

MACHAVA INDUSTRIAL PROJECT

INTRODUCTION

The political stability in the past twenty years has greatly contributed to the economical development of Mozambique and has consequently created a sound environment for a multitude of projects attracting therefore large, medium and small scale foreign investments.

Being the thermometer of the development, the construction industry has seen a big boom in the recent years due to the huge demand of infra-structures, industrial and housing for the growing population of the country.

The subsidiary companies of Wong Group Holding co., Luis Wong Projectos e Consultoria Lda, Industrias FPLM, Lda, LWJ Consultoria Lda, WP Africa Lda, have accompanied the whole evolution of the construction industry and have acquired extensive experience in the different types of projects namely: housing, tourism, industrial, educational, health and public buildings.

From the experience it was noted that the construction cost is increasingly high due to the following reasons:

- Inadequate construction method – the conventional construction methods inherited from the colonial time is costly and time consuming.
- Lack of skill labor – the lack of skilled labor compromises the construction quality and timing, resulting in the increase of cost.

- Lack of managerial skill- very often the site management is done solely by non educated foremen, or poorly prepared technicians and engineers.
- Lack of execution resources, such as equipment and tools.
- Lack of financial support, or if there is, unbearable interest rates are applied by the banking system (21%-24% annual interest).
- Except for stone, sand, cement (not enough local production), all other building materials are imported from South Africa and other parts of the world.
- Lack of competition – the few established building material traders import low quality materials and sell at high price.

Having in view the need to reduce the construction costs , and making affordable the housing cost for the majority of the population of Mozambique, as well as the large potential to participate in other types of construction (industrial, Health, Education and tourism), Wong Group is committed to develop the following activities at Machava Industrial Project:

GALVANIZING PLANT

For the coastal conditions, the best corrosion protection of steel elements of steel structures is still the hot dip galvanizing.

At present there is no large size galvanizing plant in Mozambique, therefore all steel have to be galvanized in South Africa or other countries which results in the high cost due to transport and other related logistic costs.

The galvanizing plant would cater for the following:

- Galvanizing of large steel elements.
- Galvanizing of steel windows and doors.
- Galvanizing of palisades and burglar fences.
- Galvanizing of any other types of steel elements.
- Powder Coating Plant

For aluminum and steel elements, powder coating is required for the quality finishing, providing to the finished products both corrosion protection and aesthetic appealing.

The nearest large powder coatings plant are situated more than 500KM away from Maputo, resulting in prohibitive cost to powder coat any steel or other metallic elements from Maputo.

The implementation of the powder coating, envisage at assist the local market in the following:

- Powder coating of own production of aluminum windows and doors.
- Powder coating of aluminum windows, and doors of other local manufacturers.
- Powder coating of own production of steel elements.
- Powder coating of steel elements from other local companies.

ROOF SHEETING CORRUGATION PLANT

For most industrial, educational and healthcare buildings, metallic roof sheeting, are imported as final products resulting in higher costs due to transport and custom duties.

The corrugating plant should be equipped with fixed and mobile machines, in order to cater for projects in Maputo, and other provinces of Mozambique.

The corrugation plant will be designed for the production of the following types of sheeting:

- Simple undulated sheets – for low cost housing and others construction as this is by far the cheapest roofing system.
- IBR- Roofing sheeting for industrial, health and educational projects. This is the conventional roof sheeting for the referred type of building that most construction technicians are familiar with.

- Klip Lock roof sheeting – the innovative roof sheeting system for the same purpose as IBR which guarantees the long life span of the roof as the sheets are not perforated in the fixing procedure.

The idea of implementing the roof sheeting corrugation plant, envisage the following targets:

- Low cost housing and other types of building.
- Industrial buildings such as warehouses and factories.
- Educational buildings – schools and training centers
- Health care buildings - Hospitals and health centers.
- Public Buildings
- Affordable housing

STEEL WORKSHOP

More and more steel structures are required for all types of buildings therefore a well equipped and modern steel workshop must play an important role in the Machava Industrial Complex in order to provide the following services for the construction industry:

- Manufacture of industrial building structures– as there is a huge demand for warehouses and industrial buildings for the large, medium and small scale projects spread all over the country. So far 90% of the steel structures are imported from different countries in the world. Local production would be competitive as long as the top quality service is provided.
- Manufacture of educational building structures

- Manufacture of healthcare building structures
- Manufacture of public building structures
- Manufacture of housing structures
- Manufacture of housing elements (windows and doors, roof structures, etc.)
- Manufacture of other types of structures (silos, water tanks, etc)

CARPENTRY

Windows and doors are essential part of any type of building, especially in housing.

