**NAME: TUNDE-ADETULA SIMISOLUWA**

**MATRIC NUMBER: 18/ENG08/022**

**DEPARTMENT: BIOMEDICAL ENGINEERING**

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

**DATE: APRIL,2020**

**PROJECT OVERVIEW**

The objective of this project is to add a new floor to the Alfa Belgore hall within seven months. This floor is added due to the rapid increase in students, considering the fact that the hall can only sustain 2000 students. It will be built from sustainably sourced material wherever possible. This addition will be able to sustain 500 students.

**PROJECT SCOPE**

**Deliverables**

1. A gallery that will be able to house 500 students comfortably
2. Exterior finish in accordance with environmentally preferable products
3. Integrated, intelligent control systems for lighting, heating, ventilation and air conditioning (HVAC), high speed internet, and entertainment

**Milestones**

Contract signed---------------------------------------------- 17 April 2020

Architectural design started-------------------------------- 19 April 2020

30% design review------------------------------------------- 01 May 2020

60% design review-------------------------------------------- 20 May 2020

90% design review--------------------------------------------- 31 May 2020

Design complete------------------------------------------------- 31 May 2020

Permits approved, construction begins------------------------- 01 June 2020

Removal of HVAC system complete--------------------------- 03 June 2020

Removal of electrical fittings compete-------------------------- 09 June 2020

Removal of roof and ceilings complete-------------------------- 20 June 2020

Demolition of walls if necessary complete----------------------- 30 June 2020

Construction of new walls, floors and sanctioning complete-------- 31 July 2020

Roofing complete----------------------------------------------------------- 16 August 2020

HVAC installed-------------------------------------------------------------- 31 August 2020

Plumbing, electrical, and mechanical installed----------------------------------------- 13 September 2020

Plumbing, mechanical, electrical inspections passed----------------------------------- 15 September 2020

Exterior finish-------------------------------------------------------------------------------------- 25 September 2020

Landscaping complete--------------------------------------------------------------------------- 09 October 2020

Interior finish---------------------------------------------------------------------------------------- 18 October 2020

Final inspection and acceptance by owners--------------------------------------------------- 20 October 2020

**Technical requirements**

1. All windows and doors must pass NFRC class 40 energy ratings
2. Ceiling insulation must meet an “R” factor of 38.
3. Floor insulation must meet an “R” factor of 25
4. The hall structure must be able to withstand an addition.

**Limits and Exclusions**

1. Providing electrical power, sewage, natural gas, and water services to the site.
2. Maintenance contracts and inspections
3. Development of driveways beyond 500 feet from the building site

GANTT CHART

GANTT CHART

PAYMENT SCHEDULE

Architect

Construction ManagerGeneral

Contractor

Landscape Architect

Maximum Fixed Price Contract

BEME

**HUMAN RESOURCES:**

1. Must have up to 3 years experience with electrical works.
2. Must have minimum 4 years experience in in carpentry business.
3. Must have up to 3 years experience with plumbing.
4. Must have 3 years experience as a bricklayer.

PROJECT TEAM

1. Client.
2. Consultant
3. Architect
4. Contractor
5. Mechanical engineer, electrical engineer, painter, carpenter
6. Environmental Engineer
7. The client is the lead consultant

WHY WAS THE SITE SECURED?

The site was secured so as to prevent students from entering the site, endangering themselves. It was secured also, so as to prevent accidents.

BEME OF THE ALFA BELGORE RENOVATION PROJECT

|  |  |  |  |
| --- | --- | --- | --- |
| DESCRIPTION | UNIT PRICE | QUANTITY | COST |
| Removal of roofs, ceilings, walls and electrical fittings |  |  | 20,000 |
| Blocks for new walls | 1,000 | 100,000 | 100,000,000 |
| Cement | 1,500 | 100 | 150,000 |
| Sand | 300,000 | 3 trailers | 900,000 |
| Paint | 7,000/5L | 8 5L | 56,000 |
| Iron | 15,000 | 3 sets | 45,000 |
| Bamboo for sanctioning |  |  | 25,000 (rent) |
| Wires and switches | 1,500 | 10 | 15,000 |
| Bulbs | 500 | 15 | 7,500 |
| Wood | 500 | 50 | 25,000 |
| Roofing sheet |  |  | 150,000 |
| Pipes  | 1,500 | 10 | 15,000 |
| WC and wash hand basin | 30,000 | 3 | 90,000 |
| Tiles | 1,000 | 200 | 200,000 |
| Total Estimated Cost (TEC) |  |  | 101,698,500 |
| Miscellaneous (10%TEC) |  |  | 10,169,850 |
| Consultancy fee (15% TEC) |  |  | 15,254,775 |
| Site preparations (5% TEC) |  |  | 5,084,925 |
| Transport cost (12%TEC) |  |  | 12,203,820 |
| Profit (20% TEC) |  |  | 20,339,700 |
| Total |  |  | 164,751,570 |

**PAYMENT SCHEDULE**

|  |  |
| --- | --- |
| Mobilization (30% TEC) | 10% retention = 20,339,700 |
| 50% project completion (30% TEC) | 10% retention = 20,339,700 |
| Final payment at completion (40%TEC) | 10% retention = 30,509,550 |

1. **BEME**-Bill of Engineering Measurement and Evaluation ,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.
2. **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. ... A **defects liability period** is usually a **period** of around six or 12 months but it can vary depending on the contract used.
3. **Lead Consultant**: They are team leaders, analyzing 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.
4. **Project Life Cycle** refers to the four-step process that is followed by nearly all project managers when moving through stages of **project** completion. This is the standard projectlifecycle most people are familiar with. The **Project Life** Cycle provides a framework for managing any type of project within a business
5. **Environmental Impact Assessment** is a formal method of judging the impact that any new developmental project would have on the environment and its constituents.