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DEPARTMENT: CIVIL ENGINEERING.

ASSIGNMENT: REHABILITATION OF THE ALFA BELGORE MULTI-PURPOSE HALL.

COURSE: ENGINEER IN SOCIETY.

COURSE CODE: ENG 234.

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ALFA BELGORE MULTI-PURPOSE HALL REHABILITATION PROJECT

QUESTION 1

SCOPE OF WORK

Background & Description

The Alfa Belgore Hall was built in honor of Salihu Modibbo Alfa Belgore, GCON (born January 17, 1937) who is a Nigerian Jurist and former Chief Justice of Nigeria. The hall was constructed in the early years of the Afe Babalola University's development. It is a 7,000 seater multi-purpose hall that has been used for the university's prestigious events such as the annual convocation ceremony, matriculation ceremony, award- giving ceremonies, seminars and conferences housing elite from all over the world.

The multipurpose hall also houses two invaluable sub buildings; the general bookshop where students can purchase textbooks and course materials and also the ICT centre which is in charge of running the online environment of the university.

Project Statement

The Alfa Belgore Multi-purpose hall will be a newly constructed 2-story multipurpose hall with the capacity to hold 14,000 people comfortably. It will see the addition and removal of structures/facilities that will improve its state-of-the-art infrastructure status. The rehabilitation of the multipurpose hall is going to take place in the same location of the existing hall with a few square meters keeping the total size at an approximate of 250sq.ft. It will be conducted during the long vacation summer break of the 2019/2020 session of the university to avoid interference with school activities and also to avoid hazardous occurences.

Objectives

The main purposes of the project are to increase the seating capacity of the multipurpose hall and also to add an additional floor to the existing. Other objectives that are also contained in the project are outlined below and shall be addressed duly.

As designed, the building would see the following improvements:

1. Expansion of holding capacity from 7,000 to 14,000.
2. Installation of more toilets to the building.
3. A back stage room for presentation or performance preparation.
4. An additional floor.
5. Replacement of the coatings on the floors, walls and ceilings.
6. In built audio systems on the ground and first floor.
7. Installation of more entrances/exits to the building.
8. Better ventilation network; addition of windows/vents and air conditioners.
9. A room for overseeing all technical matters.
10. An emergency meeting room/ Safe house.

Deliverables and Milestones

The end result of this project is going to see the completion of each and every objective outlined above, the deadlines and delivery dates for each of the listed objectives are given as follows:

NB: The whole project is going to span over a time frame of 32 weeks (8 months) beginning on the 1st of April and ending on the 1st of November.

I. Marking out ,Demolition ,Site Construction: April 1st – June 1st
II. Expansion of holding capacity: June 1st – July 1st
III. Construction of Additional Floor: July 1st – August 1st
IV. Construction of the backstage room: August 1st – August 15th
V. Construction of emergency and technical rooms: August 15th - August 30th
VI. Installation of audio systems on the ground/first floor: August 30th – September 15th
VII. Installation of more entrances/exits to the building: September 15th – September 30th
VIII. Addition of windows/vents and air conditioners: September 30th – October 15th
IX. Installation of more toilets in the building: October 15th – October 20th
X. Replacement of the coatings on the floors, walls and ceilings: October 20th – October 25th
XI. Miscellaneous: October 25th – November 1st

