DESCRIPTION ESTIMATE

2024



G+2 A MULTIPURPOSE VOCATIONAL TRAINING CENTER AT TIKO

FOR

KUNG YOUTHS ASSOCIATION Rep by NDICHEM MVOGO ERIC JOSE

AT

NEW LAYOUT, TIKO SUB DIVISION

STUDY BY : KAI DESIGN CENTER COMPANY LTD

+237674974443

DESCRIPTIVE NOTES, COST ESTIMATE AND TECHNICAL SPECIFICATIONS OF A PROJECT FOR THE CONSTRUCTION OF A MULTIPURPOSE VOCATIONAL TRAINING CENTER AT TIKO

I- ARCHITECTURAL SUMMARY

A. PROJECT REVIEW

The concept of this project was more of participatory approach between **KAI DESIGN CENTER** and **KU.YA in** the very beginning, design concept was based on;

- Typography,
- Form & Volume
- Physical Features
- Views
- Accommodation
- Use
- Structure and Technology
- Users
- Light
- Orientation

As we all got data from the surveyor and the geotechnical team, we then based our design on three items,

a. Topography

The topography of the site was used to develop many different conceptual approaches such as the environment the building provides (shelter / exposure), its structural approach (cantilevering / subterranean), how it is perceived (public / private), and how it utilizes its context (views / features). E.g., the secondary access road into the woodwork shop and the noise.

b. Views

The dreams of having an exact façade by top front could not be over emphasize, as this was one of the major inspirations of the whole concept even though we had challenges at the beginning, it was wonderful in achieving this magnificent approach alongside the entire project. This concept is modern and can blend with global improvements.

c. Form & Volume

We start with a simple form and volume study, where we experimented and study into how to manipulate positive and negative spaces. We then had a review from **KU.YA** on the plan they wanted.

B. PROJECT LOCATION

These estimated specifications followed upon an expertise for a dwelling. This building, which is the property of ***KUNG YOUTHS ASSOCIATION Rep by NDICHEM MOVGO ERIC JOSE*** , is, located at **TIKO**

TIKO SUB-DIVISION-SWR. The plot area is about 500-meter square. It is made up the following respectively.

C. PROJECT DESCRIPTION

As seen above, the project is made-up of the following;

MAIN PROJECT

GROUND FLOOR LEVEL

- ✓ Multipurpose Hall of 400 persons capacity that can be converted for classrooms
- ✓ Entrances from two end for accessibility
- ✓ Four toilets of male and female
- ✓ A sale bar at the main entrance for commercial used
- ✓ A stair-way that give access to the upper section

FIRST FLOOR LEVEL

- ✓ Five lecture halls
- ✓ Two office space
- ✓ Two toilets male and female
- ✓ Store area

SECOND FLOOR LEVEL

- ✓ Computer laboratory
- ✓ Library/ Achieve Room
- ✓ Two office space
- ✓ Two toilets male and female
- ✓ Six bedroom for incoming staff and lodging

OPEN ROOF LEVEL

- ✓ For Class Practical
- ✓ For Outdoor Occasion

II- ESTIMATE DETAILS

D. INTRODUCTION

The purpose of these specifications is to define the consistency and the procedure of work to be realized.

It is established to specify and supplement the indications of the estimate and the graphic parts.

E. TECHNICAL SPECIFICATION

***GENERAL INFORMATION* : renforce Concrète or Mortars**

For all works of masonry, the components of the concrete or mortar must obey certain elementary characteristics as follows:

1. Sand

All sands will be free from oxides, of organic matter of animal or vegetable origin.

Granulometry will lie between 0, 08 mm and 2.5 mm for the mortars and covers; and between 0, 16 mm and 5 mm for the concrete works.

2. Fine gravels

The fine gravels intended for the clothes industry of the concretes will be natural or crushed homogeneous materials of class 5/15 and 15/25. The gravels must be removed from their films by blowing or washing.

3. Mixing water

The water used in the mixture of the mortar and concrete should be free from any impurities like salt, have no color nor smell and can even be fit for drinking.

4. Hydraulic binders

Cements used for the concretes and mortars must satisfy the general conditions imposed by the regulation in force. They are of type **CPJ 35 of "CIMENCAM"** and will not have to present any trace of moisture. Storage on the building site will be for this purpose carried out on a dry and ventilated floor. Any stock which would not present an aspect of pulverulence will be rejected and evacuated in the four days.

