

Archaeological & Cultural Heritage Baseline/Impact Assessment:

Bolgatanga-Bawku-Pulmakom Road Rehabilitation Project



Upper East Region

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Report prepared for:	Report prepared by:
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LIST OF ABBREVIATIONS

EP	Environmental Permit
EIA	Environmental Impact Assessment
ESIA	Environmental & Social Impact Assessment
UNESCO	United Nations Education, Scientific and Cultural Organization
GMMB	Ghana Museums and Monuments Board
QGMI UK	QG Construction UK Limited
NLCD	National Liberation Council Decree
GHA	Ghana Highway Authority
EMP	Environmental Management Plan

GLOSSARY

Definitions	
Heritage	UNESCO's 1972 convention defines heritage as our legacy from the past, what we live with today and what we pass on to the future generations. My perspective is that: It is a complex of inherited tangible and intangible legacies that are usually bequeathed by individuals, families, groups, communities, societies, nations, continents and the globe.
Cultural Resources	The UNESCO 1972 convention views cultural resources as "monuments, groups of buildings and sites with historical, aesthetic, archaeological, scientific, or anthropological value...it can also be cultural practices or sites with extrinsic cultural and socio-economic value.
Chance Finds	Any artefact or cultural material of significant archaeological value that is accidentally encountered in the course of the project.
Shrine	Any tangible thing, place or landscape that is used or has been reserved by any person or group in a society for religious or spiritual purposes
Tengindana	In the local context are earth priests, individuals with ritual authority over the land and human relations with the land on behalf of their community.

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1 Introduction

Prof Wazi Apoh, archaeologist and heritage specialist in the Department of Archaeology and Heritage Studies at the University of Ghana, Legon, was appointed by QG Construction UK Limited (QGMI UK) to carry out a survey. The aim of the survey was to characterise the archaeological and cultural heritage resources and contexts along the Bolgatanga-Bawku-Pulmakom Road in the Upper East Region of Ghana. These findings form the basis for an assessment of the potential physical and cultural heritage impacts of the ongoing rehabilitation and upgrade works being undertaken along said stretch of road, henceforth denoted ‘Project’. In turn, the impact assessment will inform the update of the Project’s Cultural Heritage Impact Management Plan (CHIMP) to incorporate mitigation and preservation measures for sensitive cultural heritage receptors along the route.

The present Cultural Heritage Impact Assessment (CHIA) is also intended to fulfil the statutory requirement to protect, preserve, and develop any cultural heritage sites encountered within the framework provided by the National Museums Decree (1969) NLCD 387. Further, the CHIA also aims to satisfy the information and impact management requirements of the Project’s lenders, which require the Project to adhere to the Equator Principles and the IFC Performance Standards (PS), namely IFC PS 1 on impact assessment and IFC PS 8 on Cultural Heritage.

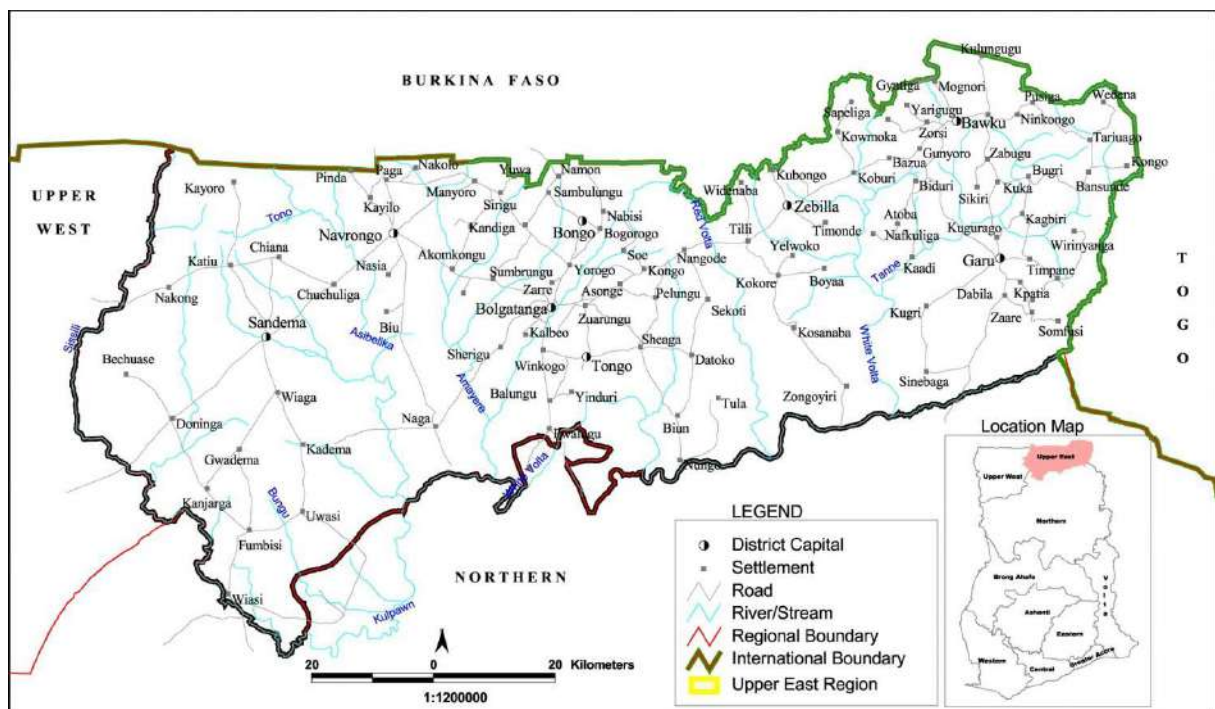


Figure 1 Location of the sites Source: <http://aodl.org/oralnarratives/farefari/object/4A-1C5-B/>

2 Project Summary

The Bolgatanga-Bawku-Pulmakom Road Project (hereafter, “the Project”) is being developed in order to upgrade the road conditions in the Northern corridor of Ghana. The rehabilitation

of the road is designed to help increase road safety, trade and stimulate economic and social development, and to further integrate the Upper East and the Northern regions of Ghana and potentially benefit the neighbouring countries. The Project is approximately 109km in length, stretching from Bolgatanga town through Bawku to Pulmakom passing through a number of towns.

