

Vernacular architecture of the Ahanta: Perspectives from Ethno-archaeological and historical investigations at Dixcove, Western Region, Ghana.

Fritz Biveridge

Department of Archaeology and Heritage Studies,
University of Ghana, Legon
fbiveridge@ug.edu.gh

Abstract

This paper investigated the consequences of the English presence at Dixcove (Effiema), specifically the impact of European architectural styles and imported European construction accoutrements on vernacular architecture from the precolonial era to 1874 when the Gold Coast officially became an English colony. Data for the study was derived from archaeological, historical and ethnographic investigations undertaken at the Daazikessie and Ntwarkro, the original quarters settled by progenitors of the current Dixcove population. Results of the study indicated that prior to the arrival of the English, the indigenes utilized only local building materials, notably flat top and bottom granitic stone blocks, bamboo poles, rammed earth and straight tree branches, all procured from the immediate precincts of the settlement to build their houses. However, significant changes occurred in local architectural styles during the era of the trans-Atlantic trade, primarily as a result of the introduction of novel European construction materials such as glass window panes, asbestos roofing slates, metal door locks and yellow bricks among many others. Other notable features adopted included multi-storied European architectural styles by wealthy indigenous merchants some of who benefitted immensely from the coastal trade there.

Keywords: Vernacular architecture, Atlantic period, Ahantaland, Ethnoarchaeology

Introduction

This paper investigated the impact of imported hardware, ironmongeries and other construction materials on vernacular architecture at Dixcove. The term vernacular architecture is defined here as all indigenously developed structures, shelters and habitations which solely utilized local resources and conventional building technologies, conceptual knowledge systems and crafts associated with their constructions. They oftentimes incorporate design elements which resonate with the cultural identity, customs and traditions of the owners and/or builders and the local environment. They included wattle and daub (adobe) houses, open/enclosed shrines, food storage barns, and animal holding shelters such as sheds, kraals and pens.

The study spanned circa, 1570 to 1874 when the Gold Coast (now Ghana) officially became an English colony. The period witnessed the most devastating and traumatic event in Africa's checkered history: the trans-Atlantic trade. The major Atlantic trading nations, Portugal, England, The Netherlands and Denmark, over a three hundred period "forcefully" kidnapped, trafficked and transplanted millions of native African peoples to the New World to be sold into lifelong bondage to European planters to be abused and belabor on cotton,

sugar and tobacco plantations. The period also saw the introduction of several new cultigens and novel products to the peoples settling the Guinea Coast.

Dixcove (7° 09' 5.40"N, 0° 28' 21.59"E) is located in the Ahanta West District of the Western Region, Ghana. The town and its neighbourhoods are inhabited by the Ahanta, one of seven ethno-linguistic populations that occupied the Gold Coast during the study period. It was also one of the earliest to have encountered Europeans in the early sixteenth century and an important commercial hotbed of the trans-Atlantic trade (Barbot 1732, Bosman 1705, Pieter de Marees 1602). Fort Metal Cross (Figure 2), built by the Royal Africa Company on a hilly promontory is undoubtedly the most striking and impressionable architectural edifice attesting to the English presence there and was integral to facilitation of commercial exchanges between the two groups. The fort also played a primal role in the ascendancy of the political economy of Dixcove, facilitating its rise from a small insignificant fishing chieftdom to cosmopolitan status with economic links to bustling European and American ports, directly connecting it to the global economy (Biveridge: 2014). Other notable vestiges of the English encounter include over a century old, still-in-use English-built church, originally purposed to evangelize the indigenes and several dilapidated single-storied European-styled mansions built by wealthy Ahanta merchants along the beachfront.



Figure 1. Fort Metal Cross (in the background), the natural cove (foreground), and some early multi-storied European-styled mansions at Dixcove (Photo: Author).

Dixcove (Figure 1) is made up of two constituent chiefdoms called *Daazikessie* and *Ntwarkro*. This uncommon but remarkable politico-administrative structure, each with its own paramount chief predated the arrival of Europeans and persists to-date because progenitors of the two groups migrated independently at different times to resettle at Dixcove (Owusu-Ansah 1995: 91). Ethno-historical narratives gathered from clan elders of

the two groups intimate that the former migrated from Eguafo and the latter from Tekyeman (Nana Agyebu IV (pers. com., August, 2022, Nana Safo Otiku, July, 2023, and Abusua Panin Kweku Afrako, May, 2023). The colonial administration during the tenure of Governor Major Hill however, deliberately referenced the two communities as Upper Dixcove and Lower Dixcove, purposely to delineate their geographical boundaries for the exaction of the poll tax (PRO. T 7/1483: 1779).

