TECHNICAL REPORT ON THE STUDENTS' INDUSTRIAL WORK EXPERIWENCE SCHEME (SIWES)

HELD AT

LEPTONS MULTI-CONCEPT LIMITED

No3, osa Emokpae close off asba and dantatte road by market square kado, Abuja.

BY

ABDULLATEEF IBRAHIM DAMILARE

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SUBMITTED TO:

THE DEPARTMENT OF QUANTITY SURVEY

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DEDICATION

I dedicate this report to Lord for His Unlimited Grace, Consistent Love, Immeasurable Faithfulness, and for sparing my life throughout the period of my SIWES programme.

Secondly, I dedicate it to my parents **Mr & Mrs ABDULLATEEF** for their undiminished support and unquantifiable assistance throughout the whole exercise and beyond.

ACKNOWLEDGEMENTS

First and foremost, my deepest acknowledgement goes to God Almighty for His overwhelming love upon my life throughout the Scheme.

I appreciate my parents Mr. and Mrs ABDULLATEEF and friends for their constant help and support.

I also appreciate all staff members of Leptons Multi-concept Limited, especially my supervisor QS. Balkisu mama sulaiman who gave out of his tight schedules to attend to me.

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CHAPTER ONE

INTRODUCTION

1.0 BRIEF HISTORY OF SIWES

The Student Industrial Work Experience Scheme (SIWES), also known as Industrial Training is a compulsory Skills Training Programme designed to expose and prepare students of Nigerian Universities, Polytechnics, Colleges of Education, Colleges of Technology and Colleges of Agriculture, for the industrial work situation they're likely to meet after graduation. The scheme also affords students the opportunity of familiarizing and exposing themselves to the needed experience in handling equipment and machinery that are usually not available in their institution. The scheme also affords students the opportunity of familiarizing and exposing themselves to the needed experience in handling equipment and machinery that are usually not available in their institution. The duration of SIWES is four months in Polytechnics at the end of NDI, four months in College of Education at the end of NCE II and six months in the Universities at the end of 300, 400 or 500 level depending on the course of study and departments preference.

The government's decree No. 47 of 8th Oct; 1971 as amended in 1990, highlighted the capacity building of human resources in industry, commerce and government through training and retraining of workers in order to effectively provide the much needed high quality goods and services in a dynamic economy as ours (Olusegun A.T. Mafe, 2009). This decree led to the establishment of Industrial Training Fund (ITF) in 1973/1974.
The growing concern among our industrialists that graduates of our institutions of Higher learning, lack adequate practical background studies preparatory for employment in industries, led to the formation of students Industrial Work Experience Scheme (SIWES) by ITF in 1993/1994(Olusegun A.T. Mafe, 2009).

Before the establishment of the scheme, there was a growing concern among industrialists, that graduates of institutions of higher learning lacked adequate practical background studies preparatory for employment in industries. Thus, employers were of the opinion that the theoretical education in higher institutions wasn't responsive to the needs of the employers of labour. SIWES introduction, initiation and design was done by the Industrial Training Fund (I.T.F) in 1993 to acquaint students with the skills of handling employer's equipment and

machinery. The Industrial Training Fund (I.T.F) solely funded the scheme during its formative years. However, due to financial constraints, the fund withdrew from the Scheme in 1978.

The Federal Government, having noticed the significance of the skills training handed the management of the scheme to both the National Universities Commission (N.U.C) and the National Board for Technical Education (N.B.T.E in 1979. The management and implementation of the scheme was however reverted to the I.T.F by the Federal Government in November, 1984 and the. Administration was effectively taken over by the Industrial Training Fund in July 1985, with the funding solely borne by the Federal Government. ITF has as one of its key functions; to work as cooperative entity with industry and commerce where students in institutions of higher learning can undertake mid-career work experience attachment in industries which are compatible with student's area of study.