The Contractor's scope of work includes the following:

- Rehabilitation/construction of those parts of the Bolgatanga-Bawku-Pulmakom road that have not previously been built;
- Insert surface dressing for the majority of the road length;
- Potential construction of a bypass to be defined at Bawku to avoid passage of heavy vehicular traffic through the centre of the settlement; and
- Development of three new bridges at the existing bridge locations at Zuarungu, Tilli and Zebilla. The new bridges will likely be located parallel to the existing ones.

3 Terms of Reference

The purpose of the archaeological and cultural heritage study is to scope out the project area and document any relevant cultural sites and heritage resources that could be adversely affected by the proposed road development and to recommend mitigation measures. Heritage resources are unique and non-renewable as such any impact on such resources must be seen as an impact that should be mitigated where possible. As the value of archaeological resources is predicated on their discovery within a specific geological host unit, construction of the proposed project could result in a net gain to the science of archaeology and heritage studies by allowing artefacts and heritage resources that would not otherwise have been found to be recovered, identified, studied, and preserved.

The following places and objects were investigated during the survey:

- i. Places, buildings, structures, and equipment
- ii. Places to which oral traditions are attached or which are associated with living heritage.
- iii. Historical settlements and townscapes.
- iv. Landscapes and natural features.
- v. Geological sites of scientific or cultural importance.
- vi. Archaeological and palaeontological sites.
- vii. Graves and burial grounds.
- viii. Movable objects.

4 Applicable Legislation and Permit Requirements

This section outlines the administrative and legal framework governing the present cultural heritage impact assessment from a national and international perspective as follows:

- Ghanaian legislation and regulations, namely the:
 - National Museums Decree (1969) NLCD 387,
 - Executive instrument (EI 118) of 1969, and
 - National Museums Regulation (EI 29) of 1973.
- International good practice, specifically:
 - OECD Common Approaches for export credits,
 - The Equator Principles, underpinned by,
 - IFC Performance Standard 1, and
 - IFC Performance Standard 8 on cultural heritage.

These are further described below.

4.1 National Legislation

The National Museums Decree (1969) NLCD 387, the Executive instrument (EI 118) of 1969 and the National Museums Regulation (EI 29) of 1973 provide the guidelines for this study. These legal documents, besides expounding on the duties and regulations of the Ghana Museums and Monuments Board (GMMB), also provide a definition of antiquities, monuments and cultural artefacts and affords protections to a variety of archaeological and cultural heritage resources.

The definitions applicable to the protected heritage resources are as follows: The National Museums Decree (1969) NLCD 387 indicates under Article 31 that

‘Antiquity means an object of archaeological interest or land in which any such object is believed to exist or was discovered, including any land adjacent to such object or land which in the opinion of the Board is reasonably required to maintain the object or the land or its amenities or to provide access thereto, or for the exercise of proper control or management over such object or land; or

Any work of art or craftwork, including any statue, modelled clay figure, cast or wrought iron metal carving, house post, door, ancestral figure, religious mask, staff, drum, bowl, ornament, utensil, weapon, armour, regalia, manuscript or document, if such work of art or craftwork is of indigenous origin and

- i. was made or fashioned before the year 1900 or*
- ii. is of historical, artistic, or scientific interest and is or has been used at any time in the performance, and for the purpose of, any traditional ceremony.*

‘Objects of archaeological interest’ means-

- i. *any fossil remains of man or of animals found in association with man; or*
- ii. *any site, trace or ruin of an ancient habitation, working place, midden or sacred place; or*
- iii. *any cave or other natural shelter, or engraving, drawing, inscription, painting or inscription on rock or elsewhere; or*
- iv. *any stone object or implement believed to have been used or produced by early man; or*
- v. *any ancient structure, erection, memorial, causeway, bridge, cairn, tumulus, grave, shrine, excavation, well, water tank, artificial pool, monolith, group of stones, earthworks, wall gateway or fortification; or*
- vi. *any antique tool or object of metal, wood, stone clay, leather, textile, basket ware or other material which is of archaeological interest'*

Further relevant paragraphs of the Act include:

'Permission to remove antiquity (Paragraph 9)

1. *A person shall not remove an antiquity from its original site without the consent of the board.*
2. *A person shall, when applying to the board for consent under subsection (1), state the exact locality in which the antiquity is situated and the place to which, and the purpose for which, the antiquity is to be removed, and the Board may require that person to submit an adequate photograph of the antiquity.'*

'Duty to notify discovery (Paragraph 10)

1. *A person who discovers an antiquity, and the owner or occupier of a land on which an antiquity is discovered on becoming aware of the discovery, shall without delay notify the board in writing of the discovery.*
2. *A person mentioned in subsection (1) shall not, without the written consent of the board alienate the antiquity discovered.*
3. *When the board becomes aware of the discovery of an antiquity but has not been notified, it may notify the discovery to a person who is or appears to be the owner or in control of the antiquity without the written consent of the board.'*

In addition, the above laws provide the foundational rules on the conduct of research on antiquities, protection, and conservation as well as for the sale and export of antiquities. The national governing body for cultural heritage in Ghana is the Ghana Museums and Monuments Board (GMMB). The GMMB is the mandated national institution in charge of all Ghana's antiquities. As the custodian, it is in charge of preservation and management of all antiquities. Section 8(1) The National Museums Decree (1969) NLCD 387 requires that a permit be obtained from the GMMB before the excavation of any antiquities can begin.

4.2 International Standards

There are currently a number of international standards relating to the protection of cultural heritage in use around the world. Among the most widely applied is IFC Performance Standard 8 developed to inform and set out minimum requirements for the protection of cultural heritage resources in development projects supported by the IFC. The stated purposes of this standard are to:

- protect cultural heritage from the adverse impacts of project activities and support its preservation; and
- promote the equitable sharing of benefits from the use of cultural heritage.

