*Yafa*	
Buipewura Toti Kyinkyanko	*Kyinkyanko*	
Buipewura Abdulai Mahama Jinnapor II	*Jinnapor*	2009 to present

Following the relocation in the 1950s of many inhabitants of Old Buipe to New Buipe, the Buipe chief, who now resides at New Buipe, appoints an elder to represent him as a sub chief and to conduct administrative assignments on behalf of the Buipewura (Table 2). The table below provides a list of representatives who were selected by various chiefs. Beyond the traditional leadership, there is a District Chief Executive (DCE) who is appointed by the Government to supervise projects in the village on behalf of the Regional Minster in fulfilment of government's goals.

Table 2: The historical succession of Buipewura's Representatives in Old Buipe

Names	Appointed by	Date
Kabanya Broni, Gonja Broni	Buipewura Jinnapor Mahama I	
Kwabena Ninjie	Buipewura Bikunutu Konkonte	
Jamani Seidu	Buipewura Niprema Atakura	
Abudu Sakara	Buipewura Niprema Atakura	
BoapowuraDairi	Buipewura Niprema Atakura	
Yakubu Sakara	Buipewura Toti Kyinkyanko	
Mahama Lusina	Buipewura Abdulai Mahama Jinnapor II	2009 to present

1.3.7 The Household Unit

The household in Old Buipe embodied, consists of the nuclear and extended family units. Each household has a head (*kana be enumo*) who is usually a man and owner of the homestead that houses members of his nuclear family and, in many cases, members of his extended family. The head of household serves as an authoritative figure. He has responsibility for assigning land (*kasawule*) and residential facilities to or requesting these for members of his family. Informants intimated that households comprised relatively large number of members of people; between 35-45 people on average, live on the same compound including the head and his wives, his brothers and their wives and children, his children and the wives of his sons. In instances where sisters and daughters of the head of household were not married but had children, they also lived in the same housing unit. The people of Old Buipe are patrilocal, hence, families belonging to a common lineage can be found in one household or homes close by.

1.4 Dissertation Structure

This research is structured into six chapters. The introductory chapter provides a background to the study, discussing the research problem and the relevant aim and objectives as well as the study area. Chapter Two presents the research methodology that includes the intellectual framework of the thesis and methods and techniques the study adopted. Chapter Three reviews the literature on the research area. Chapter Four discusses indigenous building technology and roofing techniques, building material acquisition, building processes at Old Buipe. In Chapter Five, the settlement and the compound layout of Old Buipe is discussed and analysed, highlighting household plans, structures in the compound, their functions and spatial relationships as well as abandonment and reuse of space. The last chapter, Chapter Six, provides a discussion of findings, summaries, recommendations and conclusion of the thesis.

CHAPTER TWO

RESEARCH METHODOLOGY

2.1 Introduction

This chapter discusses how the study was undertaken. It presents the intellectual framework within which the study was done and the specific methods, techniques and tools that were employed to gather relevant field data. In addition to discussions of approaches to settlement and landscape studies and to material culture studies, the information presented also covers ethnographic and archaeological research methods and techniques that were applied in this study. The chapter also includes literary data obtained from library and online sources.

2.2 The Intellectual Framework

This work has been undergirded by two main study approaches, the settlement and landscape approach and the approach to material culture studies, which are important to historical archaeological research into the built environment (e.g. Beaudry 1986; Delle 1996, 1998; Handsman and Harrington 1994; Harrington 1989a; Paynter 2000; Rubertone 1989b). The settlement and landscape approach provided the basis for assessing the distribution of building types across the Old Buipe cultural landscape, while conceptualisations of material culture fostered understanding of relationships that may be found between the tangible architectural landscape and its intangible underpinnings. In this regard, it is assumed in this work that the people of Old Buipe closely interacted and shared in similar patterns of behaviour, cognitive structures while actively learning from one another through a process of socialization (https://carla.umn.edu/culture/definitions.html). The shared patterns of behaviour thus identify them as members of a cultural group, and also set them apart from other peoples. These behavioural

patterns may be transformed temporally in relation to changing environmental, demographic, economic, ideological and other circumstances.

2.3.1 Settlement Pattern and Landscape Approaches

Settlement and landscape approaches are part of a growing platform that is vital for the description, analyses, understanding and explanation of long-term cultural and behavioral changes associated with landscapes and settlements and relationships that may be found between sites and the physical environments in which they are found (Feinman 2001: 13937). Although settlement pattern approaches may be broadly applied at the regional scale, they may also be used to examine and understand particular settlement arrangements, structures and occupational surfaces and how these inform and shape a given society and its culture (Ashmore 2007:41; Willey 2005). A study of settlement patterning and architecture is also useful for examining socio-economic and ecological principles for settlement patterning and the processes of cultural change and continuity (Butzar 1982). Rubertone (1989b: 50), defines cultural landscape as space that is "shaped and modified by human actions and consciously designed to provide housing, accommodate the system of production, facilitate communication and transportation, mark social inequalities, and express aesthetics."

In line with the conceptualisations of settlement and landscape approaches discussed, the character and distribution of buildings in Old Buipe are considered in this work to have resulted from perceptions the local people held and shared consciously and unconsciously about their built and natural environment and the changing social, economic, demographic and cognitive contexts within which they operated.

2.3.2 Material Culture Conceptualised

Material culture is conceptualized here as things people construct or engage with to objectify aspects of their cognitive and social structures in relation to their physical environment, including artefacts, buildings and technology required to produce things (Tilley 2006). Studies of material culture may thus be based on the grounds that objects are meaningfully constituted (Hodder 1987:4) and may be a means of communication among the people, as they are laden with messages and other information that can be actively and passively deciphered and used while people interact and engage with each other (Paynter 2000:11). According to Prown (1982: 1-2), objects may inform on, and reflect inherent and attached values and beliefs as well as historical events of the makers and users. They serve as a window through which a society's systems of belief and practice can be investigated.

The architectural landscape of Old Buipe was thus studied as a medium through which relationships that may be found between the different types of buildings, the layout of compounds, and the spatial distribution of buildings and compounds and the social, ideological and environmental circumstances of the people may be understood. Materialist approaches may help to infer cultural meanings from relationships people may have with their environment (Hodder 1994:19). They may also help to trace diverse social practices within a dynamic generation of identities (Calvo et. al. 2014:25). In this case, a study of Old Buipe's architectural landscape as material culture presents opportunities for identifying and interpreting intricate cultural elements that are related to the "construction of apparently less explicit" architectural dynamics. The study may also enhance understanding of the role architecture plays in the construction and composition of the Old Buipe society (Oestigaard 2004:79).

2.2 Research Methods and Techniques

Generally, information was obtained partly from literary sources, including library and online materials. Field research in the Old Buipe area involving ethnographic studies, architectural and topographical surveys, measurements and illustrations of buildings, and photography were undertaken to elicit primary data.

2.2.1 Library and Online Research

With regard to library and online research, various publications and other documented materials on Old Buipe and other Gonja settlements as well as published archaeological and ethnoarchaeological studies and literature on architecture in and around Africa were searched for and reviewed. Colin Flight's study of settlement mounds in the Central Gonja area (Flight 1968) and Prussin's anthropological investigation into indigenous architecture of the northern areas of Ghana (Prussin 1969), for example, provide insights into some of the early studies in the research area that are relevant. In addition, Posnansky's longitudinal study at Hani in the savannah belt of Ghana informed on changes and continuity that may be found in mud wall architecture (Posnansky 1972). Relics of buildings excavated by Richard York at New Buipe suggested that one-storey buildings were constructed of gravel and crushed limestone in the Gonja area during the first millennium AD (York 1973). Other information on Gonja culture, including architecture, was also gleaned from the works of Peter Shinnie (1981; 1986). Recent works by Denis Genequand and other researchers on architectural features and other materials found in the archaeological record at Old Buipe (Genequand et. al. 2016, 2017) were valuable sources of information to this research.

Apart from textual data, old maps and information on old settlements and their locations and landscape were also extracted from the library sources. Documents available on the internet such

as Google satellite maps which showed the current settlement, patterns and road networks were assessed.

In spite of the value and relevance of the literary information gathered, I was mindful of distortions that could occur particularly in translations into English of Arabic manuscripts on Gonja as published (for example by Wilks et al. 1986). Information from such sources were thus cross checked with other literature, oral traditions and ethnographic data obtained among the contemporary population of Old Buipe.

2.2.2 Ethnographic Investigations

Fieldwork at Old Buipe included an ethnographic survey of buildings and household compounds and the distribution of buildings on the landscape in relation to the social organization of the local people. The methods employed in the survey comprised informal interviewing of a cross-section of inhabitants of every household, focus group discussions with select groups of men and women, direct observations and photography. Data from past archaeological studies, ethnographic and library sources informed the construction of an expansive interview guide. Two informant/interpreters, Abdallah Lusina, a trained teacher, and Tanko Lusina, a Polytechnic graduate, assisted with the ethnographic study in September 2016 and from January through February 2017 when in-depth oral accounts were collected. The informants were fluent in both the local language and English and were well known in the settlement. They also had good rapport with the members of the community.

Among the people interviewed were Mahama Lusina, the representative of the Buipe chief (*Buipewura*), the late 'warrior leader' Samsiwura Yakubu, fourteen elders, two local masons and seven young people. Two focus group discussions were held with a group of five opinion leaders

and with a group of four women of a select family. Questions posed were in relation to their settlement and culture history, architecture (building technology and process), marriage and family relations. The interviews and focus group discussions provided the local people with platforms to express and share their views on their settlement history and architectural behaviour.

Direct observations of mud-brick house building processes, the destruction and reconstruction of an old kitchen structure, the reuse of space, and the recycling of old mud walls (clods) for brick making and for mortar mixing were made. These observations offered me the opportunity to gain insights into how the local people in their natural environment performed various tasks while interacting with their relations and neighbours. After explaining the usefulness of photography in research and to minimize possible apprehension that the people I observed might have, these processes were photographed.

2.2.3 Reconnaissance, Topographical and Architectural Survey

Since archaeological excavations were not undertaken as part of this study, I reviewed reports and publications on past archaeological excavations done in the area and other Gonja settlements by early scholars and as part of the ongoing GAP. I actively participated in the 2015 and 2016 field seasons of the GAP and conducted independent study in the latter part of 2016 and early 2017. Work during each of the GAP field seasons comprised reconnaissance surveys that included excavations, topographical surveys, mapping of the sites, cartography and analysis of satellite images of the site. The excavations covered four trenches that were dug in the settlement at loci and which were selected through surface survey and respectively labelled Fields A, B, C and D (Genequand et. al. 2016). These trenches have provided a wealth of datasets including relics of walls spanning the 16th through the 19th centuries. The walls found in Field C were still standing

and compact as compared to Field A where the walls had crumbled. These archaeological findings formed the basis of the ethnographic enquiry into the contemporary architectural landscape.

The reconnaissance survey led to the identification of some key features in the settlement such as an ancient stream, whole mounds, mounds that were partly dug out for building materials, abandoned structures, public structures, and the settlement pattern. Topographical surveys, which were conducted in mainly Old Buipe using a total station and Topstation (JSInfo) software, were useful for the production of maps and plans of the study area (see Map 4).

In the course of the architectural survey, three main types of buildings were identified as well as building materials and other resources relevant to building construction. During the September 2016 survey, measurements and illustrations of all buildings in the settlement were made, while in 2017 selected compounds were plotted and mapped using a total station and Topstation (JSInfo) software. The number of buildings and other structures, the functions of these buildings and structures and their relationships to each other were observed and documented.

In documenting the households of Old Buipe, all compounds were described, measured and illustrated by drawings. Eight compounds were selected using judgmental sampling to represent the types of compounds present in the village during the analysis of the data gathered at Old Buipe. These compounds were selected based on prior knowledge of the building types available and their spatial layout. The sample selected is representative of the compounds found at Old Buipe. Among the eight selected, a compound plan (Fig. 5.9) was designed for four compounds located within the same vicinity to show proximity while house plans were generated for five compounds.

An architectural survey of the five compounds from the selected sample was undertaken with a Total Station. This enabled the efficient and accurate plotting of geographical points in order to

generate the ground plans (Appendix I, Plate 1-5). These ground plans were developed using the Adobe Illustrator and 'TopStation' software. The survey and illustrations were undertaken and made by the researcher, Marion Berti (Draughtsman) and Christian de Reynier (Archaeologist) who are members of the Gonja Archaeological Project team. The ground plans were developed in order to understand the distribution pattern of building types, compound organization, as well as the use and function of space in each compound. The plan of each compound incorporates a grouping of buildings and supporting structures which are often detached from one another.

2.2.3 Post-field Data Analysis

Plans of selected houses were made using a Topstation (JSInfo) software. Illustrations, architectural drawings, map and photographs were fine-tuned and classified. Buildings were classified based on material, technology and layout. The various compounds studied were labelled as 'Houses' with specific numbers to enhance the analysis process. Judgmental sampling as a qualitative field research technique was used to select eight compounds for detailed description, illustration, analysis and interpretation in order to understand the particular context in which they were found (Žikić 2007:128).