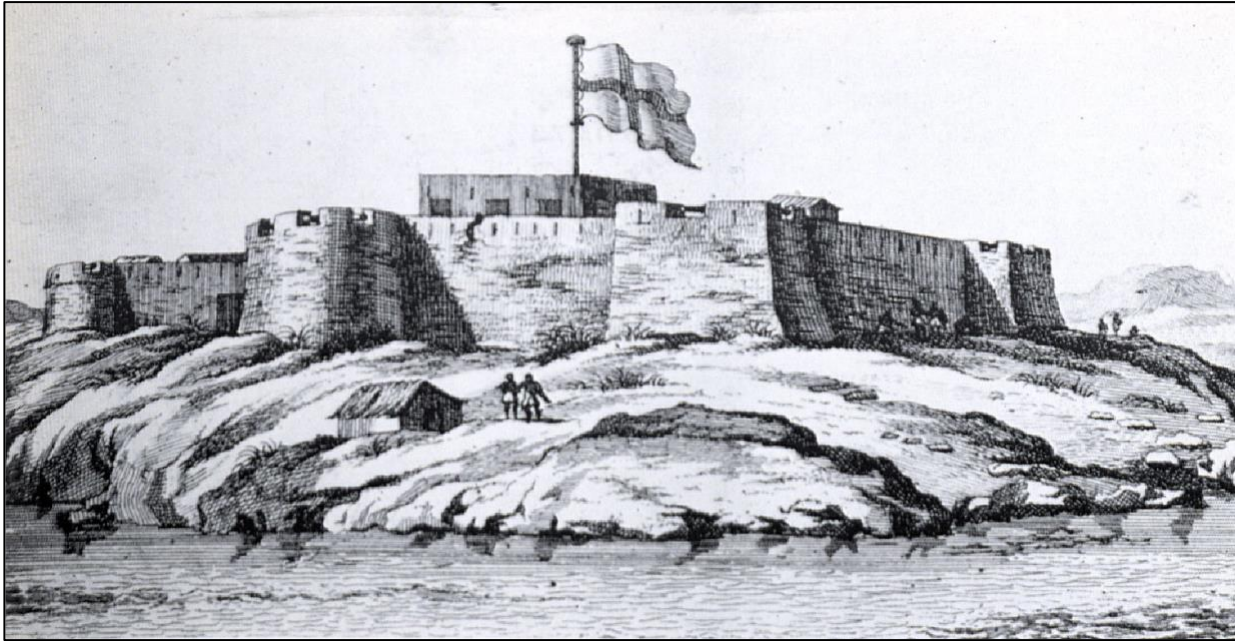


Figure 2. Fort Metal Cross, circa 1709 (Artist unknown). Source: Public Records Office, London.

Research Approach and Methodology

Field and library research constituted the prime methods used to derive data. The former involved the conduct of ethno-archaeological investigations at two ancient settlement quarters of *Daazikessie* and *Ntwarkro*. Occupation of the two sites predated the arrival of Europeans and were the first, and original quarters to be inhabited by the ancestors of the people of Dixcove. All archaeological and ethnographic data relating to vernacular architecture recovered there would therefore have constituted the earliest. This aspect of the study also involved digitally photographing eleven currently occupied, and four abandoned/dilapidated vernacular structures at the above-named suburbs. This aspect of the investigations also involved recording the geographical coordinates of the structures using a Global Positioning System (G.P.S).

The collection of ethno-historical narratives from 16 respondents, aged 65-92 years at Dixcove constituted another phase of the fieldwork. They comprised six clan heads and twelve highly respected community notables, seven of whom were retired professional vernacular house builders with cumulative experiences of approximately 385 years between them.

The library research involved the perusal of several early European primary records at Balme and the Institute of African Studies Libraries, University of Ghana. The majority of these documents comprised commercial correspondences, social and physical commentaries on the people and the environment. Others comprised title deeds and ship manifests documented by European seafarers, interloper captains and traders who operated along the Dixcove coastline and interacted with indigenous traders. Recourse to the use of the above-named sources was necessary to derive as much information as possible on the research area and the subject under study.

Brief Historical Milieu of Ahanta-land and Dixcove

Prior to the arrival of the English, Dixcove was called *Effiema* (also *Nfuma* and *Anta*), after one of Ahanta-land's most feared and revered deities whose shrine lies west of the *Nfuma* Lagoon. According to Nana Agyebu IV (pers. com., August, 2022), the name change occurred during the formative years of the Atlantic contact era, a consequence of European mariners' inability to properly pronounce *Effiema*. They proffered the name "Dickies cove," after a popular Englishman called Dick who had built an outpost along the cove's beachfront and was conducting a brisk trade in gold with the natives. With time, "Dickies cove" was corrupted to Dixcove and has remained so to-date.

Early European traders described the Ahanta as "potent, populous and very martial" and variously referred to them as "*Hanta*," "*Ante*," "*Antele*" and "*Anta*" (Marees 1602, Barbot 1732, Meredith 1812). Willem Bosman (1705: 12), the *Opperkoopman* (head merchant) of the Dutch West India Company on the Gold Coast also noted that geographically, Ahanta-land consisted of a commonwealth of several chiefdoms which extended only about two leagues from east to west on the Gold Coast. He named its main villages were "Boetre, Poyera, Pando, Sama, Anta, and Tarorary (now Takoradi) which was the largest" Lawrence (1963: 293) guesstimated Dixcove's total population in 1737, inclusive of its surrounding villages to about 2,000, and 3,000 in 1810.

It is uncertain from available data when the first European vessel berthed at Dixcove. Lawrence 1963: 295, 1969) cites the plentiful supply of gold, freshwater and the calm waters of the natural cove which facilitated the safe berthing of small ships as prime reasons which attracted the English to Dixcove.