In paragraph 6 it calls for the implementation of international treaties and national laws relating to heritage protection, stating that clients *'will identify and protect cultural heritage by ensuring that internationally recognized practices for the protection, field-based study, and documentation of cultural heritage are implemented'*.

In paragraph 7 it adds that *'where the risk and identification process determine that there is a chance of impacts to cultural heritage, the client will retain competent professionals to assist in the identification and protection of cultural heritage'*.

In paragraph 9 it is also stated that *'The client is responsible for siting and designing a project to avoid significant adverse impacts to cultural heritage. The environmental and social risks and impacts identification process should determine whether the proposed location of a project is in areas where cultural heritage is expected to be found, either during construction or operations.'*

The standard goes on to specify that Affected Communities and relevant national regulatory agencies should be consulted. It favours the retention of cultural heritage in situ (paragraph 12), only permitting exceptions where there is no feasible alternative and the removal of the resource is carried out *'using the best available technique'*.

In paragraphs 13-15, the standard addresses impacts on 'critical cultural heritage' defined as: *(i) the internationally recognized heritage of communities who use, or have used within living memory the cultural heritage for long-standing cultural purposes; or (ii) legally protected cultural heritage areas, including those proposed by host governments for such designation.*

It states that critical heritage should not be removed unless in exceptional circumstances where impacts are unavoidable. In such cases external experts should be retained to assist in its protection and assessment.

Where there are legally protected sites, the client is required to comply with legal requirements related to their protection, consult stakeholders and implement additional programmes to promote and enhance their conservation.

5 Methodology

Based on the extended terms of reference, the methodology used in this study was tailored to determine the potential impacts on archaeological, historical, and cultural heritage resources associated with the construction and earthworks for the road rehabilitation and upgrade project. This consisted of the following activities:

5.1 Desk Based Research

A heritage desk-based assessment was undertaken based on a survey of available literature. This literature included published material, unpublished commercial reports, and online material (See References). The objective of the assessment was to assess the general historical and heritage contexts and to identify any baseline information on heritage for the site and its vicinity in order to inform the assessment of the potential of archaeological remains on the sites.

5.2 Field Survey

The sites and project locations were assessed in the field on the first to fifth June 2020. The assessment included the conduct of a reconnaissance survey in transects at the proposed preferred sites to record key ethnographic objects and surface archaeological materials in the project areas (see Table 1). The location of possible heritage resources was recorded with the use of a GPS. No shovel test pits were dug to test some of the sites for buried cultural remains. The use of photographic documentation of sites, objects, landscapes, the built environment, craft production processes, sacred ceremonies, and other tangible lifeways in the project area were also deployed.

5.3 Pre-Construction Field Inspection

As per the Environmental and Cultural Heritage Impact Assessment protocols, the specialist archaeologist conducted archaeological reconnaissance/site walkover survey in the project area to identify sites for possible salvage works in the next phase. The Specialist Archaeologist also reviewed the database on the GMMB website (<http://www.ghanamuseums.org/archaeo-sites-others.php>) to determine if the proposed area has been inventoried for heritage and/or archaeological resources.

5.4 Consultation with Traditional Leadership

In line with the requirements of IFC PS 8, traditional leadership of the area (Paramount Chief and Overlords) were consulted for their indigenous knowledge to enable the team to identify any known cultural heritage sites that may be affected by the project works. It also involved the conduct of ethnographic research, interviews and focus group discussions and the recording of the histories of the communities in relation to the tangible and intangible heritage in the project areas. These were held on 2nd to 5th June 2020. These are summarised below:

Table 1 List of stakeholder engagement carried out in order to inform Cultural Heritage Impact Assessment for the Project, June 2020

Dates	Location	Interviewees
02/06/2020	Bawku Naba Chief Palace	Chief and Community Elders
03/06/2020	Pusiga Naba Chief Palace	Chief and Community Elders
04/06/2020	Reconnaissance Survey of proposed North By-Pass road	GHA Consultants
04/06/2020	Reconnaissance Survey of proposed South By-Pass road	GHA Consultants
05/06/2020	Spotters Training Workshop	QGMI & GHA Consultants

5.5 Spotter Training Workshop

A workshop to deliver a training for designated cultural heritage spotters working on the frontline during earthworks and excavations was also scheduled as part of the cultural heritage survey site visit. The aim of the training was to equip spotters with the awareness and knowledge of cultural heritage sites and objects that they might expect to find in the region, and what protocol to follow should there be a chance find during the course of the road works, as well as measures to ensure the cultural heritage sites that were identified are protected and safeguarded against damage from the road works. The workshop/training was executed at the premises of QGMI UK on the 5th of June 2020. This entailed a PowerPoint lecture in English to the staff members. A summary of the training provided is found in Appendix 1 of this report.

6 Description of The Affected Cultural and Historical Environment

6.1 Brief Archaeological Background of the Project Area

The Red, Black and White Volta basins and their confluences around Tamale, Damango, Salaga, Bawku and Pusiga areas were crossroads of cultural interaction since the 8th Century AD. These northern places were where influences of ancient Mali and Hausaland were integrated into the cultures of the indigenous/autochthonic societies earlier on. Among many others, the earliest indigenous societies include the people of the Guan, Mossi, Kusasi, Frafra, Gruma and the Grunshi people. According to archaeological surveys carried out in limited areas in the northern areas of Ghana by early scholars, these areas have evidences of early pioneers of farming typically called the Kintampo Complex Traditions dating to 2,500 BC. This was followed by the Iron Age periods of iron smelting, complex potting traditions, and farming industries. Evidence of iron smelting is often seen in remains of iron slag, tuyere (clay pipes), iron fragments, and clay furnace fragments.

