A TECHNICAL REPORT ON
STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

HELD AT:

DROYERS CONSTRUCTION LIMITED
NO. 197 Ibrahim Taiwo Road, Ilorin Kwara State

WRITTEN BY

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SUBMITTED TO

DEPARTMENT OF CIVIL ENGINEERING, INSTITUTE OF TECHNOLOGY (I.O.T), KWARA STATE POLYTECHNIC, ILORIN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF NATIONAL DIPLOMA (ND) IN CIVILENGINEERING.

AUGUST –DECEMBER, 2024

DEDICATION

I dedicate this report to Almighty God for his sustaining grace and his protection during my industrial training.

I also thank my parent **Mr.**and **MRS. AKOGWU** for their support hand, love, care, advise, prayer and for their financial support throughout the programme may God bless them. Amen

ACKNOWLEDGMENT

My profound acknowledgment goes to Almighty GOD for is goodness, kindness blessings upon me to have the (SIWES) programme and came out with a repot. Also my special thanks go to my lovely parents Mr. & Mrs. AKOGWU for their support given to me; the LORD Almighty will give unto you everything you ask for Amen.

PREFACE

This book contains the report of all the activities I undergone and the experience I gained during my four month (SIWES) programme which was held at **Droyers Construction Limited.** All the activities and experience gained were in relation with my course of study in Kwara State Polytechnic Institute of technology, Ilorin.

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CHAPTER ONE

1.0 INTRODUCTION

The student industrial work experience scheme (S.I.W.E.S) is a four month program usually commences between August to December, which is setup by the Federal Government for practical improvement of student in engineering, socials sciences and other related courses in order to expose the learners to what they are expected to meet in the professional market after graduation.

In fulfillment of mandatory four month training, I did my Student Industrial Work Experience Scheme (S.I.W.E.S) at EXCEEDING GRACE BUILDING CONSTRUCTION.

1.1 DEFINITION OF STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (S.I.W.E.S)

S.I.W.E.S is an abbreviated word which means Student Industrial Work Experience Scheme. The scheme was established by the Industrial Training Fund (I.T.F) in 1973 to solve the problem of lack of adequate practical skills needed for employment in industries by Nigerian graduates of tertiary or higher institutions. This program mainly focuses on development of the individual student in the field of work and it is based on how the student can relate theory to practical in their course of study.

In addition, it is a decision for students in tertiary institutions to gain an experience in his/her workplace during the period of attachment.

Finally, it is a program setup by NABTEB for the practical improvement of the engineering, social sciences and other related course.

1.2 AIMS AND OBJECTIVES OF S.I.W.E.S

The aims and objectives of Student Industrial Work Experience Scheme (S.I.W.E.S) are outlined as follows:

