

**PROJECT TITLE: REHABILITATION OF ALFA
BELGORE HALL.**

BY

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DEPT: BIOMEDICAL ENGINEERING.

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**PROJECT: ENG284 PROJECT
ASSIGNMENT.**

INTRODUCTION

Alfa Belgore Hall is the biggest and most foremost halling facility in Afe Babalola University, Ado-Ekiti.

But recent events in the hall have revealed the fact that the hall could not accommodate the number of the people the University were expecting for recent functions that were held.

Thus, the remodelling of the Alfa Belgore Hall at Afe Babalola University is tasked to achieve the following:

- More space to accommodate more people
- To stand tall among modern days facilities around the world.
- To improve efficiency and integrity over safety concerns.

SCOPE OF PROJECT

Clearing up

At this stage which is the first stage the building would be evacuated for work to beginning on.

The building would be cleared and all the furniture would be taken out and moved to a secured and safe place. Facilities would also be removed and safely stored in the ware house till after the project. Businesses which where there or close (e.g. ICT centre and bookshop) would be located to another site temporarily, so they can continue to carry out their activities while their permanent site would still be under construction.

Securing the Site

At this stage after evacuation and removal of furniture and other important facilities and vacation of other businesses around that premises, the stage would be commenced immediately. At this stage a barrier made of roofing sheets would be used to secure the site. This is necessary so as to ensure no one would be able to enter and leave the site at will. The only set of people with access to the site would be authorized personnel, official personnel, workers and official members of the school board (owners of the project) to inspect. This would restrict access to the site for students and those who are not mentioned above. This would be in order to prevent unnecessary accidents and limit to movement on site and also secure the equipment used on site as no one would be allowed access once the gate is locked and work for the day has finished.

Renovating Works

This is when the main work begins; we will start by removing the roof of the building. After that we will then beginning other re modelling work on the building. The main aim for this work is to expand the building so it can accommodate more people for social events, programs and other activities the schools comes up with. At the end of the project, the building is going to have more space, more facilities and more modern day touch in other to represent they school name better.

Cleaning Up

This is the final stage of the project, where all the materials, the tools, equipment used and the heavy duty machines would be returned. The roofing sheets would also be cleared and also the left over material. So that the place would be okay and ready for use and if the need be; to be re-commissioned.

SCHEDULE OF PROJECT

-Clearing up: It is estimated to take about four (4) weeks.

-Securing the Site: This is estimated to take about three (3) weeks.

-Renovating Works: This is the main part of the work estimated to take about eight (8) weeks.

-Cleaning Up: This is expected to take up to three (3) weeks.

NOTE THAT DURING THIS PROJECT THE FOLLOWING IS DONE IN THIS RESPECTIVE ORDER:

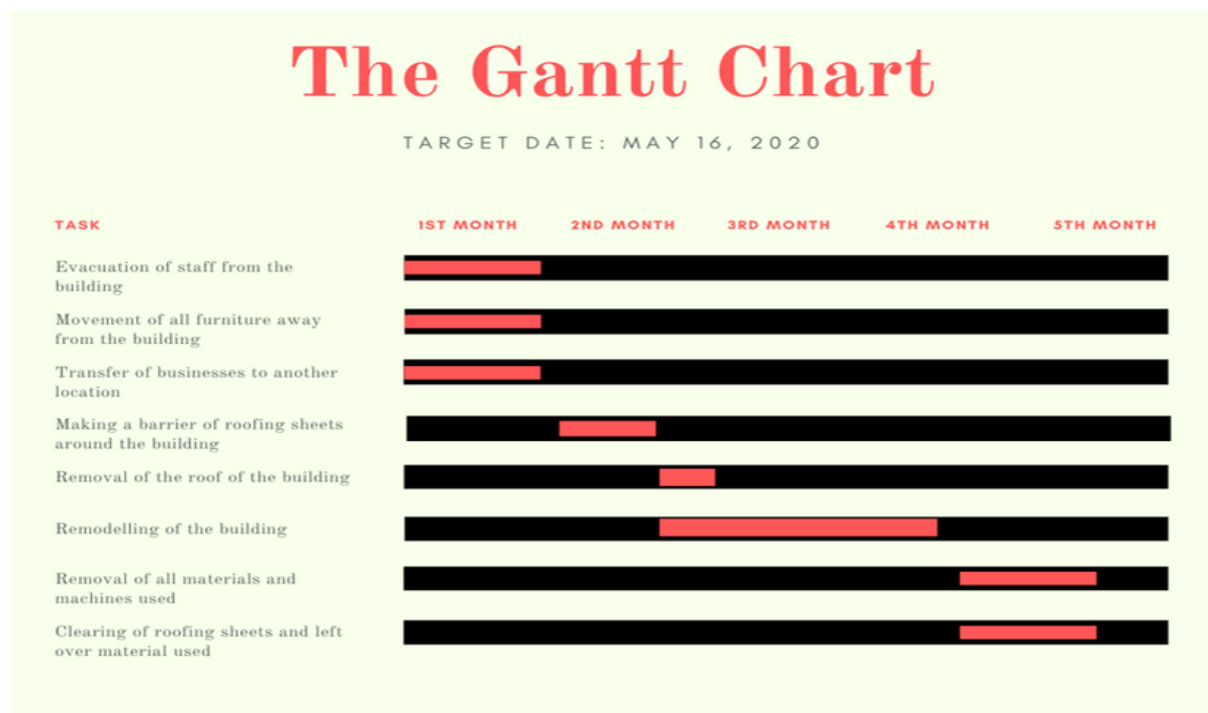
The school management conceives the project and discusses its feasibility, and the use of alternatives to substitute the services provided by the structure.

