

A GATE DESIGN PROJECT

BY

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IN CIVIL ENGINEERING.

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## **DECLARATION**

I **MUGUME CHARLES** hereby declare that the work presented in this report is my original work and has not been presented elsewhere for any academic qualifications. No part of this report may be provided without the prior written permission of the owner.

**NAME: MUGUME CHARLES**

Sign.....

Date.....

## **APPROVAL**

I certify that, I supervised the above candidate of Diploma in Electrical Engineering in her project work here at **FACULTY OF ENGINEERING TECHNOLOGY APPLIED DESIGN AND FINE ART, KABALE UNIVERSITY.**

Lecturer: MR. MUHANGI BRUNO

Signature: .....

Date: .....

### **DEDICATION.**

I first and foremost dedicate this report to my Parents Mr. Katsigaire Emmanuel, Mrs. Kebirungi Meria, my brothers and sisters who facilitated me financially and for their tireless effort, support, responsibilities and encouragement during my education.

## **ACKNOWLEDGEMENT**

A lot of thanks to everybody who encouraged and supported me to the completion of this project more especially my group members. May God bless them abundantly.

Academically I take the great honor to thank the management and staff of KABALE UNIVERSITY FACULTY OF ENGINEERING and mostly the lecturers of civil Engineering department for the knowledge built in me during my course. May Almighty God bless them all.

I extend my sincere thanks to my course mates for the co-operation and all the discussions we made. May the Almighty God reward them abundantly.

Perhaps may God bless you all who think of my well-being and your spirit of belonging to wards my colorful education.

## **ABSTRACT**

Kabale university faculty of engineering is an institution of higher learning education which prepares and enables the students to carry out projects in different groups. this is done purposely to give knowledge to students about what is done in practical. Therefore, in compliance with the above mentioned above, my project was based on the gate design at **faculty of engineering, Kabale university.**

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## **LIST OF ABBRAVIATIONS**

PMBOK: -Project management body of knowledge

Kab. -Kabale University

FETADFA: -Faculty of Engineering, Technology, Applied Design and Fine Art.

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## **CHAPTER ONE: INTRODUCTION**

### **1.0 Introduction**

This chapter deals with the introduction, background of the project, problem statement, justification of the project, objectives and methodology used during the study.

### **1.1 Background of the project.**

The project was carried out at KABALE UNIVERSITY FACULTY OF ENGINEERING, NYABIKONI, and KABALE DISTRICT. It was intended to DESIGN THE GATE. The project was done by the group of five students offering Diploma in civil Engineering second year second semester 2020.

### **1.2 PROBLEM STATEMENT.**

A problem statement is a concise description of an issue to be addressed. A simple and well-defined problem statement will be able to make a project team to understand the problem and work towards developing the solution Our problem statement is

**“INSECURITY CONTROL A ROUND NYABIKONI CAMPUS”**

### **1.3 JUSTIFICATION OF THE PROJECT**

- The purpose of our project is to carry out a study on factors that contribute to insecurity a round Nyabikoni campus Kabale university and provide the possible solutions.

### **1.4 MAIN OBJECTIVE**

- To design a gate at the faculty of engineering kabale university

#### **1.4.1 OTHER OBJECTIVES**

- ✚ Enhancement of skills of gate design by the project team members. To refine understanding through discussions and explanations
- ✚ To provide students an opportunity to test their interest in a particular career before permanent commitments are made
- ✚ Group project increases student's sense of responsibility and good work habits.
- ✚ To build the strength, team work spirit and self confidence in students' life.

✚ To increase the creativity and innovativeness among team members.

**1.5 METHODOLOGY.** These are specific procedures or techniques we used to identify, select, identify, process and analyze information about the topic. In research paper, the methodology allows the reader to critically evaluate a study's overall validity and reliability.

**1.5.1 Benchmarking.**

This is the initial point of my research where all information and data were obtained from. Was able to see different gate designs from the internet

**1.5.2 Interviewing.**

This is the process of asking people questions about how to design the gate and giving possible solutions whereby we interviewed the engineer in Kabale town and he was able to tell us on the different types of gates.

