A TECHNICAL REPORT

ON

STUDENT INDUSTRIAL WORK EXPERIENCE SHEME (SIWES)

HEAD AT

T & G PARTNERS, T & G AVENUE, OPPOSITE MATRIX FILLING STATION KULENDE, ILORIN, KWARA STATE

BY

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ND/23/ARC/FT/005

SUBMITTED TO: THE DEPARTMENT OF ARCHITECTURAL TECHNOLOGY

INSTITUTE OF ENVIROMENTAL STUDIES

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CERTIFICATION

This is to certify that **ARIYO BLESSING OLUWATIMILEYIN** whose matric number is **ND/23/ARC/FT/005** has completed his four (4) month *SIWES* Program at **T & G PARTNERS**. They have demonstrated a thorough understanding of the training material and have met all the requirements for completion. The work contain here is original and entirely executed by the above-named student in partial fulfillment of the requirement for the award of **NATIONAL DIPLOMA (ND)** in department of **ARCHITECTURAL TECHNOLOGY.**

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SIWES CORDINATOR. DATE

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HEAD OF DEPARTMENT DATE

DEDICATION

To all the individuals who have inspired me throughout my journey, including my mentors, colleagues, and friends. Your guidance, wisdom, and encouragement have helped shape me into the person I am today, I say a big thanks. I hope this my Siwes inspires others to pursue their passions and make a positive impact in the word.

Thank you all and Allah bless you.

ACKNOWLEDGMENT

Thank be to almighty Allah for his blessing, guidance, protection, the courage and the opportunity given to me to the successful completion of my SIWES program, may his protection and blessing continue to be with us (amen).

I would like to extend my deepest gratitude to the company that give me a great opportunity to do my Siwes program at their firm T & G PARTNERS.

I would like to thank my family and friends for their emotional support and encouragement during challenging times

ABSTRACT

Architecture is the art and science of designing buildings and structures that are aesthetically pleasing, functional, and sustainable. It involves the creation of physical environments that meet the needs of users, while also reflecting the cultural, social, and environmental context in which they are built.

Good architecture can enhance the human experience, promote social interaction, and contribute to the well-being of individuals and communities. It can also reflect the values and aspirations of a society and provide a sense of identity and belonging. Furthermore, architecture can play a critical role in addressing some of the world's most pressing challenges, such as climate change, urbanization, and social inequality.

This report gives a detailed account of my industrial work experience during my SIWES program at T & G PARTNERS, which deals with designing building and structures that are aesthetically pleasing, functional and sustainable. This report is based on practical and theory experience gained during the period of my program in the industry.

REPORT OVERVIEW

This report is based on the SIWES program which was undertaken at T & G PARTNERS. It is a full-time practical learning on Architectural Technology (Life and Properties)

The first chapter of the report includes an introduction, the history of the Students Industrial Work Experience Scheme (SIWES), and its goals and objectives.

i. The location, brief history and aims are all included in Chapter two of the study.
ii. The duties done during the program are detailed in Chapter three and four.
iii. Chapter five discusses the training experience.
iv. The summary, conclusions, and suggestions are discussed in Chapter 5, which is the last chapter of the report.

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CHAPTER ONE

1.1 INTRODUCTION TO SIWES

The Students Industrial Work Experience Scheme (SIWES) was established by ITF in 1973 to solve the problem of lack of adequate practical skills preparatory for employment in industries by Nigerian graduates of tertiary institutions. The Scheme exposes students to industry-based skills necessary for a smooth transition from the classroom to the world of work. It affords students of tertiary institutions the opportunity of being familiarized and exposed to the needed experience in handling machinery and equipment which are usually not available in the educational institutions. Participation in SIWES has become a necessary pre-condition for the award of Diploma and Degree certificates in specific disciplines in most institutions of higher learning in the country, in accordance with the education policy of government. The students Industrial Work Experience Scheme (SIWES) is a Skills Training Program designed to expose and prepare students of Universities, Polytechnics/Colleges of Technology/Colleges of Agriculture and Colleges of Education for the Industrial Work situation they are likely to meet after graduation. Before the establishment of the scheme, there was a growing concern among Industrialists that graduates of our Institutions of Higher learning lacked adequate practical background studies preparatory for employment in Industries.