According to Daaku (1970: 5-7) and St. Clair (2006), three trade systems operated simultaneously on the Gold Coast, including the Dixcove coastline and together, contributed in diverse ways to the development and growth of the economies of the coastal states. The first and oldest was the intra-regional exchange network with neighbouring coastal and inland polities like Wassa, Fanti, Ncassa and Nzema (Boahen 1970, Kea 1982). This exchange network greatly facilitated the transfer of agricultural produce and other items readily available in one area to less endowed areas with demand for them. The second was the inter-regional trade with Benin, Whydah and other states on the Atlantic seaboard, and involved the exchange of products like *acori* beads (Aggrey beads) and *quaqua* cloth (also called *adra* or *Benin* Cloth). According to Daaku (1970: 6), Blake (1997: 93) and DeCorse (2001: 142), European traders exploited to their advantage the big and ready market for these products on the Gold Coast. They thus procured them in large quantities from the Ivory Coast and

Benin where they were produced en-masse, and resold them for profit to the hinterland polities via middlemen. It is imperative to note that the above-named networks predated the arrival of Europeans.

The third was the inter-continental (trans-Atlantic trade) network with European charter companies. Research by Lawrence (1963: 292-297) indicated that the genesis of the trans-Atlantic trade along the Dixcove coastline preceded the construction of Fort Metal Cross by about two hundred years and that English traders began settling the research area towards the end of 1684. The material inventory (Tables 2, 3 and 4) retrieved during the excavations indicated that the quantum of goods traded during the early years namely: gold, palm oil and ivory, exchanged for India/Manchester cloth, rum, gunpowder and lead bars was exiguous. This was primarily because trade was unorganized and uncoordinated. For example, majority of the traders operated from anchored shipboards off-shore at Dixcove. Lawrence (1963: 293) notes that brisk and organized trade began with the incorporation of the Royal Africa Company and its construction of Fort Metal Cross in 1692. From the 1750's forward, other national charter companies, notably the Dutch West India Company and the Guinea Company, as well as interloper mariners made significant in-roads and together played a central role in facilitating and transplanting thousands of slaves, gold, hardwood, and palm oil from the research area to the Americas. A major consequence of the trans-Atlantic trade was that it increased and diversified the volume of commodities exchanged at Dixcove creating vistas of trade in Europe and the New World. Barter and gold dust using gold weights to establish quantum constituted the main methods used to facilitate the above-named exchanges (Peiter de Marees (1987: 65, Boahen 1970).

There is overwhelming documentary evidence attesting to vibrant commercial contacts between Dixcove merchants and counterpart traders from important New World bustling ports like New Orleans, New England Charleston, Newburyport and Boston. A report by Samuel Swan, an American trader aboard the *R.I. Love and Unity* to Jacob Tidd at Elmina dated August 20, 1899 for example asserted that:

"I have been offered at 17Gall. Pr. Oz. to take all my rum, but as I know there is no American on the coast, & that all my rum is in demand, I have determined not to sell at less than 15 & I expect by the time I return from Dix Cove (which place I am now under weight for) to get an oz for 14 or 13 Gall"(Samuel Swan quoted in Bennett & Brooks 1965: (45-62)."

Aside the external trade, a rich corpus of early European sources posits that salt production, on-shore/off-shore fishing, alluvial gold mining, horticulture and iron smelting constituted equally notable vocations of the Ahanta during the study period. Animal husbandry, hunting, trapping and the exploitation of freshwater molluscs' and crustaceans have been recorded as other less notable practices (Bosman 1705: 12, Barbot 1732: 23, John Lok, quoted in Fage 1967: 289). Fishing was undoubtedly the most important coastal adaptation and lynch-pin of the local economy (Barbot 1992: 519). That a significant proportion of the ecofacts retrieved consisted of *Pisces* remains (Tables 2,3,4) bears testimony to the above assertion (Biveridge 2014). Salt production was probably another important mainstay of the local economy (Daaku 1970: 3, Alexander1985: 655-656). De Marees (1602: 75) described Ahanta-land as having the best salt ponds on the Guinea Coast.

The Field Research

Two undisturbed locations, designated Locus A (at *Daazikessie*), and Locus B (at *Ntwarkro*) by the author constituted the principal geographical loci of the archaeological investigations. Selection of the two locations was informed by ethno-historical narratives of the indigenes which assert that they were the earliest quarters to be settled by their ancestors (pers. comm. Nana Agyebu VI, Nana Acheampong, July, 2021). It was envisaged that their stratigraphy's would yield substantial architectural related artifacts dating to the study period to facilitate reconstruction of their past architectural heritage.

A total of four surface surveys, undertaken on foot over four days at Locus A and B constituted Phase One of the field research. Each Locus was demarcated into four geographical zones which corresponded to the cardinal directions of north, south, east and west, to ensure each zone was conscientiously covered. The survey was purposed to delineate the geographical borderlines of the two sites using the extent of surface artifact scatters and a Global Positioning System (GPS). The data universe for Locus A was estimated at 169,640 sq. metres (992 metres x 170 metres), and Locus B was 75,330 sq. metres (243 metres x 310 metres). Potsherds, stone grinders, bones, a glass bead, fragments of daubs, a descript canon, molluscs shells and a partly exposed abandoned vernacular house foundation constituted material remains discovered during this phase of the fieldwork.

The excavation of two units, each measuring 1 metre x 2 metres designated Units 1 and 2 at Locus A constituted Phase Two of the fieldwork (Figure 3). Unit 1 was located on a gentle slope, 313 metres north-east of Fort Metal Cross and the sterile level reached 142 centimeters. below ground surface. Unit 2 was located 28 metres north-west of the old palace of the chief of *Ntwarkro* and its sterile level was 140 centimeters below ground surface. At Locus B, a trench measuring 1 metre x 4 metres was opened. It lay 122 metres north-west of the cove and its sterile level was 145 centimeters. below ground surface. The choice of which locations to excavate was determined judgmentally and informed by the density of surface artifact scatters. An arbitrary interval of 20 centimeters was used to control vertical provenience and a 4-millimeter squared mesh was used to sieve excavated soil. Stratigraphy colours and grain/sediment sizes were determined using the *Munsell Soil Colour Charts* and the *Wentworth Grain Size Classification Scheme* respectively.

