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DEPARTMENT: Mechanical Engineering

MATRIC NO: 18/ENG06/056

Course: ENG 284

**Outline The Scope Of Work In Detail In Order Of Occurrence**

1. **Getting direction from the Architect:** The architect so as to make a preview of the new project
2. **Displacing from the structure:** This involves moving out piece of equipment and materials from the building, removal of electrical appliances including the AC,S, Electric Bulbs, Speakers, and other electrical appliances, a glazer to remove all the aluminum doors and windows a carpenter is also called in the case where there is a wooden door, after clearing everything in the building The carpenters are called upon again to remove the ceilings and the zinc. And then a temporary fence is now made around the site
3. **Devastation of the building:** This route will rest on the freshly projected plan, if the building is to be fully or partly broken-down. The part of the building which is no more in the new plan will be brought down by block layers.
4. **Execution of the newly made plan:** This may include the expansion of the hall, addition of more windows and doors, flooring & tiling, repainting and addition of new apartment to the project etc. the work will be carried out by the brick layers lead by the construction engineer. The electrical engineers will be called to direct the wiring of the newly made structure.
5. **Finishing:** This has to do with the painting, fixing the switches and other electrical appliances, clearing of the site i.e. carrying out the material that are not needed away from the site

**Prepare the project Gant Chart**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Works | March 25 – 31 | April 1- 15 | April 17 - 31 | May 1 – 15 | May 17 - 31 |
| Commencement of project  |  |  |  |  |  |
| Visiting Site and review Document |  |  |  |  |  |
| Submission of Draft D & S (50%) |  |  |  |  |  |
| Submission of D & S (90%) |  |  |  |  |  |
| Submission of D & S Final |  |  |  |  |  |

**List all the human resources needed and constitute the project Team starting who the lead Consultant is**

* 1. **Structural Engineers**: They project, assess and examine constructions to make sure that they are competent and steady.

* 1. **Construction Services Engineer**: They plan, monitor and check systems to make buildings comfortable, functional, and safe.

* 1. **Consultant team**: They offer tasks such as; • Providing information on setting up and defining the project.
	+ Developing and coordinating the design.
	+ Preparing production Information and Tender Documentation.
	+ The members of the consultant team are:
		1. **Architect**
		2. **Cost Consultant** etc.
	+ They provide Contract Administration.

1. **(Laborers)**

1. **Civil Engineer**: Perform engineering duties in planning, designing, and supervising construction and maintenance of building constructions and facilities. Under the civil Engineer we have;
	* Water Engineer.
	* Transport Engineer.

1. **Electrical Engineer**: They test electrical devices and equipment and deal with the complete wiring of the building.

 **Explain Why the site was secured**

The Site was secured because it helps prevent vandalism along with the theft of tools, copper, building materials and machines. Construction site theft costs the industry perhaps billions of dollars each year that is why we can protect the site by the use of intruder detection, lighting, CCTV, Fences, gates, barriers and bollards.

**Develop a BEME for the project by lump sum projectors including 10% of The total estimated cost (tec) as miscellaneous, 15% tech as consultancy fee, 5% tec for site preparation and clearing after completion, 12% of tec for transport cost. 20% tec as profit**

**Estimation and Evaluation:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item  | Item Description  | Quantity m3  | Rate ₦  | Amount ₦  |
| 1.  | Site preparation and Clearing.(5%)  |   |   |  3,000,000  |
| 2.  | Consultancy fee(15%)  |   |   | 9,000,000 |
| 3.  | Transportation(12%)  |   |   | 7,200,000 |
| 4.  | Provision of Roofing sheets and Roofing Equipment.  | 1000  | 15,000  | 9,000,000 |
| 5.  | Provision of Blocks and Paving stones(Damp-proofing and Grouting Inclusive)  | 1000  | 25,000  | 15,000,000 |
| 6.  | Provision of Cranes, Trucks and Construction machines.  |   |   | 48,00000 |
| 7.  | Profit (20%)  |   |   | 12,000,000  |
| 8.  | Miscellaneous(10%)  |   |   | 6,000,000  |
|   | Sum of Works(Item 1-8)  |   |   | 57,000,000  |
|   | Provide 5% VAT  |   |   | 3,000,000 |
|  | **T0TAL**  |  |  | **60,000,000** |

**Payment Schedule**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated Completion Date.  | Construction Breakdown.  | Draw(%TEC)  |
| 1.  | 25th March.  | Mobilisation.  | 30%  |
| 2.  | 17th April  | 50% Completion  | 30%  |
| 3.  | 17th May | Completion  | 40%  |

**Bill of Engineering Measurement and Evaluation(BEME)**: is a implement used afore, during and post-construction to evaluate and value the cost of construction works.

**Deficit 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.

**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.

**Project Life Cycle**: is the categorization of phases that a plan goes through from its beginning to its closing.

**Environmental Impact Assessment(EIA)**: is the valuation of the ecological significances of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action.