Thus, the employers were of the opinion that the theoretical education going on in higher institutions was not responsive to the needs of the employers of labor. It is against this background that the rationale for initiating and designing the scheme by the Fund during its formative years – 1973/1974 was introduced to acquaint students with the skills of handling employers' equipment and machinery. The ITF solely funded the scheme during its formative years. But as the financial involvement became unbearable to the Fund, it withdrew from the Scheme in 1978. The Federal Government handed over the scheme in 1979 to both the National Universities Commission (NUC) and the National Board for Technical Education (NBTE). Later the Federal Government in November 1984 reverted the management and implementation of the SIWES Program to ITF and it was effectively taken over by the Industrial Training Fund in July 1985 with the funding being solely borne by the Federal Government.

1.2 OBJECTIVES OF SIWES

The following are some of the objectives of SIWES

- SIWES will provide students opportunity to test their interest in a particular career before permanent commitments are made

- SIWES students will develop skills in the application of theory to practical work situation

- SIWES students will develop skills and techniques directly applicable to their career

- SIWES will aid students in adjusting from colleges to full-time employment

- SIWES will provide students the opportunity to develop attitudes conducive to effective interpersonal relationships

- SIWES will reduce Student Dropout

- It exposes students to work methods and techniques in handling equipment and machines that may not be available in educational institution

1.3 BENEFITS TO STUDENTS

The industrial attachment seeks to offer students a practical translation of the theory they have been taught. It has also got individual benefit of linking the University to the industries, hence brightening the employment chances of the students in the University.

Through this attachment, I have generated a good inter personal relationship through my interaction with my supervisors and colleagues. It has also improved my working skills.

CHAPTER TWO

2.1 DESCRIPTION OF THE ESTABLISHMENT OF ATTACHMENT

I was opportune to start my industrial attachment training in the month of August 2024 with T & G PARTNERS. The name of the organization is T & G PARTNERS is located Along jebba road opposite matrix filling station, Ilorin kwara state.

T & G PARTNERS was established on the year of 1978, The firm is compressive of two set of people, the two set of people are from ILORIN, and their name are TEMIM IBRAHIM and ABDULGANIY IDRIS, from there they form there partnership alphabetical to achieve there aim as partnership the word T stand for TEMIM while G stand for GANIY, That's why is been called T & G PARTNERS.

T & G PARTNERS is an architectural firm that is dedicated to design in excellence which integrates function, aesthetics, sustainability and affordability and also ensures every project comes out unique with exquisite designs features. We also carryout structural, mechanical, electrical and quantity survey at the cooperation. Our designs have exceptional attributes where every detail counts. Our Core values Integrity, Timeliness, Fairness, Competence, Openness and Efficiency.

CHAPTER THREE

3.1 ACTUAL WORKDONE

This chapter is basically based on what I experienced and Gained during my industrial training and it is divided into two parts:

3.2 OFFICE EXPERIENCE / SITE EXPERIENCE

OFFICE EXPERIENCE

This part is a summary of lessons *learnt* in the office and on different projects carried out during my SIWES training.

In the office basically, I was able to work on different projects and designs that were sketched by my Supervising Architects and I was also give some kind of theory aspect.

3.3 LETTERING: is the art of creating and arranging letters and words in a visually appealing way. It involves the design, selection, and placement of typography to convey meaning, express emotion, and enhance the aesthetic appeal of a message.