At present it is common to import wooden doors from different countries for the housing projects in Mozambique, while local hard wood is exported in large scale, resulting in the alarming deforestation all over the country without any benefit to the local market.

In order to add value to the local timber a modern carpentry is to be installed in the complex for the production of the following items:

- Doors and windows
- Roof structures for housing
- Parquet wood planks for flooring
- Furniture

STONE PROCESSING PLANT

At present, 100% of the decorative stones are imported from various parts of the world which results in high cost due to transport and custom duties, while Mozambique is rich in natural stones.

The stone processing plant would be designed to produce decorative plates from local stones (granite, marble and other decorative stones) from different parts of the country in order to supply to the local marketing as well as exporting to other countries.

ALUMINUM AND PVC PLANT

As result of the growing construction industry, it was noted that there is a huge demand for aluminum and PVC windows and doors.

The installation of a well equipped assembling plant with sufficient raw material stock will certainly increase the production capacity and consequently reducing the cost.

The aluminum and PVC plant would be directed to the following target markets:

- Large scale housing projects
- Medium scale housing projects
- Private housing projects
- Other types of construction projects (educational, health, industrial, etc)
- Retail market – whereby standard size window and would be produced for retail market.

BRICK and BLOCK FACTORY

In order to improve the construction method, extensive investigation was done, resulting in the choice of a modular system that can reduce substantially the construction cost and time.

The brick and block factory would be dedicated to the fabrication of the following products:

- Cement blocks – modular cement blocks made of cement, coarse sand, and chip stones.
- Soil cement bricks – modular soil cement bricks made of red soil and cement.
- Concrete roof tiles – roof tiles for housing made of cement and coarse sand.
- Paving blocks- different types of paving blocks made of cement and chip stones.

The Brick and Block Factory would be dedicated to:

- Large scale housing projects
- Medium scale housing projects
- Other types of construction projects (educational, health, industrial, etc)
- Retail market – retail market.

SEWAGE TREATMENT ASSEMBLING PLANT

More and more the exigency of environment authorities of Mozambique is increasing for the sewage treatment.

In order to cope with the new requirements, extensive studies have been carried out and a German system was selected due the reduced size, the quality of treatment and minimum maintenance.

The assembling plant would be dedicated to produce some components of the treatment plant and assemble together with the imported parts from Germany according to the project requirements. The Sewage Assembling Plant would be dedicated to:

- Large scale housing projects
- Medium scale housing projects
- Other types of construction projects (educational, health, industrial, etc)
- Private Housing projects.

SOLAR ENERGY ASSEMBLING PLANT

Solar energy is the most abundance source of renewable energy in the country; therefore an assembling plant of solar systems would benefit greatly the construction industry, since the exigency for green projects would be the ultimate target for any ideal project.

Research would be done to select the best systems and import components from various parts of the world and would be assembled at the solar energy factory and supplied to the local consumers in different parts of the country.

The Solar Energy Assembling Plant would be dedicated to:

- Large scale housing projects
- Medium scale housing projects
- Other types of construction projects (educational, health, industrial, etc)
- Private Housing projects.
- Retail market.

PROFESSIONAL TRAINING INSTITUTE

As previously mentioned the lack of skilled labor and professional construction management is affecting greatly the construction industry. Wong Group intends to create a modern and well equipped training center in order to give top quality formation courses on the following subjects of the construction industry:

- Masonry
- Plumbing
- Electrical
- Carpentry
- Stone processing
- Land survey
- Quantity survey
- Steel fabrication and welding
- Quality control

- Site management
- Site supervision

The training facilities, consisting of class rooms, laboratories and living quarters would be located at Boane area at the red soil quarry land (40 Ha) where all theoretical teaching will take place. Practical training will be carried out at Machava Industrial Complex.

Highly qualified teachers would be recruited from different parts of the world to work side by side with the local teachers and monitors in order to convey their best knowledge to local professionals. A transport scheme, consisting of buses and mini-buses will be put in place for the students and teachers.

RED SOIL MINING

The red soil mining would be located at a 40 ha land at Boane, with the main purpose to create the self-sufficiency in raw material supply to the brick factory as well as the supply to the construction market, where there is a huge demand for soil filling for building and road construction projects all over Maputo and Matola cities.

Heavy Earth moving equipment (Excavators, front loaders and tipping trucks) and basic transport equipment would be allocated to the red soil mining project. Main target market of the red soil mining would be:

- Building Contractors.
- Road contractors.
- Soil filling contractors.
- Red soil suppliers.

- Soil cements brick factories.
- Private builders.

The mining operation will strictly follow the recommendation of environment authorities, where a recuperation plan would be put in place at the exploration area of the land.

TRADING

As a complement to the production units, the trading section of the project will trade the final goods in a retail and wholesale basis.