The earliest evidence of pastoral farming and potting industry is attested at Ntereso near Tamale in Ghana. The evidences show that the local people were in contact with Saharan hunters, farmers and potters over time. The earliest pottery traditions in the area include red slipped pottery with comb impressions archaeologically known as the Chuluwasi Ware dating to around 8th Century AD. Another potting tradition is the Daboya Ware which is characterized by red slip pottery with grass roulette impressions also dating to the 8th Century AD. The Silima Ware is characterized by monochrome pottery, carafe jars and flask, carinated bowls and dated to 700-1200 AD. These early pottery remains are believed to be associated with the indigenous Guan, Moshi and Grunshi societies of northern Ghana.

Due to limited archaeological research in the Upper East and North East Regions of Ghana, not much is known about the archaeology of the Kusasi and Mamprusi people who dominate the cultures and landscapes in the Bolgatanga-Bawku project area. This is despite the existing road having formed part of an important ancient trans-Saharan trade route. The Mamprusis, who migrated into the Pusiga area from Tanga in lake Chad and Gambaga, claim their descent from Naa Gbewaa whose sons founded the Mamprugu, Nanum and Dagbon Kingdoms. The Mamprusi central authority, Nayiri of Nalerigu, used to exercise overlordship of these areas including the Bawkunaba position. Though there is an age-long conflict over who should be the overlord of the Bawku paramountcy, the Kusasi people claim to be indigenous/autochthones on the land. As landowners, they are mostly Tengindana/Earth-priests and shrine lords in the area. Also, since 1957, the Kusasi, led by the Bawkunaba have been at the helm of traditional affairs with support from the 2003 Supreme Court Ruling in their favour. It is also worth noting that the last Mamprusi royal ruled as Bawkunaba from 1966 to 1983.

6.2 Findings from Consultations with Chiefs and Elders of Bawku

An interaction with the Bawkunaba (Figure 2) Zugraana Naba Asigri Abugrago Azoka II and some of his elders took place on the 2nd of June 2020 in his residence. According to him, besides the rich histories of the people of Bawku, they are also endowed with a rich cultural heritage, indigenous/traditional building styles (Figure 3), shrines, and undeveloped ecotourism sites. He pointed out that the main roads were created a long time ago so their improvement today will not impact any known heritage remains in the Bawku Township except the Bawku Town boulevard trees (Figure 4a and Figure 4b) and construction noise. Furthermore, he is of the view that the By-passes (Figure 5a and 5b) will impact on heritage sites such as shrines, farmlands, ancient locations, houses and graveyards (especially in the northern by-pass¹; Figure 6). He is however waiting for the final choice of the by-pass in order to show the heritage resources that can be impacted on that stretch.

¹ **Note:** Since the fieldwork for this report was carried out, a Project decision has been taken to exclude the Northern Bypass option on account of its impacts. As such, only the Southern Options are under consideration.



Figure 2 Photo of Bawku Naba, Elders and Researchers, 2nd June 2020



Figure 3 Model of Typical Traditional Building in the Upper East Region. Source: Bolgatanga Museum



