A TECHNICAL SUMMARY REPORT

ON

STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

AT

ARCHALIKS VENTURES

PREPARED BY

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Matric No: ND/23/ARC/PT/0022

SUBMITTED TO

THE DEPARTMENT OF ARCHITECTURAL TECHNOLOGY

KWARA STATE POLYTECHNIC, ILORIN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A

NATIONAL DIPLOMA (ND) IN ARCHITECTURAL TECHNOLOGY

2024.

DEDICATION

I dedicate this report to Almighty God for His guidance, strength, and protection throughout my SIWES training period.

I also dedicate it to my family, friends, lecturers, and industrial supervisors at Archaliks Ventures, especially Arc Ibrahim Lasisi Ayo, whose support and encouragement made this experience successful.

CERTIFICATION

This is to certify that the four-week industrial training under the Student Industrial Work Experience Scheme (SIWES) was diligently carried out by Adewale Ayomide Adebayo, with Matriculation Number ND/23/ARC/PT/0022, from the Department of Architectural Technology, Kwara State Polytechnic, Ilorin. The training took place at Archaliks Ventures, E54 Emirs Road, Ilorin, Kwara State, Nigeria, from July 2024 to August 20, 2024, under the supervision of Arc Ibrahim Lasisi Ayo (CEO). This technical summary report has been prepared and submitted in partial fulfillment of the requirements for the award of a National Diploma (ND) in Architectural Technology.

Industrial Supervisor:

Name: Arc Ibrahim Lasisi Ayo

Position: CEO

Signature: _____

Date: _____

Academic Supervisor:

Name: Mrs. Adeoye Olamide Toluwani

Position: Lecturer

Signature: _____

Date: _____.

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CHAPTER ONE: INTRODUCTION

1.1 Background of SIWES

The Student Industrial Work Experience Scheme (SIWES) is a mandatory internship program established by the Industrial Training Fund (ITF) in Nigeria, aimed at bridging the gap between theoretical education and practical industrial application. Initiated in 1973 under the supervision of the ITF, SIWES was designed to address the growing demand for skilled manpower in Nigeria's industrial sector, particularly in technical and professional disciplines such as Architectural Technology. The scheme emerged during a period when Nigeria's economy was undergoing rapid industrialization, driven by the need for infrastructure development, housing, and urban planning, which required a workforce proficient in practical skills alongside academic knowledge.

SIWES operates as a collaborative effort between educational institutions, industries, and government agencies. At institutions like Kwara State Polytechnic, Ilorin, the program is integrated into the curriculum for National Diploma (ND) and Higher National Diploma (HND) students, requiring a minimum duration of four weeks of industrial training for ND students. This period provides students with the opportunity to immerse themselves in real-world work environments, such as the architectural design and construction projects at Archaliks Ventures, where the author completed his training from July 2024 to August 20, 2024.

1.2 Objectives of SIWES

The objectives of the SIWES program are carefully crafted to equip students with the skills, knowledge, and professional attitudes necessary to excel in their chosen fields, particularly within the architectural and built environment industries. These objectives include:

1. Exposure to Modern Architectural Tools and Techniques: A primary objective of SIWES is tofamiliarize students with the latest tools and methodologies used in professional settings. During the training at Archaliks Ventures, the author was introduced to industry-standard software such as AutoCAD, which was used for drafting architectural plans.

2. Complementation of Theoretical Classroom Learning with Practical Application: SIWES aims toreinforce academic knowledge through hands-on engagement. For the author, this objective was achieved through active participation in architectural tasks, such as assisting in the preparation of working drawings and conducting site visits.

3. Development of Problem-Solving Skills and Teamwork Abilities: The scheme seeks to cultivatecritical thinking and collaborative skills in real-world work environments. At Archaliks Ventures, the author worked alongside architects, site engineers, and laborers.

4. Preparation for Future Careers in the Architectural Industry: SIWES is intended to preparestudents for seamless integration into the workforce by simulating professional responsibilities, such as material selection and understanding building codes.

5. Promotion of Safety Awareness and Adherence to Industry Standards: Given theconstruction-related nature of architectural work, SIWES emphasizes the importance of safety practices, including the use of Personal Protective Equipment (PPE) and adherence to safety protocols.

