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**A TECHNICAL REPORT ON**

**STUDENT INDUSTRIAL WORK EXPERENCE**

**SCHEME (S.I.W.E.S)**

UNDERTAKEN

AT

KWARA STATE TOWN PLANNING ILORIN

BY

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**ND/14/QTS/FT/081**

DEPARTMENT OF QUANTITY SURVEYING

INSTITUTE OF ENVIRONMENTAL SCIENCE

KWARA STATE POLYTECHNIC, ILORIN

INSTITUTION BASED SUPERVISOR

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**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF ORDINARY NATIONAL DIPLOMA (OND) IN QUANTITY SURVEYING¸KWARA STATE POLYTECHNICS**

**SIWES TECHNICAL REPORT**

**KWARA STATE**

**TOWN PLANINNG**

**DEDICATION**

This report is dedicated foremost to god almighty for his favor, mercy and grace upon my life especially during my 4 month siwes programme at Kwara state town planning, Ilorin.

 I would also like to dedicate it to my parents and siblings for their love and support and everyone else that contributed towards making my siwes training fun and successful one.

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**CERTIFICATON**

This is to certify that **Emavwodua Bright Akpeuwe** of matric number **ND/14/QTS/FT/081** compiled this report based on his fifteen weeks of student industrial working experience scheme **(S.I.W.E.S)** carried out at Kwara state town planning, Ilorin.

**Name of Student Signature & Date**

**ND/14/QTS/FT/081**

**EMAVWODUA BRIGHT AKPEUWE**

**Name of Industry Based Supervisor Signature & Date**

**Name of Academic Supervisor Signature & Date**

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**ACKNOWLEDGEMENT**

My profound gratitude to almighty god, the giver and takers of lives for keeping me alive and also to my parent for their support and care toward the completion those work ,I pray you live long to eat the fruit of your labour also to all my friend for their support.

 My appreciation also goes to my director Kwara state town planning and development to serve and study in the ministry.

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**EMAVWODUA BRIGHT AKPEUWE**

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**CHAPTER 1**

**1.0 INTRODUCTION TO THE TRAINING PROGRAM**

A. PURPOSE OF TRAINING

The students industrial work experience scheme (SIWES) was initiated in 1973 by the industrial training fund (ITF).

This was to update practical knowledge of students in the universities, polytechnics and colleges of technology. it was aimed at bridging the gap between the theoretical knowledge acquired in classes and technical knowledge in the industrial by providing students with opportunities to apply their education knowledge in real work situations.

Over the years, Siwes has contributed immensely to building the common pool of technical and allied skills available to the Nigeria economy which are needed for the nation industrial development.

Furthermore, the place and relevance of Siwes is underscored by the fact that the scheme contributes to improving the quality of technical skills generally available in the pool from which employers’ source technical manpower.

It also gives students the opportunity to blend theoretical knowledge acquired in the classroom with practical hands on application of knowledge required to perform work in the industry, also it prepares students for employment and makes the transition from school to the world of work easier after graduation.

**AIMS AND OBJECTIVES OF STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (S.I.W.E.S)**

Siwes provides avenue for student to acquire industrial skills and experience in their course of study, this is few objectives of Siwes,

1. Provision of avenue for students in the Nigerian universities to gain industrial skills and experience in their course of study.
2. To expose students to work methods and techniques in handling equipment and machinery that may not be available in the universities.
3. To prepare students for work situation they are likely to meet after graduation.
4. To provide students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between university work and actual practice.
5. To enlist and strengthen employers involvement in entire educational process of preparing university graduates for employment.

B. COMPANY PROFILE **(KWARA STATE TOWN PLANNING AND DEVELOPMENT AUTHORITY)**

Company’s profile

The Kwara state town planning and development authority (KWSTPDA) was established by the edict no 7 of 1984 and legal notice no 2 of 1985with the responsibility for promoting, coordinating and securing the physical and environment improvement of the state.

The authority is required to administer the provision of the town and country planning law cap 130 of northern Nigeria.

The executive governor of the state has the apex power in this organization and he has the final approval to form policies and programmes of the authority and it also has a board of director who formulates the principles and guidelines for the authority programmes and policies by the executive governor.