Figure 4a Bawku Town Tree-lined Boulevard – Section 1

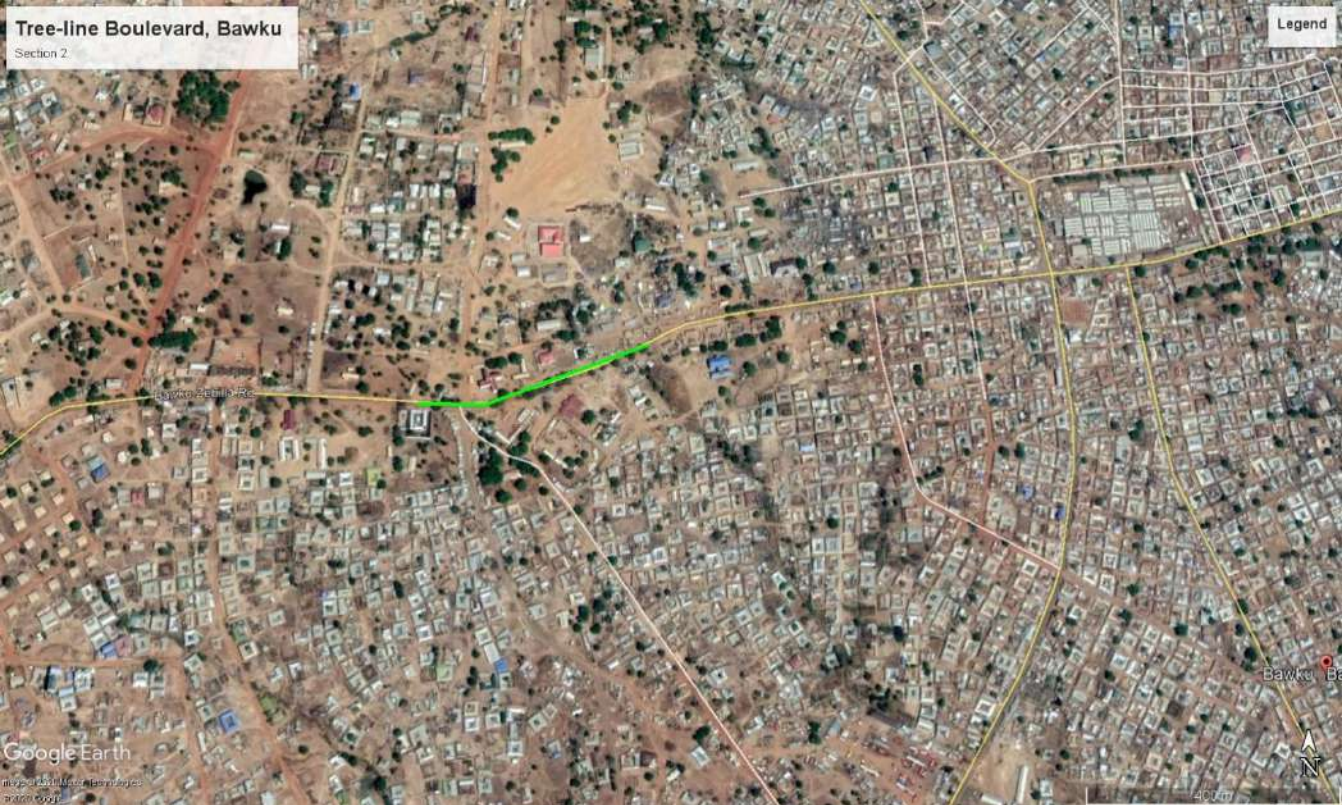


Figure 4b Bawku Town Tree-lined Boulevard – Section 2

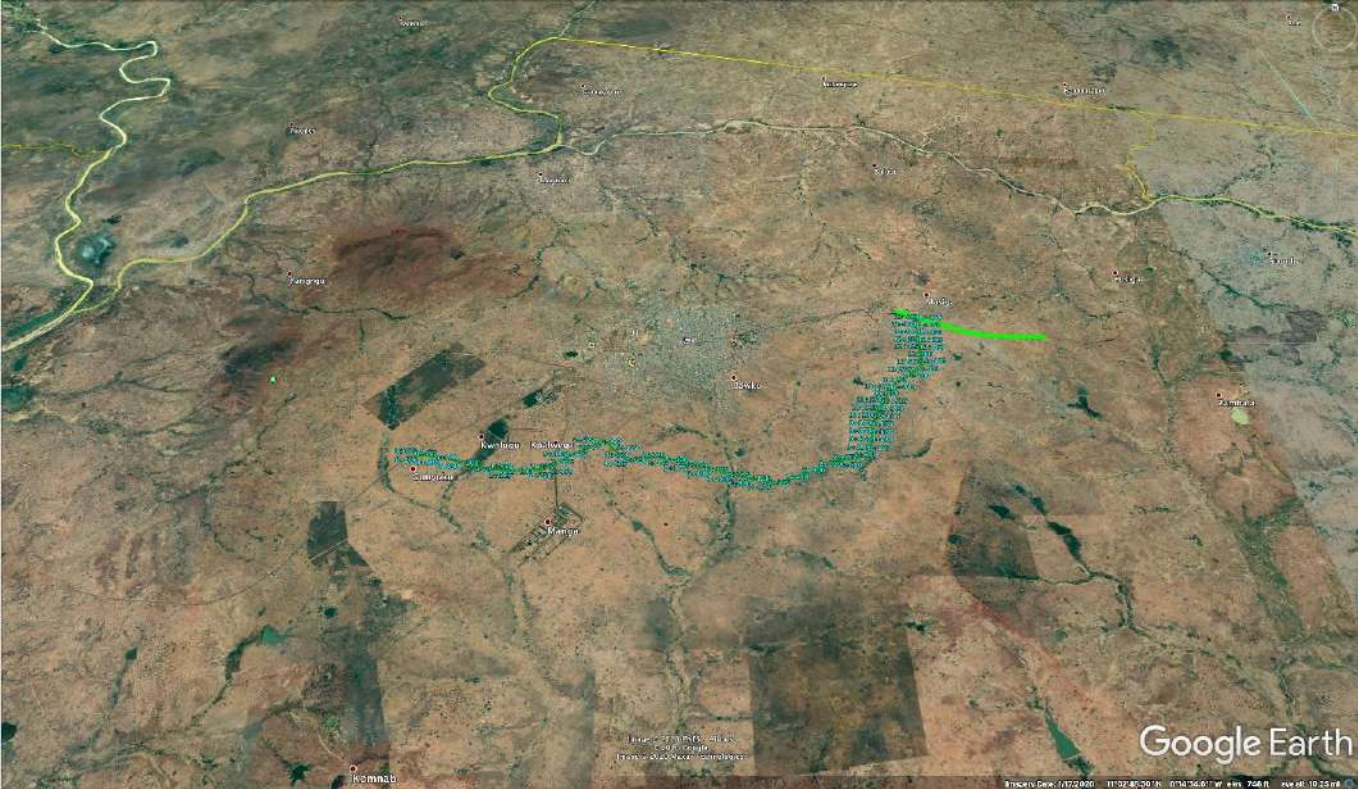


Figure 5a Southern By-pass road. This has been selected and proposed for construction.

There will be a need for heritage impact assessment here.