LETTERING CAN BE USED IN VARIOUS CONTEXTS, INCLUDING:

1. Storefront signs, directional signs, and informational signs.

2. Logos, word marks, and typography used to represent a brand or company.

3. Book covers, magazine layouts, and newspaper headlines.

4. Fine art, graphic design, and illustration that feature lettering as a primary element.

TYPES OF LETTERING:

1. HAND LETTERING: Letters and words created by hand using various tools and techniques.

2. DIGITAL LETTERING: Letters and words created using computer software and digital tools.

3. CALLIGRAPHY: Decorative handwriting that emphasizes beautiful letterforms and flourishes.

4. TYPOGRAPHY: The arrangement of type (letters and words) to convey meaning and create a visual hierarchy.

FUNDAMENTAL PRINCIPLES OF LETTERING:

1. The ability to read and understand the text. Lettering should be clear, concise, and easy to read.

2. The relationship between the size and scale of letters and words. Lettering should be proportional to the surrounding context.

3.4 SCALE

Scale refers to the relationship between the size of a building or structure and its surroundings, including the human figure. It involves the proportional relationship between the different elements of a building, such as the size of doors, windows, columns, and other architectural features.

TYPES OF SCALE:

1. Human scale: The relationship between the size of a building and the human figure, emphasizing the importance of creating a sense of comfort and accessibility.

2. Architectural scale: The proportional relationship between the different elements of a building, such as the size of doors, windows, and columns.

3. Urban scale: The relationship between the size of a building and its urban context, including the surrounding buildings, streets, and public spaces.

IMPORTANCE OF SCALE:

1. Aesthetic appeal: Scale can greatly impact the aesthetic appeal of a building, with well-proportioned elements creating a sense of harmony and balance.

2. Functionality: Scale can affect the functionality of a building, with elements such as doors and windows needing to be proportional to the human figure.

3. Contextual relevance: Scale can help a building relate to its context, with a well-scaled building blending in with its surroundings.

3.5 DIMENSION

Dimension refers to the measurement or size of a building or structure, including its length, width, height, and other relevant dimensions. Dimensions are crucial in architecture as they help to:

1. Define space: Dimensions help to define the size and shape of rooms, corridors, and other spaces within a building.

2. Determine proportions: Dimensions influence the proportions of a building, which can affect its aesthetic appeal and functionality.

3. Guide construction: Accurate dimensions are essential for construction, ensuring that buildings are erected correctly and safely.

4. Comply with regulations: Dimensions must comply with local building codes, regulations, and accessibility standards.

TYPES OF DIMENSIONS:

1. Linear dimensions: Measurements of length, width, and height.

2. Angular dimensions: Measurements of angles between walls, floors, and other elements.

3. Radial dimensions: Measurements of curved or circular elements, such as arches or domes.

KEY DIMENSIONS IN ARCHITECTURE:

1. Floor-to-floor height: The vertical distance between floors.

2. Ceiling height: The vertical distance between the floor and ceiling.

3. Door and window openings: The size and location of openings for doors and windows.

4. Room dimensions: The length, width, and height of individual rooms.

5. Stair dimensions: The size and shape of staircases, including riser height and tread depth.

3.6 GARAGE

A Garage is a structure or part of a building designed to store and protect vehicles, typically cars. Garages can be attached to a house, detached, or even built into a hillside.

TYPES OF GARAGES:

1. Attached garage: Connected to the main house, often sharing a wall.

2. Detached garage: A separate building from the main house.

3. Integral garage: Built into the main house, often with a shared roof.

4. Basement garage: Located below the main house, often with a separate entrance.

5. Carport: An open-sided structure providing partial protection for vehicles.

GARAGE FUNCTIONS:

1. Vehicle storage: The primary purpose of a garage.

2. Workshop: A space for hobbies, repairs, or projects.

3. Storage: Additional storage for household items, tools, or equipment.

4. Living space: Some garages are converted into living areas, like apartments or home offices.

3.7 PLAN

A Plan is a two-dimensional representation of a building or structure, showing the arrangement of spaces, rooms, and other elements. Plans are used to communicate design ideas, guide construction, and document existing buildings.