C.OBJECTIVE AND VARIOUS DEPARTMENTS IN TOWN PLANNING

Department in Kwara state town planning and development include: development control, schemes, physical planning research and statistics, personnel management, works, finance and supply health department.

**FUNCTIONS PERFORMED BY VARIOUS DEPARTMENTS**

1. **DEVELOPMENT CONTROL DEPARTMENT:** this department is in charge of issuing of approved building plans, fencing, renovation or development permits on state lands with a view to initiating necessary action contain or control such patterns. It investigates all petitions and complaints on physical development in the state.

It also collaborate with Kwara state environmental protection agency on assessment of environmental impact assessment report (EIAR) before granting planning approval and also control of outdoor advertisement on all state lands and roads.

1. **SCHEME DEPARTMENT:** the department is in charge of preparation of new residential schemes in various parts of Kwara state. The preparation of these schemes improved the orderly development and secures the environmental improvement of the Kwara state.

It also organized the land use pattern in the area evolved adequate linkages within the scheme area and with adjacent properties and community.

1. **PHYSICAL PLANNING AND RESEARCH STATISTICS:** The department is in charge of collation, organization and storage of data and records on approved development plans.

It is in charge of database operations in urban and regional planning including housing, tariffs, transportation, urbanization, waste management, and population. It prepares and submits the annual progress report on the operations of the national physical plans as it affects Kwara state.

1. **PERSONNEL MANAGEMENT DEPARTMENT:** the department is in charge of providing the necessary human and material resources required to enable the authority functions efficiently and effectively.

It coordinates the activities of other department and help to train and formulate manpower policies and take detailed studies of financial incentive programmes and finally the preparation of authority annual budget lies on the department in conjunction with finance division of the authority.

1. **FINANCE AND SUPPLY DEPARTMENT:** The department is in charge of internal funding of the authority. It is the responsibilities of this department to ensure that all revenue accruable to the authority are collected as well as proper custody of this money and control on expenditure. It ensures that staff salaries and other allowances on the staff are paid as at when due.

Finally the store units under the department ensures proper custody of store items and documents and also advise the authority from time to time and documents and also advise the authority from time to time on the stock of warehouse and need of the establishment.

1. **WORKS DEPARTMENT**: The department helps the authority to preserve places of architectural and historical and interest and beauty. The department help the authority to prepare architectural and engineering design in readiness for any project embark upon by the authority. It also prepare bill of quantities for a projects in the authorities.

It is the duties of the department to cross check all buildings plans submitted to the authority for approval to ensure that buildings regulations are in conformity.

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**CHAPTER 2**

**2.0 THE TRAINING PROGRAM (THEORETICAL ASPECT)**

A). A QUANTITY SURVEYOR (tools and duties of quantity surveyor).

**The Quantity Surveyor**

The quantity surveyor is essentially an expert on construction cost and construction contracts whose prime task is to ensure that the project is kept within budget and that the client gets value for money. Although the quantity surveyor is employed by the client and is part of the architect’s team, he must have a close relationship with the contractor during construction. He must ensure that in his valuations of payments due to the contractor, he remains impartial to both the client and the contractor and so produce harmony in his role as project accountant.

**Tools used by a Quantity Surveyor**

1. Interim valuation.
2. Preparation of labour and market schedule.
3. Tendering valuation.

**Duties of quantity surveyors**

The duties of a quantity surveyors is miscellaneous because he/she works with some professionals involve in construction project and buildings which include engineer, land surveyors, project manager, structural engineer, architect e.t.c and a quantity surveyor also works with semi skilled labourers like carpenter, iron muter, aluminum workers e.t.c.

These are few duties of a quantity surveyor:

**1. Preliminary Cost Advice**

The quantity surveyor gives practical advice on:

* The likely cost of the scheme – however complicated or unusual it may be.
* The comparative costs of alternative layouts, materials, components and methods of construction.
* The likely duration of project.
* The likely cost of future maintenance and operating costs.

**2. Building maintenance management**

Building maintenance management involves planning, programming, controlling and costing of maintenance and repair work.