These objectives collectively ensure that SIWES serves as a transformative platform, equipping students with the practical and professional foundation needed to contribute effectively to Nigeria's architectural landscape.

CHAPTER TWO: DESCRIPTION OF ARCHALIKS VENTURES

2.1 Location and Brief History of Archaliks Ventures

Archaliks Ventures is strategically located at E54 Emirs Road, Ilorin, Kwara State, Nigeria. This location places the firm in the heart of Ilorin, a rapidly growing city known for its blend of historical significance and modern development. The office's proximity to major commercial and residential areas, approximately 5 kilometers from the Ilorin city center, provides easy access to clients, construction sites, and suppliers, making it an ideal hub for architectural services.

The surrounding area along Emirs Road is well-connected by major roads, facilitating the transportation of materials and personnel to project sites across Kwara State and neighboring regions. The location also benefits from a stable urban infrastructure, with access to reliable electricity and communication networks, which supports the firm's operations, including computer-aided design (CAD) work and client consultations.

Archaliks Ventures was established in 2015 by Arc Ibrahim Lasisi Ayo, a seasoned architect with a vision to contribute to Nigeria's built environment through innovative and sustainable design solutions. Starting as a small consultancy, the firm has grown over the years into a reputable architectural practice, known for its work on residential, commercial, and institutional projects in Ilorin and beyond. The company has completed notable projects, such as the design of modern residential estates and the renovation of public buildings, earning recognition for its commitment to quality and client satisfaction.

Archaliks Ventures has also played a role in training young professionals, partnering with institutions like Kwara State Polytechnic to provide industrial training opportunities under the SIWES program.

During the author's 4-week training from July 2024 to August 20, 2024, the firm was actively engaged in multiple projects, including the design of a residential building, which provided a practical learning environment for the author.

2.2 Objectives of the Establishment

Archaliks Ventures operates with a clear set of objectives that guide its activities and ensure its relevance in the competitive architectural industry.

The primary objective is to deliver innovative and sustainable architectural designs that meet the needs of clients while adhering to national and international building standards.

This involves a meticulous design process, from conceptual sketches to detailed working drawings, ensuring that projects are both aesthetically pleasing and functionally efficient.

During the author's training, this objective was evident in the firm's approach to designing a residential building, where emphasis was placed on optimizing natural lighting and ventilation to enhance energy efficiency, aligning with sustainable design principles.

A secondary objective is to provide high-quality project management and site supervision services to ensure the successful execution of designs.

Archaliks Ventures prioritizes collaboration with contractors, engineers, and clients to oversee construction projects, ensuring that designs are implemented accurately.

The author observed this objective in action during site visits, where Arc Ibrahim Lasisi Ayo conducted inspections to verify that foundation dimensions matched the drafted plans, addressing discrepancies promptly to maintain project timelines. Another objective is to contribute to the professional development of young architects by offering training and mentorship.

Through its partnership with SIWES, the firm provides students like the author with hands-on experience in architectural drafting, site measurement, and client interactions, preparing them for future careers in the industry.

Additionally, Archaliks Ventures aims to promote the use of modern technology in architectural practice. The firm invests in software like AutoCAD and Revit for design work, as well as tools like theodolites for site measurements, to enhance precision and efficiency. During the training, the author used AutoCAD to draft floor plans, experiencing firsthand how technology streamlines the design

process. Finally, the firm is committed to community development, focusing on projects that improve living standards, such as affordable housing designs.

This objective reflects its broader mission to contribute to Ilorin's urban development while maintaining a client-centered approach.

2.3 Organizational Structure

The organizational structure of Archaliks Ventures is designed to ensure efficient management and coordination of its architectural projects.

At the top is the Chief Executive Officer (CEO), Arc Ibrahim Lasisi Ayo, who oversees the overall strategic direction and decision-making of the firm.

As the founder, Arc Ayo is responsible for client relations, project approvals, and ensuring that all designs meet regulatory standards.

During the author's training, Arc Ayo played a pivotal role in guiding the design process, providing feedback on the author's drafted plans, and leading site inspections to ensure quality control.

Reporting directly to the CEO is the Project Manager, who handles the day-to-day coordination of ongoing projects.