TYPES OF PLANS:

1. FLOOR PLAN: A horizontal slice through a building, showing the layout of rooms, corridors, and other spaces.

2. SITE PLAN: A plan showing the building's relationship to the surrounding site, including topography, landscaping, and other features.

3. ELEVATION: A vertical slice through a building, showing the exterior facade and other elevations.

4. SECTION: A vertical slice through a building, showing the internal arrangement of spaces and structures.

5. ROOF PLAN: A plan showing the layout of the roof, including its shape, size, and features.

KEY ELEMENTS OF A PLAN:

1. SCALE: The relationship between the size of the drawing and the actual building.

2. SYMBOLS AND NOTATION: Standardized symbols and notation used to represent different elements, such as doors, windows, and stairs.

3. DIMENSIONS: Measurements of rooms, corridors, and other spaces.

4. ROOM LABELS: Identifiers for each room or space.

5. CIRCULATION PATHS: Indications of how people move through the building.

3.8 WALL

A wall is a vertical structure that encloses, separates, or supports a building or space. Walls can be load-bearing, non-load-bearing, or decorative, and are typically constructed using various materials.

TYPES OF WALLS:

1. Load-bearing wall: Supports the weight of the building and its loads.

2. Non-load-bearing wall: Does not support significant weight and is often used for partitioning.

3. Curtain wall: A non-load-bearing wall that provides weather protection and insulation.

4. Partition wall: A wall that separates spaces within a building.

5. Retaining wall: A wall that holds back soil, water, or other materials.

WALL FINISHING MATERIALS:

1. Paint: A liquid coating applied to the wall surface.

2. Wallpaper: A decorative paper or vinyl applied to the wall surface.

3. Plaster: A mixture of water, binder, and aggregate applied to the wall surface.

4. Drywall: A panel made from gypsum plaster sandwiched between two paper faces.

5. Paneling: A decorative covering made from wood, MDF, or other materials.

6. Tile: A decorative covering made from ceramic, porcelain, or natural stone.

7. Wood: A natural material used for wall cladding, paneling, or wainscoting.

8. Glass: A transparent or translucent material used for walls, partitions, or decorative features.

3.9 ROOF

A roof is the uppermost part of a building that provides protection from the elements, such as rain, snow, sunlight, and wind. Roofs can be classified into different types based on their shape, material, and construction.

TYPES OF ROOFS:

1. Gable roof: A roof with two sloping sides that meet at a ridge.

2. Hip roof: A roof with four sloping sides that meet at a ridge.

3. Flat roof: A roof with a flat surface, often used for modern or commercial buildings.

4. Pitched roof: A roof with a sloping surface, often used for residential buildings.

5. Curved roof: A roof with a curved or arched surface, often used for decorative or architectural features.

ROOF FINISHING MATERIALS:

1. Asphalt shingles: A popular and affordable roofing material made from asphalt and fiberglass.

2. Clay tiles: A durable and attractive roofing material made from clay and fired in a kiln.

3. Slate tiles: A premium and long-lasting roofing material made from natural slate stone.

4. Metal roofing: A durable and modern roofing material made from metal sheets or panels.

5. Wood shingles: A natural and attractive roofing material made from wood, often used for rustic or traditional buildings.

6. Solar panels: A modern and sustainable roofing material that generates electricity from sunlight.

7. Green roof: A roofing material that incorporates plants and vegetation, often used for environmental and aesthetic benefits.

3.10. PROGRAMING AND CLIENT BRIEFING PROGRAMMING

Programming is the process of understanding and setting forth in writing the client's requirements for a given project. Steps in this process includes:

- Establishing goals
- Considering a budget
- Collecting
- Organizing and analyzing data
- Identifying and developing concepts
- And determining particular needs.