**1.5.3 Recording.**

This is the process of saving a voice or a video through a medium

**1.5.4 Observation.**

This is the process of overseeing what is taking place on the gate designs

**1.5.5 Participation.**

To join, to take part, to involve oneself. The research was done in groups of five members of which we were all participated



*Figure 1 showing some of group members who participated in gate design*

### **1.5.6 Documentation**

This means something transported through to a document or the written account of ideas.







### **1.5.7 Prototype**

This is an original object or form of which is a basis for other objects, forms, or for its models and generations



*Figure 2 showing a prototype*

## **1.6 Expected outcomes of the project.**

-  Enhancement of skills of gate design by the project team members.
-  Project team will have an opportunity to test their interest in a particular career before permanent commitments are made
-  Student's sense of responsibility and good work habits is expected to increase.
-  Student's strength, team work spirit and self-confidence in student's life will be enhanced.
-  Creativity and innovativeness among team members will increase.
-  Discussions and explanations will increase the understanding of team members



## **CHAPTER TWO: LITERATURE REVIEW.**

### **2.0 Introduction.**

Literature review is a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodology contributions to a particular topic.

- In our group project, we were aided by the project guides from;
  - @2013 project management institute; A guide to the project management body of knowledge

(PMBOK) BY Jorge Diego Fuentes Sanchez

### **2.1 Materials and tools used.**

✓ Pieces of wood

✓ Ply wood

#### **Tools used.**

✓ Hand saw

✓ Jack plane

✓ Hammer

### **2.2 Use of each of the materials**

#### **2.2.1 Pieces of wood.**

This is used to make a frame and the shape of the gate design with different sizes for example wood for making columns, gate shutters. Rills, gate battens



*Figure 3 showing different wood sizes*

### **Tools used**

221      **Hammer:** This is a tool with a heavy metal head mounted at right angle at the end of a handle and it is used for hitting into the piece of timber.

222      **Ply wood.**

This is a thin piece of the wood which is used to cover the gate man's house and it is also used as a brick wall

223      **Hand saw.**

This can be also known as a panel saw, it is used to cut pieces of wood into different desired sizes



*Figure 4 showing a hand saw*

224 **Jack planes.**

This is a general-purpose bench plane, it is used for shaving off smaller amounts of wood to reduce a piece of wood to a desired size