1.1 AIMS AND OBJECTIVES OF SIWES

The objectives of SIWES among others includes:

i. SIWES provide an avenue for students in higher institutions to acquire industrial skills and experience in their approved course of study.
ii. It Prepare students for possible industrial works situation which they may meet when they graduate.
iii. It makes the transition from school to the world of work easier and enhance students contact for future job opportunities.
iv. Provide students with an opportunity to apply their knowledge in real work situation thereby bridging the gap between theory (classroom) and practice (industry).
v. Enlist and strengthen employers' involvement in the entire educational process and prepare students for absorption into the field after graduation.
vi. Expose students to work methods and techniques in handling equipment and machinery which may not be available in their institutions.

1.2 BENEFITS OF SIWES TO STUDENTS

It affords the student an opportunity to learn how to function in multi-disciplinary teams.

i. Students can now effectively communicate within the working environment.
ii. It provides the opportunity for students to understand professional and ethical responsibilities more.
iii. The scheme provides an opportunity for the industries to evaluate prospective employees and give healthy feedback to the institutions.
iv. It gives opportunity for the student to make better mastery of the theoretical knowledge acquired in classrooms using practical knowledge acquired in the industry.
v. It enhances the student' attitudes to work like commitment, dedication, punctuality, politeness, effective communication and such like.

1.3 BODIES INVOLVED IN THE MANAGEMENT OF SIWES

The bodies involved are: Federal Government, Industrial Training Fund (ITF), Other Supervising Agencies are: National University Commission (NUC), National Board for Technical Education (NBTE) & National Council for Colleges of Education (NCCE), Institutions of learning (say, UBITS Department in the case of University of Benin)

i. The functions of these agencies above include among others to:
ii. Ensure that the scheme is adequately funded
iii. Establish SIWES and accredit SIWES unit in the approved institutions.
iv. Formulate policies and guideline for participating bodies and institutions as well as appointing SIWES coordinators and supporting staff.
v. Supervise students at their places of attachment and sign their log-book and ITF Forms.
vi. Vet and process student's log-books and forward same to ITF Area office Ensure payment of Allowances for the students and supervisors.

1.4 QUANTITY SURVEYING: A BRIEF OVERVIEW

Quantity Surveying is a branch of the built environment that deals with the management of the financial and contractual side of both building and civil engineering projects like roads, bridges, steel structures and such like from the initiation stage through the completion and to the post completion stage. A Quantity Surveyor seeks to minimise the costs of a project and maximise value for a proposed project (including value for money), whilst keeping the required quality, project budget and time uncompromised.

1.5 DUTIES OF A QUANTITY SURVEYOR

According to the Royal Institute of British Architects (RIBA) plan of work the roles of a Quantity Surveyor include:

In feasibility Stage

- Preliminary cost advice
- Project feasibility study
- Cost planning and budget establishment

In Design Stage

- Budget cost control
- Advice on contractual method and tendering procedures

In Tender stage

- Advice on sections of contractors
- Preparation of Expenditure statements for tax and accounting
- Technical auditing

In construction stage

- Contract documents
- Project cost control
- Interim payments
- Evaluation of life cycle

Others

- Assessment of building replacement value for insurance
- Expert evidence in arbitration and mediation
- Represent the client in design and build projects
- Evaluation of project life cycle

CHAPTER TWO

OVERVIEW OF ORGANISATION OF ATTACHMENT

2.0 ABOUT THE FIRM

Founded in 2013 and headquartered in Abuja, Leptons Multiconcept Ltd has grown into a leading name in construction and consulting in Nigeria. Specializing in civil works, architectural planning, building construction, and facility management, we are driven by a commitment to innovation, quality, and sustainability. Backed by a team of seasoned professionals—including architects, engineers, builders, and surveyors—our projects embody precision, creativity, and the highest industry standards. With over a decade of expertise in affordable and luxury housing, Leptons continues to redefine the real estate landscape by integrating cutting-edge technology, such as EDGE-compliant building systems, to deliver exceptional value and comfort.