Two distinct cultural layers were discerned within the stratigraphy. The first stretched from ground surface (0 centimeter) to 124 centimeters below ground surface, and was designated Cultural Level 1. It contained a mix of material remains of local and foreign origins, indicating that stretch of stratigraphy corresponded to the Post Atlantic Contact period. A total count of 3,144 material remains was registered for Cultural Level 1 (Tables 2, 3 & 4).

Unlike Cultural Level 1, the second cultural layer, designated Cultural Level 2 contained material remains of local origin only. It stretched from 124 centimeters to 142 centimeters below ground surface at Units 1 and 2, and 121 centimeters to 145 centimeters at Trench 1. The total count of material remains retrieved was 4,859. That it contained material remains of local origin only is indication that that section of the stratigraphy corresponded with the Pre-Atlantic Contact period and have been bolded in Tables 2, 3 and 4.

Table 1. Types and total count of finds found during the surface survey at Locus A and B.

	Types of Finds	Locus A	Locus B	Total Count of finds	Percentage count of Finds
1	Glass beads	2	-	2	0.48%
2	Local potsherds	12	21	33	8.02%
3	Bones	1	7	8	1.94%
4	Molluscs shells	123	221	344	83.69%
5	Stone Grinders	1	0	1	0.24%
6	Canon	1	-	1	0.24%
7	Glass Bottle fragments	9	13	22	5.35%
	Count According to Loci.	149	262	411	100%



Figure 3. Photo showing north and west walls of Unit 1 (Source: Author).



Figure 4. One of several fragments of daub with copious inclusions of molluscs shell fragments and stone aggregations recovered during excavations (Photo: Author).

Table 2. Cultural materials retrieved from Unit 1 according to stratigraphy levels

	Types of Finds	Level 1 (0-20cm)	Level 2 (20-40cm)	Level 3 (40-60cm)	Level 4 (60-80cm)	Level 5 (80-100cm)	Level 6 (100-120cm)	Level 7 (120-140)	Count of finds
1	Iron slag	-	-	-	--	9	14	5	28
2	Rectangular shaped blocks	-	1	-	12	23	24	23	83
3	Bones	6	13	11	34	21	67	14	166
4	Daubs,	2 4	16	41	26	12	6	6	131
5	Metal objects (local)	-	-	1	2	1	2	4	10
6	Potsherds	14	26	33	57	11	9	7	157
7	Molluscs shells	144	254	117	154	97	61	67	894
8	Stone grinders	-	-	1	4	2		1	8
9	Cannon balls	2	-	-	-	-	--	-	2
10	Smoking pipes	-	-	6	1	7	-	-	25
11	Pomade holding vessels	-	-	1	-	-	-	-	1
12	Metal objects (imported)	3	8	4	12	9	2	1	39

13	Bottles -Non alcoholic/alcoholic beverages	19	25	51	67	22	4	-	188
14	Slate pencils	-	-	-	2	1	-	-	3
15	Imported Ceramics	7	11	13	14	43	-	-	88
16	Alcoholic beverages	2 4	35	17	4 4	9	-	-	129
17	Gun flints	-	-	-	-	1	-	-	1
18	Glass beads	-	2	9	12	8	-	-	31
19	Window panes	2	16	13	4	1	=	=	36
	Total according stratigraphy levels	245	407	318	456	277	189	12 8	2020

Table 3. Cultural materials retrieved from Unit 2 according to stratigraphy levels.

	Types of Finds	Level 1 0-20cm	Level 2 20-40cm	Level 3 40-60cm	Level 4 60-80cm	Level 5 (80- 100cm)	Level 6 (100- 120cm)	Level 7 (120- 140cm)	Count of finds
1	Potsherds	21	117	123	92	66	21	24	464
2	Daubs	17	23	67	21	33	11	9	181
3	Lime fragments	-	36	19	9	3	2	1	70
4	Molluscs shells	147	221	332	97	101	59	21	978
5	Bones	16	32	17	11	12	9	11	108
6	Querns	-	3	-	-	1	-	-	4
7	Iron slag	-	-	-	11	9	6	2	28
8	Rectangular granitic stone blocks	-	4	4	-	1	4	5	18
9	Alcoholic/non- alcoholic beverage Bottles	11	49	132	98	47	21	-	358
10	Asbestos roof fragment	4	11	7	9	3	1	-	35
11	Medicinal suppositories	-	2	1	4	1	-	-	8

12	Metal objects (Imported)	12	27	32	11	17	7	5	111
13	Kaolin smoking pipes	-	2	14	21	13	4	-	54
14	Glass beads	5	16	38	24	18	-	-	101
15	Slate pencils	-	-	1	-	4	-	-	5
16	Imported ceramics	14	21	27	72	66	1	-	201
17	Dress button	-	-	-	-	1	--	-	1
18	Slate boards	-	-	2	4	2	-	-	8
19	Tar dado	=	=	1	-	2	-	-	3
	Total according to stratigraphy levels	247	564	817	484	400	146	78	2736

Table 4. Cultural materials retrieved from Trench 1 according to stratigraphy levels