- A renovations company is enlisted for the project actualization. (E.g. Engineer Charles co. ltd)
- The management reaches an agreement with the team sent in to discuss the details of the project, its duration, payment plans and workforce mobilization plans. A preliminary list is drafted to show the project specifications and a simple breakdown of the project requirements is created.
- A team of professionals is then brought to the site to do a brief survey and determine how many hands would be required to meet project milestones and delivery deadline. This team will include the lead consultant, the site foreman, the team leaders of each group of work specialization, and the leader of the labourers.
- Clearance of the valuables within the structure commences, starting with the removal of unfixed items of furniture, electrical and mechanical appliances (such as computers, printers and other ICT gadgets, bookshelves, speakers and sound systems etc.). These items are then moved to their alternative locations.
- The fixed equipment in the structure is removed. (Air conditioners, lamp holders, wooden partitioning frames, doors, windows etc.)
- The perimeter of the structure is cordoned off using **aluminium sheets** and **bamboo sticks**, to **restrict movement in and out of the working area.**
- The roofing sheets are taken off and stacked to be examined and the reusable separated from the permanently damaged.

REHABILITATION OF ALFA BELGORE HALL

- The civil engineers and labourers commence the additional construction work required, in conjunction with the electrical engineers (to specify areas where additional electrical wiring spaces are required) and the plumbers/water and waste water engineering team (for plumbing and pipe layout space specifications).
- On completion of the added floor(s), the roofing team arranges the sheets and nail them in place.
- The plumbers and electricians proceed to fix in all toilets and plumbing equipment and all wiring and lighting appliances respectively.
- The painters and tilers come in to work together and simultaneously do their jobs in sections (painting before tiling).
- The debris around the site is cleared and properly disposed.
- The completed project is cleaned to remove dust and other dirt particles.
- The moving team places all initially removed equipment in their new positions, and install the new additional appliances in their appropriate locations.
- The site area is unsealed and the last of the obstructions cleared

THE GANTT CHART



HUMAN RESOURCES NEEDED FOR THE PROJECT.

1. Engineering Consultants
2. Civil engineers
3. Mechanical engineers
4. Electrical engineers
5. Water and waste water engineers
6. Technicians
7. Artisans (Carpenters)
8. Labourers (Masons and Plumbers)

PROJECT TEAM AND THEIR DESIGNATIONS

- Engineering consultants: The team constitutes of three (3) consultants; an Engineering Professor (Lead consultant), and two Engineering Doctors.
- Mechanical engineers: Two (2) mechanical engineering doctors serve as project sub-managers, supervising the rest of the engineers in hands-on project work and achievement of project objectives.
- Civil engineers: There are four (4) civil engineers enlisted for the project implementation. These four engineers have one of them as the civil leader, and they supervise the labourers and artisans in project actualization.
- Electrical engineers: On this project, there are five (5) electrical and electronics engineers, handling the wiring and electrical and electronics components installation.
- Water and Waste Water engineers: These two (2) engineers have the duty of monitoring the creation and implementation of an effective water system and waste water disposal system for the structure by the plumbers and their apprentices.
- Artisans: The twenty (20) artisans to work on the roofing aspect of the project are monitored and supervised by the project foreman (one of the supervising mechanical engineers), ensuring safety precautions are observed and effective delivery of quality service.
- Labourers: Forty (40) labourers and ten (10) plumbers are enlisted for the project, and are expected to do the majority of the heavy lifting in the course of the project completion.
- Architect: It is he who will design the new structure.
- Quantity surveyors: He will ensure that all the materials used for the project are of good quality and can be used and also to ensure that the materials are in good shape.
- There will also be a group of consultants who will advise the best way that the project will move. The lead consultant will be the **CLIENT**.
- Structural Engineer : He will ensure that the new structure can hold and can live up to its expectation.