Requirements

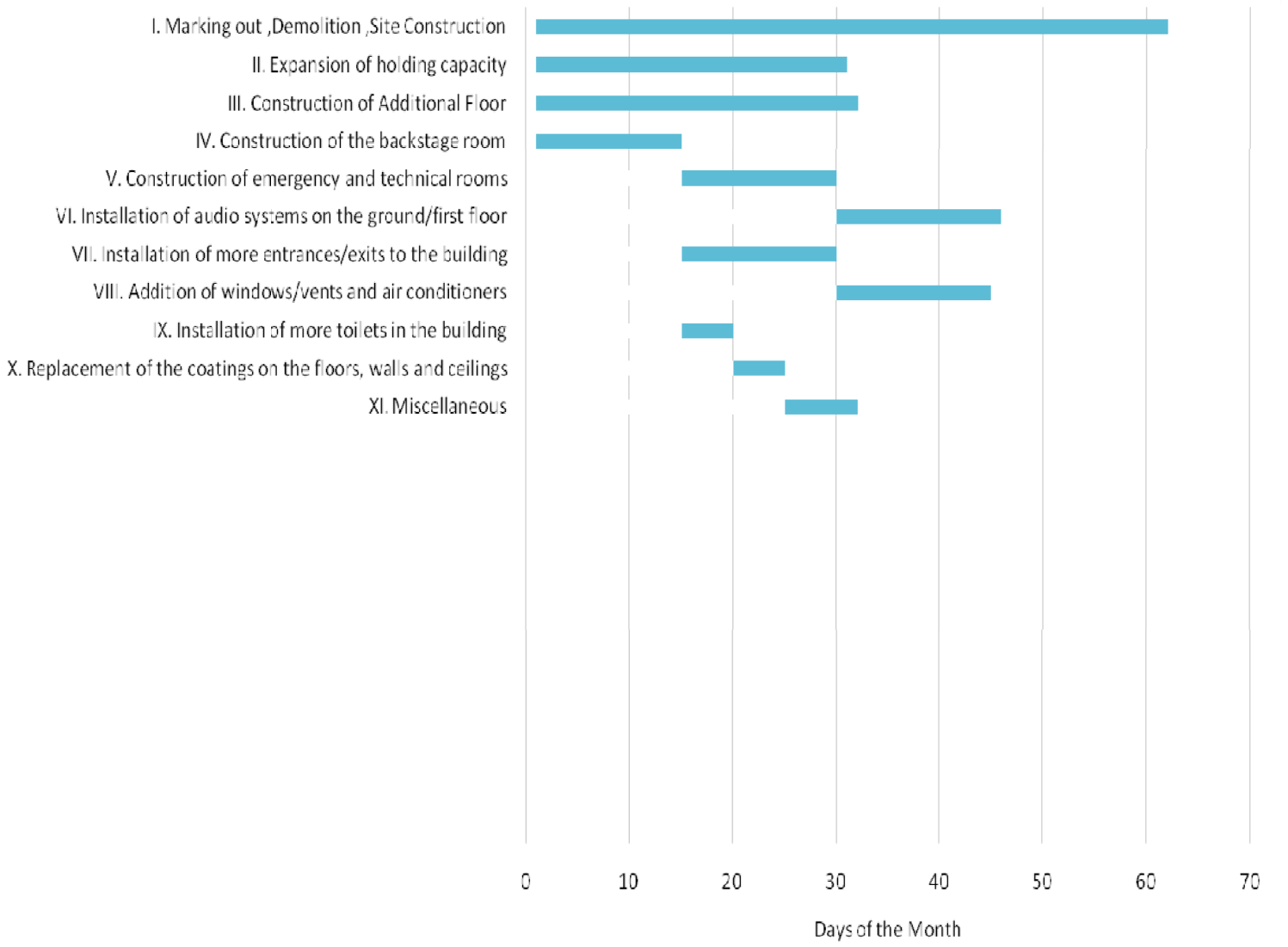
Requirements include all things necessary to support the project;

Concrete ,Masonry ,Metals ,Wood & Plastic ,Thermal & Moisture Protection ,Doors & Windows ,Furnishings ,Conveying systems ,Mechanical Works ,Electrical Works etc.

QUESTION 2

PROJECT GANTT CHART

TASK NAME	START DATE	DAY OF MONTH*	END DATE	DURATION* (WORK DAYS)	DAYS COMPLETE*	DAYS REMAINING*	TEA MEM
REHABILITATION PROJECT							
I. Marking out ,Demolition ,Site Construction	4/1	1	6/1	61	61	0	Laolu
II. Expansion of holding capacity	6/1	1	7/1	30	30	0	Mubara
III. Construction of Additional Floor	7/1	1	8/1	31	31	0	Sekinat
IV. Construction of the backstage room	8/1	1	8/15	14	14	0	Moham
V. Construction of emergency and technical rooms	8/15	15	8/30	15	15	0	Jackson
VI. Installation of audio systems on the ground/first floor	8/30	30	9/15	16	16	0	Nathan
VII. Installation of more entrances/exits to the building	9/15	15	9/30	15	15	0	Veronic
VIII. Addition of windows/vents and air conditioners	9/30	30	10/15	15	15	0	Brando
IX. Installation of more toilets in the building	10/15	15	10/20	5	5	0	Jasper
X. Replacement of the coatings on the floors, walls and ceilings	10/20	20	10/25	5	5	0	John
XI. Miscellaneous	10/25	25	11/1	7	7	0	Michae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IV. Construction of the backstage room
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VIII. Addition of windows/vents and air conditioners
IX. Installation of more toilets in the building
X. Replacement of the coatings on the floors, walls and ceilings
XI. Miscellaneous
0
10
20
30
40
50
60
70
Days of the Month

QUESTION 3

HUMAN RESOURCES NEEDED AND PROJECT TEAM

The rehabilitation of the Alfa Belgore Multi-purpose hall will require the use of the following human resources right from the nitty gritty cement work to the general overseeing of the construction project. They include:

a) Masonry Workers: Concrete laborers and masons.
b) Plumbers: Master plumbers, Plumber and pipe fitter.
c) Exterior Installations: Roofer, Insulation specialist, Siding Contractor and PVC installer.
d) Equipment Operators: Crane Operator, Signal worker, Equipment and heavy equipment operator
e) Engineer**:** Assistant Project Manager, Building Inspector, Civil Engineer, Superintendent, Surveyor, Field Engineer, Inspector, Planner, Construction Engineer
f) Electrician: Apprentice, master electrician and electrician
g) Construction Laborers and Helpers: Laborer, General Laborer, Painter, Construction Worker, Ceiling Tile Installer
h) Carpenter: Apprentice, Carpenter, Framing Carpenter, Dry Wall Finisher, Dry Wall Installer, Plasterer, Joiner
i) Site management: Project manager, Site Manager, Construction Manager, Construction Superintendent, Project Assistant, Safety Manager, Safety Director, Scheduler, Estimator, Contract Manager, Contract Administrator.
j) Welder: Welder and Iron worker.

