

CLAY BRICK MANUFACTURING PROJECT

DEQUAN SHIPPING & TRADING INC.

No. 13 Hermitage Village, Corentyne-Berbice,

Guyana

By: Samson Esudu

Environmental Protection Agen

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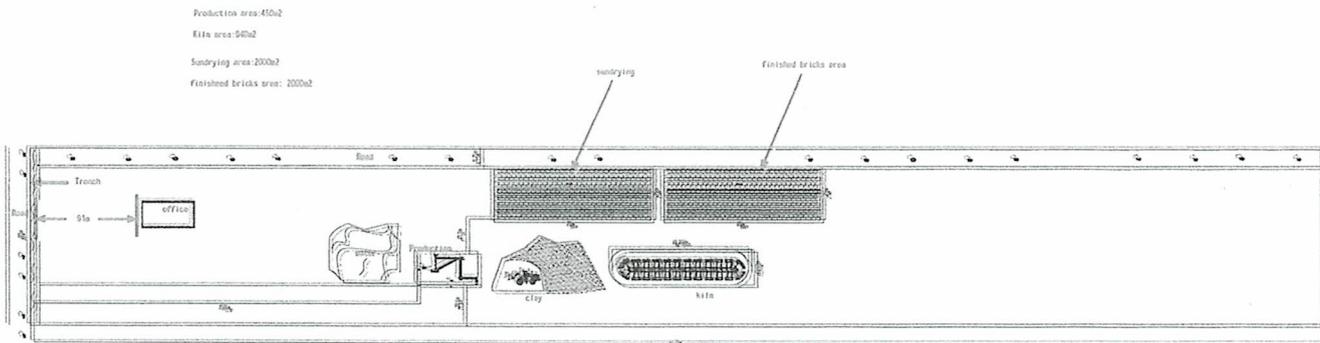
Whim Office

April 2022

Site Description

No. 13 Hermitage Village, Corentyne-Berbice on water side is transported land in Mr Collins Elcock and family ownership which comprises of loamy clay soil texture. Its an ideal soil texture highly suitable for clay brick, roofing tiles and compound paving bricks manufacturing business. The referred land amounts to over 100 acres. It was used as animal farmland over years.

Lot.13 Hermitage,Gorentyne Berbice.Guyana-Sublot"A"



After transforming animal farming into import and export business, land has been idle for over 10 years which has attracted the attention for clay brick, roofing tiles, vent bricks and compound paving bricks production hence leads to aquaculture project in an excavated pits.

Clay products are made from the non-organic minerals that do not contain carbon-based materials. Firing clay products with natural gas or coal will produce some emissions which are well documented and controlled guided by national regulations under Environmental protection Authority.

Project Design

The initial phase process includes;

i. Clearing of the area.

This will involve clearing grown up bushes around the area using an excavator/manual labour force and organisation of some structures.

ii. Mobilisation/excavation of clay

At initial level, hiring of excavator and truck will be done to excavate and dump clay to prepare area for moulding because it may not be daily activity as operations begin. The traditional approach of digging clay from the ground within 10-20ft deep. However, the company will acquire it's equipment when production intensifies for higher orders and export

iii. Mixing and moulding using a moulding machine.

Multipurpose machine which does the clay mixing, moulding and cutting with a production capacity between 12000-30000 moulds per 10hrs.

iv. Sun drying of moulds

This level entirely depends on heat from the sun which takes approximately 2-5days depends on the weather. However, we expect to introduce modern electronic/gas ovens for drying moulds between 12-24hrs.

