A TECHNICAL REPORT ON STUDENT INDUSTRIAL TRAINING EXPERIENCE SCHEME [SIWES]

UNDERTAKEN AT:

REUBOJ GEOSPATIAL CONSULTING LIMITED is located at

NO.10 IKORITA/OLOSẸ ROAD , ADJACENT OLORUNKUGO HOUSE, IKORITA IFO LOCAL GOVERNMENT OGUN STATE

PRESENTED

By

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ND/23/SGI/FT/0043

SUBMITTED TO THE DEPARTMENT OF SURVEYING AND GEO- INFORMATICS

FACULTY OF ENVIRONMENTAL STUDIES, KWARA STATE POLYTECHNIC. ILORIN KWARA STATE.

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AN ORDINARY NATIONAL DIPLOMA (OND) IN SURVEYING AND GEO- INFORMATICS.

MARCH, 2025

CERTIFICATION

I, **BELLO TAIWO ABOSEDE** with Matric number **ND/23/SGI/FT/0043** hereby certify that the information contained in this SIWES report were obtained as a result of my experiences during my 4 month SIWES programme at **REUBOJ GEOSPATIAL CONSULTING LIMITED** in accordance with survey rule and regulations and departmental instructions. I therefore submit the report as a partial fulfillment of the requirements for the student work experience scheme requirements for KWARA STATE POLYTECHNIC ILORIN, KWARA STATE, student work experience scheme.

_____ _____

DATE

(SIWES SUPERVISOR)

_____ _____

DATE

(SIWES COORDINATOR)

_____ _____

DATE

(HEAD OF DEPARTMENT)

_____

_____

SURV. OJELABI REUBEN **DATE**

DIRECTOR, DIRECTORATE OF

INDUSTRIAL LIAISONS PLACEMENT

DEDICATION

This Siwes report is dedicated to my lovely supporter/guidance

MR & MRS BELLO

ACKNOWLEDGEMENT

Praises and thanks to the Almighty GOD for his showers of blessing throughout my Industrial Training period and for a successful completion. I would like to express my deepest and sincere gratitude to my training supervisor and management of **REUBOJ GEOSPATIAL CONSULTING LIMITED** and other sectional heads in person of **SURV. OJELABI REUBEN** He has given me the opportunity to carry out this Industrial training; providing invaluable guidance throughout the training period. His supervision, vision, sincerity and motivation was deeply inspired me. I am extremely grateful for what he has offered me. I would also like to thank him for his friendship, empathy and great sense of humor.

Nevertheless, my profound acknowledgement will extend to my Head of Department of Surveying and Geo- informatics Kwara State Polytechnic and all other departmental lecturers for the advice, support and correction made to me while in the classroom, during practical and every time I need their assistance. I pray you all continuous to leave in good health and more promotion on your field sir and ma.

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CHAPTER ONE

1.0 INTRODUCTION

This report presents my experiences and achievements during my six-month industrial attachment at **REUBOJ GEOSPATIAL CONSULTING LIMITED** The report provides an overview of the organization, its objectives, and the activities I was involved in during my attachment.

It also highlights the skills and knowledge I acquired during the period, including practical experience with surveying equipment, geospatial software, and project management techniques.

1.1 INCEPTION OF STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME

The Students Industrial Work Experience Scheme (SIWES) is a program that was established in Nigeria to bridge the gap between theoretical knowledge acquired in the classroom and practical skills required in the workplace. SIWES was initiated in Nigeria in 1973 by the federal government as a response to the need for practical exposure of students in higher institutions to real work environments. Its relevance in the education system cannot be over emphasized as it develops the student to become skilled and experience professionalism in the various disciplines. It enables students to appreciate the basic concept involved in their field of study. SIWES, which involves the university

authorities and the industrial sector, runs for 24 weeks for students in the fourth academic year in the universities. The scheme was organized by the federal Government and jointly coordinated by the Industrial Training Fund (ITF) and the Nigerian Universities Commission (NUC). The importance of the training scheme is justified as it is a research field, which enables students to be totally in- depth in finding the working culture, practice and tools in their various areas of specialization.

1.2 OBJECTIVES

The Students' Industrial Work Experience Scheme (SIWES) was created with the goal of fostering and supporting the development of skills in business and industry in order to create a pool of qualified native workers sufficient to meet the demands of the economy. Any industrial organization's most valuable resource depends on the technical proficiency of its workforce to operate and maintain its non- human assets and resources, which is why SIWES is required. According to the program's operational norms and guidelines, students are assigned to a structured environment (private or public), whose operations are related to their course of study. The purpose of this training time is to help students at different levels connect the theory they learn in class to real- world applications. According to the government's education policy,

CHAPTER TWO

2.0 DESCRIPTION OF THE ESTABLISHEMENT OF ATTACHMENT

REOBOJ GEOSPATIAL CONSULTING LIMITED is a private surveying and geospatial services company located in Ogun State The company was established in 2020 with the aim of providing innovative and cutting-edge solutions in surveying, mapping, and geospatial consulting.