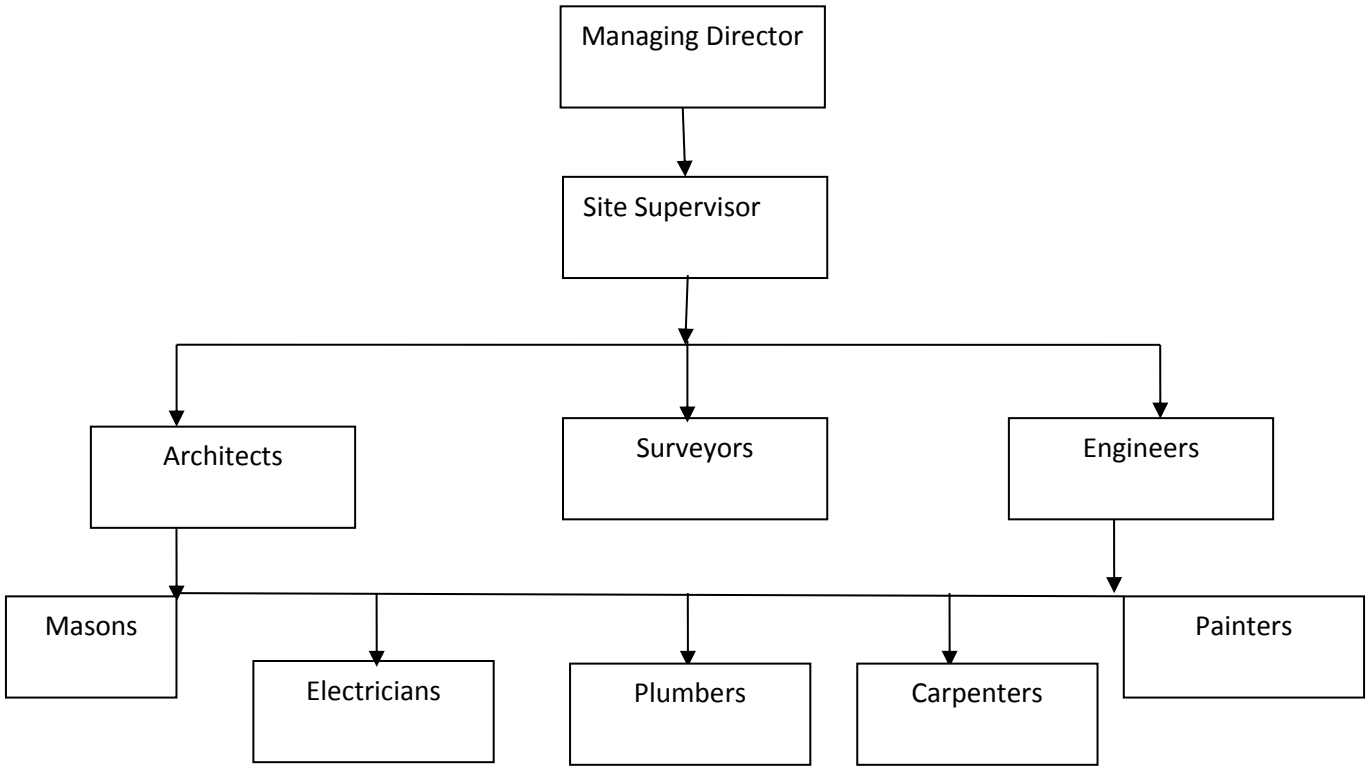
- To install in the students, self-confidence and self-reliability in their fields of operation.
- To expose students to work methods and techniques in handling equipment and machineries that may not be show to them in their various schools.
- To prepare students for their work situation that they are likely to meet after graduation from school.
- To make the students practically oriented on what they were thought in class.
- To enlighten the students about the various aspects of the course of study.
- To expose the students to some safety precautions while working with machines or equipment.

CHAPTER TWO

2.1 Historical Background of the Company

The historical background of the organization which I was attached to my four-month training course (SIWES) the organization name is **Droyers Construction Limited.** And The Company is majorly into Construction located at NO. 197 Ibrahim Taiwo Road, Ilorin Kwara State.

2.2 Organization Chart



2.3 SECTION/UNIT OF THE ORGANIZATION AND THEIR SPECIFIC FUNCTION

The section of the work department in the organization is divide into (six) 6 section namely:

1. Financial section.
2. Administrative section.

3. Secretariat section.
4. Civil engineering section.
5. Architectural engineering section.

2.3.1 Financial Section

This section is in charge of financial aspect of the organization, it issues out money for project execution and audit the income of any executed project and keep the account.

2.3.2 Administrative Section

This section ensures the smooth running of the organization. This section makes use of the administrative set up of the organization and is in good order.

2.3.3 Secretariat Section

This section keeps the necessary records of organization and files them for reference and also issue out letter to the organization

2.3.4 Civil Engineering Section

This section the civil engineer are the one that go to the site and construct the design that the architecture on the ground and are in charge of construction of building, road bridge and supervise the organization project pertaining to civil work. This section is controlled by Engineer B.J BOLAJI.

2.3.5 Architecture Engineering Section

The architecture engineering sections are the aspect of designing.

CHAPTER THREE

3.0 STUDENT SPECIFIC INVOLVEMENT AT THE VARIOUS SECTION/UNIT

The involvement of my training was done mainly with building construction.

I was part of the team that partakes in the BUILDING THREE BEDROOM FLAT on an upper plan floor.

Concrete and Mortar

Concrete: it mean the mixture of granite or grave, sharp sand, cement, and water to get a straight. It is also composite material composed of coarse aggregate bonded together with fluid cement that hardens over time.