Leptons Multi-concept Limited is a forward-thinking real estate development company dedicated to delivering comfort, value, and optimization in every project. We specialize in creating innovative properties tailored to modern lifestyles, ensuring quality, affordability, and sustainable living for our clients. At Leptons, we don't just build homes—we craft experiences.

2.1 SERVICES PROVIDED BY THE FIRM

Leptons Multi-concept Limited offers multi-disciplinary services covering a wide spectrum of studies from project appraisal stage up to commissioning and through the maintenance stage. The scope of services rendered by the firm includes the following:

- Construction and maintenance of Buildings, Landscaping and other Engineering infrastructures
- Feasibility and Viability Studies
- Pre-investment Studies/Appraisals
- Cost Modeling
- Preliminary and Final Designs (Architectural and Engineering)
- Estimating and Quantity Surveying
- Construction Management
- Construction Supervision
- Turn-Key Projects Negotiation and Supervision
- Direct Labour Projects
- Arbitration

- Expert Witness
- Fire Insurance Assessment
- Dilapidations

2.2 OFFICE EQIPMENT FOR ARCHITECTURAL/ENGINEERING/QUANTITY SURVEYING SERVICES

Some of the office equipment at the disposal of the Firm are:

- 5 Nos Pentium 4.0 Computers
- 3 Dell Pentium M Laptop
- 1 No Hp Deskjet 1280 Coloured Printer
- 1 No Hp Deskjet 1220 Coloured Printer
- Binding Machine
- Elepaq CE 2500 Generating Set

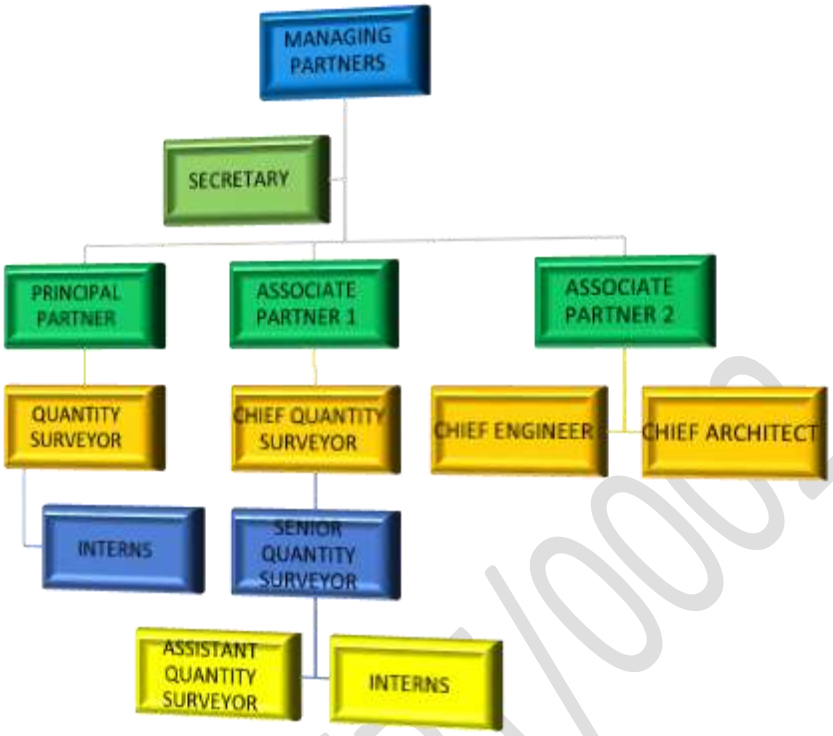
Software in use include:

- Microsoft Excel 2010
- Microsoft Word 2010
- Microsoft Office 2010
- Microsoft Office Project 2010
- Autocad 2016
- Adobe Pagemaker 6.5
- Corel Draws 5,10 & 11
- Archi CAD 9,11 & 19
- Photoshop C23

The firm also has tools and equipment for Construction Purpose and is in arrangement with Messrs MADONA Organisation Ltd. on hiring of equipment that it does not own.

