ENG 284

ASALEM ALABO JOSHUA
18/ENG06/007
MECHANICAL ENGINEERING

Assignment

1) Scope Of Work

The Scope of works (SOW) is sometimes described as statement of work, is a very general, and sometimes ambiguous term refering to a general description of the works that is expected to be performed under a particular contract.

1) Review of old plan and Design.

Firstly, review of the old design and plan must be done

2) New Design and Planning If Needed:

If the review of the old design and planning needs changes, the new design and plan will be needed.

3) Get Approval from Government bodies / Design bodies in charge:

Apply for approval of your project design from Governing bodies.

4) Evacuation, site clearing and removal of valuable items.

Evacuate the site, and remove valuable items like fans, air conditioners, speakers etc.

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5) Demolition/Dismantling and Preparing:
Demolition of the building takes place.

6) New foundation (if needed):
If the old foundation is not suitable for the new design, a new foundation is needed

7) Concrete/structural Works:
Erecting of walls and other structural works will be done

8) Waterproofing System provisions:
Roofing comes next after erecting the building and other waterproofing system will be installed.

9) Electrical and Plumbing Works:
Wiring and insertion of pipes is then put into the building

10) Plastering Works/Painting (exterior & interior)
Plaster the walls and the whole building

10) Installation of Doors, Windows, Metal works
Doors and windows will be installed

12) Tiling and Marble Works and Ceiling Work
13) Sanitary Works/landscaping and beautification
14) Installation of air conditioners and commissioning of building

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S/N	ACTIVITY	DURATION (Days)
1	Review of old Design	2
2	New Design And Planning	3
3	Project Approval	5
4	Evacuation, Site clearing	3
5	Demolition	5
6	New Foundation (If Needed)	5
7	Concrete/Structural Works	14
8	Roofing	7
9	Electrical & Plumbing works	7
10	Plastering works/Painting	14
11	Doors/Windows Installation	7
12	Tiling and Marble Works	5
13	Landscaping and Sanitary Works	5
14	Fans/AC, Building Commissioning	6

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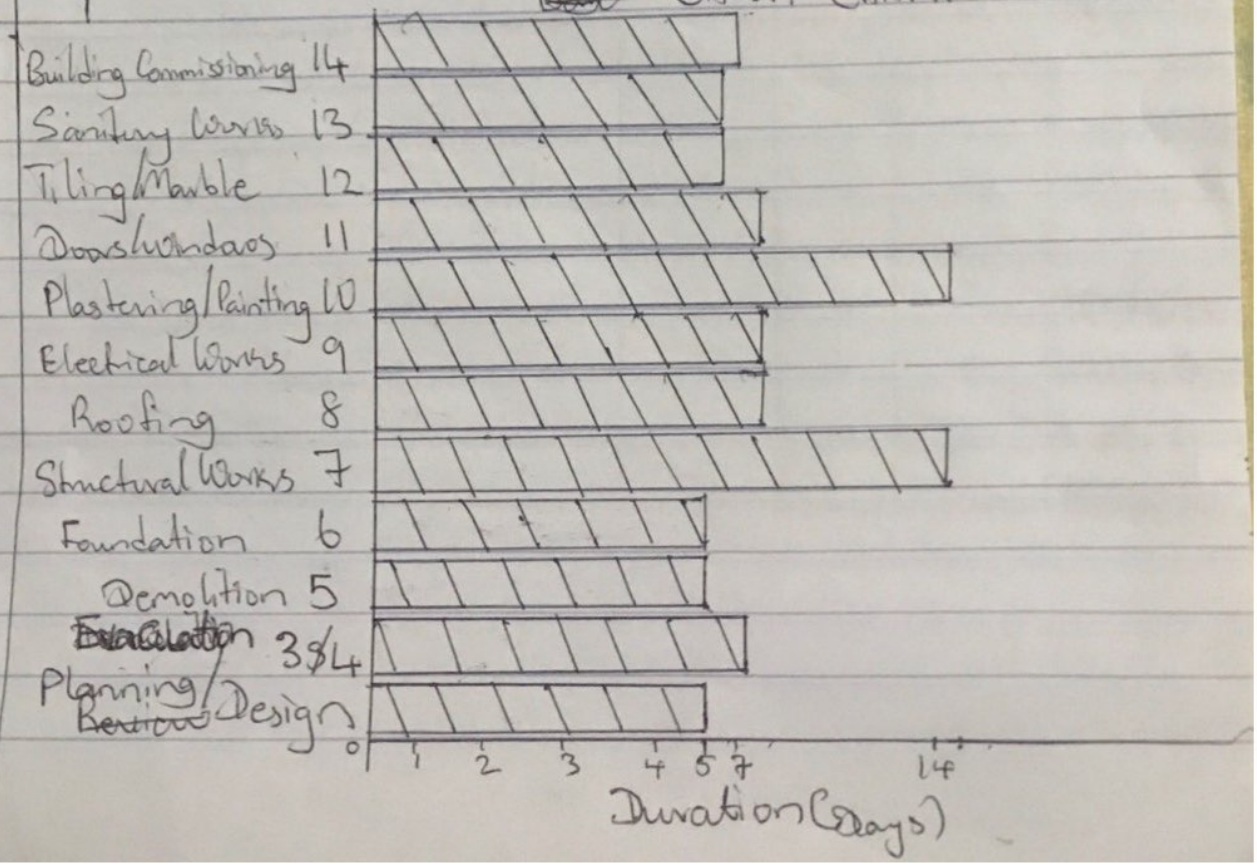