Mortar

Mortar: is used to bind different building blocks like bricks, stones. It is made up of sharp sand, cement, and water.

3.1 Substructure and Superstructure

Substructure: is the lower portion of the building which transmits the dead load, live load and other load to the below the sub soil.

Superstructure: is an upward extension of a existing structure above a baseline called ground level in general and it usually sever the purpose of the structure's intended use. It is also underlying or supporting structure.

3.2 Casting of slab ration mixing

Casting of slab ration mixing: Firstly casting involve the mixture of cement, sharp sand, granite or coarse aggregate and water to get a straight that can carry a load and we have some ration which is use in casting.

3.3 FORMULAR FOR CALCULATING CASTING MIXTURE.

1) 1 : 2 : 4
2) 1 : 3 : 6
3) 2 : 4 : 8

Mean of the above ration are:

1) 1 : 2 : 4

   1: Head pan of cement.

   2: Head pan of sharp sand.

   4: Head pan of granite or coarse aggregate.

2) 1 : 3 : 6

   1: Head pan of cement.

   3: Head pan of sharp sand.

   6: Head pan of granite or coarse aggregate.

3) 2 : 4 : 8

   2: Head pan of cement.

   4: Head pan of sharp sand.

8: Head pan of granite or coarse aggregate.

For casting of slab there must be reinforcement before that what is a concrete slab is: a concrete slab is a structural element, which are construct to provide flat, useful surface. It is a horizontal structure component, with top and bottom surfaces parallel or near so.

3.4. Reinforcement for slab

Reinforcement for slab: this is the arrangement of the reinforcement bar prepared by the iron bender in the position of slab. E.g.

1. Decking mat
2. Flat beam or consume beam
3. Security beam
4. Dropping beam etc

The entire above component of reinforcement has their own sizes which are:

1. Decking mat are mostly in 12mm
2. Flat beam or consume beam are in 16mm
3. Security beam are in 16mm
4. Dropping beam are in 20mm

3.5 Casting of slab framework

Casting of slab framework:- is the process of setting panels for the purpose of casting the slab. These supports were fitted in position such that they may remain intact while casting was going on. The panel might be made of wood or iron steel.