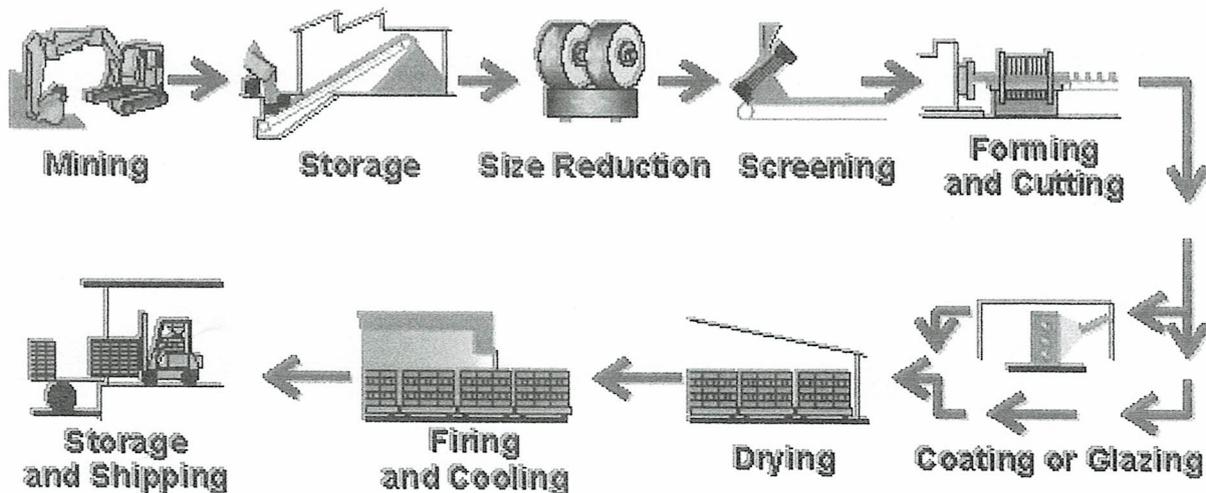
v. Building of temporary kiln/Firing.

A temporary kiln is an intended baking method at the initial phase of the process which involves piling dry moulds with openings where firewood inserted and fired for 6 -12hrs.

vi. Cooling of red bricks and packaging for sale.

This is the final stage which cooling takes approximately 12-24hrs depends on the quantity in the kiln and the weather as well.

Illustration of the process



NB: This process takes a period between 10-15days for bricks to be ready for sale though drying stage is mainly determined by weather changes. It does not involve any process as drilling, blasting, etc.

Phase II

No	Activity	Year														
		A	S	O	N	D	J	F	M	A	M	J	J			
1	Recruitment and Training of personnel	█														
2	Importation of electronic kiln	█														
3	Purchase of Trucks				█	█										
4	Establish distribution storage in Town						█	█	█							

Summary

Guyana has fully depended on concrete blocks and importation of clay bricks from Trinidad. The intent to this effect is to reinstate clay bricks/tiles/compound paving bricks/vents production at a small scale and gradually expand and renovate/replace old structures with modern equipment and improve sustainable production for domestic and export.

The growth in Guyana’s economy and population, coupled with urbanization, has resulted in an increasing demand for residential, commercial, industrial, and public buildings as well as other physical infrastructure.

Environmental effects

Clay building materials are made from the non-organic minerals. As such, they do not contain carbon-based materials. Clay do not contain highly toxic compounds. Firing bricks with natural gas or coal will produce some emissions, which are well documented and controlled by state and national regulations.

However, many of the processes involved in brick production present hazards that are known to detrimentally affect worker's health. These hazards directly influencing the health and safety of the workers are further classified into chemical hazards, physical hazards, and physiological hazards. Dust inhalation is the main chemical concern among those working in the brick kilns. Brick dust particles contain known irritants and carcinogens that deteriorate the breathing capacity of the lungs. One of the carcinogenic chemicals contained in brick dust is crystalline silica. Silica is a baseline component of granite rock, sand, soil, and several other minerals. Excessive heat exposure is the most common physical hazard present in the kilns and can lead to heat exhaustion or heat stroke.

Mitigation Measures

Clay building materials can reduce its environmental impact in two ways.

- Firstly, by educating the building sector on the need for the design of energy-efficient buildings and the importance of choosing suitable building materials.
- Secondly, by becoming more energy efficient and adapting to the use of better performing kilns and cleaner-burning fuels.
- With a majority of the brick manufacturing workforce lacking education, implementation of hazard prevention within the kilns.
- Excavated pits will be backfilled using damaged bricks and other pits will be transformed into aquaculture projects to benefit the surrounding community and Guyana at large with fish and its products.

Ultimately, using clay bricks/tiles/compound paving bricks/vents for building work means you are using a flexible material, available in a wide range of sizes and with different finishing options.

It's abundantly clear that clay bricks/tiles/compound paving bricks/vents can be a valuable asset to a domestic, commercial or social project.