2.2.4 Visual Documentation

A Nikon camera and a Motorola Moto G smartphone camera were used to take photographs and videos during the research. Practices that damaged old buildings and resulted in their collapse, children fetching water, mixing of mud, moulding of mud-bricks, and the construction of houses, were observed and documented photographically. Also, architectural drawings, plans and illustrations were made of buildings and structures. Although the camera served as an essential tool, informants were reluctant to freely divulge information when the camera was on. I therefore

had to seek their permission and consent before recording with the camera and in cases where these were glossed over, I had to apologise and make amends instantly. Most of the informants were, nonetheless, welcoming during this exercise.

CHAPTER THREE

A LITERATURE REVIEW

3.1 Introduction

This chapter discusses the literature and other documents assessed and reviewed in relation to ethnoarchaeological approaches to studies of architecture in West Africa and elsewhere. Literary works on the settlement history of Gonja are also discussed. Among these works are translations of 18th and 19th century-manuscripts of Arabic scholars which Ivor Wilks and other Western European scholars translated and reviewed (Wilks et. al. 1986). In addition, the section covers information on archaeological, ethnographic and other anthropological studies of northern Ghana.

Studies of contemporary societies and relationships that may be found between their material culture and associated systems of behaviour are useful to addressing archaeological issues (Schiffer 1978). The sub-discipline of archaeology, referred to as 'ethnoarchaeology' comprises use of ethnographic data 'to deepen knowledge and understanding of the archaeological record, how this record can be better researched and interpreted, and how research results can be adequately explained' (Gavua 2012). As a study of the life ways of a contemporary people for archaeological purposes (David and Kramer 2001; Ogundele 2005:26-27), this field may enable the researcher to 'appreciate the processes of change over extended periods of time' and to 'delineate significant changes in site formation, uses of material culture and reactions to environmental, economic, and political stimuli' (Posnansky 2004). Ethnographic studies of analogous prehistoric and ethnographic villages may also inform on kinship, including extended patrilocal and polygamous family systems (Flannery 1972:30-38).

Thus, the results of ethnoarchaeological studies and archaeological ethnographies may foster analogy or inference to understanding the past and to resolutions of contested past settlements (e.g. Maskell 2007). The sub-field may provide a methodology for relating the architecture and settlement of Old Buipe to their antecedents particularly where direct connection can be found between the past and present inhabitants of the settlement.

It is noted, however, that present day cultures of indigenous peoples in Africa may be heavily influenced by the cultures of other peoples of the world, including Western Europeans and there may be 'preconceptions when conceptual relationships between past and present are being established' (MacEachern 1996:244). Thus, ethnoarchaeology will be most beneficial in constructions and reconstruction of the culture histories of indigenous African communities when the culture of each community is studied as an independent unit before it is associated with Western European ideas and elements.

3.2 Ethnoarchaeological Studies of Architecture in West Africa and Ghana

Research by scholars such as Merrick Posnansky at Begho (Posnansky 1972), Roderick McIntosh at Hani (McIntosh 1976), Kwaku Effah-Gyamfi at Bono Manso (Effah-Gyamfi 1979) and James Anquandah among the Shai (Anquandah 1992) are among the earliest ethnoarchaeological studies that have been conducted across Ghana.

Posnansky and his team's work at Hani between 1972 and 1974, for example, yielded information on house foundations and other architectural remains, house-building techniques and mud wall decay (Posnansky 2004:32). Their work revealed that although the Hani settlement has changed in configuration, there has been continuity in settlement's composition, as houses are rarely abandoned, and are rebuilt on the same locations with soil obtained from a specially dug pit

adjacent to the house (Posnansky 2004:36). The soil, which is puddled and used to construct walls, often include ceramic sherds and other materials recovered from the pit.

As a follow-up to this study, Roderick McIntosh explored the processes and patterns of decayed or decaying building materials in the archaeological record and suggested methods by which archaeologists may identify evidence of decayed mud walls and patterns and processes of deterioration (McIntosh 1976). Kofi Agorsah's (1985) investigation of how earth-walled buildings transcend into the archaeological record at Nchumuru provides insight into how local buildings are constructed and maintained, and the processes that contribute to the deterioration and collapse of such buildings

A preliminary study of architecture among the Bulsa of northern Ghana by Clement Apaak (1996) provided some knowledge on construction technologies, various types of buildings and their functions as well as relationships that may be found between compound organization and social structure. The social logic underpinning the built environment in relation to lineage organization among the Tallensi as studied by Gabrilopoulos and other researchers suggested that the built environment can provide the background upon which social action occurs (Gabrilopoulos et. al. (2002:222). Eyifa's (2007) research among the people of Tongo Tengzug in the Upper East Region of Ghana has shown that building construction, including wall decoration and associated symbolism, may relate to differences in gender roles. The influence of human action, socioeconomic situations of people and renegotiations of social positions in configurations of domestic space has been identified in the White Volta Basin of northern Ghana (Calvo et. al. 2014:30). Such space may be used to express and codify multiple messages about the social and cultural dynamics of a given community of people in areas such as giving birth, feeding practices, craftsmanship, and death (Calvo et. al. 2014: 31)

A study of architecture in Zaria suggests that variations in the climatic conditions affect building styles, as buildings are often constructed in this settlement in relation to changing climatic conditions, in addition to various cultural factors (Moughtin 1985). Moughtin observed, for example, that circular huts with mud walls and steep conical thatched roofs with eaves were popular among the non-Muslim peoples of the Jos plateau and was probably a preferred type of building in the Western Sudan over the past two thousand years, in spite of the adoption by some inhabitants of North African variants (Moughtin 1985: 123). He also noted that the preferred type of building was resistant to erosion. The roofs, fitted with extended spouts and eaves directed rain water away from the walls, while the base of most walls projected about 0.45m to form a plinth that provided a seat and prevented surface water from damaging the foundation (Moughtin 1985:123).

A study by Diane Lyons (2007) in Tigray, Ethiopia, of how vernacular architecture served as space of political authority and power during the last century revealed that domestic houses are active political spaces which people may incorporate into their larger political landscape. It also suggested that hierarchical power and socio-economic status may influence vernacular architectural designs (Lyons 2007; 2019).

3.3 Architecture and Building Techniques of the Gonja

According to Prussin (1969:82), two main types of architecture can be found among the Gonja. Architecture, including compound layout, among the Gonja east of the White Volta are generally circular and show close affinity with those of the Dagbon, while buildings found in western Gonja (of which Larabanga is a typical example) are reminiscent of the rectilinear construction seen in the ‘urban centres’ of northern Ghana which, according to Prussin (1969:82), is inhabited by

mainly Mande-speaking populations. Thus, while the circular buildings are found among the Gonja east of the White Volta may reflect indigenous architectural styles, the rectilinear buildings west of the river may be new introductions to the local architectural landscape.

The rectilinear architecture, comprising buildings with flat roofs whose pinnacles and waterspouts empty into confined alleyways have often been associated with urbanism and with ancient urban centres located farther north along the Trans-Saharan trade routes (Prussin 1969: 84-85). Prussin observed that many of these buildings as found in Larabanga, for example, had little or no decorative treatment. Compounds of such buildings are relatively large in comparison with those seen elsewhere in Northern Ghana and their entrances may have "groundnut granaries that stand like guards in front of them" while open spaces found between them may house a large *dawadawa* tree or a mango tree to provide shade in a sitting area made of logs (Prussin 1969:86).

Generally referred to as 'Sudanese architecture,' the indigenous rectilinear architecture is characterized by adobe, daub, or mud-brick buildings some of which may have two storeys with flat roofs and open into courtyards (Elleh 1997:24-25; Eyifa 2007:24; Lyons 1996:357). In many villages, they may be interspersed circular buildings on the same compounds (Prussin 1970:13). Rectilinear buildings were, nonetheless, constructed by missionaries, colonial officials and Arab/Swahili traders who operated in West Africa and signified wealth, modernity, urbanity and political power (Hull 1976:69).

3.4 Ancient Mounds and Settlement Features

Mounds of variables sizes and profiles have been observed to be common to the Gonja archaeological landscape (Flight 1968). The result of excavations Flight (1968: 97) had undertaken on eight of these mounds suggest that they measure on the average 76 metres (250 feet) across

and 9 metres (30 feet) high with the larger types being of the same origin. Some of them consisted of a series of superimposed building levels, with the deteriorating walls of the superstructure collapsing into the rooms of the standing walls. Flight asserted that the buildings were invariably rectangular and divided up into small compartments of 2.4-3 metres (8-10 feet) across with and flat roofs (Flight 1968: 97).

Matthewson (1968) observed, however, that settlement mounds that were found and excavated in Central Gonja were about 6 metres (20 feet) high and roughly oval in shape with an average diameter of about 60.9 metres (200 feet). A number of the mounds excavated in Juni and Kisoto, for example, represented the collapsed remains of complex architecture (perhaps multi-storeyed buildings) which probably consisted of three main successive periods of construction (Matthewson 1968:109). Oral traditions of Kpembe, a Gonja settlement, claims that the 'palace' of Jakpa, the legendary hero of the Gonja, was constructed of a mixture of shea-butter and honey (Matthewson 1968:88). A preliminary survey of the site of this 'palace' revealed the ruins of a rectangular building, about 22.8 metres (75 feet) long and 10.6 metres (35 feet) wide, with walls which were still standing measuring between about 1.8 metres (6 feet) and 3.6 metres (12 feet) high (Matthewson 1968: 88).

Dating of these mounds has not yet been completely resolved. However, the absence of smoking pipes from the Juni and Kisoto mounds suggests that the sites of these mounds were occupied prior to the mid-17th century and before the introduction of the pipes to the area (Ozanne 1962). The later phases of mounds found at Krunkrunmboi and New Buipe contained smoking pipes of the late 17th and 18th centuries (Flight 1967; York 1973).

York (1973:1) identified three distinct phases of a broken sequence from the excavations of three large mounds at New Buipe and dated the first phase to the late second or early first millennium

B.C., the second phase to the first millennium A.D., and the third phase between the mid-fifteenth and the early eighteenth centuries A.D. At Old Buipe, however, York found rectangular mounds with rectangular spaces that looked like courtyards that probably dated to the mid-sixteenth century (York 1973: 4). He observed that the Old Buipe settlement declined in size due to a motor-road that was constructed in the 1950s and to ferry transportation on the Black Volta. Relics of the previous settlement could be identified within a radius of about 1.2km around its current boundaries.

Work undertaken in 2015 during the first season of the Gonja Archaeological Project that Denis Genequand led and of which I was a team member, revealed two distinct ancient settlements in Old Buipe. The first of these comprised "the modern village and a number of ruins, mounds including other ancient places in its surroundings" and was "bordered to the south by a vast empty area still remembered as the former market place." (Genequand et al. 2016:7). The second of the ancient Old Buipe settlements covers an extensive area that encompasses different shapes of archaeological mounds (Map 4). Although this second settlement is rich in material remains, the local people do not have memories about it. Genequand et. al. (2016:7) opined that this may be due to the "relative antiquity" of the site.

Two types of mounds were identified at Old Buipe by researchers of the Gonja Archaeological Project (Map 4). The first type of mound is sub-circular or oval and elongated and do not present any particular internal relief, while the second type is more or less quadrangular and orthogonal with internal depressions (Genequand et. al. 2016:8). The latter type of mound has been observed to match buildings or sets of buildings with orthogonal plans which are organised around courtyards (Genequand et. al. 2016:8).

The earlier forms of buildings identified were characterized by earthen walls which measured between 0.60 m and 1.10 m at the base (Genequand et. al. 2016:21). Some of these walls had traces of greyish earthen-based coating and cross at right angles to suggest rectangular or square architecture that had flat roofs (Genequand and Apoh 2017:151). The walls, which were made of "hardened grey-brown clay, with no apparent additions such as gravel, but had a few small laterite blocks and generally present a slight batter" appear to have been constructed using the random-coursed (cob) technique (Genequand et. al. 2016: 21). Several vertical cracks observed in these walls were probably due to desiccation. No remains of mud brick were observed. The faces of the walls were often covered with a layer of greyish plaster (which could be clay mixed with ashes) with original thickness about 1 to 2 cm. The case of one of the walls that was labelled 'M 2005' suggests that walls at the site were built directly on the floor, without foundations (Genequand et. al. 2016: 21).

The floor of some of the earliest buildings identified seems to have been plastered, whereas the floors of subsequent buildings were made of laterite gravels. Some of the floors were superimposed (Genequand et. al. 2016: 18). This suggests the reuse of constructional space on compounds. Charcoal samples retrieved from the floors produced dates that suggest the constructions spanned between the 16th and 19th centuries (Genequand and Apoh 2017: 151).