PROJECT TEAM

*a) Lead Consultant **Architect**:* The architect is tasked with the new buildings design, the additions and removal of most details. He also needs the knowledge of how various products would contribute to the overall performance of the building. He is the reference point for all other people in the project team because without his skills and interpretation, the rehabilitation wouldn't be possible.

b) *Contractor*: The Contractor oversees and manages the construction of the building for the Client, following the Architect and Engineers' designs. The work is delivered under a contractual agreement. The Main Contractor will select Sub-contractors based on the capability, availability and price. Sub-contractors include many specialist trades.

c) *Sub contractor:* His main job is to support the main contractor and take charge of the details that hold lesser weight and can be carried out with ease.

d) *Consulting Engineer:* Tasked with one of the most important jobs on the site, the consulting engineer is expected to provide an expert take on the planning, design and construction of the multipurpose hall.

e) *Client:* The Client is the person/company for which the building is being built, in this case it's the Afe Babalola University. The Client will define the aesthetic and functional needs for their building.

f) *Special Consultants*: There are Specialist Consultants for an array of subjects; sustainability, acoustics, fire, security to name just a few. Most will not get involved in product selection, but do write the overall performance specification, which indicates the performance criteria that must be attained by the chosen product. So Specialist Consultants indirectly influence product choice.

QUESTION 4

Why the site was secured.

Security is a very important part of any construction process. Lots of money is spent on hiring manual labor, purchasing materials needed for the building, hazardous circumstances etc. It would not be wise to leave the construction site without proper security in the form of various precautions that are going to be discussed below. Details on how a site can be properly secured are given as follows:

1. Ensure adequate fencing is up around the entire work site. Depending on the area, crime rate, and potential property loss evaluate the possibility of investing in a site wide security system or outside agency to provide site security. Keep valuable items out of plain sight from the viewpoint of the public. Pay attention to where scrap metal piles may be onsite. Scrap metal often brings thieves into a work site.
2. Always lock buildings. Keep valuables out of sight within the buildings. If someone looks through a window and does not see anything worth taking it may deter them from entering. Use alarms, flood lights, and cameras when possible. While the upfront cost can be expensive, a good security system can prevent expensive break-ins.
3. All excavations should be 100% barricaded or fenced in at the end of the day. This protects the public or any employees who enter the area from driving or falling into the excavation. Do not rely on a perimeter fence to protect individuals from harm due to an exposed hole within the site's boundaries.

QUESTION 5

Bill of Engineering Measurements and Evaluation (BEME)

Total Estimated Cost (TEC) for the construction process: 200,000,000₦

S/N	*Expenses*	*Percentage Allocated(Of TEC)*	*Cost in Naira*
1	*Construction Costs*	*23%*	*46,000,000*
2	*Equipments and Implements*	*15%*	*30,000,000*
3	*Transportation Costs*	*12%*	*24,000,000*
4	*Consultancy Fee*	*15%*	*30,000,000*
5	*Site preparations and clearing after completion*	*5%*	*10,000,000*
6	*Profit*	*20%*	*40,000,000*
7	*Miscellaneous*	*10%*	*20,000,000*

Payment Schedule
Total estimated cost for the payment of services: 50,000,000

S/N	*PAYMENTS*	*PERCENTAGE ALLOCATED*	*AMOUNT IN NAIRA*
1	*Mobilization*	*30%*	*15,000,000*
2	*At 50% completion*	*30%*	*15,000,000*
3	*Final Payment at*	*30%*	*15,000,000*

	Completion and hand over		
4	*6 Months Defect Liability Period*	*10%*	*5,000,000*

QUESTION 6

Bill of Engineering Measurements and Evaluation (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, labor, equipment and all/any other resource(s) required for the success of any construction endeavor based on a pre-determined scope and specification.

Defect Liability Period

During this period, the client reports any defects that arise to the contract administrator who decides whether they are defects (i.e. works that are not in accordance with the contract), or whether they are in fact maintenance issues. If the contract administrator considers they are defects, then they may issue instructions to the contractor to make them good within a reasonable time .At the end of the defects liability period, the contract administrator prepares a schedule of defects, listing those defects that have not yet been rectified, and agrees with the contractor the date by which they will be rectified. The contractor must in any event rectify them within a reasonable time.

Lead Consultant

The lead consultant is the consultant that directs the work of the consultant team and is the main point of contact for communication between the client and the consultant team, except for on significant design issues where the lead designer may become the main point of contact.

Project Life Cycle

A standard project typically has the following four major phases (each with its own agenda of tasks and issues): initiation, planning, implementation, and closure. Taken together, these phases represent the path a project takes from the beginning to its end and are generally referred to as the project “life cycle.”

Environmental Impact Assessment (EIA)

Environmental Impact Assessment (EIA) is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse.