

ENGINEER IN SOCIETY ASSIGNMENT ON THE ONGOING ALFA BELGORE PROJECT

ALFA BELGORE IN AFE BABALOLA UNIVERSITY ADO-EKITI IS UNDERGOING A RENOVATION

SCOPE OF WORK

TASK 1

*Site work*

1. Ensure that all of the erosion control, storm water monitoring, EPA requirements and miscellaneous environmental requirements are included. Dust control, mud control, truck washes, etc.
2. Traffic control is very important, especially if there are street utility obligations.
3. Sidewalk permits / specifically identify responsibility both on the site and financially
4. Street opening permits / specifically identify responsibility both on the site and financially
5. Blasting permits and vibration monitoring
6. Special inspection and monitoring requirements for the specific items within this scope of work.
7. Compaction inspection services / selection of Engineering firm as well as financial obligations
8. Street and City bonding requirements for signage, traffic signals, landscaping, etc.
9. Special blasting or underpinning insurance requirements. Monitoring of these issues
10. Permitted techniques for existing utility excavation, such as hydro excavation requirements.
11. Special engineering requirements for blasting or underpinning.
12. Pile requirements and submittals
13. Pile installation, field inspection reporting
14. Responsibility for foundation as-built / this could be the concrete trade's responsibility.
15. As – built responsibility for utilities, etc.
16. Call before you dig responsibility CBYD
17. LEED material and submittals
18. Temporary winter protection
19. Site maintenance, frost removal, mud removal, snow removal
20. Concrete access such as ramps, etc. for concrete placements
21. Site access for all trades, haul roads, etc.

## TASK 2

### *Demolition*

1. Coordination with mechanical, sprinkler and electrical
2. Safety issues / schedule of demolition
3. Removal of material / dumpster coordination
4. Hazardous material coordination
5. Environmental hazards / dust and asbestos
6. Shoring responsibilities / coordinate with site work, mason, concrete
7. Overtime requirements / demolition when other trades not on site

## TASK 3

### *Concrete*

1. Design mix obligations / reports / submittals / approvals
2. Reinforcing bar obligations / shop drawings / erection drawings
3. Formwork documents / erection drawings
4. Specialty concrete / high strength / admixtures
5. Proper stripping of formwork, with obligation for surface consistency and coloration

## TASK 4

### *Masonry*

1. Mortar, grout submittals
2. Block, brick, precast submittals
3. Any specialty usage of contractors such as “ Spec Mix “
4. Construction and expansion joint layout
5. Earthquake reinforcing requirements.
6. Grout requirements
7. Specialty requirements for scaffold, tower cranes, movable scaffolds, etc.
8. Mockup requirements
9. Sample requirements
10. LEED requirements

## TASK 5

### *Carpentry*

1. Material certifications, fire ratings, etc.
2. Pressure treated materials / understanding of requirements
3. Fasteners / in many cases, this trade will exclude the fasteners / I recommend inclusion
4. Onsite material protection upon delivery
5. Distribution of material on the jobsite.
6. Coordination, window, door, all other trades.
7. Sheathing identification, project name, etc.
8. Building wrap specialty
9. Special inspection for framing, etc.
10. Installation specifics; doors, windows, etc.
11. AWC requirements / American Wood Council or other agency requirements

## TASK 6

## *Interior Finishes*

1. Mock up requirements
2. Subsurface responsibility
3. Protection of finished surfaces / need to identify the responsibility / coordinate with schedule
4. Cleaning and sealing of the finishes / when in the construction process
5. Waxing or special sealer applications required by the manufacturer
6. Coordination with other trades due to ventilation requirements or special safety considerations (example, the spraying of intumescent paint will produce vapors or fumes that need to be coordinated with other trades) this type of coordination must be identified within the scopes of work.
7. LEED requirements
8. Paint coordination with mechanical and electrical ( example, painting of gas-lines)

## TASK 7

### *Mechanical*

1. Operating manuals
2. Site review and educational meeting for maintenance employees
3. Temperature controls / in many cases, the temperature controls are not picked up due to a miscommunication between the mechanical contractors and the electrical contractor
4. Motor starters / coordinate with electrical trade
5. Fuses / coordinate with electrical trade
6. Replacement filters, screens, belts, etc.
7. As – built responsibilities
8. LEED responsibilities
9. Pipe and ductwork identification

## TASK 8

### *Sprinkler*

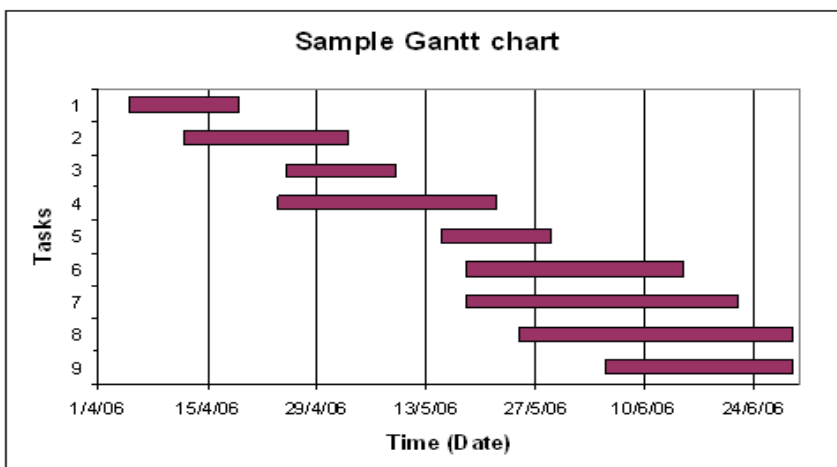
1. Design requirements / drawings
2. Coordination with mechanical, electrical and structure
3. Construction protection / fire barrels / extinguishers / identify responsibility
4. Coordinate with interior finishes for escutcheon plates
5. Fire pump / capacity and volume analysis
6. Coordination with Water Company / identify responsibilities
7. Certification and testing
8. Fire Department coordination and final inspection / identify responsibilities
9. Special systems such as Ansell systems
10. As-built requirements