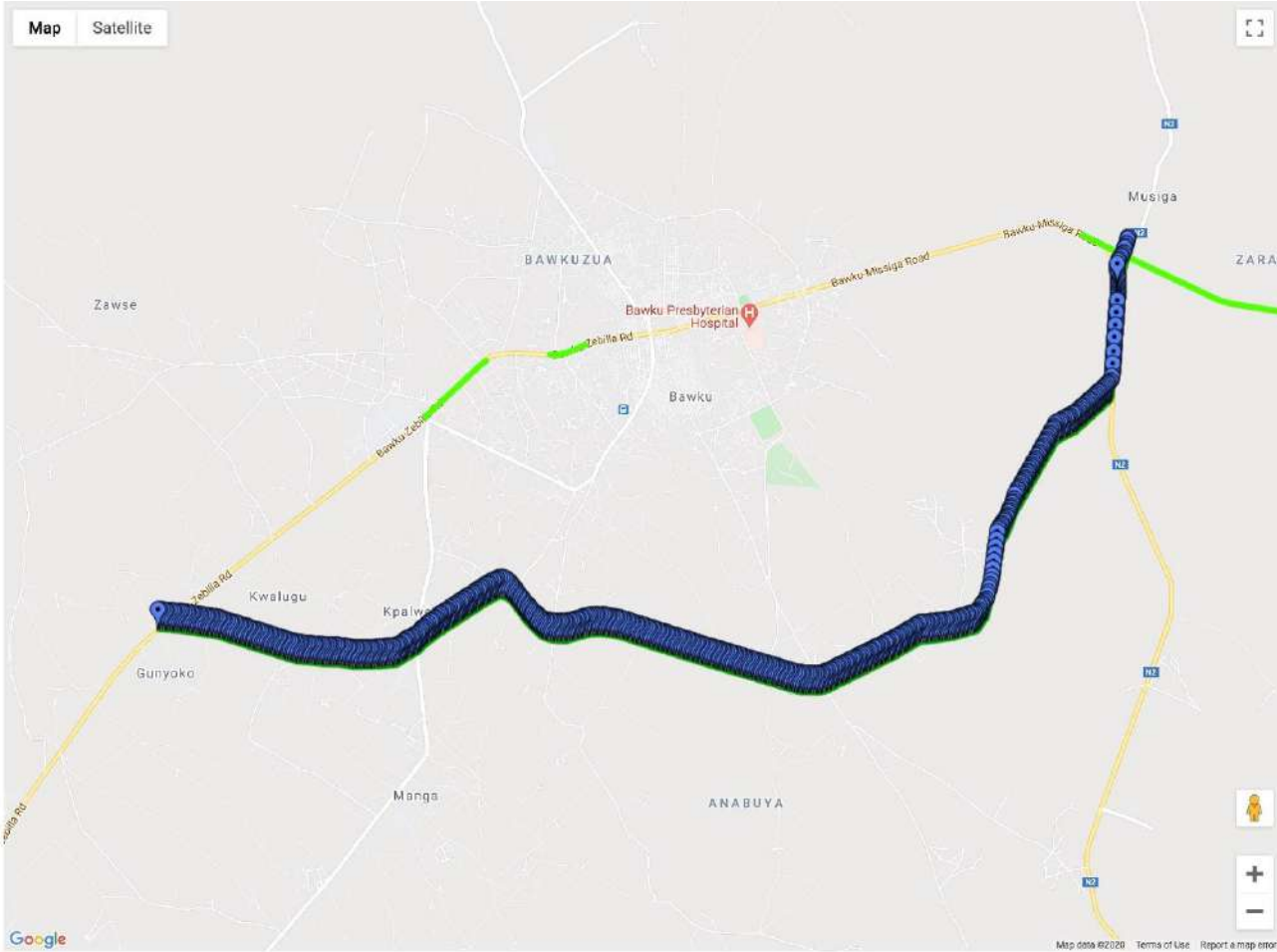


Figure 5b. Southern By-pass road. This has been selected and proposed for construction. There will be a need for heritage impact assessment here.



Figure 6 Possible Shrine Site that will be impacted in the Bawku Northern By-Pass road options.² Notably, the author has been informed that the northern by-pass has not been selected and therefore no requirement to carry out cultural heritage studies along this option

6.3 Findings from Consultations with Chiefs and Elders of Pusiga

An interaction with the Pusiganaba, Tambiss-Baalug Konwiag Ke IV and some of his elders (Figure 7) occurred on the 3rd of June 2020. According to him the name Pusiga is derived from the Tamarind Tree (Figure 8). As such, most of the Tamarind trees in the communities are sacred. So far none of them has been identified in the Project zones. He was also of the view that the roads were created a long time ago however the only heritage resource that will be impacted are the trees planted on the Bawku-Pusiga Boulevard during the German colonial times in the late 1800s (Figure 9). He pointed out that besides the rich histories of the people of Pusiga, they are also endowed with a rich cultural heritage, indigenous/traditional building styles, shrines, and undeveloped ecotourism sites. These include the ruins of the German

² **Note:** Since the fieldwork for this report was carried out, a Project decision has been taken to exclude the Northern Bypass option on account of its impacts. As such, only the Southern Options are under consideration.

Colonial Station (Figure 10), the Naa Gbewaa Shrine (Figure 11), Bingbing Shrine (Figure 12) and the Muatang Shrine (Figure 13) all located in Pusiga.



Figure 7 Photo of Pusiga Naba, Elders and Researchers, 3rd June 2020



Figure 8 An example of a Tamarind tree in the community believed to be sacred



Figure 9a Bawku-Pusiga Boulevard with German colonial period trees



Figure 9b Bawku-Pusiga Boulevard with German colonial period trees



Figure 10 Ruins of the German Colonial Station



Figure 11. The Naa Gbewaa Shrine in Pusiga



Figure 12 The Bingbing Shrine



Figure 13. The Muatang Shrine with its Tengindana in the foreground

7 Description of the Affected Cultural and Historical Environment

Table 2 List of cultural heritage resources found during the survey (see photos above)

No	Description	Nature /importance/Usage of Shrine	Location in Relation to Project/coordinates
1	Northern By-pass road	It is a proposed road that will cut through the northern part of Bawku Town. It has many clusters of villages and heritage sites	It is no longer within the project site since this Northern Bypass has not been selected and proposed to the GHA
2	Southern By-pass road	It is a proposed road that will cut through the southern part of Bawku Town. It has a few clusters of villages and heritage sites. Several different route options are being considered for a Southern Bypass.	It is within the Project footprint. Will require further cultural heritage assessment once routing defined.
3	The Muatang Shrine	The shrine is located on a hill overlooking the Pusiga town. The shrine is made up of laterite/rocks on top of the hill. It is still in daily use to provide protection and fertility.	It is outside the Project footprint area
4	The Bingbing Shrine	It is located in a grove in Pusiga with two huge laterite/rocks. It is still in daily use to provide protection and fertility	It is outside the Project footprint area
5	The Naa Gbewaa Shrine	It is a Python Shrine believed to be the home of the founder of the Mamprusi people. It is propitiated on a daily basis to ask for protection, sacred powers and divination. The site has been encircled with a low wall	It is outside the Project footprint area

No	Description	Nature /importance/Usage of Shrine	Location in Relation to Project/coordinate
		and with sacred trees within it. The shrine is made of chunky laterite remains	
6	Ruins of the German Colonial Station at Pusiga	Ruins were the earliest circular and square building foundations of laterite/rocks. It functioned as German rest Stops in the past. It was later used by the British colonial forces. The buildings no longer exist except the foundation walls within the Pusiga District Assembly.	It is outside the Project footprint area
7	Bawku Town Boulevard Colonial Period Trees	These trees were planted during the British Colonial era from 1915 onwards	It is within the project footprint
8	Bawku-Pusiga Boulevard with colonial period trees	These trees were planted during the German colonial period from 1890 to 1914 under strict colonial supervision.	It is within the project footprint

8 Sensitivity of the Sites in Relation to the Proposed Road Project

Cultural resources and heritage comprise tangible historical/archaeological sites, documents and artefacts together with religious/spiritual sites (sacred sites) and activities. These are important to local communities, customary law, traditional beliefs, values and practices

The sensitivity of a cultural feature to direct impacts depends on the level of importance assigned to it and how close they are to the project site. This is the product of a number of factors, including features of present-day cultural value; its current role; its cultural or sacred associations, its aesthetic value; association with significant historical events or traditions and its role as a sacred site or local landmark. For cultural features of heritage value, its potential as a resource of archaeological data will also affect its sensitivity. The significance of an impact, either direct or indirect, on a site is assessed by combining the magnitude of the impact and the sensitivity of the site.