Preliminary conclusions Genequand and Apoh (2017:158) made suggest possible multiple co-habitation of compounds in the ancient settlement of Old Buipe. These researchers also observed the possibility of different quarters or neighbourhoods in the settlement that were related to distinct ethnic, linguistic or religious identities, kinship affiliation, or activities (Genequand and Apoh 2017:158).

CHAPTER FOUR

OLD BUIPE INDIGENOUS BUILDINGS AND CONSTRUCTIONAL PROCESSES

4.1 Introduction

This chapter discusses the various types of buildings that are found in Old Buipe and the processes by which these buildings are constructed. The materials used in the construction processes, how these materials are procured and processed and the various methods and techniques by which buildings are constructed are addressed. Building construction is an aspect of culture humans use to adapt to their physical environment. Besides expressing the needs of people, buildings protect them from the elements and unpredictable fluctuations in climatic conditions and other external conditions that may present "principal hazards or discomforts of life" (Prussin 1969). Indigenous people, such the people of Old Buipe, may have their peculiar ways of designing and constructing buildings that suit the environmental needs. As observed elsewhere, indigenous or traditional methods of building and styles of ornamentation may evolve from the use of locally available materials (Hyland 1969:10).

4.2 Categories of indigenous buildings found in Old Buipe

Indigenous buildings of Old Buipe may be referred to as earthen constructions (Prussin 1981) made primarily of daub or earth mixed with water and tempering materials. They are referred to locally as mud-houses (*kɛdanga)*. Two main types of buildings are found at Old Buipe. These comprise rectangular and circular (round) buildings. The rectangular building is predominant and serve to house people, while circularly shaped constructions usually accommodate livestock. Circular structures are known to have been built in the distant past to serve as palaces or homes for older women (Samsiwura Yakubu, per. comm. 18/09/16).

The buildings are made of daub walls (Fig. 4.1), brick walls (Fig. 4.1) and concrete blocks (Fig. 5.11) and may be roofed with either grass or aluminium/zinc sheets The walls are mostly plastered with mud mortar (Fig. 4.2) with a few coated with cement mortar. Unlike those made of daub, walls constructed of bricks are rarely plastered. Concrete wall buildings are a novelty.

4.2.1 Rectangular buildings

Two main types of rectangular buildings are found at Old Buipe. These comprise single-room (Fig. 4.1) and multiple-room buildings (Fig. 4.2). The single room building, considered by the local people as the older type, has an average floor plan of 3.50 m by 4.80 m with a portico/veranda that is about 1.40m in width. It is normally roofed in a conical style. The multiple-room rectangular building consists of two to three rooms that are arranged to face a central courtyard and is roofed with thatch using triangular truss saddleback technique. A combination of both types of building may be found on a compound in which case the buildings are linked by short walls.

Informants expressed preference for rectangular buildings for a couple of reasons. First, such buildings can be constructed conveniently with relative ease. The second reason is the fact that the skills and knowledge systems associated with the construction of such buildings are traditional and have been shared between and across generations of the people.

Fig. 4.1: Daub (left) and mud-brick (right) rectangular buildings (single rooms) with conical thatch roof in House 8 (by D. Genequand, 2016)

Fig. 4.2: Rectangular mud-brick structure with saddleback triangular truss thatch roof (by D. Genequand, 2016)

4.3 Building Constructional Processes

Building construction at Old Buipe is undertaken by specialists (masons and carpenters) with direction and assistance provided by persons who commission buildings, including heads of households and able young men and women. It is usually undertaken during the dry season, particularly from January through March when weather conditions are favourable.

The knowledge and skill of material acquisition processes and of constructing particularly indigenous daub-wall structures (*kɛdanga*) at Old Buipe are passed on from one generation to the next. Fathers who have such knowledge and skills as well as professional builders (*aprupor*) share them with their sons, kinsmen and apprentices. According to local informants, the specialists acquired the art of building through observation and hands-on practice when buildings were constructed, as there was no formal educational training in building technology. It has, however, become uncommon for sons to learn the practice from fathers and hence there is increasing reliance on a few specialists.

Usually, men engage in building construction (Fig. 4.3). However, women and children (young boys and girls) fetch water to bring to construction sites and offer other services that may be required of them, including carrying of earth (clay and sand), branches and grass from where they are obtained to building sites. Women may also cook for men engaged in the building process (Fig. 4.3) and prepare a special meal to celebrate the completion of a building.

Fig. 4.3: The woman (right) of House 20 cooking and serving while construction was ongoing

4.3.1 Building Materials

Buildings in the Old Buipe settlement are constructed of a combination of local materials such as daub, branches (wood) and grass and of other materials like cement, lumber, nails, aluminium/zinc sheets and paint which are acquired from nearby markets. Most of the buildings found on the 25 compounds surveyed during this research are made of locally acquired materials. These buildings are often interspersed with constructions that are of non-local materials. The use of non-local materials may be linked to changes in the social and economic situations of families. The main kinds of local materials that are used in indigenous building constructions in the settlement are discussed below.

4.3.1.1 Daub

Daub, a combination of clay, water and tempering materials, is the most commonly used local material for wall construction. Ancient mounds, collapsed buildings and archaeological remains of walls observed in the settlement indicate that daub has been the primary material used for construction of building structures. Clay is mainly dug by men with hoes and pickaxes from the neighbourhood where a building is to be constructed or from a distance on the outskirts of the settlement (Fig. 4.4) and is carried by them, as well as women and young men, to the building sites. It is used directly or moulded into bricks. The particular type of daub, locally referred to as '*gembi'* is suitable for each stage of wall construction and is identified by specialist builders. The skill of identifying and processing good quality clay into daub is passed down through generations of builders.

Two main types of daub, one characterised by a mixture of clay and gravel and the other being a mixture of clay and honey have been identified by local informants (Samsiwura Yakubu, per. comm. 18/09/16). The daub made of clay and gravel was for the construction of walls while the mixture of clay and honey functioned as a bonding agent (mortar) for brick-wall laying and as plaster. The clay and honey mortar is known to have strengthened walls to withstand harsh weather conditions in historic times. Its use has been discontinued probably due to the scarcity of honey and to the availability of other materials like cement and paint. The discovery by the local people of silty clay with malleable features may have also contributed to the disuse of the clay and honey mortar. Processing of the silty clay and the use of this clay in wall construction is, according to informants, less difficult and time consuming.

Silty clay has become the most common material for plastering walls as it becomes quite elastic (gummy/starchy) when mixed with water. It is generally used to plaster the internal surface of

walls and the floors of rooms. The outer surfaces of a few walls are plastered with this material. The earth is often acquired from the outskirts of the village.

Fig. 4.4: Digging, mixing and kneading of clay at Old Buipe (Photo by D. Genequand)

Sometimes remains of collapsed walls are crushed and mixed with fresh clay as tempering agent during the preparation of daub. In most cases, the wet daub is left for two to three days to solidify and for some its inclusions to soften up. It is then remixed by turning and kneading with hands and feet into the desired workable consistency and moulded into spherical or cylindrical clods which are used in forming walls.

4.3.1.2 Water

Water is essential to building construction at Old Buipe. It is used in mixing and kneading clay with gravel (as a temper) to render it malleable. It is also used in kneading mortar for bonding layers of walls, plastering and smoothing floors. It is the responsibility of women and children to fetch water into barrels, big pots and basins in the household for building purposes.

Today, a borehole mechanical system has become one of their main sources of water for families, minimising the drawing of water from distant ponds and streams. Children, specifically young boys (ages 8-14) generally perform the task of fetching water from the borehole. Water from this source is transported by motorised tricycles, popularly known as “Motor King”, to building sites (Fig. 4.5).

Fig. 4.5: Photo of children supplying water to the brick making site on ‘MotorKing’ (Photo by Author)

4.3.1.3 Thatch and Wood

Thatch for roofing buildings is derived from tall *tussocky* grass *(Poa)* that naturally grows in the savannah woodland area where Old Buipe is found. Two types of thatch, white (*atinbor fufuo*) (Fig. 4.6) and black (*atinbor kidim*), are distinguished by the local people. The people claim that the white variety lasts longer than the black. The grass is harvested from nearby fields and bound into bunches with plant fibre before being transported to compounds where they are left in the open to dry. When it is considered to be dried properly the larger varieties of grass, referred to locally as *agasa*, is woven by mainly women (Fig. 4.6) before being used to roof buildings. Occasionally, men weave the grass depending on the roofing style. The rest of the grass that is not woven is used to fill in the open spaces in between roof coverings of the woven thatch in a process called *mobisi*. Fibre of a plant locally known as '*kenymbele*' is used for binding and weaving of thatch and the thatch onto wooden frames of roofs.

Bamboo (*Bambusoideae*) and wood from a tree locally called '*kakube'* are most preferred for constructing roof frames due to their high quality and durability and their ability to resist insect attacks. According to oral accounts of the Old Buipe people, the '*kakube'* evokes good omen that attracts visitors/guests to homes. Guest and visitors are believed to bring 'good fortune' to homes. Sawn wood is also used in some cases for roof frameworks. In cases where sawn wood is used, the *kakube* is used as poles supporting porticoes.

Fig. 4.6: Harvested thatch (*atinbor*) for roofing (Photo by Author)

4.3.2 Indigenous Buildings Techniques

Two main building techniques are employed by the people of Old Buipe. They are the random-coursed technique (cob) and the brick-laying technique. The former, according to oral accounts of the people and archaeological records (Flight 1968; Genequand et. al. 2016; Matthewson 1968; York 1973), has been widely practiced over centuries. The latter is a recent choice in indigenous architecture.

4.3.2.1 Random-coursed Technique

This random-coursed technique is used to produce walls that are locally known as *kɛdanga* or *agbɛl*. It involves the spreading and superimposition of layers of daub moulds to form a wall. Before walls are raised, the construction site is prepared by clearing of tree stumps, grass and dirt. Prayers are then offered after which the presiding mason marks the outline of the building plan on

the floor with a hoe up to about 10cm below surface for a foundation to be laid. Pegs and twine are used to create straight lines and right-angled corners.

Following the marking of the building plan, moulded, wet daub is laid horizontally across the marked space. The daub is kept malleable through continuous sprinkling of water on it while it is being spread out. Water is also splashed onto the walls to enhance the joining and smoothing of the layers. Each layer is raised to about 30cm wide and 60cm high and left to dry for about a day or two before the next layer is added on. Five distinct layers, on average, are superimposed on each other to form the wall of a building. According to informants, it takes about two weeks to complete the construction of the walls of a one-room building. During the wall-laying process, space is provided in sections of the wall and affixed with wooden frames for doors and windows to be subsequently fixed.

4.3.2.2 Brick-wall Building Technique

The construction of walls with solar dried mud-bricks has become popular at Old Buipe in recent years. Brick buildings are often interspersed with daub buildings on many compounds. Bricks are made using earth found at sites with low mounds that have different layers of soil and contain coarse materials, including ruins of collapsed buildings and potsherds. The material is dug and heaped with pickaxes and mixed with water when it is kneaded with legs, and turned over with hoes while unwanted objects like sticks and big stones are removed (Fig. 4.7). The kneaded earth is then scooped with the hoe and mixed again before being used to mould bricks. A wooden frame with two compartments is used for producing bricks.

Fig. 4.7: Kneading of earth (mud) with both legs for moulding bricks (Photo by D. Genequand, 2017)

Fig. 4.8: Grooving in mud during brick making process (Photo by D. Genequand, 2017)

Bricks are usually produced by two men at a time with the assistance of male children in the community who provide water throughout the process. Between 300-400 bricks are made in a day (Fig. 4.8). They are exposed to the sun and left over a period of two weeks to two months to dry

and cure before being used to build walls. Most of the brick makers, who are also local architects, are from a neighbouring settlement called Litho.

Bricks are laid and bonded with mortar systematically until the walls of a building are raised (Fig. 4.9). The mortar is mixed of dark grey silt and reddish brown soil to the desired elasticity (Fig. 4.10). Two or three people are usually involved in the process of brick laying. Completion of the walls of a house is dependent on the number of people involved. With three brick layers, the walls of a one-room building are constructed in a day or two. The local people thus prefer mud-brick buildings to daub buildings because of the speed with which brick buildings are completed.

Brick-wall building construction in Old Buipe probably resulted from interactions between the local people and diverse groups of people who engaged in trading between the south and the north of Ghana (Wilks et. al. 1986) who might have constructed such buildings when they settled in Buipe. According to local accounts, the people of Old Buipe borrowed the sun-dried mud-brick building technique from the Asante. A stream that is found about 1-2 kilometres southeast of the settlement, referred to locally as '*Asante Nsuo'* (water for the Asante) (Fig. 4.10), is an important landmark that the people of Old Buipe cite to affirm interactions between their forebears and the Asante. The stream is known to the people as a source of water and a resting place for Asante and other Akan traders who traded at the old market of Old Buipe which has been located south of the settlement (Genequand et al. 2016; Wetcher 2016).