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**3. Construction management**

Construction management uses latest management techniques and other applications of

programming, network analysis, risk analysis, cash flow forecasting, budgeting and other control mechanisms.

**4. Valuation of construction work**

The quantity surveyor prepares interim valuations, values variations and prepares financial statements during construction. He will also settle the final accounts at project completion. He may also prepare statements of expenditure for tax or accounting purposes and assess the project’s replacement value for insurance purposes.

**5. Bill of Quantities**

Competitive tendering remains a common basis for selection of contractor and bills of quantities are fundamental to the process. Bills translate the drawings into a document listing in detail all the component parts required for a project so that each contractor can calculate tender prices on exactly the same basis as his competitors.

**6. Contractual Methods**

The quantity surveyor can advise on the best type of tendering and the best form of contract that will best suit a specific project. The quantity surveyor prepares the documents for obtaining the tenders and arranging the contract.

**7. Cost Planning**

Cost planning is a specialist technique used by quantity surveyor’s, which aims to help all members of the design team to arrive jointly at practical and efficient designs for the project and to keep within the budget. Once a realistic estimate is set from the cost plan, constant monitoring reduces the risk of overspending by noting problem areas at an early stage and applying prompt corrective action.

**8. Arbitration**

This is a formal process for settling disputes

**Different Duties of Quantity Surveyors at Pre-Contract and Post – Contract Stage**

|  |  |
| --- | --- |
| **Pre-Contract** | **Post – Contract Stage** |
| 1. Gives preliminary cost advice | He prepares interim valuations |
| 2. Prepares cost plans | Values variations |
| 3. Advises on contractual methods | He also prepares financial statements that keep the client informed as to the runningcost of the project |
| 4. Prepares bills of quantities and other tender documents | Evaluates all financial claims made by the contractor who is allowed to be present atsuch times so that agreement is ensured and disputes are avoided |

B).FOUNDATION (different types of foundation and factors affecting choice of foundation.)

Foundation

 Foundation is the lowest part of a structure which provides a base for the super- structure provides, foundation is the lowest or first structure of any building construction work such as (house, bridge, dams) e.t.c. capable of carrying the loads of the structure which could be either imposed or superimposed including dead weight of the structure and transmitting it to the soil.

 The primary function a well – constructed foundation is to transmit safely and distribute both dead and live loads from the super structure through the substructure to the bearing capacity of the soil, foundation should transmit the load in such a way that differential or partial settlement is minimized.

Loadings

There are three main types of load:

1 **Dead loads** are the static or constant weight of the structure made up from the walls, floors, roof, etc.

2 **Live loads** (also known as **imposed loads**) such as furniture, goods and people, are movable. In addition there are variable loads caused by the weather, such as snow and rain.

3 **Wind loads** can be positive or negative. They are not **dead** or **imposed** and therefore require specific consideration

**PURPOSE OF FOUNDATIONS**:

* Transfer the building load to the ground.
* Anchor building against wind and seismic load.
* Isolate building from frost heaving.
* Isolate building from expansive soils.
* Holds building up from moisture.
* Provide living spaces (basement, storage).
* Houses mechanical systems.

**Foundation Types**:

**Spread Footings:**

* Used for most buildings where the loads are light and / or there are strong shallow soils.
* At columns there are single spot square pads where bearing walls have an elongation form. These are almost always reinforced.
* These footing deliver the load directly to the supporting soils.
* Area of spread footing is obtained by dividing the applied force by the soils safe bearing capacity (f=P/A).
* Generally suitable for low rise buildings (1-4 Stories).
* Requires firm soil conditions that are capable of supporting the building on the area of the spread footings.
* When needed footings at columns can be connected together with grade beams to provide more lateral stability in earthquakes.
* These are most widely used because they are most economical.
* Depth of footings should be below the top soil, and frost line, on compacted fill or firm native soil.

**Drilled Piers or Caissons**:

* For expansive soils with low to medium loads, or high loads with rock not too far down, drilled caissons (piers) and grade beams can be used.
* The caissons might be straight or belled out at bottom to spread the load.
* The grade beam is designed to span across the piers and transfer the loads over to a column foundation.