Potential impacts on heritage resources may relate to the possibility for disturbance, removal or destruction of archaeological deposits or cultural heritage features during construction activities. Project activities or sites that are in close proximity of a cultural heritage receptor also have the potential to devalue its unique characteristics, or even affect access to the sites. Specific activities with the potential to impact archaeology and built heritage resources include ground excavations (foundations and piling) required for construction purposes e.g. lay down areas of work camps, new access roads, etc.

Potential Chance Finds

As with any project site, there is a potential for previously unrecorded cultural sites to lie within. As all unknown cultural heritage will be sub-surface, it is only direct impacts arising from disturbance that could occur. Archaeological relics could be found on the site at any time during the lifetime of the facility. However, the occurrence of archaeological heritage that was not identified prior to the commencement of development works will be seldom and random. This is what is termed as Chance Finds. This is high priority only during the initial phase of the project, i.e. excavation/earth works.

Disturbance within the project area during operation could potentially occur during the excavation works of additional building facilities, infrastructure, pipelines, cable lines and the installation of fencing for other works. This is however outside the scope of the present Project.

As the value of archaeological resources is predicated on their discovery within a specific geological host unit, construction of the proposed Project could result in a net gain to the science of heritage studies by allowing remains that would not otherwise have been found to be recovered, identified, studied, and preserved. As such, this presents a potential *opportunity* as well as impact.

Table 2 above contains a summary of the cultural heritage finds, description of their use/importance and their location. Table 3 goes on to assess the Project's potential impact upon the Cultural Heritage assets identified (in relation to their cultural significance to their host community) and provides recommended mitigations to safeguard their integrity, protect access to them and, where necessary, compensate for any impacts.

In addition to the asset/site-specific mitigations and steps recommended in Table 3 below, the following measures shall be applied across the board:

- It is advised that the Project makes it clear when disclosing its external grievance mechanism to communities, that it is accessible to all and may also be used as a tool for reporting any Project-induced cultural heritage impacts or concerns, be they real or perceived.
- The Project Cultural Heritage Impact Management Plan shall be applied in relation to any chance finds.

Table 3 Assessment of impacts and proposed asset-specific mitigations

Asset No.	Description	Sensitivity	Impact Characterisation	Suggested Mitigation / Action
1	Bawku Northern By-pass road	High	<p>If this Northern By-Pass is chosen, possible shrine sites, graveyards, farmlands, ancestral trees, and ancient settlements will be severely impacted.</p> <p>A northern bypass option would require new routes to be opened up due to lack of suitable <i>existing</i> feeder roads or access tracks that can be incorporated, i.e. there is less scope for using existing tracks. As a result, there is a higher potential likelihood of impacting as-yet undiscovered cultural heritage resources / assets.</p>	<p>According to recent report this road has not been chosen.</p> <p><u>Note: The Northern Bypass route option has been ruled out in favour of a Southern option, see Asset no. 2 below.</u></p>
2	<p>Bawku Southern By-pass road options</p> <p>(Note: There are several routing options under consideration and assessment for the southern bypass)</p>	Medium	<p>Depending on the routing option selected for a southern bypass, the impact on any heritage resources is prospectively assessed to be medium.</p> <p>This is on account of it being possible to maximise use of existing feeder roads to the south of Bawku.</p> <p>The development of any shortcuts could however impact heritage resources (village huts, farms, shrines and possible burials. Newly opened shortcuts would however</p>	<p>Once a southern bypass routing is defined, a detailed archaeological survey shall be carried out, documenting heritage resources to be impacted on the proposed road once the preferred routing is pegged. Mitigation actions will be proposed after that study.</p> <p>In addition, the Project Cultural Heritage Impact Management Plan</p>

Asset No.	Description	Sensitivity	Impact Characterisation	Suggested Mitigation / Action
			form only a small portion of the entire bypass alignment.	would be applied in relation to any chance finds.
3	The Muatang Shrine	Low	It is outside the Project area of impact. As a hill, it cannot also be mined for gravels. However, it needs to be protected and access to the site preserved.	It is proposed that it should be protected (where applicable) and community access to the site be preserved (where applicable)
4	The Bingbing Shrine	Low	It is outside the Project area of impact. As rocks, they cannot be mined for chippings.	It is proposed that it should be protected (where applicable) and community access to the site be preserved (where applicable)
5	The Naa Gbewaa Shrine	Low	It is outside the Project area of impact.	It is proposed that it should be protected (where applicable) and community access to the site be preserved (where applicable)
6	Ruins of the German Colonial Station	Low	It is outside the Project area of impact.	It is proposed that it should be protected (where applicable) and community access to the site be preserved (where applicable)
7	Bawku Town Boulevard Colonial Period Trees	High	It is likely some of the trees on one side will be destroyed.	After a review of the road design, any tree that is uprooted out of necessity in the Project footprint area must be replaced with new trees. A caretaker must be paid to water and maintain

Asset No.	Description	Sensitivity	Impact Characterisation	Suggested Mitigation / Action
				them for a period of two years. The Chief of Bawku and the Municipal/District Chief Executive have to be notified of this arrangement.
8	Bawku-Pusiga Boulevard with colonial period trees	High	It is likely some of the trees on one side will be destroyed.	After a review of the road design, any tree that is uprooted out of necessity in the Project footprint area must be replaced with new trees. A caretaker must be paid to water and maintain them for a period of two years. The Chief of Pusiga and the Municipal/District Chief Executive have to be notified of this arrangement.