	Types of Finds	Level 1 (0-20cm)	Level 2] (20-40cm)	Level 3 (40-60cm)	Level 4 (60-80cm)	Level 5 (80-100cm)	Level 6 (100-120cm)	Level 7 (120-140cm)	Count of finds
1	Potsherds	47	26	33	71	41	23	17	258
2	Daubs	2	4	3	6	11	7	4	37
3	Bones	11	9	15	47	21	17	9	129
4	Stone Grinders	-	-	-	-	1	-	-	1
5	Molluscs shells	127	311	97	221	98	112	66	1032
6	Rectangular granitic stone blocks	-	-	2	-	1	4	5	12
7	Lime plaster	-	14	12	7	3	1	2	39
8	Palm kernel nuts								
9	Querns	-	-	2	-	3	-	1	6
10	Iron slag	-	-	-	-	1	5	11	17
11	Smoking pipes	1	2	7	3	4	1	-	18
12	Cannon balls	1	-	-	1	-	-	-	2
13	Metal objects	7	21	13	9	11	3	-	64
14	Alcoholic/Non-alcoholic	23	39	24	62	17	1	-	166

	beverage bottles								
15	Slate pencils	-	-	-	1	2	-	-	3
16	Imported ceramics	13	11	31	29	11	1	-	96
17	Glass beads	7	9	12	7	11	-	-	46
18	Window panes	-	2	-	11	13	-	-	26
19	Medicinal suppositories	7	13	9	10	4	-	-	43
20	Descript door lock	-	1	-	-	-	-	-	1
21	Mirror fragments	2	-	3	-	-	-	-	5
22	Asbestos roofing sheet	-	2	11	15	2	-	-	30
23	Dutch yellow bricks	-	-	2	4	11	-	-	17
24	Beverage bottle stoppers	-	-	--	2	6	-	-	8
25	Belt hook	-	2	-	-	-	-	-	2
	Total according to stratigraphy levels	248	466	276	506	272	175	115	258

Discussion

Despite the wide array of material remains retrieved, only those associated with architecture and building constructions were analyzed and were broadly categorized into two groups to facilitate their classification. The first group comprised material remains of local origin used in vernacular architecture. Their total count was 3,463 and comprised copious quantities of heavily fragmented daubs (Figure 4), several rectangular/square-shaped granitic blocks, molluscs shells and fragments of lime plaster. The colorations and exterior linear markings of the blocks were same as the rocky boulders found onshore and were likely hacked from there.

The total count of material remains of the second group comprised construction hardware and other building accoutrements of external origins used primarily in European-styled architecture. These finds included yellow bricks, tar dado, glass window fragments, window panels, screws, iron rods, brackets and brad nails. Other recovered items comprised copious quantities of extensively eroded metal objects such as parts of cutlasses, hoes, mattocks, asbestos roofing sheets, descript door locks and hinges. The above-named building and construction materials constituted integral imports to the Guinea Coast during the era of the trans-Atlantic trade (Alpern, 1995: 4-43, Bosman 1705, Barbot 1732, de Marees 1602). That these materials were retrieved from Cultural Level 1 during the Post Atlantic Contact Period (1550 forward) is ample testimony that they were of European origins introduced during that period.

The G.P.S coordinates of twelve low-lying mounds, believed to be collapsed adobe houses, and thirteen abandoned rectangular-shaped vernacular structures were noted and documented in a field notebook during the surface survey. Additionally, the G.P.S coordinates of twenty-six poorly maintained but still occupied vernacular structures were identified and mapped in the field notebook to shed light on past settlement patterns at Locus A and B.

Evidential data from the study indicated that *pise de terre* (mix of rammed earth and clay), and flat stone blocks on the top and base constituted the principal building materials used in vernacular house constructions prior to European arrival at the research area. The latter are abundant and easily obtainable along the beachfront. Straight tree branches of 4 centimeter to 6 centimeters diameters, twigs, vegetal twines and woven palm fronds (thatch) constituted other notable resources used. Unlike daub and the stone blocks which were readily discovered during the excavations, none of the other materials which are organic were retrieved. This may be attributed to the large amounts of carbon-based compounds they contain which make them easily decay in the archaeological record. Termite action and the relatively high humidity and temperature levels experienced in the research area can be cited as other factors which could have facilitated their disintegration.

Respondents averred that in the past before the arrival of Europeans, artisans engaged in vernacular house constructions constituted themselves into guilds, supervised by the most senior builder. This enabled them advance their craft, maintain high professional standards and training, and pursue common goals and interests. They also had several young apprentices eager to learn the trade understudying them. They further intimated that five major stages were involved in vernacular house constructions and that total construction time spanned twelve to twenty days, and depended on prevailing weather conditions and the

prospective size of the structure. Except for stage 1, stages 2 to 5 was followed by 2 to 3 days of inactivity and this was purposed to allow the wet clay walls to dry and harden.

Stage one was a short customary event and involved the pouring of libation amid recitation of supplicatory solicitations and intercessory petitions by the head of family of the owner to the ancestors and deities of the land. This was done to ward off evil spirits and ensure successful completion of the project. The ceremony was always conducted at the spot where the proposed structure was to be built and sometimes also involved the sacrifice of one white cockerel to appease the deity.

Stage two commenced with digging of the foundation of the proposed structure (Figure 5). Foundation depths were not standardized but averagely ranged from 25 centimeters to 30 centimeters below ground surface. Ground slope, soil compactness and builder's discretion generally constituted the most important criteria which determined foundation depths. Floor levels inside rooms were generally low, hardly exceeding 10 centimeters above ground surface.