The company has a flat organizational structure, with a managing director at the helm. The managing director is supported by a team of experienced surveyors, geospatial analysts, and administrative staff.

Facilities and Equipment

REOBOJ GEOSPATIAL CONSULTING LIMITED has a well-equipped office with state-of-the-art surveying and geospatial equipment, including:

- Total stations
- GPS receivers
- GIS software (ArcGIS, QGIS)
- Surveying software (Autodesk, Carlson)
- Computers and laptops

Services Offered

The company offers a range of services, including:

- Topographic surveys
- Boundary surveys
- GIS mapping
- Geospatial consulting
- Project management

2.1 LOCATION AND BRIEF HISTORY OF ESTABLISHMENT

No 10 IKORITA/OLOSẸ ROAD ADJACENT OLORUNKUGO HOUSE IKORITA IFO LOCAL GOVERNMENT OGUN STATE

Brief History of Establishment

REUBOJ GEOSPATIAL CONSULTING LIMITED was established in 2008 by **SURV. OJELABI REUBEN** a seasoned surveyor with Six (6) years of experience in the industry.

The company started as a small surveying firm providing services to local clients but has since grown to become a leading provider of surveying and geospatial services in Lagos State]. Over the years, the company has built a reputation for delivering high-quality services and has worked on numerous high-profile projects in Industry

REUBOJ GEOSPATIAL CONSULTING LIMITED is a private Survey firm. The company was

established and legal registered under C.A.C corporate commission in the year 2019, the firm name has been in existences since seven year back. And the firm has fully involved in both government and privates survey job both in the state and outside the Lagos State.

The mandate of the ministry is primarily to formulate and implement the policies, programmes and projects of the Federal Government of Nigeria (FGN) with respect to road transport, highway construction and rehabilitation; highways planning and design monitoring and maintenance of federal roads and bridges nationwide.

2.3 OBJECTIVES OF ESTABLISHMENT

The primary objective of establishing **REUBOJ GEOSPATIAL CONSULTING LIMITED** is to provide innovative and cutting-edge surveying and geospatial services to clients in various industries, including:

Infrastructure Development : To support the development of infrastructure projects, such as roads, bridges, and buildings, by providing accurate and reliable surveying and mapping services.

Land Administration: To assist in the management and administration of land resources by providing services such as land surveying, mapping, and GIS analysis.

3. **Environmental Monitoring**: To support environmental monitoring and management

efforts by providing services such as GPS tracking, GIS analysis, and remote sensing.

4. **Professional Development** To provide training and development opportunities for surveying and geospatial professionals, promoting capacity building and skills development in the industry.

aims to become a leading provider of surveying and geospatial services in the region, known for its excellence, innovation, and commitment to delivering high-quality services.

Topographic Surveying

Geographic Information System Analysis

Digital Mapping and Street Guide Mapping

Drone Mapping and Analysis

Hydrographic Surveying

2.5 Departments and Units in the Firm

The following departments/section were operated and function well, they are:-

ii. Managing Director

iii. GIS Section

iv. Admin. Section

v. Finance and Accounting Section

vi. SIWES/IT Student Section

ORGANIZATION STRUCTURE

MANAGING DIRECTOR

↓

GIS SECTIONS

↓

ADMIN SECTION → FINANCIAL ACC.

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SIWES/ IT STUDENTS

CHAPTER THREE

Plotting on AutoCAD

WHAT IS AUTOCAD?

3.1 AUTOCAD is a computer-aided design (CAD) software used for creating, modifying, and analyzing digital models of physical object and environment.

3.2. HISTORY OF AUTOCAD

AUTOCAD was first released in 1982 by Autodesk inc, and has since become one of the most widely used CAD software in various industries.

3.3. TYPES OF AUTOCAD

1. **AUTOCAD (FULL VERSION): The standard, Full featured version of autocad suitable for most user.**
2. **AUTOCAD CIVIL 3D: A specialized version for civil engineers with features for infrastructure design, analysis and simulation.**
3. **AUTOCAD MAP 3D: A version for geographic information systems (GIS) and mapping professionals**
4. **AUTOCAD PLANT 3D: A version for plant design and engineering, with features for 3D plants design and documentation.**
5. **AUTOCAD ARCHITECTURE: A version designed for architecture with features for building design documentation and visualization.**

3.4 BENEFITS OF USING AUTOCAD

1. **Improval accuracy**
2. **Increased productivity**
3. **Enhance collaboration**
4. **Cost-effective**

Plotting on AutoCAD is the process of creating a hard copy of your drawing. This can be done using a plotter or a printer. To plot a drawing on AutoCAD, follow these steps:

1. Open the drawing you want to plot.
2. Click on the Plot button on the toolbar or type Plot in the command line.
3. Select the plotter or printer you want to use from the list of available devices.
4. Choose the paper size and orientation you want to use.
5. Select the plot style you want to use. Plot styles determine how the drawing will be plotted, including the line weights, colors, and other settings.

