

**NAME: ODUNTAN AYOMIDE**

**MAT NO: 18/ENG06/052**

**DEPARTMENT: MECHANICAL ENGINEERING**

**COURSE: ENGINEER IN SOCIETY (ENG284)**

**DATE: SUNDAY 5<sup>TH</sup> APRIL 2020**

**ASSIGNMENT:**The Alfa Belgore Rehabilitation project is ongoing. As a designated Student Consulting Engineer you are expected to do the following

1. Outline the Scope of work in detail in order of occurrence
2. Prepare a Project Gant Chart
3. List all the human resources needed and constitute the Project Team stating who the Lead Consultant is.
4. Explain why the site was secured
5. Develop a BEME for the project by lump sum projections including 10% of the total estimated cost (tec) as Miscellaneous, 15 % tech as consultancy fee, 5% tec for site preparations and clearing after completion, 12% of tec for transport cost. 20% tec as profit
6. Prepare a payment schedule as follows
  - (a) 30 % tec for Mobilisation
  - (b) Next 30 % tec at 50% completion
  - (c) Final Payment of 40 %tec at completion and hand over. Retain 10 % tec for a 6 months Defect liability period

7. What is BEME, Defect Liability Period, Lead Consultant, Project Life cycle, Environmental Impact Assessment (EIA)

## **PART 1:SCOPE OF WORK**

Client: Afe Babalola University.

Address: Afe Babalola University, Ado Ekiti.

Project Name: Proposed renovation of Alfa Belgore Hall.

Project Sponsor: Afe Babalola University.

Timeline of project: 2 months

### **Interior:**

- Patch all walls and trim in preparation for paint.
- Fix and replace all outlets/covers as necessary (ensure matching colour's and styles)
- Fix and replace all switches/switch-plate covers necessary (ensure matching colour's and styles)
- Clean/scrape all windows and ensure proper operation. Replace non-functional windows.
- Replace flooring with ceramic tile and level floor where necessary.
- Installation of overhead air conditioning vents.
- Replace bathroom flooring and all damaged WC's.

### **Exterior:**

- Replace all entry doors with automatic doors.
- Replace all roofing sheets.
- Expansion of underground septic tank for waste disposal.
- Take out old paving stones, level ground and lay new ones.
- Clearing of site.

## **PART 2:PROJECT GANT CHART**

<b>1</b>	<b>Task name</b>	<b>Start date</b>	<b>End date</b>	<b>Duration</b>
<b>2</b>	Patch all walls and trim in preparation for paint.	2/04/2020	7/04/2020	5 days
<b>3</b>	Fix and replace all outlets/cover as necessary.	7/04/2020	10/04/2020	2.5 days
<b>4</b>	Fix and replace all switches/switch-plate covers necessary.	10/04/2020	13/04/2020	2.5 days
<b>5</b>	Clean/scrape all windows and ensure proper operation.	13/04/2020	17/04/2020	4 days
<b>6</b>	Replace flooring with ceramic tile and level floor where necessary.	17/04/2020	26/04/2020	9 days
<b>7</b>	Installation of overhead air conditioning vents.	26/04/2020	06/05/2020	4 days
<b>8</b>	Replace bathroom flooring and all damaged WC's.	06/05/2020	11/05/2020	5 days
<b>9</b>	Replace all entry doors with automatic doors.	11/05/2020	15/05/2020	4 days
<b>10</b>	Replace all roofing sheets.	15/05/2020	24/05/2020	9 days
<b>11</b>	Expansion of underground septic tank for waste disposal.	24/05/2020	31/05/2020	7 days
<b>12</b>	Take out old paving stones, level ground and lay new ones.	31/05/2020	04/06/2020	5 days
<b>13</b>	Clearing of site.	04/06/2020	09/06/2020	3 days

	date 4th april to 9th june 2020												
description	2nd-7th april	7th-10th april	10th-13th april	13th-17th april	17th-26th april	26th april-6th may	6th-11th may	11th-15th may	15th-24th may	24th-31st may	31st may-4th june	4th-9th june	
patch all walls and prep for paint													
fix and replace all outlets													
fix and replace all switches													
clean all windows													
replace flooring with ceramic tiles													
installation of overhead a.c vents													
replace bathroom floors and damaged WCs													
replace all entry doors with automatic doors													
replace all roof sheets													
expansion of underground septic tank for waste													
take out old paving stones, lay new ones													
clearing of sites													

