

PROPOSED PETROL STATION



PROJECT BRIEF



C & F INNOVATION LTD
P.O. BOX 1400 KIGALI
RWANDA

1. DEVELOPER: MUSABYEMUNGU ANNE MARIE

Tel: 07 88 31 68 61

KANZENZE - RUBAVU

2. PROJECT NAME : PROPOSED PETROL STATION

PURPOSE: COMMERCIAL

3. Project team:



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4. PROJECT SITE LOCATION & SURROUNDINGS

The site is on Plot No.1594, located in the RUBAVU District, KANZENZE Sector, and KIREREMA Cell. This particular plot is bordered by a murram road and three plots in which the usage is commercial and residential.

Google Image showing the plot.



5.PLOT SIZE

The overall area of the plot is 1226 Sqm.

6.PROJECT DESCRIPTION

A. Objectives and Nature of Project

Rwanda has experienced a lot of growth over the past decade and a half both economically and in demography. This pushes for more petrol station around the country coupled with the position that Rwanda has opened its gates to neighborhood countries as well as very far countries. This growth has consequently increased the number of investors and visitors. And the people of kabari center need a petrol station to stay close their business. This project aims at providing this target market the requisite the facilities above mentioned for this described population and any person who wishes to do a business in Rwanda. Our mission is to successfully build, promote and provide quality petrol station. We plan to create an environment of convenience that surpasses the standard level for other petrol station in Rwanda. The client of this petrol station development will have every need met to ensure a total and comprehensive comfort.

B.Objectives of the Project

- Implementing a cost-effective promotional strategy that will maximize awareness for the quality of petrol station and facilities;
- Aiming at exceeding the customer's expectations;
- Providing High quality petrol station at minimized cost

C.project design & Concept

Environmental Sustainability

The project provides for maximum green spaces around the buildings to provide cool environment and therefore improving the air quality within the interior spaces of the buildings.

In terms of glazing choice it is recommended in the design to utilize low emissivity.

All the rooms cubicles shall be naturally ventilated hence no need to use the mechanical ventilation.

The solar path has taken into consideration at both planning and design stage of the project by locating the large surfaces of glazing on the southern and northern sides, they shall minimizing the need for the mechanical air conditioning within the rooms

Rain Water Collection

Another environmental sustainability measures that shall be undertaken in this development will be storage and reuse of rain water collected from the building. This water shall be stored underground in the storage tank provided on site and shall be used for general purposes such as cleaning etc...

Architectonic composition

The design being vertically oriented incorporates the use of horizontal elements to both contrasts with the verticality and also to bring the whole composition to human scale.

The Balcons on the building façade shall also assist in sun shading to minimize heat gain and therefore improving on human comfort.

Colour choice

Colour choice will mainly be determined by the existing buildings within the surrounding to ensure that the proposed building integrates well with the environment.

A Working circulation for any car using the petrol station

7.PROGRAMS

BLOCK	AREA
Block 1:FUEL PUMP AREA	191.26 m ²
Block 2: SHOPPING AREA	109.5 m ²
Block 3: SERVICE AREA	99.07 m ²

Table 1: building blocks and areas

A.PROGRAMS IN EVERY BLOCK

BLOCK 1:

MAIN FUEL PUMP

TRUCK FUEL PUMP

BLOCK 2:

SHOP

TOILET

BLOCK 3:

VIDANGE

OFFICE

STORE

TOILET

GENERATOR ROOM

8.LAND USE:

The project shall have an overall plot coverage of. 1226 m2,

FACILITY	FLOOR	FUNCTIONS	AREA COVERED
BLOCK 1			
MAIN FUEL PUMP	GROUND	4 FUEL PUMP	174.7 Sqm
TRUCK FUEL PUMP	GROUND	1 FUEL PUMP	16.4 Sqm
BLOCK 2			
SHOPING AREA	GROUND	SHOP TOILETS	109.5 Sqm
BLOCK 3			
SERVICE AREA	GROUND	VIDANGE OFFICE	99.07 Sqm
GROSS FLOOR AREA			399.67 Sqm
FLOOR AREA RATIO			0.32
BUILDING COVERAGE			399.67 Sqm (32.5%)
LANDSCAPED AREA			131.03 Sqm (10.7%)

10. Parking and Paved areas:

The project will contain parking for up to 4 cars. The total area located to parking is 65m².

11. Green space:

We have provided 131.03 m² for landscaping and greening. This excludes the covered pedestrian spaces on either side of the building and the entrances.

12. Occupancy:

It is projected that the number of users that will be occupying the space during operation is about 50 users including the clients, attendants, administrators, and caretakers.