6. Click on the Plot button to start the plotting process.

Plotting Settings

Before you plot your drawing, you need to set up the plotting settings. These settings determine how the drawing will be plotted. Here are some of the plotting settings you need to consider:

1. Plot scale: This setting determines the scale at which the drawing will be plotted.
2. Plot area: This setting determines which part of the drawing will be plotted.
3. Plot style: This setting determines how the drawing will be plotted, including the line weights, colors, and other settings.
4. Paper size: This setting determines the size of the paper on which the drawing will be plotted.

CHAPTER FOUR

Instrument Settings

Instrument settings refer to the settings that control how the surveying instruments behave. These settings determine how the survey data will be collected and processed. Here are some of the instrument settings you need to consider:

Instrument Settings for Total Station

1. Horizontal angle: This setting determines the horizontal angle of the total station.
2. Vertical angle: This setting determines the vertical angle of the total station.
3. Distance measurement: This setting determines how the total station will measure distances.
4. Prism constant: This setting determines the prism constant of the total station.

Instrument Settings for Leveling

1. Instrument height: This setting determines the height of the leveling instrument.
2. Staff intercept: This setting determines the staff intercept of the leveling instrument.
3. Leveling mode: This setting determines the leveling mode of the leveling instrument.
4. Tilt correction: This setting determines the tilt correction of the leveling instrument.

Setting Up the Total Station

To set up the total station, follow these steps:

1. Place the total station on a firm and level surface.
2. Level the total station using the leveling screws.
3. Set the horizontal angle and vertical angle of the total station.
4. Measure the distance to the prism using the distance measurement setting.

Setting Up the Leveling Instrument

To set up the leveling instrument, follow these steps:

1. Place the leveling instrument on a firm and level surface.
2. Level the leveling instrument using the leveling screws.
3. Set the instrument height and staff intercept of the leveling instrument.
4. Choose the leveling mode and tilt correction of the leveling instrument.

Setting the Instrument on a Tripod

Setting the instrument on a tripod is an essential step in ensuring accurate measurements. Here's a step-by-step guide on how to set the instrument on a tripod:

1. Choose a firm and level surface: Look for a surface that is firm and level. Avoid setting up the tripod on soft or uneven ground, as this can affect the accuracy of the measurements.

2. Extend the tripod legs: Extend the tripod legs to the desired height. Make sure the legs are evenly spaced and the tripod is stable.

3. Level the tripod: Use the leveling screws to level the tripod. Make sure the tripod is perfectly level, as this will affect the accuracy of the measurements.

4. Attach the instrument: Attach the instrument to the tripod using the instrument clamp or adapter. Make sure the instrument is securely attached and will not move during measurements.

5. Level the instrument: Use the leveling screws to level the instrument. Make sure the instrument is perfectly level, as this will affect the accuracy of the measurements.

6. Check the instrument: Check the instrument to make sure it is functioning properly. Make any necessary adjustments to ensure accurate measurements.

Tips for Setting the Instrument on a Tripod

Here are some tips to keep in mind when setting the instrument on a tripod:

1. Use a sturdy tripod: Use a sturdy tripod that can support the weight of the instrument.
2. Choose a level surface: Choose a level surface to set up the tripod.
3. Level the tripod carefully: Level the tripod carefully to ensure accurate measurements.
4. Attach the instrument securely: Attach the instrument securely to the tripod to prevent movement during measurements.
5. Check the instrument regularly: Check the instrument regularly to ensure it is functioning properly.

Common Mistakes to Avoid

Here are some common mistakes to avoid when setting the instrument on a tripod:

1. Setting up the tripod on uneven ground.
2. Failing to level the tripod properly.
3. Attaching the instrument insecurely.
4. Failing to check the instrument regularly.
5. Using a tripod that is not sturdy enough to support the weight of the instrument.

CHAPTER FIVE

PROBLEM ENCOUNTERED

I encountered financial support during the training

5.2 SUGGESTION FOR THE IMPROVEMENT OF THE SCHEME

Based on my experience during the SIWES program, I propose the following suggestions to improve the scheme:

- **Better Supervision and Mentoring**

- Assign experienced supervisors/mentors to guide students throughout the program.

- Regular meetings and feedback sessions to ensure students are meeting program objectives.

- **Enhanced Orientation Program**

- Conduct a comprehensive orientation program for students before the commencement of the SIWES program.

- Provide detailed information on program objectives, expectations, and evaluation criteria.

- **Improved Logistical Support**

- Provide adequate logistical support, including transportation, accommodation, and equipment.

- Ensure that students have access to necessary resources and facilities.

- **Regular Evaluation and Feedback**

- Conduct regular evaluations and feedback sessions to assess student performance.

- Provide constructive feedback to students to improve their performance.

5.3 RECOMMENDATION

There is no doubt that some students during their Industrial Training do not have the opportunity of being exposed or intentional do not attend SIWES PROGRAMED.Those external supervisors should be sent to the various industrial training attachment

areas and centers to find out if the Industrial Training is suitable and functional or even

at times do not see any place of attachment.