2.4 THE STRUCTURE OF THE ORGANISATION

The organizational structure of the company Leptons Multi-concept Limited is headed by three Managing Partners; the principal partner and two other associate partners as shown in the organogram below. One secretary handles correspondence for the partners.



CHAPTER THREE

3.0 TOOLS AND EQUIPMENT USE WITH THEIR FUNCTION

3.1 Total Station

A total station is an electronic/optical instrument used in modern surveying and building construction that uses electronic transit theodolite in connection with electronic distance meter (EDM).It is also integrated with microprocessor, electronic data collector and storage system.

The instrument is used to measure sloping distance of object to the instrument, horizontal angles and vertical angles. This Microprocessor unit enables for computation of data collected to further calculate the horizontal distance, coordinates of a point and reduced level of point.

Data collected from total station can be downloaded into computer/laptops for further processing of information.

Total stations are mainly used by land surveyors and civil engineers, either to record features as in topographic surveying or to set oust features (such as roads, houses or boundaries). They are also used by archaeologists to record excavations and by police, crime scene investigators, private accident Reconstructionist and insurance companies to take measurements of scenes.

3.2 Auto Level/Dumpy Level

A dumpy level, builder's auto level, levelling instrument, or automatic level is an optical instrument used to establish or verify points in the same horizontal plane. It is used in surveying

and building with a vertical staff to measure height differences and to transfer, measure and set heights.

3.3 Theodolite

Basic surveying instrument of unknown origin but going back to the 16th-century English mathematician Leonard Digges; it is used to measure horizontal and vertical angles. In its modern form it consists of a telescope mounted to swivel both horizontally and vertically. **A theodolite** is a precision instrument for measuring angles in the horizontal and vertical planes. Theodolites are used mainly for surveying applications, and have been adapted for specialized purposes in fields like metrology and rocket launch technology. A modern theodolite consists of a movable telescope mounted within two perpendicular axes the horizontal or trunnion axis, and the vertical axis. When the telescope is pointed at a target object, the angle of each of these axes can be measured with great precision.

3.4 Prism Pole

A prism pole can be used to measure the elevation of a specific ground point by using a sight level, which is important if you want to get accurate results. You can find a survey pole in a variety of materials — from metal and fiberglass to a variety of composites.

3.5 Bipods

Find a collection of aluminium survey bipods, carbon fiber bipods, quick-release bipods, and more. Easy level adjustment for better precision & accuracy.

3.6 Measuring Wheel

The measuring wheel – also known as a surveyor's wheel, click wheel, perambulator, odometer, way wiser or trundle wheel – is a tool used to measure distances. Measuring wheels have a counting mechanism that counts the number of rotations and uses the circumference of the wheel to calculate the distance covered.

CHAPTER FOUR

ACTIVITIES DURING THE SIWES PROGRAM

4.0 OVERVIEW OF MY EXPERIENCE

The Student Industrial Work Experience Scheme (SIWES) definitely achieved its purpose during these few months of my attachment with Leptons Multi-concept Limited. It has enlightened my knowledge of quantity profession more beyond the confinement of my notebooks and classroom. During the period of my training at Leptons Multi-concept Limited, I have been exposed to various practices in quantity surveying in the area of consultancy under the supervision of QS Balkisu mama suleiman. I took part in activities such as contract Bills of Quantities preparation, program of work preparation, site visits, market survey and such like.

Generally, the experiences gained could be summarized under the following headings:

4.1 MEASUREMENTS (QUANTITIES TAKE OFF)

In the aspect of measurements, I was made to study complex building drawings and then taking off for the drawings. Upon completion, the measurements were checked and corrections were made by my supervisor. Subsequently, I did taking off of drawings of proposed and ongoing projects.

4.2 MARKET SURVEY

Market survey is a sales forecasting method which is used to gather information related to products in the market which cannot be collected from the company's internal record. During my training, I was made to fetch current prices of furniture's and electrical appliances so as to generate adequate rates for the preparation of Bills of quantities and material schedule. This enabled me to know more types of Air conditioners, fans and furnitures of local and international standards.