5. Reinforcements

The reinforcements for reinforced concrete will be mild steels and steels High Adherence (imported) in conformity with the regulations of rules BAEL98 MOD 91. They must be perfectly clean, without any trace of rust, and must have good qualities of not-adherence at painting and greases.

They will be worked and implemented in accordance with the plan of reinforcement subjected by the contractor to the approval of the project superintendent before the beginning of work.

6. Formwork

The formwork will be simple and robust. They will have to support without appreciable deformation the weight and the push of the fresh concrete, the effects of the vibration and the weight of the men employed at the time of the implementation.

The sealing of the formwork will be sufficient so that the water excess cannot involve cement.

CHAPTER I: INSTALLATION OF THE BUILDING SITE

Work of installation of building site will be the load of the profit enterprise. They will include:

- the construction of a provisional fence;

- the construction of a store of provisioning with a contiguous office where the books of building site and the parts graphic will be available permanently;'
- Possibly provisional connections out of water and electricity.

CHAPTER II: PRELIMINARY WORKS/EARTHWORK

❖ Studies

The studies include:

- Establishment of the plans of execution and details on suitable scales;
- Establishment of the planning of work.

❖ Clearing of the topsoil

This comprises the clearing of undergrowth of the ground on the site of the building. This work includes all subjections of clearing and tree felling.

❖ Excavations

The excavations will be with respect to the Engineers Structural plans or specifications. The execution of these excavations will be subordinated to the approval of the establishment by the Engineer.

❖ Backfilling

The earth dug from the trench can only be used as backfill soil if it is lateritic. On the other hand, if it's not good enough then soil has to be brought from any borrow pit that is of laterite. The backfilling will be carried out by layers successive of 20 cm, sprinkled and compacted.

CHAPTER III: FOUNDATION

❖ Sealing coat

A proportioned lean concrete (150 kg/m^3) of 5cm thickness will be leveled on the trench bottoms.

TYPE OF FOUNDATION: *spread footings under posts + walls from foundations + longitudinal beam.*

❖ **Spread footings under posts**

Out of concrete reinforced with section as on the structural calculations provided by the project engineer. Concrete: proportioned with 350kg/m ^{3}

- Steel: HA E400 after the structural analysis and between 10 to 15 cm max.

❖ **Walls of foundations**

The walls of foundations will be carried out in agglomerates of cement of 20 X 20 X 40 stuffed with the ordinary concrete proportioned with 200 kg/m ^{3} and roughcast with the ordinary cement mortar.

❖ **Posts**

Out of reinforced concrete and of section as on the structural calculations provided by the project engineer.

- Concrete: proportioned with 350kg/m3
- Steels: Φ frameworks 6 every 20cm + HA E400 after structural analysis

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❖ **Pavement of the ground and approach Ramps**

The ground will receive a concrete pavement reinforced with 5cm thickness on a “film polyane” of 400 microns:

- Concrete: proportioned with 350kg/m ^{3}
- Rods: Lattice TS 6/6; net 150 X 150

❖ **Longitudinal beams:** for walls of foundation in stuffed agglomerates of 20

Out of concrete reinforced with section as shown on structural calculations.

- Concrete: proportioned with 350kg/m3
- Rods: Φ frameworks 6 every 20 cm + HA E400 after structural analysis.

CHAPTER IV: MASONRY - RISE

❖ Walls above-grade

The load-bearing walls will be assembled in hollow cement agglomerates 15x20x40 following the indications of the plans. These agglomerates will have to offer a collapsing resistance sufficient.

❖ Posts

Out of concrete reinforced with section

- As on engineering calculations.
- Concrete: proportioned with 350kg/m ^{3};
  Rods: Φ frameworks 6 all 20cm + HAE400

❖ Lintels

Out of concrete reinforced with section 15 x 20 following thickness of the walls:

- Concrete: proportioned with 350kg/m ^{3}
- Rods: Φ frameworks 6 every 15cm + HA E400

❖ Beam

Out of concrete reinforced with section following engineering calculations

- Concrete: proportioned with 350kg/m ^{3}
- Rods: stirrups Φ 6 every 20 cm + HA E400.

❖ Upper floors

The floor consists of a flagstone of compression out of reinforced concrete placed on the hollow blocks. The beams will be spaced of 55 cm on both sides. The hollow blocks will be 55cm length.

❖ **Coating**

On all the built parts, it will be carried out cement rendering of 1,5cm thickness out of mortar cement proportioned with 400 kg/m ^{3}

- Fixing: Over side mortar of large sand.
- Completion: with fine sand mortar plasters.

❖ **Reinforced concrete staircase:**

Of half turn flights.