**Piles:**

* for expansive soils or soils that are compressive with heavy loads where deep soils can not take the building load and where soil of better capacity if found deep below.
* There are two types of piles.
	1. Friction piles – used where there is no reasonable bearing stratum and they rely on resistance from skin of pile against the soil.
	2. End bearing – which transfer directly to soil of good bearing capacity.
		+ The bearing capacity of the piles depends on the structural strength of the pile itself or the strength of the soil, whichever is less.

**Mat Foundations:**

* Reinforced concrete raft or mats can be used for small light load buildings on very weak or expansive soils such as clays.
* They are often post tensioned concrete.
* They allow the building to float on or in the soil like a raft.
* Can be used for buildings that are 10-20 stories tall where it provides resistance against overturning.
* Can be used where soil requires such a large bearing area and the footing might be spread to the extent that it becomes more economical to pour one large slab (thick), more economical – less forms.
* It is used in lieu of driving piles because can be less expensive and less obtrusive (i.e. less impact on surrounding areas).
* Usually used over expansive clays, silts to let foundation settle without great differences.

**Factors affecting choice of foundation**

These are factors affecting the choice of foundation:

1. Nature of soil
2. Total load on the building
3. The amount of settlement produced by the loading

**1.** **Nature and bearing capacity of soil**: the nature and bearing capacity of the subsoil varies with different types of soil, note, since different soils has different soil texture, properties and bearing capacity, this implies that different types of foundation can be used for different soils.

**2. The total load on the building:** the total load on a building is made up of dead loads, live loads and wind loads.

The total load on building determines the choice of foundation; pile foundation is uses for building bridges which are subjected to heavy load either imposed or super imposed loads.

**3. The amount of settlement produced by loading:** soil is compressible t varying degrees, as loads are been applied to foundation of the soil, beneath the foundation will be compressed, the water and air in the voids between the soil particle will squeeze out and the foundation will settle.

**Factors that causes failure of foundation**

 These are few causes of failure of a building foundation,

1. Unequal settlement of the sub – soil
2. Unequal settlement of masonry
3. Action of atmosphere
4. Lateral escape of the soil below the foundation
5. Horizontal movement of the soil adjoining the structure
6. Lateral pressure tending overturns of structure.
7. Shrinkage due to withdrawal of moisture from the soil below the foundation.



**Slurry wall**

**Pile foundations**

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**CHAPTER 3**

**3.0 MARKET SURVEY**

A). MARKET SURVEYING AND IT RELEVANCE TO PREPARATION OF BILL OF QUANTITY.

Market surveying is a practice where by the quantity surveyor or the contractor goes to the market frequently to know and check the price variation of building materials over time.

Market surveying helps in preparation of bill of quantity and preparation of schedule, it also very important to carryout market survey in new environment before preparation of bill of quantity and schedule because location affects the cost of building materials.

IMPORTANCE OF MARKET SURVEYING

1. Frequent and effective market survey helps in easy preparation of bill of quantities.
2. It helps the quantity surveyor to know the variation of price building materials at different areas.
3. It helps in estimating the financial cost of building projects.

B. FACTORS AFFECTING PRICE OF BUILDING MATERIALS.

These are few factors that can alter the price of building materials for building construction at different:

1. Transportation: this is a major factor that influences the price of any building material. The cost of imported building materials is always different from the cost of that same building material if they are produced locally due to the cost of transportation.

Figure 2: a table showing price variation of the cost of block in Lagos and Kwara state.

|  |  |  |  |
| --- | --- | --- | --- |
| Lagos state | Price (N)  | Kwara state | Price (N)  |
| 1) 6 inch blocks (150mm) |  180 | 1) 6 inch blocks (150mm) | 150 |
| 2) 9inch blocks (225mm) | 300 | 2) 9inch blocks (225mm) | 250 |

C) DETAILS OF A MARKET SURVEY ON BUILDING MATERIALS CARRIED OUT IN KWARA STATE.