### **PART 3:PROJECT TEAM**

The following team would be needed for adequate execution of the project

1. Civil engineer
2. Architect
3. Drafts man
4. Financial planner
5. Project manager
6. Builders
7. Electrician
8. Plumbers
9. Painters
10. Tilers
11. Surveyor
12. The quantity surveyor

**-THE TEAM LEADING CONSULTANT IS THE CIVIL ENGINEER-**

### **PART 4:WHY THE SITE WAS SECURED**

The site was secured due to the following reasons:

1. It's situated in the school so to prevent accidents from non-workers and external people (students, teachers and both educational and non-educational staff).
2. To contain unforeseen happenings such as a fire outbreak.
3. To prevent unwanted visitors from the project site.
4. To protect building materials and other valuables from theft.
5. To contain dust during rehabilitation, therefore avoiding air pollution.

## **PART 5: BEME (Bill of Engineering Measurement and Evaluation)**

<b>TOTAL ESTIMATED COST (tec)</b>	<b>₦15,000,000</b>	
<b>DESCRIPTION -</b>	<b>PERCENTAGE</b>	<b>AMOUNT -</b>
	-	
<b>MISCELLANEOUS</b>	<b>10%</b>	<b>₦1,500,000</b>
<b>CONSULTANAT FEE</b>	<b>15%</b>	<b>₦2,250,000</b>
<b>SITE PREPARATION AND CLEARING AFTER COMPLETION</b>	<b>5%</b>	<b>₦ 750,000</b>
<b>TRANSPORTATION COST FEE</b>	<b>12%</b>	<b>₦ 1,800,000</b>
<b>PROFIT</b>	<b>20%</b>	<b>₦ 3,000,000</b>
<b>TOTAL</b>	<b>62%</b>	<b>₦ 9,300,000</b>
<b>COST OF MATERIALS NEEDED</b>	<b>38%</b>	<b>₦5,700,000</b>
<b>TOTAL ESTIMATED COST -</b>	<b>100%</b>	<b>₦15,000,000</b>

## **PART 6: PAYMENT SCHEDULE**

<b>ESTIMATED PAYMENT SCHEDULE COST</b>		<b>₦ 15,000,000</b>
<b>DESCRIPTION -</b>	<b>PERCENTAGE -</b>	<b>AMOUNT -</b>
<b>MOBILIZATION</b>	<b>30%</b>	<b>₦ 4,500,000</b>
<b>HALF COMPLETION</b>	<b>30%</b>	<b>₦ 4,500,000</b>
<b>FULL COMPLETION</b>	<b>40%</b>	<b>₦ 6,000,000</b>
<b>TOTAL -</b>	<b>100%</b>	<b>₦15,000,000</b>
<b>DEFECT LIABILITY</b>	<b>10%</b>	<b>₦ 1,500,000</b>

## **PART 7:**

1. **BEME:** can be described as 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.
2. **Defect Liability Period:** The defects liability period (or 'DLP') is a fixed period of time, starting from the date of practical completion, during which the contractor has an express contractual right to return to the site to rectify defects.
3. **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.
4. **Project Life cycle:** Every construction project has a life cycle which can be compared to that of a biological life cycle where activities begin gradually and build rapidly as the project commences to final deliverables. A standard construction project in general, has the following five major life cycle phases: Initiation, Planning, Execution, Performance and monitoring and lastly Closure of the project.
5. **Environmental Impact Assessment (EIA):** Environmental Impact Assessment is a tool designed to identify and predict the impact of a project on the biogeophysical environment and on man's health and well-being, to interpret and communicate information about the impact, to analyze site and process

alternatives and provide solutions to sift out, or abate/mitigate the negative consequences on man and the environment.