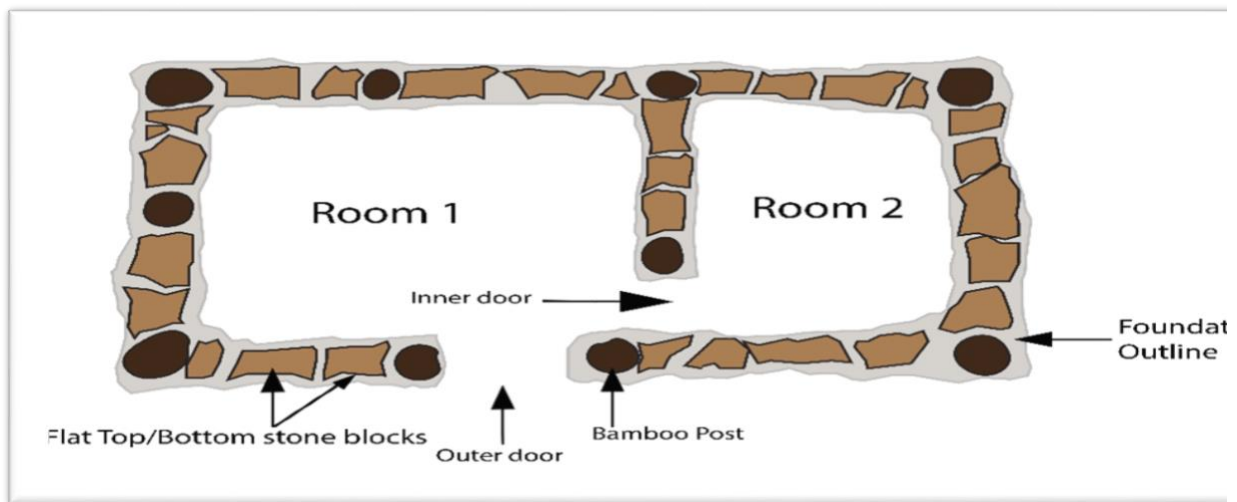


Figure 5. Schematic aerial view of vernacular house foundation (illustration: Author).

Stage three involved vertically erecting the superstructure of the proposed structure using dried bamboo posts of approximately 2.5 metres – 3 metres high. They were placed at about 1.5 metres to 2 metres intervals inside the foundational dugouts. The posts were next firmly secured at the base level with a mix of soil, cobbles and clast rocks, measuring approximately 65 millimeters to 256 millimeters in diameter at their longest axis. This ensured they were sturdy and upright. To further enhance rigidity, the bamboo posts were also secured to each other horizontally with vegetal twines at about 25 centimeters intervals on the bamboo posts (Figure 6).

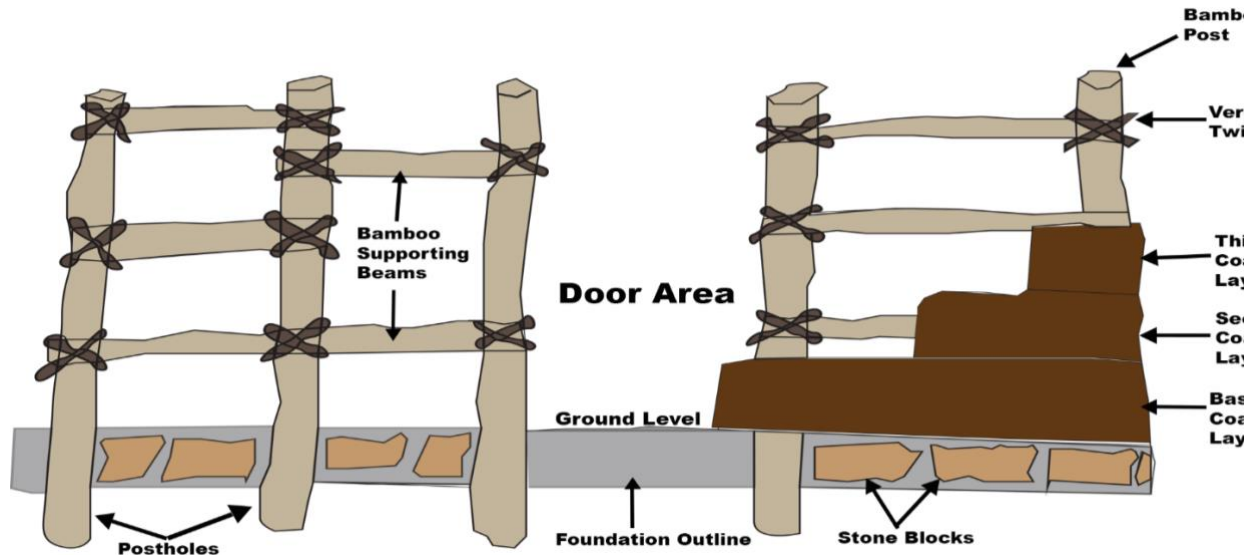


Figure 6. Schematic drawing of the bamboo superstructure of a vernacular house (Illustration: Author).

The penultimate stage involved laying in a single horizontal file, the rectangular stone blocks in-between the bamboo superstructure posts inside the foundation (Figure 6). The stone blocks are laid one apiece after another, and served as the structural foundation over which the clay walls of the structure will be erected. The bulk (> 91%) of the stone blocks recovered from archaeological contexts were flat-faced on their tops and bases. They averagely measured 25 centimeters (length) x 18 centimeters (width) x 8 centimeters (depth). Respondents intimated that the reason for selecting only rocks with flat tops and bases was to ensure that they provided a steady immovable ledge over which the walls could be firmly supported and erected.

Walls of Ahanta vernacular houses served three primary functions: for load bearing (roof support), to enclose space, and as shear barriers to resist water and strong winds. Their exteriors were generally rough and unsmoothed with flexes. They were always laid in courses, starting from the base upwards to roof. This is evidenced by thin jointed horizontal lines observed in-between the various coursed layers (Figure 7).

A cursory examination of the walls of the abandoned vernacular habitations appeared to indicate that they were made out of a mix of rammed earth, clay and/or laterite. However, further examination of the bulk of the daubs including those recovered from archaeological contexts (N= 349) under a Leica Electronic Microscope revealed significant quantities of several inclusions evenly spread out within their body fabrics. Seven of the inclusions could not be positively identified on account of their extensively eroded exteriors and heavily fragmented nature which averagely measured $\leq 3\text{mm}^2$ across their longest axis. A total of 26 however, were identified as grounded potsherds (GP), mollusc shell fragments (MSF) and rock clasts (RC), composed of mainly granite. The last two measured averagely 4 millimeters to 67 millimeters. across their longest axis, and had no identifiable shapes or sizes. The

average ratios of the three media named-above per daub was: 3 (GP): 7 (MSF): 16 (RC) respectively.

All sixteen respondents intimated that they were deliberate additions, purposed to strengthen, enhance longevity, and prevent cracking which was a natural consequence of moisture loss and the curing process. They also averred that soils with significant amounts of silt and/or organic matter such as decaying leaves and twigs were generally avoided during soil harvesting. Their use according to the respondents, can be detrimental because their body fabrics naturally contain multiple pores which make them less dense and compressible. To promote malleability and shaping of walls during the erection stage, soils needed to be well-rammed, with small containments of moisture which made them more malleable and breathable.



Figure 7. One of several abandoned vernacular structures at the ancient settlement quarter of Daazikessie. Note the vertical/horizontal bamboo posts within the coursed clay walls used to secure the superstructure in place (Photo: Author).

The lowest coursed layer was always the widest, and the first to be laid during wall constructions. The widths, though not standardized measured averagely 10 centimeters (height) x 25 centimeters (breadth), and covered the entire distance of the foundation, except for areas where doors and windows were to be installed. Subsequent layers overlying the base measured 10 centimeters x 20 centimeters. To prevent the premature collapse of the earlier laid courses, each coursed-layer was always allowed to sun-dry and harden before overlying ones were erected. The process was repeated till lintel/roof level was attained. Areas demarcated for doors and windows were left uncoursed during the wall erection process.

Respondents asserted that woven palm fronds (raffia mats) constituted the main materials utilized as doors and windows in ancient times. They were rolled up and secured with hooks affixed into the daub at the lintel level during the day which allowed for easy inflow of air into rooms. Hooks holding them in place were untied or lowered at night when temperatures dropped or during downpours to prevent rainwater from entering the structure.

The final stage of construction involved horizontally securing the thatch roof into the top ends of the walls with the aid of straight tree branches. These served as roof embers over which two or three layers of thatch will be overlain. The embers were laid at 30° - 40° angles, at intervals of about 40 centimeters of each other. To secure the wooden embers into the walls and forestall their being blown away as sometimes occurs during heavy thunderstorms, the thatch and roof embers were held together into position with vegetal twines, made from the dried stems of *Ulva lobate.*, a creeping seaweed commonly found naturally growing in coastal neritic waters of the Gulf of Guinea.

Miscanthus (elephant grass) and *Hyparrhenia hirta* (Coolatai grass) which naturally grow widely in the research area were the preferred grasses for thatching roofs by most vernacular house builders. Respondents intimated that this was because they are resilient and durable. Their long, slender and sturdy flexible stems also allowed easy bundling. Their other notable properties include their longevity, pest resistibility, insulation against heat and cold, and rainwater shedding abilities. Harvesting the fresh grass, usually cut at the base was the first stage of the thatching process, followed by sun-drying them and finally bundling them together into layers with vegetal twines.

Vernacular ancillary structures like bathhouses, kitchens and lavatories were unattached outhouses, averagely lying 5 metres to 7 metres away from the main structure. Bath houses were small open-roofed structures, capable of holding only one person at a time. Their short adobe walls, measuring approximately 180 centimeters to- 218 centimeters above ground level allowed any adult user of average height, a 360° view of their surroundings. Flat stone blocks, similar to those utilized as house foundations, closely laid side by side of each other served as floors for the occupant inside the bath house. An aperture 4 centimeters to 6 centimeters in diameter at the base of one side of the wall allowed the outflow of effluence.

Toilets like bathhouses were small and unattached one-roomed structures. They were enclosed on three sides by adobe walls with a door fitted on the fourth side and overlain with thatch. The inside of the structure consisted of a round-shaped dug-out measuring 1 metre to 2 metres deep, over which wooden planks, strong enough to support the weight of an adult were laid.