Fig. 4.9: Raising the mud-brick wall of a house (Photo by D. Genequand, 2017)

Fig 4.10: The late Samsiwura Yakubu leading team to the area

of the dried-up *Asante Nsuo* stream (Photo by Author)

4.3.3. Maintenance of walls and buildings

Daub walls often stand for about 8-10 years before they develop cracks and begin to deteriorate. These walls are maintained mainly during the dry season after the rains have ceased. Maintenance works include patching of cracks found in walls, plastering of weathered walls and floors as well as fortifying weathered and washed foundations. Some buildings are also plastered to make them attractive and buttresses are attached to the external surfaces of some walls to protect the walls from collapsing (e.g. Fig. 4.1). Buttresses are usually constructed at wall connections, in areas with severe cracks, and at the base of walls that experience severe erosion.

4.3.4 Roofing Styles and Techniques

Buildings are roofed when their walls are thoroughly dried. In the roofing process, branches may be planted at specific intervals by the external surfaces of walls to serve as poles onto which smaller branches or lumbar are affixed to form frames upon which woven thatch is laid and fasted to form a roof. Two varieties of roofs and roofing techniques are found in the Old Buipe settlement. These are the conical roof and roofing technique and the triangular truss roof and roofing technique.

4.3.4.1 Conical Roof

This roof type is mostly installed onto single rectangular structures that measure 3.5 x 4.5 m on the average (e.g. Fig. 4.1). The roof is usually raised by experts with woven thatch (*atinbor*) which they arrange and fix on frames with plant fibre. The frames are made with 6 main wooden rafters or chords of the *kakube* tree and battens. Three of the rafters are first inserted into the walls from three sides of the building against each other and bound onto a short ridge beam at the apex. The other three rafters are then raised from the walls opposite those on which the first rafters were placed (Fig. 4.12). A ridge beam holds the rafters in place to create the main framework upon

which other lighter branches or battens are arranged and tied with fibre obtained from the *kenymbele* tree in a parallel format (Fig. 4.12). The space between the frame battens are usually wider at the base of the frame than at the apex where very little or no space may be left (Fig. 4.11). Where there is a portico, its roof is connected to the roof of the main building.

Fig. 4.11: Conical roof framework showing both the *kakube* and *kadeba* poles (by D. Genequand)

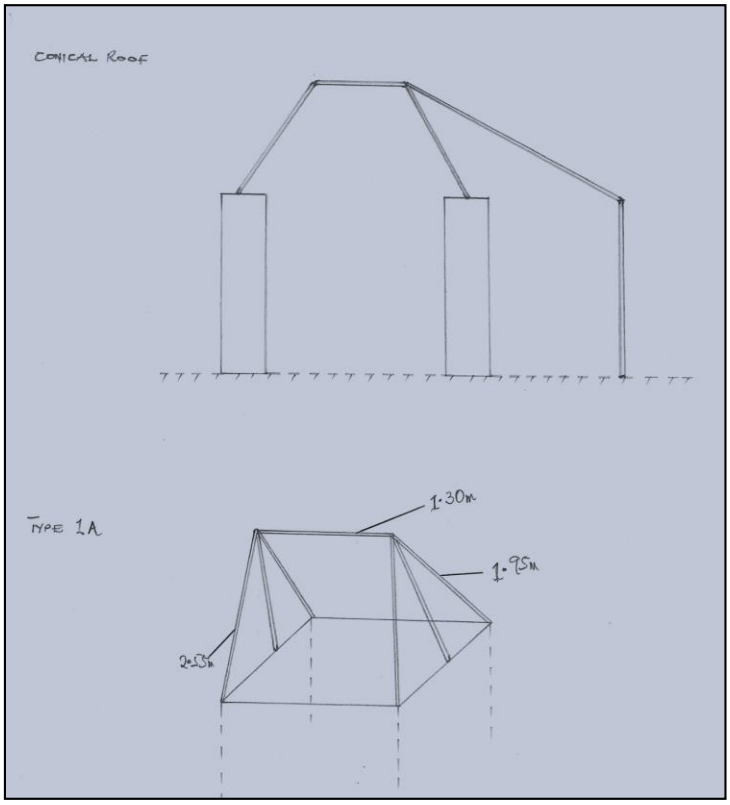


Fig. 4.12: Type 1A – Roofing framework for conical roof style (Drawing by Author and M. Amenyo-Xa)

In a variant of this roofing style, two rafters are placed perpendicular at the centre of the building walls as a support system for the roofing framework, (Fig. 4.13). One end of a rafter measuring about 1.50m is bound to the ridge beam that holds the rafters in place at the apex. The other end is then lowered to meet the central pole or rafter which has been inserted in the walls in the centre of the room (Fig. 4.14). The central rafter is sometimes inserted into the walls and rests on other poles that serve as pillars. According to oral accounts, this art of construction is one of the techniques which have been practiced by the people since ancient times.

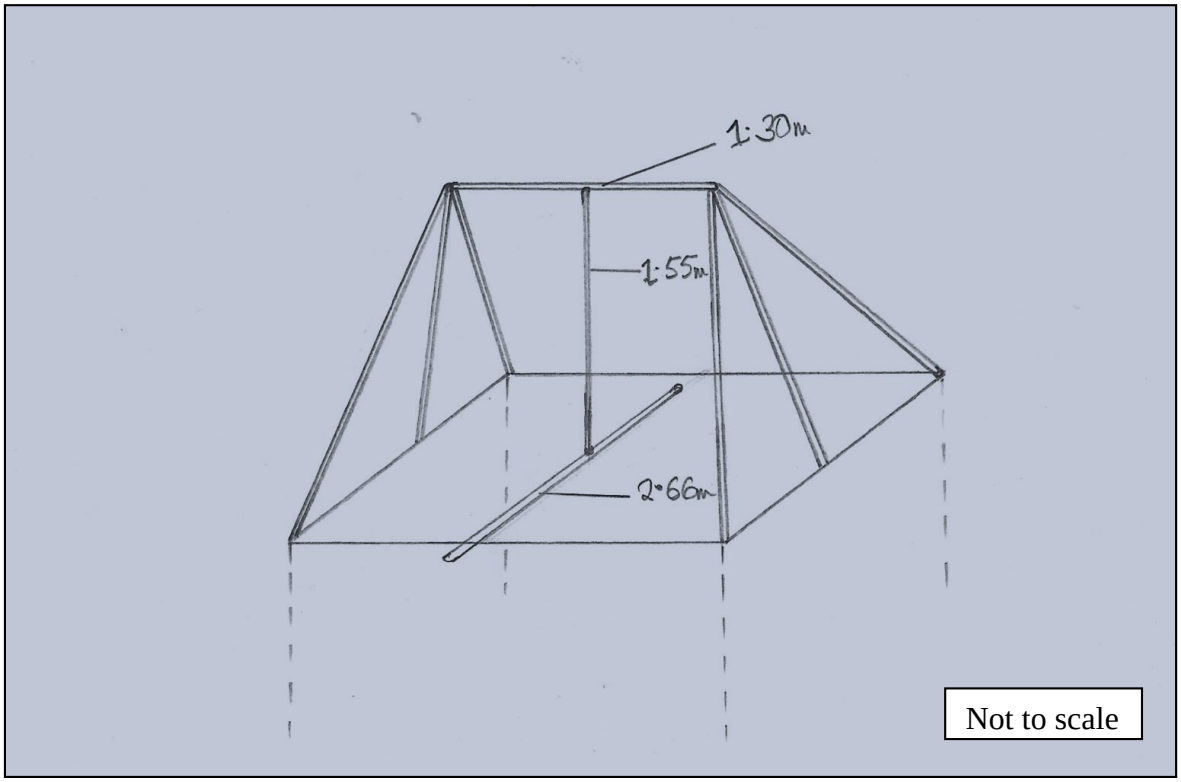


Fig. 4.13: Type 1B- Another framework for conical roof style (by Author and M. Amenyo-Xa)

Fig. 4.14: Roofing framework for Type 1B showing the central rafter and broken rafter from the apex (by D. Genequand)

4.3.4.2 Triangular Truss Roofs

The triangular truss roofs refer to roofs that cover buildings whose widths have walls that are raised to serve as gables (Fig. 4.15). The roofing framework is designed to match the triangular shape of the gable walls resulting in a saddleback shape with two long inner and outer rafters that are placed on the triangular apex of the walls. The inner rafter or ridge beam rests on the two axes of the walls while battens are arranged parallel to the beam and across from all sides to the walls. The battens are bound with plant fibre (*kenymbele*) in square-like frames (Fig. 4.17) upon which thatch is spread and affixed. Outer rafters are then placed onto the thatched roof (Fig. 4.16). These rafters sometimes rest on other post-poles installed on both sides of the walls as means of support. The support systems could be rebuilt when the integrity of the roof is at stake (Fig. 4.18).

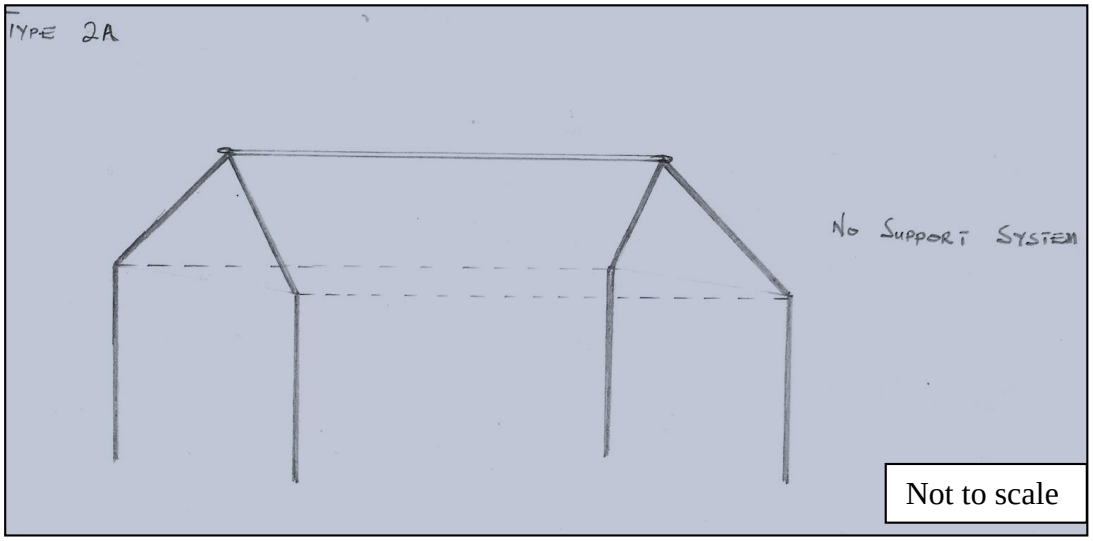


Fig. 4.15: Type 2A- Triangular truss roofing style (by Author and M. Amenyo-Xa)

Fig. 4.16: Triangular truss roofing style on gable walls (Photo by D. Genequand)

Fig. 4.17: Collapsed building showing the square-like frames of the framework (Photo by D. Genequand)

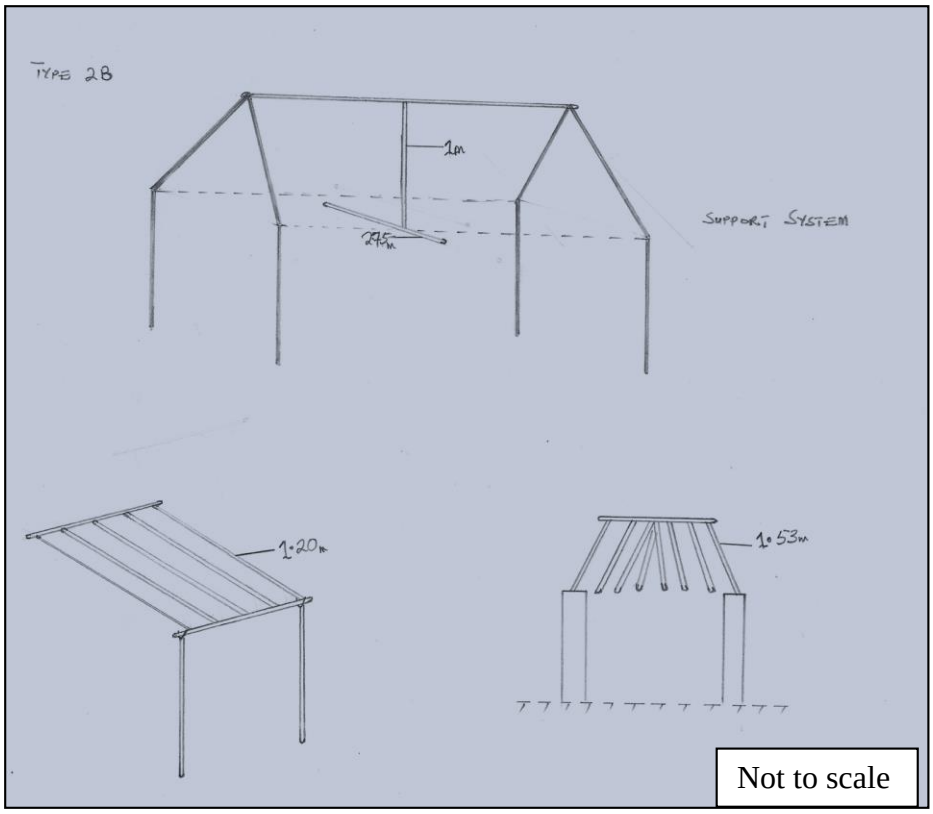


Fig. 4.18: Type 2B- Triangular Roofing Style with a central support system

4.3.4.3 Aluminium Zinc Roof

This is another roof type that is constructed by an expert carpenter using the triangular truss technique. Its construction, however, involves the use of modern materials such as aluminium or zinc sheets, timber and nails which are all bought from shops in nearby towns. Some of the local carpenters have learned this new roofing technique in New Buipe and other towns.