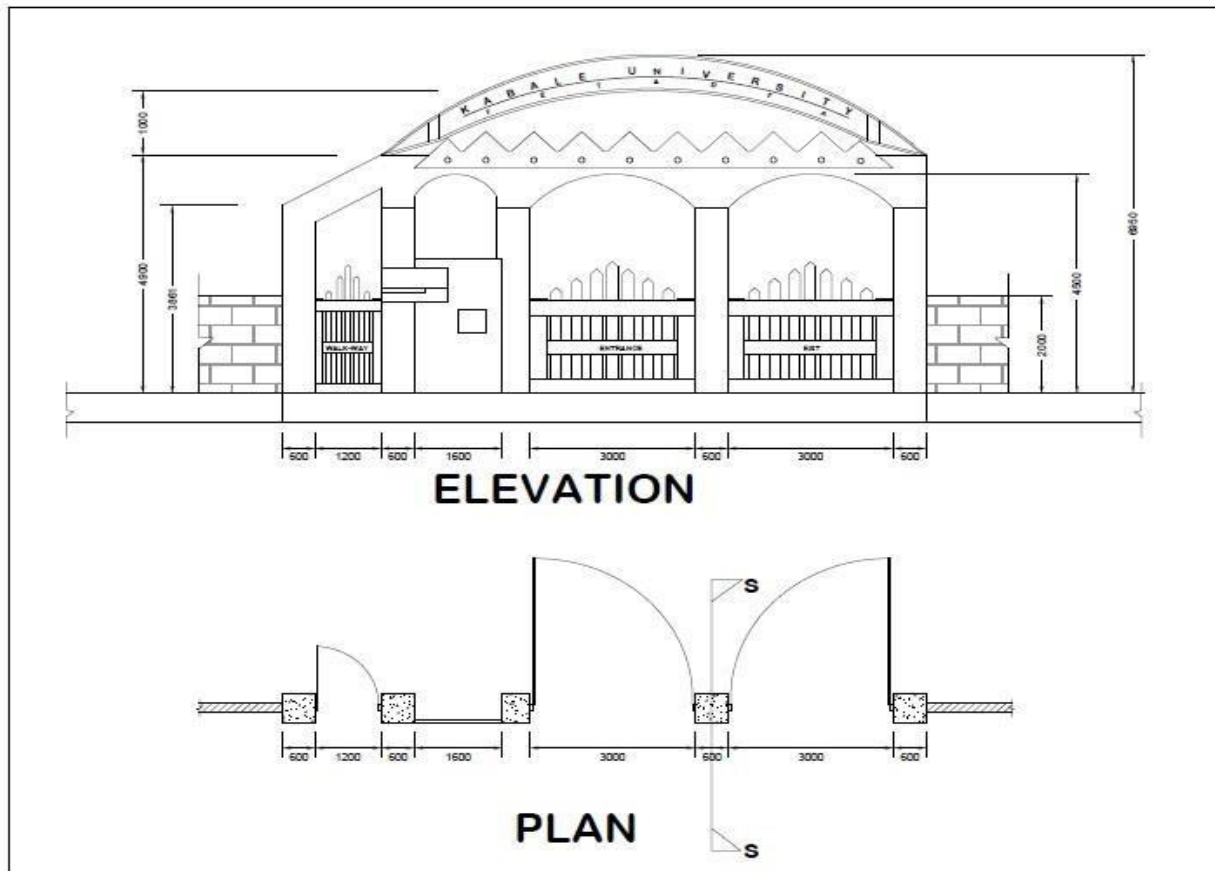


*Figure 5 showing a jack plane*

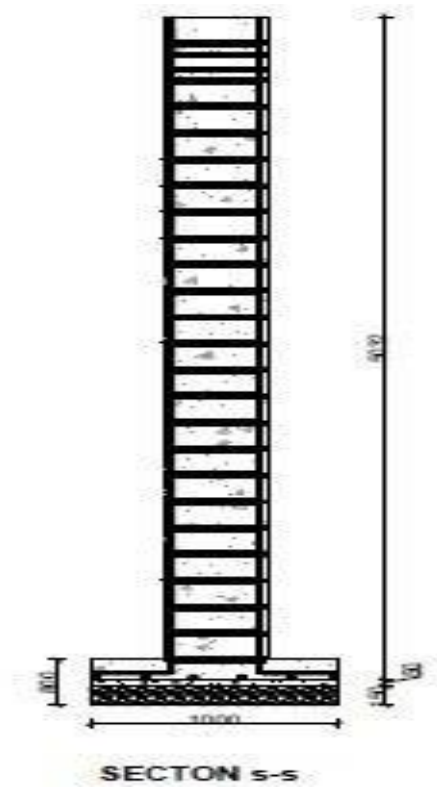
## CHAPTER THREE: METHODOLOGY USED

**3.1 Simulations and experiments performed.** We were able to join timbers together making frame together using mortise and tenon joints and flash joints

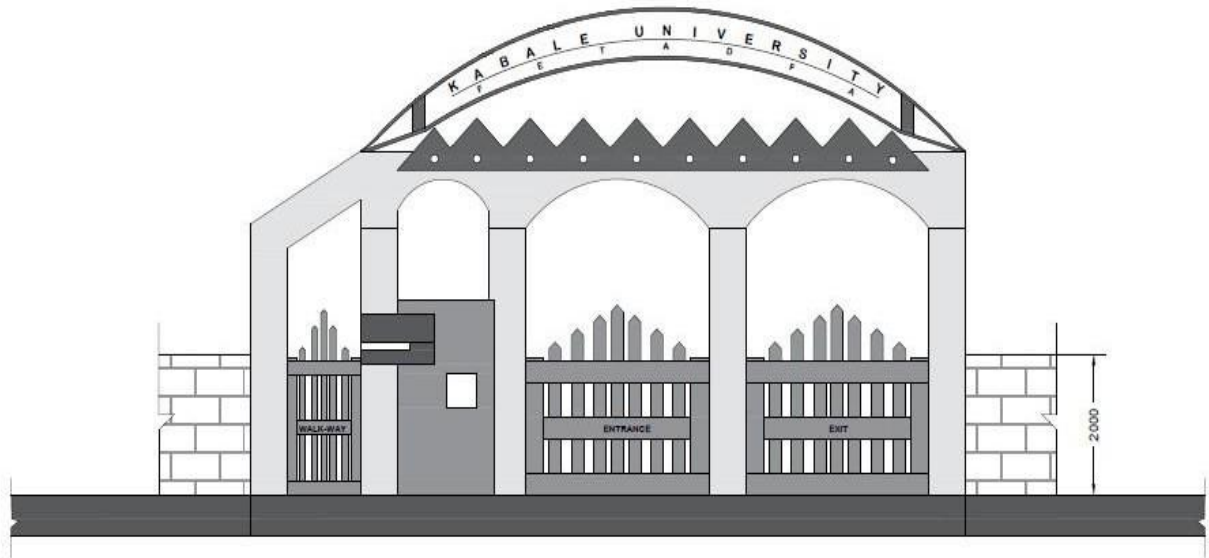
**3.1.1 Detailed architectural drawings.** We planned and designed the gate drawings to slve insecurity at the faculty of engineering, kabale university