9 Limitations and Recommendations

Table X above provides the risks level associated with the heritage resources identified so far in the project area. In addition to the mitigations and steps that are recommended above, it is advised that the Project takes into consideration the various tools that the community uses for reporting any concerns related to cultural heritage impacts.

In terms of limitations, the archaeological experts could not precisely identify and document the heritage resources that may be impacted if the Southern by-pass of Bawku is finally chosen for construction. It is therefore recommended that archaeologist/heritage expert must be re-engaged to undertake precise identification, documentation and salvaging of important heritage remains before construction is started on the southern by-pass.

That notwithstanding, it is recommended that the Project consider the southern By-pass options over the Northern options for Bawku. The reason being that the latter's impact on heritage resources is likely to be lower as compared to the Northern By-pass option on account of it being less densely populated than the northern By-pass. Nevertheless, if the intention is to open up Bawku north suburbs to the international highway, then can be considered, provided that the pegged areas shall be subjected to intensive heritage impact assessment to mitigate the impact before construction begins.

I also recommend that since the first round of the Cultural Heritage/Spotters training was poorly attended, a second round of this training should be conducted.

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11 Appendix 1: Cultural Heritage/ Spotter Training

11.1 Introduction

The Spotters Training on cultural heritage awareness is a requirement spelt out in the Cultural Heritage Management Plan (CHMP) and Chance Find Procedure (CFP) developed for the QGMI UK. In implementing the process, an archaeologist in the person of Prof Wazi Apoh from the Department of Archaeology and Heritage Studies, University of Ghana/ Consultant at Ngoryiyi Ventures was invited to execute the training for a select number of staff of QGMI UK who are directly responsible for activities relevant to identification and preservation of cultural heritage during the construction of the road project. This is also meant to ensure the Project's adequate preservation and management of the cultural heritage resources of the affected communities. This is consistent with Ghana's Antiquities Law NLCD 1969 as well as the UNESCO 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO 1972).

11.2 Objective

The objective of this spotters training exercise was to enable the staff of QGMI UK to:

- a) have the ability to recognize, locate and identify archaeological remains/chance finds during work activities in the area.
- b) understand aspects of protocol and appropriate actions regarding what to do in terms of procedure, when they discover any heritage remains or chance finds before and during the construction process as it pertains to the CHMP and CFP
- c) respect cultural heritage available in the project area in order to ensure the preservation of the culture, knowledge, and practices of the local people.

11.3 The Training Process

The workshop/training was executed at the premises of the QGMI UK the 5th of June 2020. This entailed a PowerPoint lecture in English to the staff members.

11.4 The Lecture

The lecture provided an overview of the Antiquities Law of Ghana (NLCD 387, 1969) which mandates the Ghana Museums and Monuments Board (GMMB) to be the custodians of all cultural and heritage remains in Ghana. It also touched on how it necessitates the compliance of Heritage Impact Assessment (HIA) procedures which entail the systematic identification and documentation of cultural heritage remains at a project site.

The lecture defined what was meant by tangible and intangible Ghanaian cultural heritage, artifacts, features, natural heritage, biodiversity and bio-cultural heritage. The lecture provided an overview on the cultural developments in Ghana from the Kintampo Complex Culture (pioneers of sedentism and farming in Ghana) period dating to 2,500BCE and its notable associated remains including coarse pottery, rasps/celts, stone beads, grinding stones and stone axes (Nyame Akuma) remains. This was followed by an overview of the Iron Age period in Ghana dating from 500 BC with its associated remnants of potting, iron smelting, smithing, furnaces and forging technologies in Ghana. It also

touched on the Koma land Terracotta Figurines dating from 6th-14th centuries AD by revealing the earliest art forms in clay revealing religious belief, indigenous technology, cultural scenes and creativity of its makers. Sites and material evidence of the historical periods and rise of urbanization, long distance trade, the Trans-Saharan Trade and the Atlantic trade in Ghana were examined.

The historical and cultural developments in the northern part of Ghana were also covered. Typical material culture associated with these period and key sites in the northern region were explored. The lecture also focused on the Cultural Heritage Management Actions and Chance Finds Procedure developed for QGMI UK and their expected protocol and reporting procedures.

The lecture then focused on what the Archaeologist did and found during the scoping and salvage archaeology phase of the project in the Bolgatanga-Bawku-Pulmakom Road Rehabilitation Project area.

11.5 Conclusion and Recommendation

On the whole, the training went well and met the stated objectives. The feedback from the participants was positive. However, it was poorly attended. It is recommended that a second training session for the field supervisors and key field staff be done since they are on the frontline and it will aid them in the identification and salvaging of future potential chance finds during the course of the Project.

11.6 Training Attendance Record

Prof Wazi Apoh (Archaeologist/Heritage Specialist, University of Ghana/ Ngoryiyi Ventures)
Mr Samuel Gyam (Research Assistant, University of Ghana/ Ngoryiyi Ventures)
Mr Joshua Mawangoe (Health, Safety and Environment Officer, QGMI-UK)
Mr Peter Dagadu (Chief Engineer, Dehlin/Ghana Highways Authority)
Mr Edward Abugrago (Community Liaison Officer, QGMI-UK)
Mr Peter Alnaa Dary (Planning Engineering officer, QGMI-UK)

12 Appendix 2: Specialist Expertise

Prof. Wazi Apoh (Associate Professor, Archaeology and Heritage Expert/Frederick Douglass Scholar; Consultant at Ngoryiyi Ventures). P.O. Box LG 3, Legon-Ghana

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Educational Background

- Doctor of Philosophy Degree in Archaeological Anthropology; conferral date 12-21-2008
- Master of Philosophy Degree in Archaeology, University of Ghana, Legon: 1999-2001
- Bachelor of Arts Degree in Archaeology, University of Ghana: 1993-1997

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