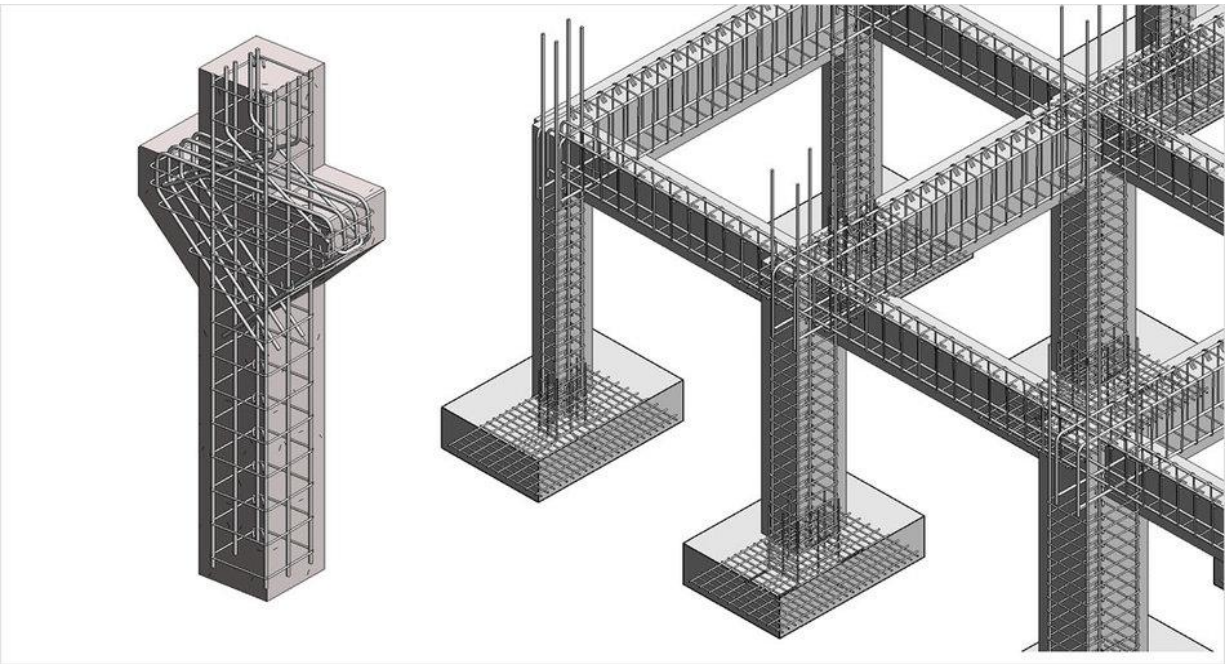
Mixing machine

3.6. Casting for Column and Beam: For casting of a column there should be reinforcement before casting the column.

Firstly what is column and beam?

Column: is a horizontal member who carries the weight of the beams, floors and slab to the foundation.

Reinforcement: reinforcement for a column requires 12mm for the horizontal steel and 8mm or 10mm for the ring with the bending wire if the column is not carry a story building or more.



After the reinforcement then would be a framework which will be at the outer part of the reinforcement to guide the casting of the column.

Beam: is a vertical member of a building that carries the slab, roof, linter level from the beam to the column and from column to the foundation.

Reinforcement: The vertical iron steel will in 12mm and the ring will be in 8mm or 10mm

After the reinforcement then would be a framework which will be at the outer part of the reinforcement to guide the beam when casting.

3.7 Setting Block Layout on a Slab

Setting Block Layout on a Slab: The first action of the builder is to set out all the shape of the building plan on the deck slab. Required tools needed using 3: 4: 5 methods are:

1. Measuring tape
2. Builder square
3. Site square
4. Plumb –line instrument
5. Builder line

3.8 Setting Block Layout on a Deck Slab

Setting Block Layout on a Deck Slab:- firstly there was a mixture of sharp sand, cement, and water to form mortar. After the setting out of the entire angle according to the upper plan of the building, which mean we place some mortar on the area we want to place the block on to make the block to be permanent on the deck slab. After then we stated building up and set out the door and window.

The window setting out of the upper plan was 120mm or 1.2mm which means the size of the window.

The door setting out of the upper plan was 900mm for the size of the door.

Then we move to the lintel level (lintel level mean the horizontal structural beam spanning an opening such as between the upright of the door, window, and which support that wall above).

Reinforcement for lintel, beam or column for upper floor: this is the arrangement of the reinforcement bar prepared by the iron bender in the position of lintel, beam and Column.

Pouring of mixed concrete: this is made with concrete, which is the mixture of cement, sharp sand, granite and water with the mixing ratio 1: 4: 6 and the 450mm thickness.

3.8 Oversite

Oversite: is also known as German floor by the layman, oversite concrete is a mass that you pour to cover the entire length and breadth of a building on the ground floor to sever as a additional support to the structure stability of a building to keep out ground air and moisture (moisture mean water or other liquid diffused in a small quantity as vapour, in a substance or on a surface).

Diagram:

3.9 D P C

D P C: (D P C) mean damp-proof-course. DPC is generally applied at the basement level which restricts the movement of moisture through wall and floor.

CHAPTER FOUR

EXPERIENCED GAINED

In summary, this program has exposed me to some practical aspect in relation to my course of study (Civil Engineering) and I benefitted greatly from the program. What I learnt at various site involves the following

- Civil Engineering construction
- Civil Engineering material management
- Civil Engineering building and highway set up

CHAPTER FIVE

5.0 CONCLUSION

I was absolutely impressed on how they carried out their day-today activities in the organization theywork with time and highly discipline and accommodative. I have gained a lot from the organization relating to my course of study in practical ways.

5.1 Personal Impression Aboutthe Organization

My personal impression about industrial based for four month student industrial working experience scheme (SIWES)

I was impress about the organization towards the acceptance of my (SIWES) letter in their organization and my scheme with them remain bless.

Thanks to you all for your support during my programme.

5.2 Suggestion/Recommendation to the Organization

1. It is recommended that every engineering student must undergo and be enrolled in reading plan design in construction
2. They should try and be given allowances to SIWES student because some people are living far from the company.