## TASK 9

### *Electrical*

1. Temporary lighting and power requirements
2. Specialized power requirements for specific trades, such as spray fireproofing
3. Temperature controls / coordinate with mechanical requirements
4. Motor starters / coordinate with mechanical requirements
5. Fuses / coordinate with mechanical
6. Lamp responsibilities
7. Data and low voltage responsibilities
8. LEED responsibilities
9. Site review and educational meeting for maintenance employees
10. Panel schedules / proper installation and presentation

## GRANTT CHART



## LIST OF HUMAN RESOURCES NEEDED

HR managers have to be able to identify and [document project](#) roles and responsibilities, and develop a [plan](#) describing the end-to-end processes that will be required on a [project](#) (or series of [projects](#)) in order to determine its [human resource](#) requirements.

HRM typically involves the following [core](#) activities:

- Role analysis.
- Role [specification](#).
- Workforce [planning](#).
- Recruitment and selection of temporary and permanent staff as required...
- Training and [development](#).
- Skills and Talent
- [Compensation](#) (remuneration).
- Legal issues.
- Managing [employee](#) payroll, benefits and [compensation](#).
- Communicating with [employees](#).
- Resolving [disputes](#).
- Evaluating [performance](#).
- Managing [employee](#) relations.
- Ensuring [equal opportunities](#).
- Making sure staff [facilities](#) are suitable and well-maintained.

## PROJECT TEAM INVOLVED IN THIS PROJECT

Lead Consultant; Civil Engineers( project manager)

Civil, Mechanical, Structural, Chemical, Electrical Engineers, Technicians, builders etc.

## THE CONSTRUCTION SITE WAS SECURED

In order to reduce the risk to the **construction site** you **need** to increase the risk to the potential criminal. ... Deterrence – there **are** many ways to deter a criminal. Whereas an open, unprotected **site** looks welcoming to a potential criminal, a **site** with fences, locks, CCTV and security guards **will** discourage them. In the sense that students are in the school premises the safety of the student is to be ensured.

**BILL OF ENGINEERING MEASUREMENT AND EVALUATION (BEME)**

DESCRIPTION	QUANTITY	UNIT COST(₦)	TOTAL COST (₦)
Bags of cement	1000	75,000	75,000,000
Truck of sand	20	50,000	10,000,000
Truck of gravel	15	60,000	900,000
Roofing sheet	150	1500	225,000
Window	25	100,000	2,500,000
Light bulb	50	16,000	8,000,000
Wire	35	5,000	175,000
Water pipe	40	30,000	1,200,000
Water closet	30	45,000	1,350,000
Sink	30	24,000	720,000
Water Bore hole	3	1,500,000	45,000,000
Tiles	2200	13,000	28,600,000
Bucket of Paint	150	50,000	7,500,000
Total Estimated Cost			189,270,000
Miscellaneous(10%)			18,927,000
Cousultancy fee(15%)			28,390,500
Site preparation And clearing(5%)			9,463,500
Transportation(12%)			227,124,000
Profit(20%)			37,854,000

**PREPARATION OF PAYMENT SCHEDULE**

PROJECT TEAM	MONTHLY PAYMENT
30% of estimated cost of Mobilization	<b>1,350,000</b>
30% of estimated cost	<b>1,350,000</b>
Final payment 40% of total estimated cost at completion	<b>1,800,000</b>
50% of total estimated cost at completion	<b>2,250,000</b>
30% of total estimated cost	<b>1,350,000</b>
10% of total estimated cost for 6 months	<b>450,000</b>

**Overall payment = ₦4,500,000**

**7. Definition;**

- What is 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 the site.

- **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. ... A **defects liability period** is usually a **period** of around six or 12 months but it can vary depending on the contract used.

- **Who is a Lead Consultant?**

**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.

- **Project Life Cycle**

**Construction Project Life Cycle: An Overview.** Every large **construction project** has a **life cycle** which can be compared to a biological **life cycle** where activities begin gradually and build rapidly as the **project** commences to final deliverables. When a **project** reaches its final days, activities taper off and slow down.

- **Environmental Impact Assessment**

**Environmental impact assessment (EIA)** is the process of evaluating the **environmental** consequences of a plan, policy, programme or any other project prior to the execution of the proposed action; it is the primary instrument for development planning and decision-making.

**PRESENTED BY : JOHN-UGWU NNEOMA FAVOUR**

**COMPUTER ENGINEERING**

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