Figure3: a table showing the market survey of building materials at Kwara state

|  |
| --- |
| **BUILDING MATERIAL: ROOFING MATERIAL** |
| Names of roofing materials | Dimension | Price (N) |
| 1. Adex pan
 |  | N 1000 per bundle |
| 1. 6ft handbrand
 |  | N 8,000 per bundle |
| 1. 6ft coloured
 |  | N 2,500 per bundle |
| 1. 6ft coloured lento
 |  | N 12,500 per bundle |
| 1. 6ft coloured deep gutter
 |  | N 13,000 per bundle |
| 1. 6ft coloured embrose
 |  | N 15,000 per bundle |
| **BUILDING MATERIAL: WINDOW MATERIALS** |
| Frames | dimension | Price (N) |
|  | 8 blades | N 750 per pair |
| 6 blades | N 600per pair |
| 4 blades | N 500 per pair |
| 2 feets | N 400 per pair |
|  | 4 mm | N 100 per pair |
|  | Door edge 5m | N 150 per pair |
|  | 2$^{1}/\_{2}$ feets | N 130 per pair |
|  | 5mm | N 250 per pair |
| **BUILDING MATERIAL: NAILS** |
| 1. Different type of nail
 | Dimension | Price (N) |
| 1. Adex nail
 |  | N 350 per |
| 1. washer
 |  | N 500 |
| 1. roof sheet (big)
 |  | N 800 |
| 1. roof sheet (small)
 |  | N 350 |

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CHAPTER 4

4.0 FIELDWORK & CALCULATION

A.**SETTING OUT**

 **(**Method of setting out and different equipment used for setting out.)

 This is the transfer of information the building drawing to the ground with high degree of accuracy. When the site clearance is completed the settings out of the building drawing (Plan) work begin.

The first tasked in setting out a building is to establish a base line from which the whole of the building can be set out.

**Setting Out Equipment**

Before any setting out work commences, the equipment should be carefully checked for accuracy, There is a variety of equipment used for setting out, ranging from simple timber items to highly technical optical equipment. It is important however that all items are in good condition and give accurate readings

The range of setting out equipment includes:

* Measuring tapes.
* Spirit levels and straightedge.
* Optical levels, optical squares and theodolites (for setting out angles).
* Laser levels.
* Builder’s square.
* Profile boards, ranging lines and pegs.
* Hammers, nails and saw.
* Measuring Tapes

All tapes used should be manufactured to the current European Standards.

**Steel tapes**

Steel tapes are used for maximum accuracy when setting out. Modern tapes are epoxy

coated or nylon coated for longer life. Tapes are graduated in metres and millimetres and

can be read to the nearest millimetre.

Steel tapes are available in a variety of lengths ranging from 3m to 100m, the 5, 20 and 30

metre tapes are probably the most useful when setting out housing, whilst the 100 metre

tape would be more suitable on large scale works.

**Optical Levels, Optical Squares and Theodolites Used for Setting**

**Out Angles**

When levels have to be transferred over a long distance, the method of straightedge and

level can be very time consuming and rather inaccurate.

A more accurate method is to use a setting out instrument called an optical level or

theodolite. This type of instrument makes use of a system of mirrors that can be aimed at a leveling staff.

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**The Builder’s Square**

Most buildings have square corners, i.e. corners set at 90 ̊ or at a right angle.

A timber building square can be constructed to check and maintain 90 ̊ corners.

The builder’s square is laid to the previously fi xed front line, and the second line is placed to

the square to produce a right angle.

Builder’s squares can be constructed of 75mm x 25mm timbers, half-lap jointed at the

Corner to form a 90 ̊ angle with a diagonal brace, tenoned or dovetailed into side lengths.

This type of construction will keep the square accurate

**Spirit Levels**

There are various types of spirit level available and they are made in a variety of sizes.A spirit level consists of a wood or metal body in which one, two or three leveling bulbs are encased. These levelling bulbs are transparent glass or plastic tubes which contain a coloured liquid.

Use of spirit levels

Spirit levels are used to check whether lines or points of reference are horizontal or plumb.

When used for setting out purposes, the level is used in conjunction with a wooden straightedge.

**Line level**

Pocket or line levels are also useful. A line level is hung from a taught line strung between two points. The line level is used to check if the line is horizontal.