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3. A lot of professionals will be needed in the rehabilitation of alfa Belgore Hall. Some which are highly trained while some with little level of formal education

LEAD CONSULTANT → Civil Engineer (registered & trained)

a) Client
b) Architect (registered and trained)
c) Land Surveyor
d) Project Manager
e) Project Engineer
f) Site Engineer
g) Site Supervisor (registered architect, civil engineer)
h) Structural Engineer
i) Electrical Engineer
j) Mechanical Engineer
k) Civil Engineer
l) Plumber (trained)
m) Quantity Surveyor
n) Professional Carpenter
o) Labour
p) Craftsmen/tilers
q) Painters
r) fitters
s) Security
t) Accommodation Stores
u) Light & Water
v) Project Sign post including the name of project
w) Contract etc.

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4) Why is the site always secured?

Building and Construction sites are often natural targets for thieves as they generally contain valuable high plant, material and equipment. This can be accessible by criminals if the site is not secured. The site is secured to avoid three types of threats to Construction sites:

a) - Threats to property and assets. → Theft
b) - Threats to operations → Vandalism
c) - Threats to life → Terrorism

a) If the site is not secured, workers/people go in and out of the site, so valuable items might get missing.

b) If the site is not secured, it can lead to destruction of materials (e.g student protest).

c) Nobody knows what will happen to a student/person passing by the construction site; A zinc, blocks or hard materials may fall from any angle and hit the individual, leading to injury/death. So the site is always secured.

So therefore, we secure a site to avoid the risk of theft, vandalism ~~(and Terrorism)~~ of valuable items) and Terrorism. This can be done by restricting movement into the site, setting up of CCTV systems, Provision of storehouse for valuable items, lightening the site, use of barriers and the use of security guards.

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BEMF

Budget of 1 Million Naira (₦1,000,000)

S/N	Items	Specification	Qty	Unit cost ₦	Estimated cost ₦
1	Cement	–	200 bags	375	75,000
2	Gravels	5 tons	2	15000	30,000
3	Sand	50 tons	3	10000	30,000
4	Labour	–	–	–	15,000
5	Wood/Planks	–	500	20	10,000
6	Bricks	–	500	20	10,000
7	Roof zinces	–	200	50	10,000
8	Bolts & Nuts	–	500	20	10,000
9	Roofing Metals	–	200	50	10,000
10	Glass	–	10	1000	10,000
11	Ceramic	–	20	500	10,000
12	Transportation to the	–	–	–	120,000
13	site	–			
14	Stainless steel/Irons	–	100	1000	100,000
15	Galvanized Iron Sheet	–	50	1000	50,000
16	Landscaping/beautification	–	–	–	10,000
17	Site clearing and	–	–	–	50,000
	Sanitary Works	–	–	–	
18	Consultancy Fee	–	–	–	150,000
19	Miscellaneous	–	–	–	100000
	Profit	–	–	–	200,000
	Total	–	–	–	1000,000

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Payment Schedule

6) A budget of One Million Naira (₦1,000,000) has been budgeted as the fee that will be given to the Contractor for the project activities.

S/N	Amount of works Completed	Price (₦)
1	At the Start of the project	272,000
2	At 50% Completion	272,000
3	At Completion and Handover	364,000
4	Defect Liability Period	92,000
	Total,	1000,000

7) BEME : Bill of Engineering Measurement and Evaluation (BEME) also referred to as "Bill", is a tool used before, during and to assess and value the cost of construction work.

DEFECT LIABILITY PERIOD: It 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 works of the consultant team and is the main point of contact for communication between the client and the consultant team, except for significant design issues where the lead designer may become the main point of contact.

PROJECT LIFE CYCLE: refers to the series of ~~death~~ events that took place in the project making.

ENVIRONMENTAL IMPACT ASSESSMENT: Is the assessment of the environmental consequences of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action

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