During the construction process, a solid beam is created from several planks of timber and placed on the axes of the walls at the apex across the centre of the building (Fig. 4.18). Short timber rafters are placed in a parallel manner and nailed against the solid beam to create a triangular shape. Other planks are placed as joists under the rafters and nailed onto them. Depending on the size of the room, three to four pairs of rafters may be used in creating large squares or rectangles in the framework (Fig. 4.19). Less rafters are used in this construction than in that of the indigenous triangular truss roof, as the zinc roofing sheets are flat and can easily be nailed to each rafter. Once all the joints are nailed in, the sheets become stable.

In some cases, eaves designed as gutters are constructed at the edges of the aluminium/zinc roofs (Appendix I, Plate7 and 8) to channel rainwater from the roof into various storage containers like aluminium pots and barrels. The space between walls and aluminium/zinc roofs may be covered with a ceiling of polished and painted plywood.

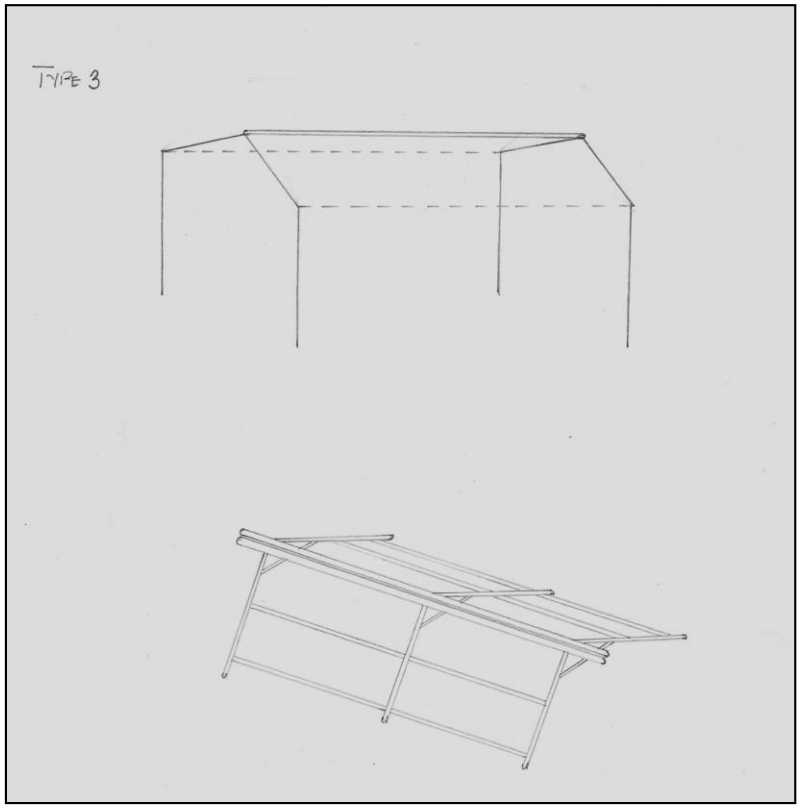


Fig. 4.19: Type 3A- Framework for the triangular truss roof with aluminium zinc material (by Author and M. Amenyo-Xa)

CHAPTER FIVE

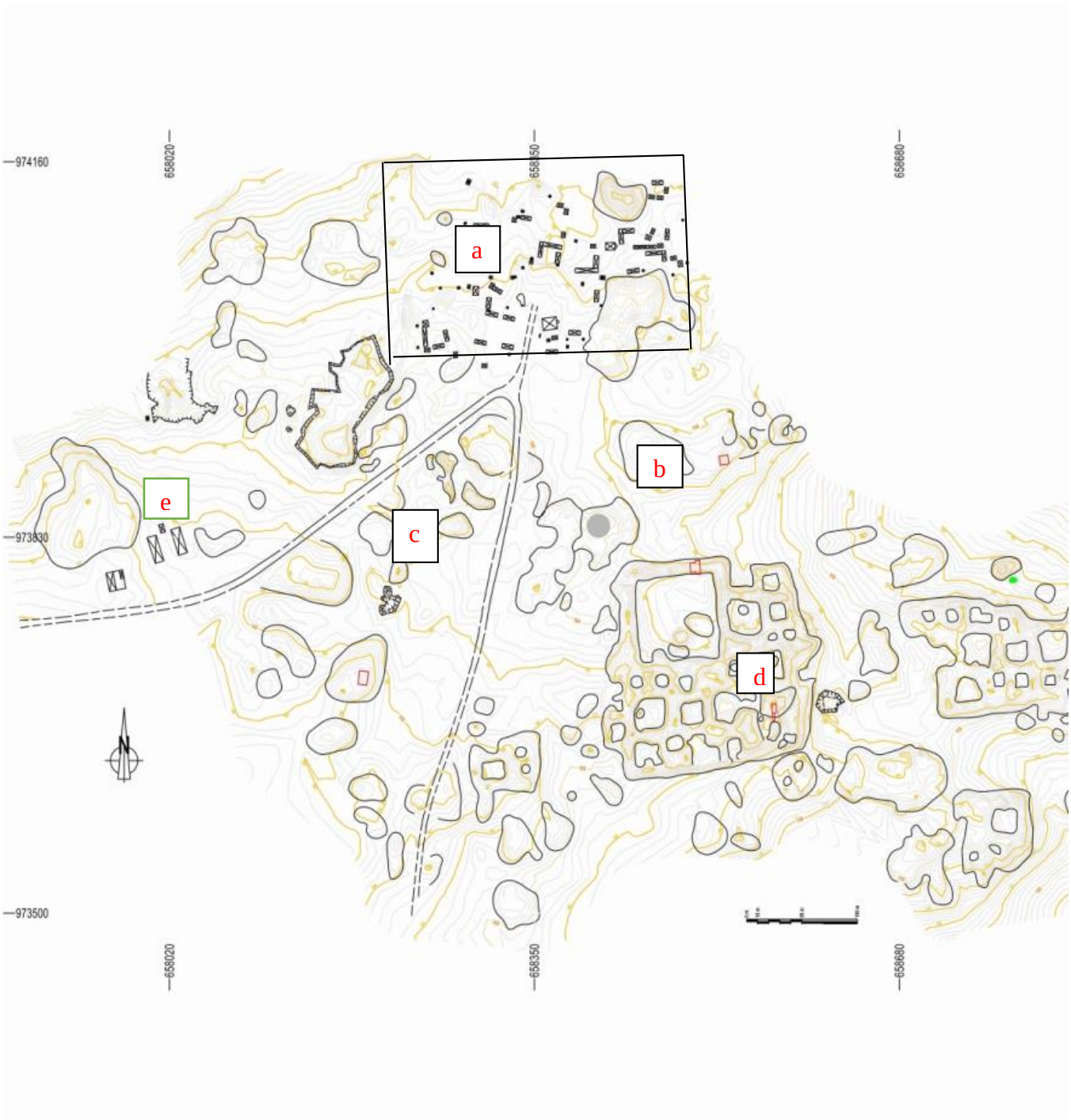
SETTLEMENT MORPHOLOGY AND COMPOUND LAYOUTS

5.1 Introduction

A topographical map of Old Buipe and the sites of ancient mounds with ruins of older collapsed buildings adjacent to it (Genequand et. al. 2016 & 2017) indicates that there was a relatively extensive ancient settlement in the area (Map 4). The current Old Buipe settlement (Map 4a) comprises a combination of public and private buildings and spaces that are configured in a nucleated pattern. This chapter informs on the layout and composition of mounds, buildings and spaces in the Old Buipe settlement and its environs and how these relate to the social, political and economic lives of the people.

5.2 Public Spaces, Buildings and Features

Among public spaces, buildings and features discussed in this section are the site of an ancient market place, mounds, school buildings, sources of water, and the Ndequra Jakpa Mausoleum (Genequand et.al. 2017). The site of the ancient market (Map 4b) is found at the south-eastern fringes of the current settlement. It is known to the local people as a place where traders from southern and northern regions of Ghana traded. To the southwest, south and southeast of the current settlement are mounds of varied shapes that mark ancient Buipe (Map 4c & d).



Map. 4: Topographical Plan of Old Buipe showing the present-day village and ancient settlement mounds (Genequand et. al. 2015-2017).

Another public space in the settlement is the compound of the local Basic School which is located about 300m south-west of the settlement (Map 4e). The school attracts students from Old Buipe and the neighbouring villages. A pavilion which previously housed the school is found about 200m northeast of the settlement (Map 5).

The main sources of water that the people of Old Buipe patronise and hence serve as important public spaces include a mechanized borehole system, a dammed stream, and a pond that is locally called 'crocodile pond' because of the presence of some crocodiles in it. While the borehole is located within the settlement, the dammed stream and pond are found on the outskirts and serve as the main sources of water during the wet season for both humans and livestock (Fig. 5.1). The people revere the crocodiles in the pond as sacred.

Fig. 5.1: Crocodile pond at the neighbouring village (Photo by Author)

Also in the public domain are an older and a newer mosque (Fig. 6 b & c) whose architectural forms differ from those of the indigenous buildings. The older mosque (Fig. 5.2a) is located within

the central precinct while the newer is found on the southern end of the settlement (Fig. 5.2b). Both mosques are constructed of cement blocks, concrete, mortar, lumbar and other modern materials and are painted. Although the old mosque has a subtle form which blends with the indigenous building types, the new mosque, which is relatively large enough to accommodate up to 200 people, is designed in a way that is atypical of the architectural landscape.

Fig. 5.2a: Old Mosque (by D. Genequand)

Fig.5.2a: New Mosque (by D. Genequand)

Informants claim that this mosque was constructed in mid-2016 within 3 months with funding from the "Wells Foundation" whose plaque is found on the building.

5.3 Private Buildings and Space

Private buildings in the Old Buipe settlement are characterized by mainly rectilinear physical structures that are found on the compounds of households many of which are clustered around the centre of the settlement (Map 4a) and are arranged in relation to kinship ties. A head of household usually builds on family land he inherits, or land he acquires as gift or through purchase. He decides on when and where to build on this land and on the purposes for which a building would serve. The head usually distributes buildings on his compound to his wife(s), male and female children and to serve as kitchen or storage. He may also construct a pen and coup for livestock. In

cases where new buildings are constructed to either replace older ones or to serve as supplementary rooms on a compound the older buildings may serve as storage units or may be abandoned.

5.3.1 The Compound

A compound (*laŋ*) is constructed in the contemporary Old Buipe settlement to accommodate the members of a nuclear family or a combination of a nuclear and some extended family members. It may thus consist of buildings that accommodate the head of household, his wife (or wives), children and their spouses, grandchildren, and other relatives who may not have their own residential units. A compound that houses only a nuclear family is relatively smaller than one that accommodates both nuclear and extended family relations (Fig. 5.9). Its size may vary depending upon whether or not the head of household is polygamous, a practice that is generally acceptable among the Gonja (Prussin 1969:18). As a wife is customarily entitled to a separate room unit which she may share with her children, a household head has to construct a new building on the compound any time he marries a new wife. He may also decide to find land elsewhere in the settlement and construct a building to house in new wife and children in order to minimise domestic tension among wives.

A compound that houses nuclear and extended family members is expanded as the family grows. New buildings may be constructed by elderly sons and other male extended family members, who may wish to live with a household head on his compound or close by it. In some cases, a son may decide to relocate from within his father's compound to a building he constructs within proximity to his father's house. A son may also acquire a separate land elsewhere with the assistance of his father and create a compound on it to house his nuclear family. Informants claim that a son who moves out of his father's compound demonstrates that he is independent and economically capable. The relocation may, however, be determined by the availability of land. Where a son

relocates away from his father's compound he and his family may still have access to his father's compound and facilities.