4.3 SITE SUPERVISION

This involves the coordination and direction of onsite work progress in order to attain the specified project standards with respect to time, quality of materials, safety and such likes. During my training, I was able to visit some construction sites in states where physical facilities were examined for the purpose of renovation, completion, interim valuation and at times alteration.

4.4 PREPATATION OF BILLS OF QUANTITIES

The Bills of quantities provide project specific measured quantities for work items which are specified in the drawings and specifications of a contract/tender documentations. The BoQ contains three major parts which are preliminaries, measured works and provisional sum. The addition of the sum from these three parts give the contract sum. The contract sum is the anticipated sum for the completion of a project. It is the basis for valuation and variation. During my training, I grounded my knowledge on how to prepare the BoQ using Microsoft Excel.

4.4.1 Preliminaries

These are cost significant items that are not related to any measured work but are crucial for the project execution. It is very difficult to distribute these costs among measured works hence, the reason why it is separated. Preliminaries include;

- Maintenance of the site clean
- Charges for health and safety
- Lighting and power
- Site accommodation

4.4.2 Measured Works

These are works that have been actually measured from the principles of measurements and which will be carried out during the course of the project. The units for their measurements range from linear meter, square meter, cubic meter, tonnes, number and such like. The amount is obtained from the product of quantities of the measured work and the rate (which is born from market prices) with necessary adjustments made to it.

4.4.3 Provisional Sums

This is an allotted sum for a specific work that is not defined enough in details but for which tenders are made to price.

4.5 OFFICE MANAGEMENT

Office management is the administrative process of handling, controlling, managing and maintaining balanced with duties and processes within an establishment which are essential for the actualization of the organization's goals. So far, I have learnt the use of some office equipment in my firm such as photocopier, printer, scanner, perforators and skills such as file sorting, proof-reading techniques, official(contract) correspondence and reception.

4.6 PROGRAMME OF WORK

This may be a non-contractual document serving as a reference point for how work will be carried out. It could also be an obligation imposed on the contractor to deliver certain works in a particular way and within a certain time. It is made up of work elements on one column and the duration for execution on the adjacent column. During my training, I was exposed to the process of preparing a programme of work using the Gantt chart.

4.7 CONTRACT ADMINISTRATION DUTIES

This involves decision making and prompt information exchange during inception, through execution and after the completion of a contract to enhance compliance with basis of the contract and adequate fulfillment of the parties' obligations. During this SIWES I was taught that proper documentation and understanding of contract documents is important not only for the purpose of quality compliance, but also to serve as a tool for detecting ambiguities in design and for legal purposes. The items below are activities relating to contract administration which I engaged in.

4.7.1 Preparation of Interim valuation

When a contractor files in for interim payment, it is necessary that valuation be carried out to ascertain how much is really due to him for the work he has done. Hence, the need for interim valuation. Interim valuation is prequalification for the issuance of the interim payment certificate which then lead to payment to the contractor. It is a detailed breakdown that contains an application for payment of work undertaken since the last valuation.

The manner of payment of interim payment is usually specified in the contract. It can either be by paying an agreed amount at a certain date (or when a milestone is reached) or by measurement of quantity of work done at stages until the completion of the project. When any aspect of the work cannot be easily measured physically on site, a percentage of it will be taken from the BoQ. However, in the case of variation, valuation will be done according to the JCT standard form of contract. These are:

- If the works are similar in character and executed under similar conditions without significant change in quantity to those in the BOQ the rates in the BOQ are used.
- If the work is not similar in character or involves other than additions, omissions, or submissions or if it not reasonable to value it using the rates in the BOQ as basis then a fair valuation is used. A fair valuation as I was made to understand is a rate agreed upon by both the QS and the contractor.
- If there are changes in the conditions and quantity, the valuation is to use the rates in the BOQ as basis.