**Profile le Boards**

Timber profiles are wooden boards held in place by wooden pegs. Timber pegs and cross pieces is required when erecting profiles at each corner of a rectangular building. Straight profiles require two pegs and one cross piece. When setting out using pegs and ranging lines, the pegs or the lines can be knocked or moved accidentally during everyday use.

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b) **MEASUREMENT OF BUILDING WORKS**

The Bill of Quantities (BOQ) is defined as a list of brief descriptions and estimated quantities. The quantities are defined as estimated because they are subject to measurement and are not expected to be totally accurate due to the unknown factors which occur in civil engineering work. The objective of preparing the Bill of Quantities is

to assist estimators to produce an accurate tender efficiently and to assist the post contract administration to be carried out in an efficient and cost-effective manner. It should be noted that the quality of the drawings plays a major part in achieving theses aims by enabling the taker-off to produce an accurate bill and also by allowing the estimator to make sound engineering judgments on methods of working.

Figure 2.1shows a sample of a bill of quantities.



c) **TAKING OFF**

This implies reading off dimensions form drawings and setting them down in a specific order on special paper known as dimension paper and inserting an appropriate description.

**Standard Dimension Paper**

1

1

2

2

3

3

4

4

On the left-hand side is a narrow binding margin. The remainder of the sheet is divided into two identical halves each containing three narrow columns and a wider one; the timesing column, the dimension column, the squaring column and the description column respectively. The columns are used as follows

1. **Timesing column:** is used for multiplying (timesing) the dimensions when necessary, each multiplying factor followed by an oblique stroke. A factor followed by a dot indicates addition instead of multiplication.

3.45

7.59

0.15

2.08

4.44

0.15

4

2

12

1. **Dimension column** is used for recording the dimensions in metres and centimetres.Each linear dimension is underlined.

7.59

Length

Linear

A pair of dimensions, one above the other indicates an area (a superficial item).

7.59

Length

 Area

3.46

Width

A group of three dimensions indicates a volume ( a cubic item)A number (without a decimal point)

7.59

Length

 Cubic

3.46

Width

Dept

0.15

Note the order of entering dimensions is strictly:

1. Length

2. Width

3. Depth/height

Item indicates an item of cost for which a quantity cannot be calculated. A sum of money is usually estimated and allowed for in the bills.

Allow for bringing to site

and removing from site

all plant required for this

work section

Item

 Item

1. **Squaring column:** the resulting areas and volumes inserted in the timesing and dimension columns are subsequently calculated and entered into the squaring column opposite their respective dimensions.

3.45

7.59

0.15

2.08

4.44

0.15

4

2

12

15.71

4.16

1. **Description column:** This wide column is for entering descriptions of the measured work.

Hardcore filling to make

up levels under floors,

average thickness not

exceeding 250mm

3.45

7.59

0.15

2.08

4.44

0.15

4

2

12

15.71

4.16

1. **Waste column:** This is an imaginary column occupying the right had side of the description columns in which the taker-off inserts any preliminary calculations (waste) which may be necessary in order to arrive at his dimensions. All preliminary calculations must be shown in waste. They need to be set down accurately and carefully so they can be checked. They should be written either above or below the description not level with it to avoid confusion.nearest 10mm before being transferred to the dimension column:
2. **Descriptions**

The first line of each description should start at the same level as its first dimension. Standard or common abbreviations are allowed in taking off but descriptions must be written in full in BOQs.Descriptions must be concise, brief and free from grammatical errors. Terms used must comply with current technical usage and an estimator must be able to read, understand and price it quickly and accurately.

The following points should be noted:

Descriptions should not be broken at the bottom of the page or column to continue overleaf

Do not write ‘ditto’at the top of a column as this has no meaning

Instead, repeat the first phrase in the description followed by “… as before described” or “abd”,

15.67

0.68

0.23

7.89

0.68

0.23

13.99

0.45

0.15

Plain in-situ

Conc (1:3:6) abd

&

Ddt

Backfill exc.

matl. Abd

&

Add

Remove excvtd

matl. from site

Deductions

Each item to be deducted requires the description to start with the word Deduct or Ddt (underlined).

A description must follow the word Ddt. It should not be written on its own. The next positive

Description should be preceded with the word Add (underlined) in order to emphasize the change from deductions to additions.