Kitchens consisted of low open huts, overlain with thatch or sliced bamboo stems and vertically secured into the ground with wooden posts at the four corners. This allowed for free inflow of air, ensuring heat generated during cooking was naturally expelled. Average kitchen size ranged from 3 metres to 4 metres (length) x 2 metres to 2.5 metres (breadth) x 2 metres to 2.5 metres (height). Stationary stone grinders, stone/clay hearths and short low wooden benches constituted the only furniture found in these shelters.

Despite the commonality of the materials used, and simplicity of the technology employed in vernacular house constructions, it is worth noting that the roofs hardly leaked or fell off during rainstorms. Similarly, the walls were rigid, with approximate lifespans of 35 - 45 years. This however, was largely dependent on vagaries of tropical weather conditions and regularity of maintenance works undertaken which generally was low and affordable. Room temperatures monitored over 70 days, at midday and midnight daily, also averaged 25° and 23° Centigrade respectively, in spite of hot exterior average temperatures of 32° - 35° daily experienced in the dry season and 22° - 25° in the wet season. The high thermal mass

of adobe walls which dissipates heat was primarily responsible for the coolness within these structures.

Undoubtedly, the English presence at Dixcove and the Atlantic trade significantly impacted vernacular architecture. The archaeological inventory attested not only to dramatic material transformations in vernacular architecture but also continuity at Locus A and B. The dominant external features of European architectural designs included having multiple rooms and rectangularly shaped. Many were single storied structures with steeped asbestos roofs, linearly set with one entrance from which it could be accessed or exited. Granite block walls, sometimes accentuated with standardized yellow bricks and bonded into position with lime, heavy wooden doors, and glass windows arched at the top constituted other notable exterior elements that defined these structures. Unlike vernacular structures, bathhouses, kitchens and lavatories were incorporated into the created spaces. Major interior elements included the use of imported accessories such as metal rods, brackets, hand-forged brad nails, metal hinges, keyed door locks, hasps and metal window panes.

Wealthy indigenous merchants appeared to have been the foremost pioneers to embrace these novel European architectural designs. That some of the oldest still-standing vernacular structures incorporating European architectural designs (Figure 8) belonged to this elitists' class is clear testimony supporting this assertion. Some of the prominent owners named included Quamina (the son of Acca, a Dixcove *Caboceer*), Nana Mensah Kumah, Harry Brew and Thomas Brew (sons of Richard Brew). Ethno-historical narratives gathered from some of the indigenes intimated that the above-named persons were very successful native brokers and "gold takers who profited considerably from the Atlantic trade (Nana Safo Otiku, pers. comm. July, 2023, Abusua Panin Kweku Afrako, pers. comm. May, 2023). They may have channeled part of their profits into building these European styled structures to reflect their newly acquired societal status

Interestingly, many of these European architecturally inspired buildings incorporated the African traditional use of space in their designs. These included open centrally placed courtyards at the ground floor where large water holding pots were placed halfway under roofs to harvest rainwater. These spaces also functioned as cooking, washing and cleaning spaces for the occupants. Other elaborate exterior detailing worthy of note included the use of local materials such as stone blocks, shell derived lime and hardwoods such as bamboo and mahogany (*Swietenia macrophylla*).

The significant recovery of the above-named European made building materials and accessories at stratigraphy levels 1-5, (1550 forward) is clear evidence that they were foreign novelties, introduced to the people of the region during the Atlantic contact era. The use of lime to plaster vernacular house walls also appeared to have become popular and fashionable during that era (Figure 8), evidenced by its increased usage from only 12 fragments at Cultural Level 2, to 97 at Cultural Level 1. It is reasonable to infer that a state of mutual trust, conviviality and entente cordiale may have existed between the natives and the English because all the vernacular structures incorporating European designs and owned by wealthy native merchants were laid-out very close to Fort Metal Cross.



Figure 8. Some early indigenously owned European-styled mansions with lime plastered walls, imported asbestos roofing's and glass window panes at Dixcove, circa 1720-1880. (Photo: Author).

Conclusion

Prior to the Euro-Ahanta encounter at Dixcove, the indigenes sourced all materials used in vernacular house construction from within the settlement precincts. The notable ones comprised rammed earth, stone blocks, bamboo posts, straight tree branches, twigs and vegetal twines. Their easy availability, reusability, affordability and renewability probably made them the preferred choice materials. Evidence from the study appeared to suggest that their sole use persisted up to the early phase of the Atlantic contact era when imported building materials and other construction accoutrements became available within the community.

Notable characterizations of early Ahanta vernacular structures included their simple but highly efficient designs and relatively short construction times. However, their tendency to lose strength and dimensional stability over time, if continuously and extensively exposed to water and damp conditions are its major disadvantages.

The strength of the archaeological assemblages can be gleaned from three perspectives. First, it shed light on the types of European hardware and building accessories introduced at Dixcove. Second, it showed how they were utilized and third, it revealed how it impacted vernacular architecture. The novelties included yellow baked bricks, asbestos roofing sheets, nails, glass window frames/panes, and building accessories like keyed metal door locks and door hinges. Evidential data from the study indicated that from the mid-seventeenth century forward, affluent Dixcove natives fused vernacular designs with European styled architectural models which incorporated the above-named accoutrements to build single storied mansions, some of which had expansive central stone-paved courtyards.

That Ahanta vernacular designs promoted their cultural identity and architectural heritage cannot be over-emphasized as it provided a solid foundation for their shared humanity and an important link to their past. Like chieftaincy regalia and other traditional art forms, they constituted strong artistic and cultural expressions of the people and concerted efforts must be made to preserve not just their unique designs but the technologies associated with their constructions.

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