A typical compound comprises bedrooms (*kewutor/abutor*) with portico, a courtyard (*kulonde*), a shed (*kapatare*), a kitchenette (*adesikpa* or *jade*), hencoop and/or pen (*kulu*), a storeroom, shade tree, a toilet and a bathroom, and a garden. The placement of the structures and space on the compound are defined by gender roles. Each of these components of a compound is described below:

5.3.1.1 Bedrooms (kewutor/abutor) and Portico (Poto)

Bedrooms are mainly rectangular buildings constructed of daub or mud bricks. The daub buildings are sometimes modified by plastering with cement. Bedrooms built of cement blocks and concrete are few. Referred to locally as *'poto'*, the portico is usually attached to the frontage of bedrooms to cover a porch or veranda. This structure consists of a roof supported by poles at regular intervals. Sometimes, it is demarcated or walled with mud-bricks or daub. The portico ushers one to the entrance of a bedroom and provides shade during the day (Fig. 5.3). It may also provide space for sitting, dining, working and for receiving guests. A few porticoes, particularly those found in front of women's bedrooms, have hearths and pots which are positioned in the western corners to serve as kitchen (Fig. 5.3a & 3b).

Fig. 5.3a: A portico with guests

Fig. 5.3b: A portico kitchenette (Photos by Genequand)

5.3.1.2 The Courtyard (*Laŋ*)

Most compounds in Old Buipe have a central courtyard. A few compounds have two or multiple courtyards due to the arrangement of buildings therein. A kitchen structure with hearths, grinding stones, pots and barrels may be placed in the central courtyard (Plate 1 –ground plans in Appendix) or aligned around the courtyard (Plate 3 - ground plans in Appendix). The courtyard also houses pens and coops and sheds as well hearths (*asure*), mortars and ovens for smoking fish or meat.

The courtyard is the public space on a compound where most of the family socialization and domestic interactions take place. Among activities that are undertaken in the courtyard are the feeding of livestock, naming ceremonies, processing of farm produce, preparation of ingredients for cooking, building of houses, pounding of boiled yam into a local meal (*kapal*) and the pounding of millet into flour. The courtyard also serves as a children's playground.

5.3.1.3 Shed (Kapatare and Kejan)

A shed (*kapatare*) is usually erected in the middle of a compound. It may be constructed of wooden posts which serve as pillars on which a thatched or aluminium roof is placed (Fig. 5.4). Its sides may be enclosed all the way up to the roof or to the mid-section with wood, aluminium/zinc sheets or any other material that is convenient. Much cooking on a compound takes place under the shed which may also house water storage jars or barrels, some food items such as cassava, and utensils. Hence, several hearths (*asure*) may be found arranged under this structure and in front of it.

Fig. 5.4: A semi-opened shed that serves as a kitchen (Photo by D. Genequand)

A variant of the shed, called *kejan* locally, is usually made of four branches that are erected vertically into post-holes dug into the ground and covered with beams and joists. Farm produce and processed foods like cassava, okra, and vegetables are normally placed on this type of shed to dry. A hearth is sometimes placed close by this shed for cooking purposes and for smoke generated by fuel wood that is used in the hearth to ward off pests (Fig. 5.5a & 5b).

Fig. 5.5a: *Kejan* in a courtyard (by Denis Genequand)

Fig. 5.5b: Processed cassava being dried on a *kejan* with a hearth (by D. Genequand)

5.3.1.4 Kitchen (*Jaade or Adesikpa*)

An Old Buipe kitchen (*jaade*) is a daub or mud-brick structure that may be semi-open and attached to another building on the compound (Fig. 5.6a). It may also be a freestanding enclosed structure on the compound in front which hearths are placed. This variant, which is known locally as *adesikpa*, also serves as storage for farm produce, food items, utensils and water (Fig. 5.6b).

Fig. 5.6a: Kitchen with small openings in wall (by D. Genequand)

Fig. 5.6b: A collapsed and a newly constructed *adesikpa* (by D. Genequand)

5.3.1.5 Chicken coop and pen (*Kulu*)

Chicken coops and pens (*kulu*) are structures constructed of mud-bricks or daub either circularly or in rectangular shape (Fig. 5.7a and 5.7b). They are about 1.6m high with relatively small openings and may be roofed in conically or triangularly with thatch. A coop may double as a pen to house livestock, including chicken, guinea fowls, sheep and goats and it is usually associated water jars and bowls (*kaba*) which are placed or planted at the entrance or corners of the structure to store water for the livestock (Fig. 5.7).

Fig. 5.7a: A conically roofed round-shaped coop/pen

Fig.5.7b: Rectangular-shaped mud-brick coop/pen

(Photo by Author & D. Genequand)

5.3.1.6 Storeroom

A building constructed of daub or mud-brick walls and roofed with thatch on a compound may be reserved solely for use as storage. Such a building may be used to store farm produce kept in sacks, barrels, big aluminium pots, and baskets. Utensils and some food items like yam are also stored in this building. Hearths are usually built close by stores in order for smoke and heat they generate while in use to repel pests. Informants claim that, in the past, stores were built of woven dry straw or cane in a conical design. Such stores served as granaries (*kopru*) for storing grains and groundnut. Their construction has been discontinued as a result of increasing theft and destruction caused by bushfire.

5.3.1.7 Shade Trees

Shade trees such as Mango and Neem are important components of a compound. Wooden benches, either portable or installed, are usually found under the shade trees (Fig. 5.8a and Fig. 5.8b). The members of a compound may find shade under these trees during high temperatures particularly in the dry season and use the space as a sitting area, a working ground and for social gathering.

Fig. 5.8a: A mango tree on a compound (Photo by D. Genequand)

Fig. 5.8b: A Neem tree with an installed bench adjacent to a compound (D. Genequand)

5.3.1.8 Compound and Backyard Garden

A garden may be found within a compound on its backyard. This garden, the size of which may vary depending upon the size and economic status of the household, is kept by mainly women in the household. Crops cultivated in the garden include okra, pepper, and maize.

5.4 Compound Layout and Building Plans

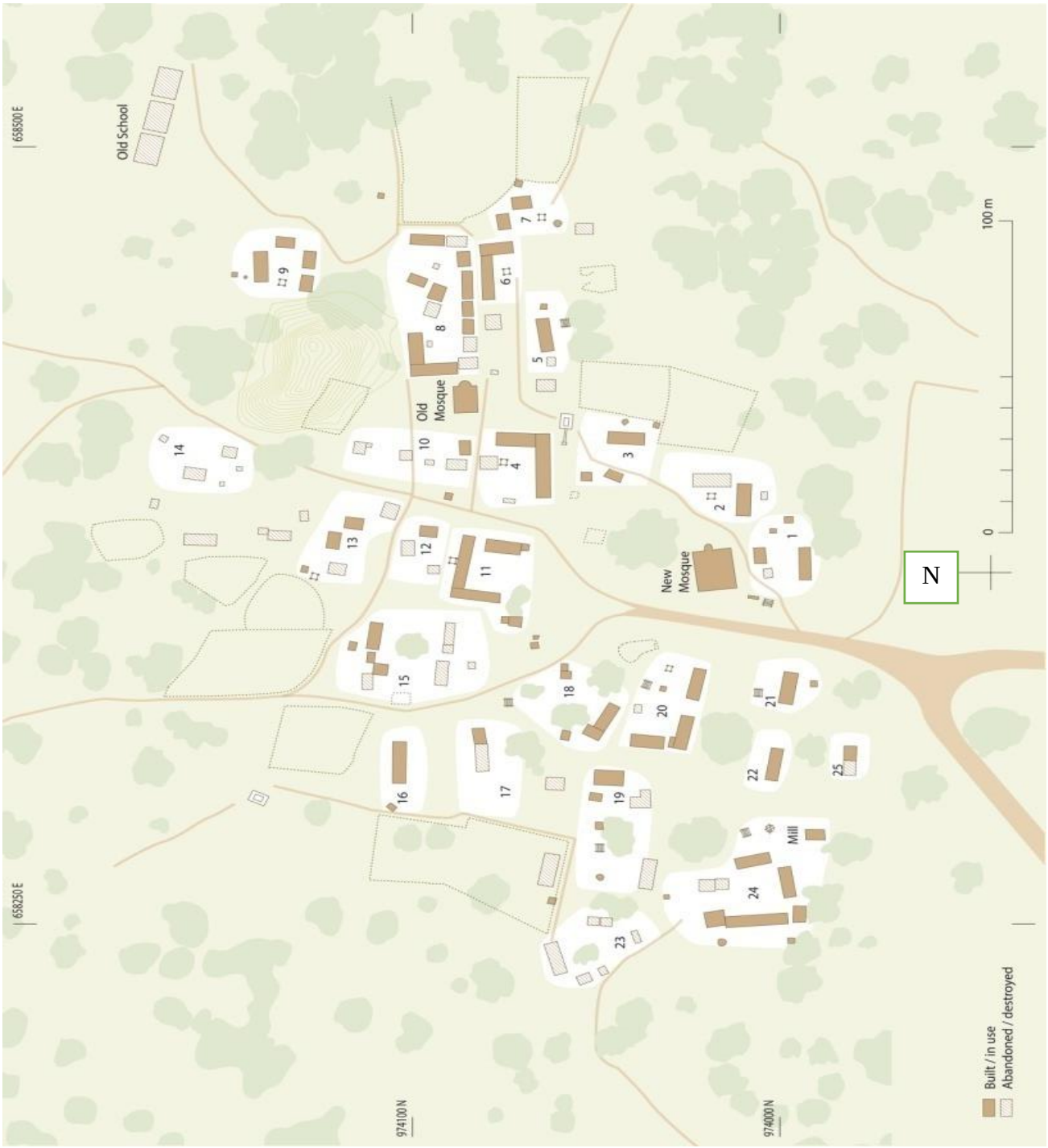
Twenty-five compounds were identified in the Old Buipe settlement with the aid of the Bing satellite image, mapped and numbered (Map 5). Among these compounds, four had been abandoned and are in the process of collapsing. These are indicated with faint broken lines while buildings which are still in use are marked in brown on the settlement plan (Map 5).

Buildings on a compound are arranged around a courtyard, which is either enclosed by the various buildings or is in the front of the buildings. Buildings that house heads of households are usually positioned towards the north-east or eastern corner of a compound to signify as a means of status differentiation. Bathroom and toilet facilities are usually positioned behind and away from the main buildings on compound at obscure corners. The people of Old Buipe claim that it is customary for these facilities which they consider to be 'unclean' to be separated from the 'clean' areas of a compound, as it is prudent to keep their surroundings clear of filth to prevent illnesses.

The compounds, with the exception of the sub-chief's which is partly enclosed, are not physically bounded or marked with fences or walls, although they express social boundaries. Their limits or boundaries and transitions are identified by their entrances and exits which are located at any opening between buildings, depending on which direction one is from. Also space around the compound that is swept regularly marks the space the compound covers as observed elsewhere by Pearson and Richard (1994: 24). The enclosure of the sub chief's compound may be an indication of political and socio- economic status.

A critical examination of the compound plan (Fig. 5.9), suggests many of the compounds have a curvilinear depression on one side of its limits. This depression on the ground indicates the consistent use of a space that serves as the main entrance (*kebuna*) to a compound. This main entrance which is consciously imagined by the people could have been created through the continuous use by the household members and other people in the community.

Figure 5.9 shows the different types of compounds, spatial arrangement of structures and features on these compounds, and the proximity between different compounds. Structures on the compounds have been given letters to identify them. Information on compound layout of compounds that were selected and sampled is expressed in Table 3. Plans developed for five select compounds are found in the Appendix I.