3.11. WORKING DRAWINGS/CONSTRUCTION DOCUMENTS

The working drawings phases of construction documents describe in graphic form, all of the essentials of the work to be done: location, size, arrangement and details of the project. Since the successful and timely execution of these documents can be equated closely with an office's financial success, Architects constantly search for more efficient ways to produce construction documents. Regardless of the method of preparation, it is extremely important that the documents be accurate, consistent, complete and understandable. This requires thorough quality control including constant review and cross-checking of all documents. In addition, effective coordination of consultants' drawings is essential to avoid conflicts and interference in the construction of the Architect's designs and documents the integrated result.

CHAPTER FOUR

4.0 SITE EXPERIENCE

4.1 SETTING OUT

Setting out refers to the process of transferring the design of a building or structure from the drawing board to the construction site. It involves marking out the exact location and dimensions of the building's components, such as walls, columns, and foundations, on the site.

The purpose of setting out is to ensure that the building is constructed accurately and in accordance with the design specifications.

IMPORTANCE OF SETTING OUT

Setting out is a critical step in the construction process, as it ensures that the building is constructed accurately and in accordance with the design specifications. It helps to prevent errors and mistakes, saves time and money, and facilitates construction planning.

PURPOSE OF SETTING OUT

1. Setting out helps to establish the building's layout, including the location of walls, doors, windows, and other features.

2. Setting out ensures that the building is constructed accurately, with correct dimensions and alignments.

3. Setting out helps to prevent errors and mistakes during construction, which can save time and money.

4. Setting out provides a clear plan for construction, helping contractors and builders to plan and execute the work efficiently.

4.2 FOUNDATION FOOTING

Foundation footing known as a footing or foundation pad, is a structural element that transfers loads from a building or structure to the ground. It is a critical component of a building's foundation system, providing a solid base for the structure and preventing settlement or movement.

PURPOSE OF FOUNDATION FOOTING

1. To transfer loads from the building or structure to the ground.

2. To prevent settlement or movement of the building or structure.

3. To provide stability to the building or structure.

4. To distribute loads evenly across the foundation.

CONSTRUCTION PROCESS FOR A FOUNDATION FOOTING

1. Excavating the site to the required depth.

2. Building formwork to shape the footing.

3. Placing concrete into the formwork.

4. Allowing the concrete to cure and harden.

5. Backfilling the excavated site with soil.

4.3 EXPERIENCE GAINED

- I gain experience on preparing construction documents, including drawings, specifications, and schedules.
- I learn project management skills, including coordinating with contractors, managing budgets, and meeting deadlines.
- I gain knowledge of building codes and regulations, including zoning laws, accessibility standards, and energy efficiency requirements.
- I gain about building materials and systems, including sustainable and innovative materials.
- Developing of communication and teamwork skills, including working with colleagues, contractors, and clients.
- I learn time management and organization skills, including prioritizing tasks, meeting deadlines, and managing multiple projects.

CHAPTER FIVE

5.1 PROBLEMS AND CHALLENGES

PROBLEMS ENCOUNTERED

The problems or challenges encountered during my six (4) months' work experience which could be constraints to future students who may want to observe their SIWES in LSDPC can be stated as follows.

REJECTION OF STUDENTS

Some organizations reject students when approached for placement. This to a large extent discourages students and kills their enthusiasm towards the SIWES program. Also, the process of entering the Corporation was politicalized, as you had to know somebody working in the Corporation before you can be accepted to work, this routine of recruitment had discouraged students.

5.2 CHALLENGES

FINANCIAL PROBLEM

This was a major constraint because the allowance given to trainee was not encouraging. Finance are meant to be considered as a motivating factor for any intending trainee student. Financial aid is very important to help the students cover up the expenses of feeding, transportation and wears (i.e., official wears) among others.

TRANSPORTATION PROBLEM

Though, transport services were provided for the staffs to various routes but it was amazing that I.T. Students were not liable to any seat until all the staffs had conveniently seated and most times, we were inconveniently packed and bullied when in the bus. This act of discrimination is really disgusting because it makes trainees to feel inferior.