13. Fire fighting in case of the accident.

In this project, no fire accident is likely to occur due to the fact that electricity distribution is well designed and all the fuel pump will be on high quality.

In case of fire accident, there is provision of firefighting equipment (fire extinguishers, fire cabinet etc). Fire alarm, Automatic fuses will be also provided and emergence exit are provided. The extinguishers should be regularly inspected and maintained; the personnel of the building must be trained on their use.

14 Traffic control

In this project, no traffic jam is likely to occur due to the fact of entering and exit in petrol station is well designed.

14. Infrastructure Access:

The site is bordered by a Murram road, by passed by electric power lines

15. Project Cost:

It is estimated that the project shall cost Three hundred sixty thousand US Dollars(360,000 \$)

16. Description of all Planned Activities and all Materials to be used

The project shall employ the tried and tested mode of construction with reinforced foundations and slabs supported by similarly reinforced beams and columns as per calculations done. Walls openings and a pitched roof will complete the building envelop.

The materials to be used are:

Retaining walls: the reinforced concrete walls will be done to avoid the collapsing of the soil wall in basement floor and lower ground floor, masonry with reinforced concrete column retaining wall will be done to secure the wall near the road accessing the lower ground floor and the south wall near the ground floor. To avoid the humidity, the layer of a tar (Damp Proof Membrane) will be put in place before the construction of any retaining wall.

Foundations: reinforced concrete pads supporting columns, a ground beam linking the columns and supporting the basement floor slab.

The Slabs: will be of reinforced concrete cast into temporary metal formwork. The floors will be finished with floor tiles.

Structural Framework: will be of reinforced concrete cast into metal timber formwork.

Walling: the walls will be made of hollow concrete blocks made on site using a manual block-making machine. These blocks will be bonded with mortar. In wet areas the walls will be tiled, all other areas will have their walls painted.

Ceilings: the ceilings shall of the painted upper floor slab for basement and lower ground floor, but for the remaining floors the Gypsum ceiling shall be used.

Roof: the reinforced concrete roof will be used, gutters will be of similar material, while down pipes and their accessories will be of PVC.

Openings: the main doors will be aluminum with frosted glass while the interior doors will be paneled timber doors. Windows will be of aluminum frames with 5mm thick tinted glass to reduce heat gain.

Electricals: the standard electrical cabling will be taken through PVC conduits. All lighting fixtures will be energy saving.

Plumbing: all water including grey and black shall be channeled through approved PPR pipes. Water storage tanks will be installed above the roof. Ground water will be conveyed in public storm water drainage as per the detailed master plan for Nyarugenge District. The water storage tank will be of reinforced concrete.

Site Works: the boundary wall will have a masonry foundation, concrete block walling and live fence in some areas. Access into the site will be through a metallic gate. The parking will be paved with paving blocks and bounded by painted concrete kerbs. Landscaping will consist of green grass, selected trees and small monuments along walkways. Night lighting will be via solar powered lights.

17. Compliance of Development to Laws, Regulations and Policies

Materials: all materials to be used are accepted by Rwanda Bureau of Standards (RBS).

Construction Technology: the project will take into consideration local materials and techniques of the local community.

Safety during Construction: different equipment's such as fire-fighting equipment, clothing equipment will be used to the site.

Safety after Commissioning: we will have fire-fighting and first aid equipment in every block to be used in an emergency period.

.Waste Water and Sewage: this will be done using an aerobic sewage system of the HDRO oxyfix brand whose agents are available locally.

18.Likely Environmental Impact During Construction and Mitigation Measures

The project will not affect the environment. All soil which will be excavated, all waste which will be generated to the site will be kept out the site in a public waste disposal. Recyclable materials can be taken to disposal experts where they can recycle and be reused

19.Likely Environmental Impact after commissioning and Mitigation Measures

After commissioning, Solid waste from toilet can be used to produce Biogas. This energy can be used to Cook, lighting,etc

20.Implementation:

we anticipate that the project approval would take **20 days**, following which time they would have finished organizing financing. They plan to begin construction by March of 2017 and complete the project on March **2018 (In 1 years)**.

Construction will commence with establishment of a site store/office after which a temporary fence will be erected, and after this, the demolition of the existing houses will immediately take place. Once the site is thus secured the building levels shall be established, the excavation for the construction of the basement floor will be done and the retaining walls done to secure the basement & the ground floor. Then construction of structures will begin from the foundation through the shell to the roof, and then followed by finishes, while site works commence. This will be the boundary wall, parking, storm-water collection and water and sewage disposal. On completion the project will be commissioned and a management unit will then handle the operations of the development. This summary is elaborated in the sub sections bellow.