- ❖ Steps: 29 X 18, of width: 1.20 m.
- ❖ Stage of rest: 12 cm thickness.
- ❖ Waist: 8 cm min thickness

Out of concrete reinforced thickness indicated on the plan (8 cm mini):

- Concrete: proportioned with 350 kg/m ^{3}
- Rods: Lattice TS 8/8; net 150 X 150
- Steels HA E400

CHAPTER V: COVER – SEALING

a) **Frame**

❖ **Firm**

The farms will be carried out with hard wood of section 4cm X 15cm and will be treated with xylamon. The tie-beam and the principal rafter will be braced.

These farms will firmly be anchored in masonry using waiting irons fixed on the beams.

❖ **Purlins**

They will be out of wood hard of section 5 X 15 and treated with the xylamon.

On the pinions and the partition walls, they will be fixed with flat sealing fastenings of 3 X 30 X 200.

b) **Cover**

The cover will be made out of sheet vat aluminum 6/10 ^{E} in a length fixed on the breakdowns by sleeper screws of 8 X 80 with accessories.

- the ridge sheathing will be raised and covered with ridge sheets
- the pinions will receive aluminum banks

CHAPTER VI: METAL FITTINGS

❖ Doors

With one or two casements

- Tally: 3 cm thickness sawn timber.

Casement: Timber 3 cm thickness sawn with hinge plates + lock with Gun calf.

❖ ALUMINUM windows glazed

- Profiled adapted for rail (high and low)
- Casement with door of 97 X 200 overlapping
- Framework: out of ALUMINUM

❖ Thresholds

For the stop of the cover on the level of the slopes They will be in angle of 30 with tail of carp's all the 50cm

NB: All the metal fittings will receive an anti-rust paint before the assembly.

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CHAPTER VII: JOINERIES

- **Wall cupboards**

  - Racks out of hard wooden treated with the xylamon on wood cleats fixed at the walls;
  - Tally out of hard wood treated with the xylamon;
  - Casements: out of hard wood + sash bolt and bolt cadenassable.

CHAPTER VIII: ELECTRICITY

- Shall be determined by the Electrical Engineer in charge of the said project.

CHAPTER IX: PAINTING

Work of painting will include/understand all subjections of shelling, sandpapering and stopping to the coating of painter.

- **Impression**

  - Walls: lime
  - Wood: Diluted Glycerol

- **Completion**

  - Walls
    - External walls Pantex 1300 in 2 layers
    - Interior walls Pantex 800 in 2 layers
    - Base 30cm in oil-based paint in 2 layers

Joinery and metal: oil-based paint in 2 layers

CHAPTER X: Landscaping

❖ **Gutters**

It will be carried out around the buildings of the proportioned reinforced concrete gutters with 350 kg/m^3, of 40cm broad and 30cm of depth, with cast bottom smoothest using an ordinary cement mortar proportion with 400kg/m^3.Thickness of the walls 8cm.

These gutters will be covered with prefabricated slabs with the right of a slope.

A minimal slope of 2% will be carried out at the bottom of the said gutters to facilitate the run-off waters.

❖ **External pavement**

The walls of base will be protected by a pavement from 80cm from width and 8cm thickness all around the buildings

This pavement will be out of ordinary concrete proportions with 300kg/m^3

BILL OF QUANTITIES AND COST ESTIMATE FOR THE CONSTRUCTION OF A G+2 A MULTIPURPOSE VOCATIONAL TRAINING CENTER AT TIKO (STRUCTURAL FRAME, PLASTERING, ELECTRICAL AND PLUMBING PIPING ONLY) WITHOUT FINISHING AND FURNISHING

N°	DESIGNATION	UNIT	Q'TY	Unit Price	Total Cost
	LOT N° 1: PRELIMINARY WORKS + EARTHWORKS				
	DOCUMENTATION WORK				
1.1	Architectural working files (KDC SUPPORT)	**LS**	-	-	-
1.1.1	Geotechnical studies report (KU.YA responsibility)	**LS**	-	-	-
1.1.2	Structural Analyses files (KDC SUPPORT)	**LS**	-	-	-
1.2	***COUNCIL FOLLOW UP***	**LS**	-	-	-
1.2.1	Building Permit fee (1% of the project cost) (Approx. 91m)	**LS**	-	-	-
1.2.2	Block and situation Plan /signing in surveys office	**LS**	-	-	-
1.3	***STUDIES-SITE INSTALATION***				
1.3.1	complimentary studies for structures and Electricity	LS	-	-	-