Map. 5: Village plan of Old Buipe (Marion Berti, Draughtsman)

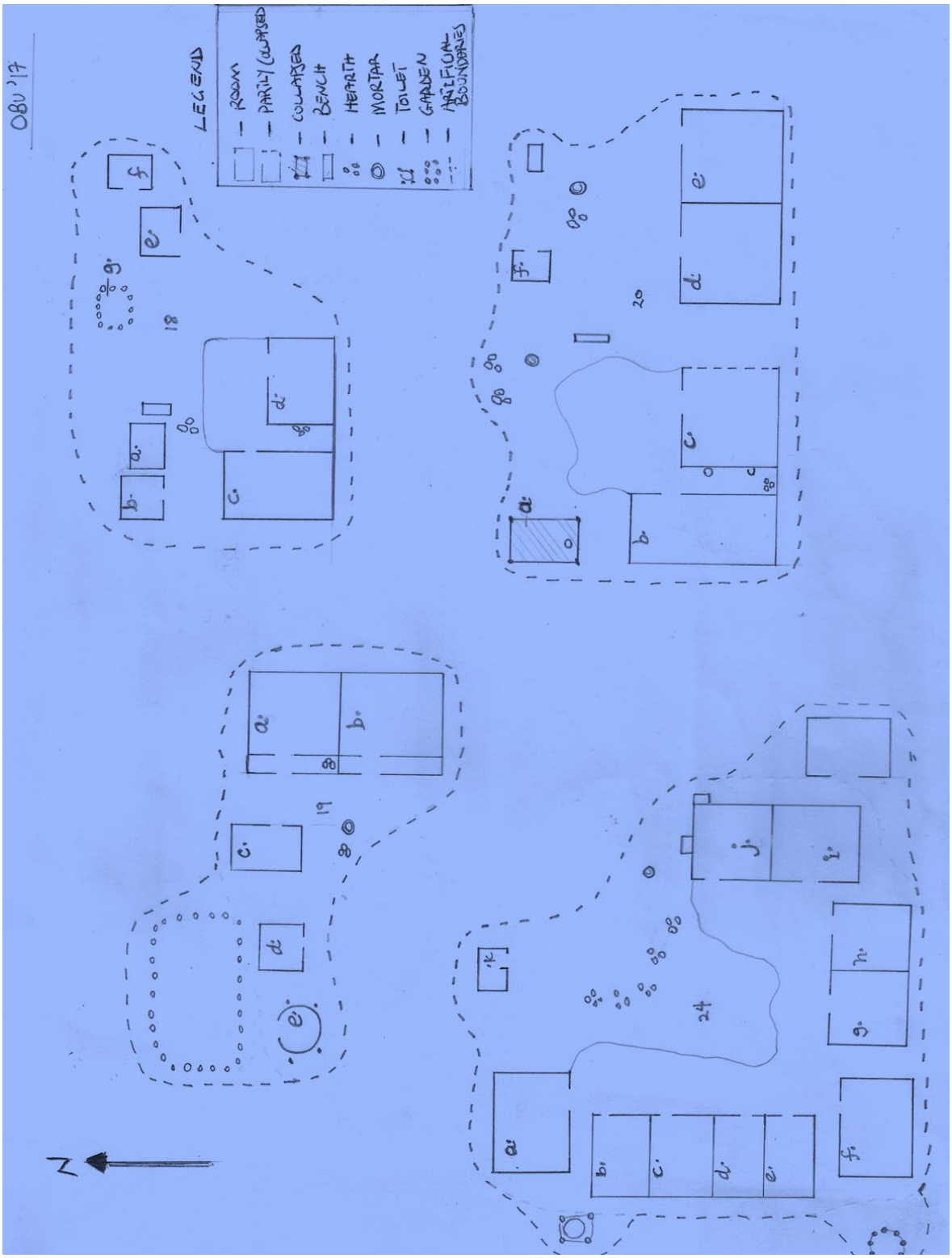


Fig. 5.9: Plans of compounds of selected households.
Not to scale (Drawing by Author and M. Amenyo-Xa)

Table 3: Select compounds included in the sample analysed

Compound No.	Building Style	Building Technique	Roofing	No. Of Rooms	Other Features
Compound 3	rectangular building	random-coursed layer	triangular truss; aluminium/zinc	2	One building, plastered walls and floors with cement mortar, central courtyard portico, kulu and kapatare
Compound 8	rectangular building	random-coursed layer and mud brick	conical, triangular truss; thatched	8	Seven buildings, porticos attached, foundation of buildings and collapsed kulu (round structure), large backyard garden
Compound 11	rectangular building	random-coursed layer and mud brick	triangular truss; aluminium/zinc	8	Three buildings, U-shaped enclosed compound, porticos attached to all rooms, plastered courtyard adesipka, kulu and wooden pen outside the compound, ensuite bath and toilet in master bedroom, detached bathroom and toilet.
Compound 15	rectangular building	mud brick	triangular truss; aluminium/zinc	2	One building, portico attached, remains of collapsed, thatched roofed kulu and kitchen/storage in the compound, toilet and bath at the back, compound garden
Compound 18	rectangular building	mud brick	triangular truss; thatched	2	Two buildings, L-shaped, semi-opened jaade, plastered floor, partly painted walls, kulu and wooden pen, toilet and bath at extreme of compound
Compound 19	rectangular building	mud brick	triangular truss; thatched	2	One building, elevated foundation, partly walled portico, thatched kitchen/storage and kulu, compound garden
Compound 20	rectangular building	mud brick	triangular truss; thatched	4	Two buildings, One L-shaped, plastered floors, kulu, wooden bench, newly constructed 2 room structure
Compound 24	rectangular building	mud brick	triangular truss; thatched and aluminium/zinc	11	Five buildings, U-shaped, partly plastered walls and floors, cluster of hearths at the north of the compound, toilets and baths at back of compound

5.5 Abandonment of Structures and Reuse of Space

When the surfaces of daub and brick walls are exposed to harsh weather conditions their integrity tend to be at risk. Exposure of thatch roof to the elements also lead to their eventual deterioration. The grass and wood may rot as they get soaked with rain water or may be burnt by fire. At Old Buipe, the walls and floors of buildings are often maintained to prevent water from penetrating them and causing damage, while roofs of thatch are often replaced. Maintenance works include constant plastering and buttressing of walls and foundations. When the walls and roofs of a building are beyond repair following several attempts to maintain them, the building may be reused as a bathroom or storage for tools and farm implements and thereafter abandoned or demolished.

When a building is abandoned, it deteriorates gradually and in stages. First, the roof collapses and further exposes the walls which become weakened from its upper extremities, as it is weathered. The upper layers of the wall then collapse usually onto the floor of the room. The wall shutters when it hits the ground and reveals clods of daub formed in the various constructional layers or mud-bricks (Fig. 5.10). The lower portions of the wall may remain standing over a considerable period of time. Where all the wall of a building collapse, the foundation and/or the floor, if plastered or compacted, may be left. With the passage of time, the mud clods and mud-bricks undergo further disintegration. The clods and bricks are washed and eroded gradually by rain water and runoff particularly during the rainy season and dry up and become compacted during the dry season. This process leads to the accumulation of mud wall debris which could end up in the archaeological record as a house mound.

It is quite common, however, for buildings to be constructed on the floors of collapsed structures. According to informants, it is easier and less expensive for a home owner to reuse an abandoned space and to replace an old building within the same compound than to relocate to a new land.

Fig. 5.10: Abandoned building undergoing disintegration (Photo by D. Genequand)

Construction of a building on space occupied by a collapsed structure may be done with modern industrial materials (Fig. 5.11). Daub from a collapsed building may also be recycled and reused to construct a new building. In such a situation, the daub which loses its elasticity is used as tempering material that is mixed with been freshly dug clay.

Fig. 5.11: Modern building type with industrial materials (Photo by D. Genequand)

5.6 Destruction of Archaeological Sites and Mounds

The selection of a site for suitable materials to be used for moulding mud-bricks are mostly based on the soil type and topography. High grounds are usually chosen and many of these are house mounds and possible archaeological mounds (Fig. 5.12). Digging of such sites for building material results in the unearthing and destruction of archaeological materials and other record (Fig.5.13a & b). Ceramic fragments from such disturbed sites are often found embedded in the fabric of daub and mud-brick walls (Fig. 5.14).

Fig. 5.12: Builders/brick makers digging into a mound for moulding bricks (Photo by D. Genequand)

Fig. 5.13a: Broken vessel in the profile of a dug-out pit (Photo by D. Genequand)

Fig. 5.13b: 18th and 19th century potsherds from a disturbed mound (Photo by D. Genequand)

Fig. 5.14: Fragments of ceramic in the fabric of mud-brick wall (Photo by D. Genequand)

CHAPTER SIX

SUMMARY AND CONCLUSION

6.1 Discussion

This work focused on the built environment of Old Buipe, a contemporary Gonja settlement in northern Ghana. It discussed literary and field data that inform on the main categories of buildings that may be found in the settlement, the processes by which buildings are constructed, how buildings are configured into compounds, and how compounds are distributed spatially. Relationships that may be found between the physical structures and their spatial configuration as found in the settlement and the social and physical environmental contexts of the local people have also been addressed.

The findings of the fieldwork I conducted in the Old Buipe settlement and the relevant literary information suggest that the Gonja, including the people of Old Buipe, descended from a migrant Mande speaking group which in the 16th century was on a mission to explore why there was a decreasing supply of gold to the Mande and to punish those responsible (Prussin 1969; Wilks et. al. 1986). Old Buipe was established when some of these migrants settled in an area that was already occupied by different groups of people, such as the Guan, and eventually created a trading centre that engaged with Begho and other major commercial centres to the south and north of the territory (Anquandah 1982; Geneqund et al. 2016. The distribution of house mounds within and beyond the Old Buipe settlement as discussed in Chapter 3 indicates that the settlement was larger and probably more complex than the contemporary one. Recent developments, including the construction of a major highway that links southern and northern Ghana, and the relocation of people from Old Buipe to New Buipe along this highway, account for the current size and configuration of the settlement. The construction of most buildings in the settlement appears,

however, to have followed a pre-existing tradition with regard to materials and building techniques.

6.1.1 Continuity and Change in Building Construction

The information assembled in this work shows that the architectural landscape of Old Buipe has been influenced by a combination of variables, including the physical environment, local technological traditions, the availability of new constructional materials and changing technology. The materials of which most buildings in the settlement are constructed, including branches, thatch, plant fibre ropes, clay for producing daub and mud-bricks, and water are obtained by the people locally. The techniques of roofing most of the buildings with thatch, the conical and the triangular truss roofing techniques, do not deviate very much from what is known about techniques employed in the area in the past (Mathewson 1968; York 1973; Genequand et al. 2016).

There is, however, a gradual shift in the technique of building walls from the random-coursed daub technique to the mud-brick laying technique as expressed in Table 3. This shift has been accounted for as a function of economic consideration, as brick-wall construction is considered by the people to be less time consuming than daub-wall construction. Local accounts also attribute the adoption of the mud-brick technique to influences from the Akans in the south. Some walls of buildings uncovered in archaeological excavations under the Gonja Archaeological Project which range between the 16th and 19th centuries, are rectangular or square in shapes and were built in “cob” (Genequand et al. 2016). This suggests continuity in building design.

The roofing of buildings with aluminium/zinc sheets, nails and lumbar, which are not part of the local resources, is on the ascendancy but limited to the compounds of chiefs and other families

that can afford such 'modern' materials. These materials, which may be termed as 'modern materials' are purchased by homeowners from vendors in neighbouring settlements.

6.1.2 Compound Configurations, Layout and Abandonment

Based on the results of the study, it can be asserted that the sizes, contents, configurations and layouts of compounds in the Old Buipe settlement are affected by social, economic, political and physical environmental factors. The composition and sizes of compounds, for example, have a direct relationship with the patrilocal residency and patrilineal lineage system as well as polygyny as the people of Old Buipe practise. Large compounds are associated with households whose heads have multiple wives and children and with households that consist of both nuclear and extended family members. Such compounds are expanded when male descendants construct their homes on the same compound or in the vicinity of the lineage head. The absence of clearly defined boundaries of compounds can be attributed to cohesion, bonding and trust among family members who customarily reside close by each other. As indicated by oral accounts of the people, the relationship between the social system and compound composition follows an established local tradition (Gabrilopoulos et. al. 2002). However, due in part to new experiences the local people gain as they travel and interact with other peoples and to other social dynamics, the patrilocal residency system is altering. It is thus common for the compound of a nuclear family to be sited several meters away from that of the lineage head.

The study results suggest also that the configuration of buildings and space on the compound in Old Buipe is shaped not only by gender relations whereby wives (women) with their children customarily have separate rooms but also by economic activities of the household. The keeping of livestock and the storage and processing of farm produce, for example, influence the types of structures that are built on a compound. Apart from bedrooms, buildings on some compounds

includes pens, sheds and rooms that serve as storages. These structures are constructed on the courtyard and adjacent bedrooms.

Movement on the compound is subconsciously regulated, as access to certain areas, such as the private rooms which serve as the sleeping rooms, are restricted to only close members of the extended family. Porticoes and courtyards are areas where guests and neighbours are hosted. All household and extended family's members have open access to other spaces like the kitchen and portico. However, access to these spaces by neighbours and other visitors are controlled. Even on the chief's compound, only special guests are hosted in the living room which is designated for private meetings and negotiations. Other guests are hosted in the courtyard. Gabrilopoulos et. al. (2002:222) refer to this spatial arrangement on a compound in relation to gender, age, status and social action of as "compartmentalization."

A compound in Old Buipe is abandoned when the lineage that owns it becomes extinct or relocates elsewhere. It may also be abandoned when a family head dies without leaving male children or when the male children relocate. The site of an abandoned compound may be reclaimed, nonetheless, by other male members of the extended family who may rebuild it to reflect a process Gabrilopoulos et. al. (2002: 233) describe as "the developmental cycle of a compound."

6.1.3 Implications of the Study for Archaeology

In general, a close relationship is found between the ethnographic and the archaeological contexts of buildings in Old Buipe in particular, the Gonja territory and other parts of northern Ghana at large. Features of the built environment, such as walls and floors and associated materials, including pottery, grinding stones, laterite blocks, which were recovered from 15th century to 19th century archaeological contexts in Old Buipe (Genequand et al. 2016:23-24) and other sites (e.g.