*Figure:6 showing plan and elevation of the gate*



*Figure:7 showing the section of column*



## ARCHTECTURAL IMPRESSION

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*Figure:8 showing architectural impression*

### 3.1.2 WORK DURATION /WORK PLAN.

We started with stated with the description of the work whereby we did it in two weeks of February to march (20<sup>th</sup> february to 20<sup>th</sup> march) . then on the third week of march there was forming of groups followed by research of the title which was done from second week of march up to first week of October. From the second week of October. There was development of the proposal and proposal submission second week of October to fourth week. Then from first week of November, there was plan implementation up to third week, the from the fourth week of November up to second week of December there was presentation. The on the third week of December there was draft report writing and lastly final report submission starting from fourth week of December up to 4<sup>th</sup> of January 2021

Period/duration	Feb-march(20 <sup>th</sup> feb-20 <sup>th</sup> march)				OCT				NOV				DEC			
Description of work	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Forming group																
Research of title																
Proposal development																
Proposal submission																
Plan implementation																
Presentation																
Draft report writing																
Final report submission																

Table: 1 showing work duration/work plan

**3.1.3 BUDGET OF THE DESIGN. This is how we budgeted with the design of the gate as follows**

DESCRIPTION	UNITS	QUANTITY	RATE	AMOUNT (shs)
Data for research	GB	02	7500	15000
Papers used	Pages	80	50	4000
Laptop hiring		01	30000	30000
Materials for actual design				60000
Simple transport	Kilometers	06	3000	18000
Printing		40	300	12000
Hiring tools				50000
Others				30000
TOTAL				219000shs

Table:2 showing the budget of the plan



## **CHAPTER FOUR: DISCUSSION OF THE RESULTS**

### **4.1 Achievements or Skills acquired**



During my project plan design, I was able to;

- ✚ Apply the knowledge that I acquired in Drawing and CADs unit like dimensioning, making plans and generally appreciate and understand the practical application of my academic programme.
- ✚ Present critical and innovative opinions with confidence, as well as capable of resolving problems professionally. This has encouraged me to be job-ready thus increasing my employment prospects
- ✚ Demonstrate excellent ethics and integrity in the work conducts and work as team player efficiently. In addition, I learnt to work with my professional mentors and to begin to build networks within my profession.
- ✚ I was able to realize the importance of working together to achieve the same goal.

### **4.2 Challenges**

- ✚ Lack of experience in using some tools for example some members did not know how to use a drilling machine and jack plane.
- ✚ Careless handling of tools and materials among group members.
- ✚ There was a problem of time management among our group members for example some were used of coming past one hour during erecting up our prototype.
- ✚ There was a problem of delay in raising payments for materials of our prototype among team members.
- ✚ Corona virus pandemic also became a problem where one was forced to put on a mask daily.

### **4.3 Solutions to the challenges**

-  Developing teamwork spirit.
-  We were briefed on how to use different tools for different tasks by the store attendant.

## **CHAPTER FIVE: FUTURE PROSPECTS**

### **5.1 Recommendations.**

I encourage the university to put more emphasis on real life projects in order to improve the **innovation** and creativity of students.

Students should be very serious with these real-life projects because they are very important for their future.

### **5.2 Conclusion**

Despite the challenges encountered, I would like to encourage my fellow students to engage in real life projects such that hands on skills can be improved in the country.

## **REFERENCES**

Project management body of knowledge, (PMBOK) BY Jorge Diego Fuentes Sanchez

## APPENDICES



*Appendix: 1 assembling of gate design*