Generally, interim valuation is summarized as:

Money due for contractor = Gross Valuation – Previously certified Amount.

Gross Valuation = Preliminaries + Work done + Material Onsite + Nominated Subcontractor + Variations + Fluctuations + Claims –Retentions- Amortized advance payment

The determinants of the gross valuation are explained below:

- **Preliminaries**: The sum of items of preliminaries already used as at the time of valuation are added up from the Preliminary Bill of Quantities. The items that are time related are apportioned to the time already spent. We add if any.
- **Work done**: This is the amount of work done by the contractor and can be verified from what is in the BoQ for measured works. This can only be added.
- **Material on and offsite**: I was made to know that the JCT requires the inclusion of material onsite and the ones ordered and paid for(with evidence of payment) by the contractor. Add if any.
- **Nominated Sub contractors**: I was told consideration is also given for works carried out by subcontractors since it is the duty of the contractor to pay them. Addition is made.
- **Variations**: I was made to understand that a change in sum as a result of change in design will be considered as well but this must have the express approval of the designer and must have been agreed by the parties to the contract. Addition is made.
- **Fluctuations**: Cases of fluctuations mostly occur when there is economic crisis or delay in a project. Addition is required.
- **Claims**: A claim may be laid by either parties to the contract when the other party defaults in his part of the contract agreement. The compensation could be in form of money or Extension of Time (EOT). Addition is therefore required.

- **Retention**: Retention is a particular percentage of the contract sum that is held back by the client to ensure that the contractor meets up with the project standards and that there is no defect recorded during the defect liability period. This amounts to a deduction.
- **Amortization of Advance payments:** The advance payment granted to the contractor during the beginning of the project is now deducted from the sum of money due to him.

Other than the interim valuation, I was able to observe the preparation of other contract documents such as, form of tender (articles of agreement and conditions of contract), fee claim and preliminaries. I was also able to represent the firm in the submission of Expression of Interest (EOI) for consultancy services.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

Generally, I have been able to discuss SIWES itself. Its history, purpose, bodies involved in its management and its benefit to the students. Also, we now know what Quantity Surveying is about and how to become a qualified Quantity Surveyor in Nigeria. Above all, the wonderful experiences I gained during the period of my training have all been concisely outlined too including Measurements, Market Survey, Site Supervision, Preparation of BoQ, Office management, Programme of work, Contract Administration, Registration with BPP and NIQS Biennial Conference.

Until now, I have always esteemed measurement as the peak of Quantity Surveying practice, I had little awareness of the professional ethics required in Quantity Surveying and I also did not see must importance on basic attitudes to work especially punctuality. All these and several other fallacies I had in mind about quantity surveying have been carted away by the educative, practical and first-class professional training I received during my Internship at Leptons Multi-concept Limited. Now, I am able to synergize what I have been learning in classroom with what is applicable in the industry.

Although much have been learnt during the period of my training, but majority of my experiences are related to consultancy because I was attached to a consultant firm. Also, the passive nature of the construction market in Abuja unlike Abuja and Lagos affects flow of jobs which causes dormancy at times.

I hope it only gets better with SIWES in department of Quantity Surveying, University of Benin. The limitations in the preceding paragraph can be taken into consideration and possible solutions made for better performance of the SIWES program.

5.2 RECOMENDATIONS

As it has been noted earlier, the one-sided nature of my experience as regards Quantity Surveying in a consultant is a challenge in the sense that few knowledge about construction was gained. Also, the poor market competition in Abuja causes dormancy at times in companies because no or less work is at hand to do. In addition to these, inadequate supervision from the institution is a problem as this may cause some students to take the program less seriously.

It is therefore recommended that students be supervised on regular basis during the training say, monthly. This is to ensure that the students are assessed on the job and to keep track on how the students are improving on the job. I also recommend that the institution create structure whereby students can easily move from one organization to the other without difficulty in situation where the initial organization has less than three departments.