Bracketing

A bracket should be used wherever:

(a) More than one dimension applies to a description

(b) More than on description applies to a dimension

The bracket is written in the description column just next to the squaring column

Niling

In order to delete, cancelling of dimensions is not allowed. Instead, the word “NIL” is written in the squaring column opposite the offending dimension or dimensions. Arrows are usually used to denote the extent of the deletion

32.89

0.68

0.23

15.67

0.68

0.23

7.89

0.68

0.23

13.99

0.45

0.15

25.54

0.45

0.15

NIL

**Symbols and Abbreviations**

During the process of “taking-off” or measurement words entered in the description column are abbreviated to shorten descriptions, save space and also save time. The symbols an abbreviations range from those in general use to those that are specifically used by quantity surveyors

|  |  |
| --- | --- |
| Dpc | Damp proof course |
| Fdn | Foundation |
| Fwk | Formwork |
| g.l | Ground level |
| Hwd | Hardwood |
| Conc | Concrete |
| Ditto/do | Same as above |
| Col | Column |
| Ddt | Deduct |
| c/c | Centres |
| Blk | Block work |
| Reinfd | reinforced |
| Sprd | Spread |
| Wdw | Window |
| Blkwk | blockwork |

**TAKING OFF LIST**

Taking off list varies for different kinds of building and construction project, i.e the taking off list for a building with column with quite different from a building without column as well as building with staircase and sometimes the type of foundations used also determine what items would be included and calculated for in the taking of list.

The taking off list of any building is divided into:

1. Substructural
2. Super structural
3. **Substructural:** The substructure of a building is defined as the structural work below ground level used to support the structure above. Some items to be calculate under sub-structural works includes: column base, trench excavation, site clearance pit excavation surface treatment etc.

***A complete substructural works take off list for a building with columns***

1. Preambles
2. Plants
3. Site clearances
4. Top soil excavation
5. Topsoil disposal
6. Pit excavation
7. Allowance for column pit
8. Trench excavation
9. Leveling and compacting
10. Surface treatment
11. Earthwork support
12. Backfilling
13. Filling to make up level(laterite and hardcore filling)
14. Block wall in foundation
15. Concrete in foundation
16. Oversite concrete
17. Water proofing (dpc and dpm)
18. Concrete in blinding
19. Concrete in column base
20. Concrete in foundation
21. Concrete in column
22. Reinforcement in column base
23. Reinforcement in columns
24. BRC wire mesh
25. Formwork to edges of column
26. Formwork to sides
27. Formwork to edges of the bed
28. Plastering
29. Protection
30. Finishing

**2. Super structural works:** The superstructure in turn is defined as the structural work above ground level and it also includes the roof works

***A complete super structural works take off list for a building with columns***

1. Concrete in column
2. Reinforcement in column
3. Formwork in column
4. Wall plates
5. Tie beam
6. Rafter
7. Struct
8. noggin
9. Fascial board
10. King post

|  |  |  |
| --- | --- | --- |
| NO | ITEM NAME | DETAILS |
| 1 | Plants  | Plants are mechanical and electrical moving earth machine used on site and it is a preliminary item. |
| 2 | Site clearance | Site clearance involves the removal of walls, hedges, ditches, and trees, other vegetation and services from the site and it measured in M2 |
| 3 | Topsoil disposal | Top soil disposal involves the carting away of excavated materials off and on site and it is measured in M3 |
| 4 | Top soil excavation | It involves the removal of the uppermost and vegetative part of soil which is not suitable for fdn footing and it is measured in M2 |
| 5  | Earthwork support | it a temporary support given to the soil which is unstable not to make it fall bank and it is measured in M2 |
| 6 | Surface treatment | It involves the used of anti termite solution and other chemical solution to kill soil micro organisms and it is measured in M3 |
| 7 | Trench excavation | A trench is a type of excavation or depression in the ground that is generally deeper than it is wide (as opposed to a wider gully or ditch), and narrow compared to its length (as opposed to a simple hole and it is measured in M3 |
| 8 | Formwork | Formwork is the term given to either temporary or permanent molds into which concrete or similar materials are poured and it is measured in M2 |
| 9 | Backfilling | It is measured in M3 |
| 10 | Leveling and compacting | It involves making the soil stable and well compacted and it is measured in M2 |
| 11 | Damp proof course | Damp proof course is always on the wall cavity and it is measured in M2 |
| 12 | Damp proof membrane | It is usually laid on the hardcore and it is measured in M2 |
| 13  | Foundation footing | A concrete support under a foundation that rests in solid ground and is wider than the structure supported and it is measured in M3  |
| 14  | Oversite concrete | Oversite concrete is the mass concrete that you pour to cover the entire length and breadth of a building on the ground floor to serve as a source of additional support to the structural stability of a building especially storey buildings and it is measured in M3 |
| 15 | Reinforcement in columns |  |
| 16 | Plastering  |  |
| 17 | Wall plates |  |
| 18 | Tie beam |  |
| 19 | Rafter |  |
| 20 | Fascial board |  |