Mathewson 1968; York 1973) show close resemblance to what has been found in the ethnographic context in the Old Buipe settlement. For example, walls found in archaeological excavations and in the ethnographic context are both laid rectilinearly are made of daub in which broken potsherds and other inclusions are found (Genequand et al. 2016). Hearths constructed of blocks of laterite as found in the archaeological record of the settlement are also a common feature of the present day compound.

The construction, use, discard and collapse of buildings, as observed in the contemporary Old Buipe settlement, offer insights into site formation processes in the study area with particular regard to how some settlement mounds may be formed, what such mounds are likely to contain and how archaeological space may be understood. The segregation of spaces on compounds into public and private domains, including gardens, the portico, courtyard, kitchen, bedrooms in relation to gender roles, kinship, economic activities and status and the concepts of 'clean' and 'unclean' are, for example, informative of the possible factors that influence spatial distribution within settlements as may be found by archaeologists.

Overall, the eclectic approach adopted in this study has provided insights into the character, continuity and change in building practices of the people of Old Buipe and the Gonja in general. The study results may serve as reference for further research into the built environment in northern Ghana and other parts of the West African sub-region that have similar environmental and cultural circumstances as those of Old Buipe. However, since the acquisition of clay from mounds for building purposes in the study area disrupts the archaeological record and may blur the stratigraphy of these mounds and other sites in the study area, I wish to recommend further archaeological investigation of mounds in the area before they are destroyed by constructional activities. It will also be useful if further research in undertaken to ascertain the influence other indigenous groups

who cohabited Old Buipe with the Gonja had on the built environment of the settlement and its environs.

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APPENDIX I: Ground Plans and Photographs of Sample Compounds

Ground Plans of five selected compounds

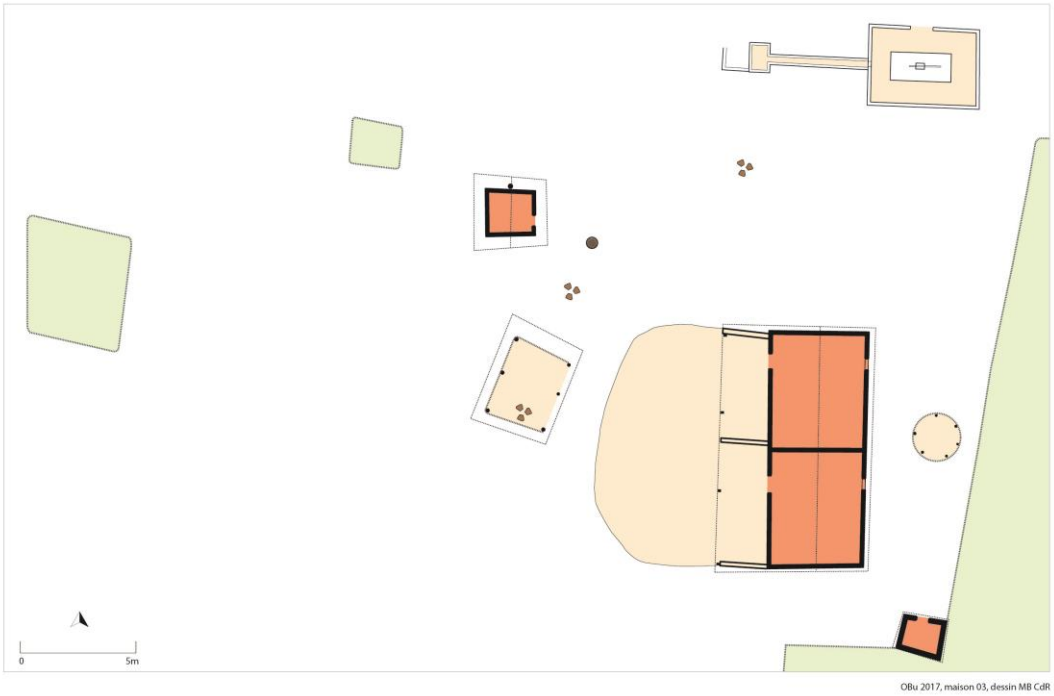

Plate 1: Ground plan of House 3

Plate 2: Ground plan of House 8

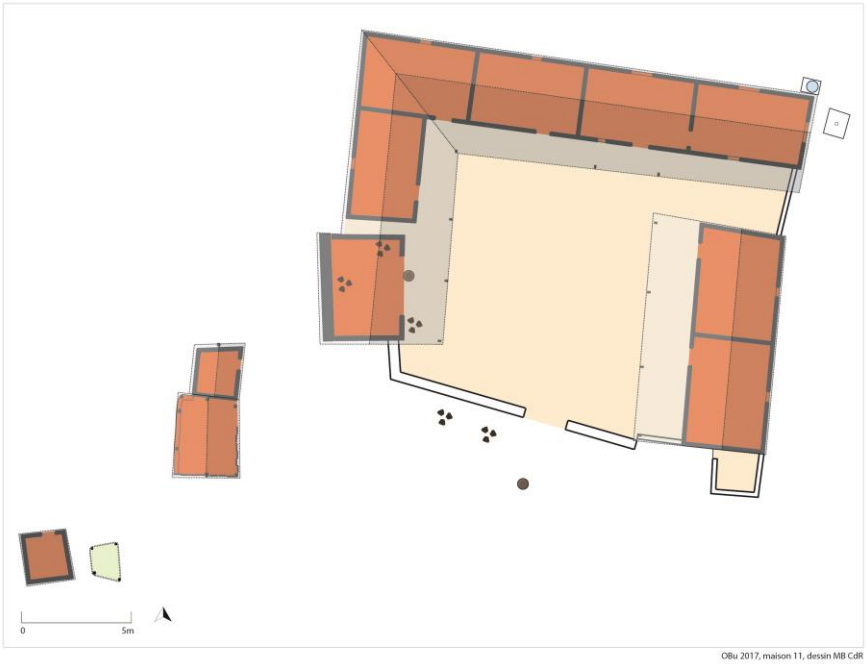

Plate 3: Ground plan of House 11

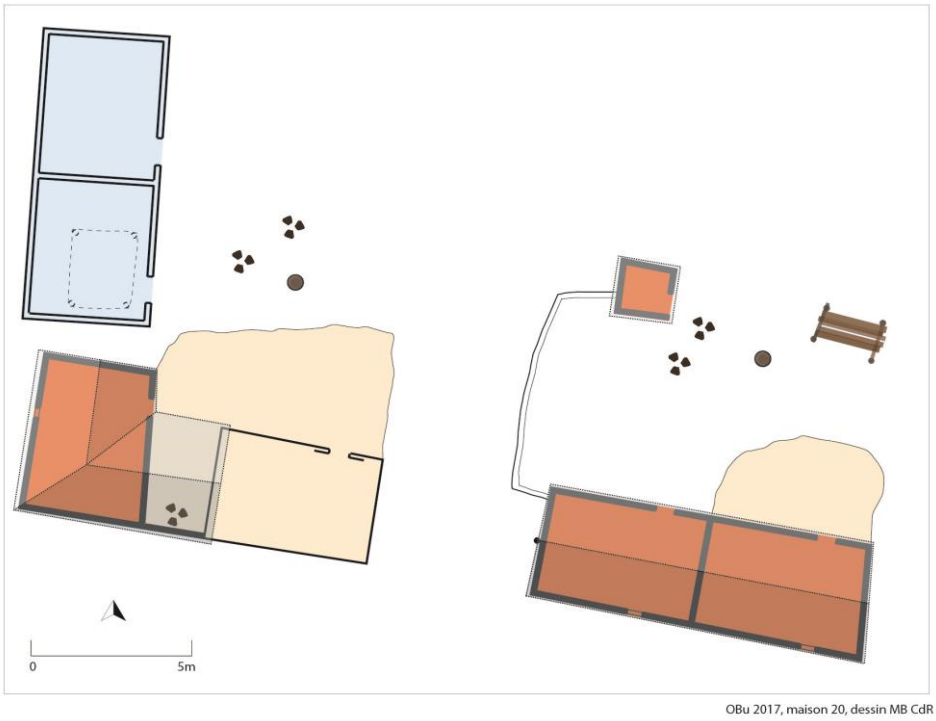

Plate 4: Ground plan of House 20

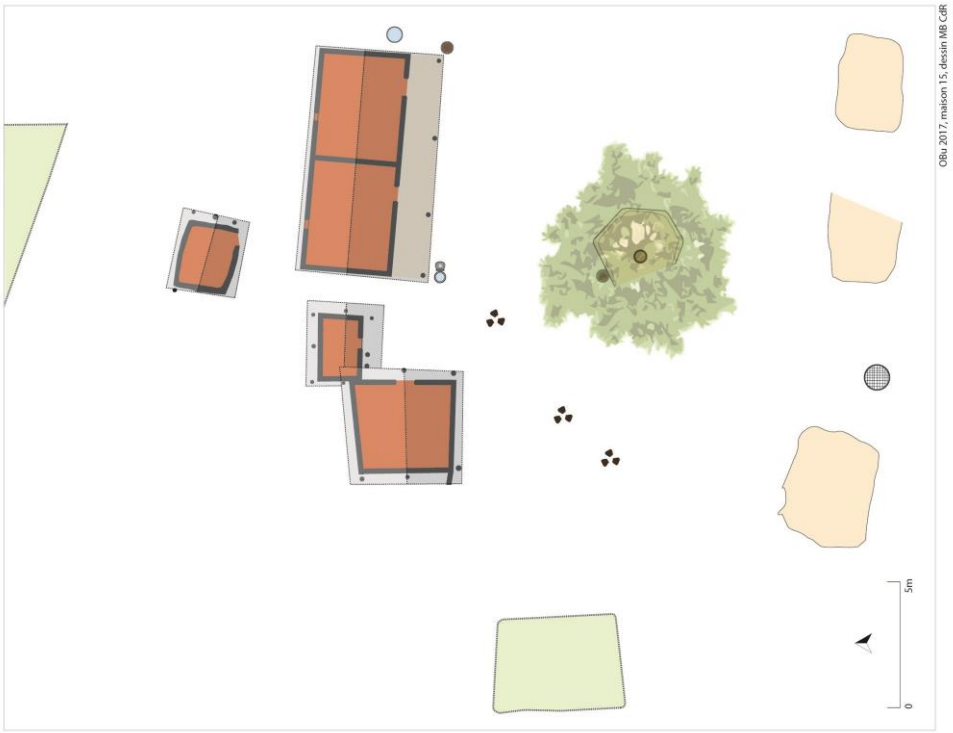

Plate 5: Ground plan of House 15

Photographs of some of the selected compounds showing buildings, courtyards, supporting structures and features.

Plate 6: Portico containing a pot and hearth in House 8 (by D. Genequand)

Plate 7: Aluminium/zinc roof and cement plastered courtyard of a compound (by D. Genequand)

Plate 8: The main building and structures in a compound (by D. Genequand)

Plate 9: A nuclear family compound

Plate 10: Arrows showing water (left) pot and coop (right) for fowls (by D. Genequand)

Plate 11: Plastered and un-plastered floors in the courtyard of House 24 (by D. Genequand)

APPENDIX II: Glossary

Table 4: List of Gonja words and their meanings in English

	Gonja word	English Translation		Gonja word	English Translation
1	*kokuloŋ*	Door/doorway	25	*Mma*	Mother
2	*kebuna*	Entrance	26	*Toto/Nto*	Father
3	*Laŋ/kulonde*	Courtyard	27	*Enye/ Nda' nyeso*	Boy/brother
4	*tokuro*	Window	28	*chɛso/ Nda chɛso*	Girl/sister
5	*kebuso*	Roof	29	*Mbia/ Kebia*	Child/children
6	*poto*	Portico	30	*Lor*	River
7	*abutor*	Room	31	*kɛdangba*	Mud house
8	*laŋ*	Compound	32	*kapatare, jaade, adesikpa*	Kitchen/ Storage
9	*nkre*	Fence	33	*kasawule*	Land
10	*druna*	Earth	34	*atinbor*	Thatch
11	*gembi*	Mud	35	*fufuo*	White
12	*ndidi*	Wood	36	*kidim*	Black
13	*kambol*	Garden	37	*kulu*	Animal pen/house
14	*ndɔ*	Farm	38	*kejan*	Wooden shed
15	*kɛtsapale*	Granary	39	*aprupor*	Expert builder
16	*sheshil*	Sand			
17	*agbɛl*	Wall			
18	*Kapua*	Water pot			
19	*Ntsu*	Water			
20	*Kedibi*	Tree			
21	*Afol*	Tree bark/fibre			
22	*Adaŋkpa*	Cooking pot			
23	*Kadeba*	Bamboo			
24	*Kana be enumo*	Family head			