1.3.2	Site installation (Haul and install equipment's, etc.)	LS	1.00	200,000	200,000
1.3.3	General earthworks as required(removal of earth to about 2m)	m2	500.00	100	50,000
	SUBTOTAL				***250,000***
1.2	***EARTHWORKS***				
1.2.1	Foundation trenches and footings excavation	m3	255.93	5,000	1,279,650
1.2.2	Backfilling of foundation trenches	m3	117.00	5,000	585,000
1.2.3	Polyene film to top of sand filling	m3	182.00	600	109,200
	SUBTOTAL				***1,973,850***
	SUBTOTAL LOT N° 1:PRELIMINARY WORKS + EARTHWORKS				***2,223,850***
	LOT N° 2: FOUNDATIONS CONCRETE/MASONRY WORKS				
2.1	5cm concrete blinding dosed at 150kg/m3 for strip foundation, and column footings	m3	18.96	100,000	1,896,200
2.2	Reinforced concrete for foundation footings dosed at 300kg/m3	m3	22.48	150,000	3,371,550
2.3	Reinforced concrete for grade beams dosed at 300kg/m3	m3	15.96	150,000	2,394,000
2.4	Reinforced concrete for columns dosed at 300kg/m3	m3	8.02	150,000	1,202,850
2.5	20cm solid block work for foundation walls, as on plans	M2	98.80	9,000	889,200
	SUBTOTAL LOT N° 2				***9,753,800***
	TOTAL OF LOT 1 AND 2				***11,977,650***
	LOT N° 3.1: ERECTION WORKS FOR GROUND FLOOR AND DECKING				
3.1.1	Sand-screed blocks of (15x20x40)cm	m^2	456.00	9,500	4,332,000
3.1.2	Plastering and surfacing with Pantiquot	m^2	1,222.00	3,200	3,910,400
3.1.3	Reinforced concrete, dosage 300kg/m3 for lintels, columns, stairway, tie beams and beams of the veranda	m^3	45.60	150,000	6,840,000

3.1.4	Mass concrete on floors with diameter 6mm matt of 25 space @ C/C, dosage at 300kg/m3 for ground floor only	m^3	24.80	150,000	3,720,000
3.1.5	Preparation of decking of first floor level.	m3	310.00	15,000	4,650,000
	SUBTOTAL LOT N° 3A				***23,452,400***
	LOT N° 3.2: ERECTION WORKS FOR FIRST & SECOND FLOOR AND DECTING				
3.2.1	Sand-screed blocks of (15x20x40)cm	m^2	1,368.00	8,500	11,628,000
3.2.2	Plastering and surfacing with Pantiquot	m^2	3,356.00	3,200	10,739,200
3.2.3	Mass concrete on floors with diameter 6mm matt of 25 space @ C/C, dosage at 250kg/m3 for ground floor only	m^3	24.80	120,000	2,976,000
3.2.4	Mass concrete on floors with diameter 6mm matt of 25 space @ C/C, dosage at 300kg/m3 for ground floor only	m^3	49.60	150,000	7,440,000
3.2.5	Preparation of decking of first floor level.	m2	620.00	15,000	9,300,000
	SUBTOTAL LOT N° 3B				***42,083,200***
	LOT N° 3.3: ERECTION WORKS FOR THE DECK ROOF AND BUILDING OF SIDE WALLS OF 1.3M				
3.3.1	Sand-screed blocks of (15x20x40)cm	m^2	104.00	8,500	884,000
3.3.2	Plastering and surfacing with Pantiquot	m^2	208.00	3,200	665,600
3.3.3	Reinforced concrete, dosage 300kg/m3 for lintels, columns, stairway, tie beams and beams of the veranda	m^3	2.91	150,000	436,500
	SUBTOTAL LOT N° 3C				***1,986,100***
	TOTAL COST OF ERECTION 3A+3B+3C				***67,521,700***
	LOT N° 4: OTHER WORKS				
4.1	ELECTRICAL (EARTHING, PIPPING WORKS)	LS	1.00	3,500,000	3,500,000
4.2	PLUMBING WORKS (PIPING ONLY)	LS	1.00	1,800,000	1,800,000

	SUBTOTAL LOT N° 4				***5,300,000***
	AMOUNT EXCLUSIVE OF VAT				**84,799,350 FCFA**
Close This Cost Estimate All Taxes Inclusive At the Sum of Eighty Four Million Seven Hundred And Ninety-Nine Thousand, Three Hundred And Fifty France CFA					