**e) DIFFERENT IMAGES ON SITE**



1. Reinforcement in column base
2. Reinforcement in column
3. Form work for lintel
4. Form work for column
5. Reinforcement made for floor slab

**SIWES TECHNICAL REPORT**

**KWARA STATE**

**TOWN PLANINNG**

**CHAPTER 5**

**5.0 END OF SIWES PROGRAM**

SUMMARY OBSERVATIONS CONTRIBUTIONS RELEVANCE OF EXPERIENCE GAINED TO CLASSROOM KNOWLEDGE AND CONCLUSION

A SUMMARY

The report stated the objective of SIWES which is to provide an avenue for students in institution of higher learning to acquire industrial skills and experience in their approved course of study and also to prepare students for the industrial works situation which they are likely to meet after graduation.
 The report also stated the description of the establishment of attachment and the work carried out during the attachment period.
More so, it also stated the problems encountered during the programme and also gave suggestion for improvement of the scheme

B.OBSERVATIONS

 As a student my first observation was the cognition of the difference between the school environment and the labour market, as it is a different ball game entirely.

I also observed that safety was paramount and it could easy be seen as the primary goal of every staff of the company and not only the technicians. As safety equipments and instructions were always put in place or made available at strategic locations within the company. From the workshop to the service desks to the customer care centres to the offices to the receptions.

Figure 5.0: Caution Sign

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Neatness was also a key attribute as even though the job is usually seen as a dirty job, technicians were always admonished to be as neat as possible in their dressing and in carrying out their duties.

C. CONTRIBUTIONS

My contributions were shown in my work done at different site patrols at kwara state town planning and services at the field while setting out a plan for filling station along kuntu road.

**ND/14/QTS/FT/081**

**EMAVWODUA BRIGHT AKPEUWE**

 D.RELEVANCE OF EXPERIENCE GAINED TO CLASSROOM KNOWLEDGE

The relevance of the experience gained can be linked to the following courses;

1. BLD 103 BUILDING CONSTRUCTIONS
2. QUS 102 MEASUREMENT OF CONSTRUCTION WORKS
3. QUS 105 WOOD WORKSHOP PRACTIS
4. QUS 104 PROPERTY OF MASTERIALS
5. SUG111 PRINCIPLE OF SURVEYING

E. RECOMMENDATION

I would like to recommend that allowances should be paid to students during their programme just like NYSC and not after. This would help them a great deal to handle some financial problems during their training course.

 F. CONCLUSION

My 4 months industrial attachment as quantity surveyor at kwara state town planning was a huge success and a great time of acquisition of knowledge and skills. Through my training I was able to appreciate my chosen course of study even more, because I had the opportunity to blend the theoretical knowledge acquired from school with the practical hands-on application of knowledge gained here to perform very important tasks that contributed in a way to my productivity in the company. My training here has given me a broader view to the importance and relevance of quantity surveying in the immediate society and the world as a whole, as I now look forward to impacting it positively after graduation. I have also been able to improve my communication and presentation skills and thereby developed good relationship with my fellow colleagues at work. I have also been able to appreciate the connection between my course of study and other disciplines in producing a successful result.

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**EMAVWODUA BRIGHT AKPEUWE**