BILL OF ENGINEERING MEASUREMENT AND EVALUATION (BEME)

ITEM NO	DESCRIPTON	QUANTITY	UNIT COST	TOTAL COST
1	Roofing sheet	100	N 1,400.00	N 140,000.00
2	cement bags	500	N 180,000.00	N 90,000,000.00
3	Trucks of gravel	12	N 35,000.00	N 420,000.00
4	Trucks of sand	13	N 45,000.00	N 585,000.00
5	Glass which will be brought as 12x12	10	N 50,000.00	N 500,000.00
6	Light bulbs fittings	40	N 8,000.00	N 320,000.00
7	Light bulbs	40	N 2,500.00	N 100,000.00
8	Copper wires	60	N 2,000.00	N 120,000.00
9	Projector	3	N 150,000.00	N 450,000.00
10	T.V	4	N 100,000.00	N 400,000.00
11	Pipes of different sizes	46	N 80,000.00	N 3,680,000.00
12	Window	13	N 450,000.00	N 5,850,000.00
13	CCTV cameras for security	12	N 25,000.00	N 300,000.00
14	CCTV system	1	N 50,000.00	N 50,000.00
15	Total estimated cost			N 102,915,000.00
16	Miscellaneous (10%)			N 10,291,500.00
17	Consultancy Fee (15%)			N 15,437,250.00
18	Site preparations and clearing after completion (5%)			N 5,145,750.00
19	Transportation (12%)			N 12,349,800.00
20	Profit (20%)			N 20,583,000.00

PAYMENT SCHEDULE

- 30% of Total Estimated cost for Mobilisation
- 30 % of Total Estimated cost
- 50% of Total Estimated cost for completion
- Finally payment of 40% of Total Estimated cost at completion and hand over
- Retain 10% of Total Estimated cost for a 6 months defect liability period.

PAYMENT SCHEDULE FOR THE PROJECT

Work Description	Percentage TEC required	Time Payment is Due	Amount (NGN)
Mobilization : Down-payment of wages, importation of some materials and machinery, procurement of accommodation	30%	On commencement of project.	30,000,000
Second payment : Procurement of materials, payment of worker, miscellaneous costs and other	30%	After 50% completion of project	30,000,000

expenses.			
Final payment :	40%	Completion and Handover	40,000,000
Completion of wages, profits, consultancy fees.			

Note : 10% Total Estimated Cost (TEC) is to be retained for a 6-months defect liability period.

WHY THE SITE WAS SECURED

Having known that the project is located in a students’ residential area, and also that there is a car lot situated around the site, **it is secured with roofing sheets**; and the only entrance would have chains and padlock when the work for the day is over. This is done in order to limit the number of people that will have access to the site during working hours, (access control) so as to avoid accidents during work hours. So it would only be workers and officials on the site during working hours. After working hours the gate would be closed, so as to avoid anyone to be able to enter and steal any material from the site.

So generally, the area had to be securely cordoned off to prevent accidents and injuries or death as a result of structural mishaps or debris flying suddenly or falling in the process of the work being done; and to ensure the safety of the working tools and materials being used on the site.

DEFINITION OF TERMS

BEME : Bill of Engineering Measurement and Evaluation (BEME) also referred to as 'Bill'; is a tool used before, during and post-construction to assess and value the cost of construction works. This includes the cost of materials, labour, equipment and all/any other resource(s) required for the success of any construction endeavour based on a predetermined scope and specification.

Defect Liability Period : A defects liability period is a period of time following practical completion during which a contractor remains liable under the building contract for dealing with any defects which become apparent. Depending on the form of contract you are reading, it may also be referred to as a rectification period or defects correction period.

Lead Consultant : Lead consultants have hands-on roles which involve the day-to-day running of continuing client projects. They are team leaders, analysing and reviewing proposals from the team, providing appropriate solutions to problems, and making decisions on the way forward by acting as liaisons between the client and the consultancy team. Their work involves directly dealing with the

client to clearly understand its needs, and to provide possible solutions for the client's consideration. The team receives and works on the client's information from the lead consultant.

Project Life Cycle : A project life cycle is the sequence of phases that a project goes through from its initiation to its closure. The number and sequence of the cycle are determined by the management and various other factors like needs of the organization involved in the project, the nature of the project, and its area of application. The phases have a definite start, end, and control point and are constrained by time. The project lifecycle can be defined and modified as per the needs and aspects of the organization.

Environmental Impact Assessment [EIA] : Environmental Impact Assessment is defined as an activity designed to identify the impact on the bio-geophysical environment, on man and well-being, of legislative proposals, projects, policies and operational procedures and to interpret and communicate information.

EIA is basically a systematic process of identifying the future consequences of a current or proposed action.