This role involves scheduling site visits, managing timelines, and liaising with contractors to ensure that construction aligns with the architectural designs.

The Project Manager also supervises junior architects and interns, including the author, assigning tasks such as drafting elevations or conducting site measurements.

Below the Project Manager are the Senior Architects, who lead specific projects and oversee junior architects in design and documentation processes.

They ensure that architectural drawings meet client specifications and industry standards.

The firm also has Junior Architects who assist in drafting, client meetings, and material selection. Interns and trainees, such as the author, support the team in various capacities, including CAD drafting, site supervision, and administrative duties.

This hierarchical structure ensures smooth workflow management and enhances teamwork, allowing knowledge and expertise to be transferred effectively across different experience levels within the firm.

CHAPTER THREE: WORK CARRIED OUT DURING SIWES

3.1 Architectural Drafting and Design

My involvement in architectural drafting and design at Archaliks Ventures was a central component of my 4-week SIWES training from July 2024 to August 20, 2024, providing hands-on experience in translating concepts into technical drawings. The process began with an introduction to the firm's design workflow, where I was assigned to assist the Senior Architects in preparing drawings for a residential building project. I was trained to use AutoCAD software on a dedicated workstation, starting with the creation of a basic floor plan. Under the supervision of Arc Ibrahim Lasisi Ayo, I learned to set up a new drawing file with a scale of 1:100, importing a site plan template to define the building footprint (e.g., 10 meters by 15 meters).

My tasks included drafting interior and exterior walls, using the "Line" and "Offset" commands to ensure accurate dimensions (e.g., 300 mm wall thickness), and adding doors and windows with standard sizes (e.g., 900 mm by 2100 mm doors). I used the "Block" command to create reusable symbols for fixtures like sinks and electrical outlets, improving efficiency in the design process. I also practiced adding annotations, such as room labels and dimension lines, using the "Text" and "Dimension" tools, ensuring clarity for construction teams. During this process, I encountered challenges with aligning walls accurately, which I resolved by consulting a tutorial provided by the firm and adjusting my snapping settings to grid points.

Additionally, I assisted in creating an elevation drawing for the same residential project, focusing on the front facade. I used the "Polyline" tool to outline the building's exterior features, including a pitched roof with a 30-degree slope and a 1.2-meter overhang, and added shading to indicate window placements. I learned to cross-check my work against the floor plan to ensure consistency in dimensions and heights (e.g., a 3-meter ceiling height). This task enhanced my understanding of how 2D drawings communicate design intent, and I submitted my draft to Arc Ibrahim Lasisi Ayo for review, receiving feedback to refine window proportions, which I adjusted using the "Scale" command.

3.2 Site Supervision and Measurement

The site supervision and measurement activities at Archaliks Ventures provided practical insights into the implementation phase of architectural projects during my SIWES training. I participated in two site visits to a construction site for the residential building project, located approximately 10 kilometers from the firm's office at E54 Emirs Road, Ilorin. Accompanied by a Senior Architect, I assisted in verifying that the on-site work aligned with the drafted plans. My initial task was to measure the foundation dimensions using a 30-meter tape measure, confirming a base of 10 meters by 15 meters with a tolerance of ±5 cm, as specified in the design.

I also learned to use a theodolite to check the levelness of the foundation, adjusting the instrument's tripod to ensure stability and aligning the crosshairs to measure a vertical drop of less than 1 cm over the 15-meter length. This process revealed a slight slope (approximately 0.8 cm), which I reported to the site supervisor, who instructed the laborers to add soil fill to level the area. I documented the measurements in a field notebook, noting the time (e.g., 9:00 AM to 10:30 AM) and weather conditions (e.g., clear skies), which helped me understand the importance of environmental factors in construction.

During the second visit, I assisted in marking out wall positions using chalk and a string line, ensuring a 300 mm offset from the foundation edge to match the wall thickness in the plan. I worked with a laborer to stretch the string line across the site, using a spirit level to maintain a horizontal alignment within ±2 mm. This task required coordination to avoid disturbances from site traffic, and I learned to communicate effectively with the team to pause activities during marking. These experiences improved my skills in site documentation and spatial awareness, as I recorded the layout in sketches and compared them with the AutoCAD drawings back at the office.

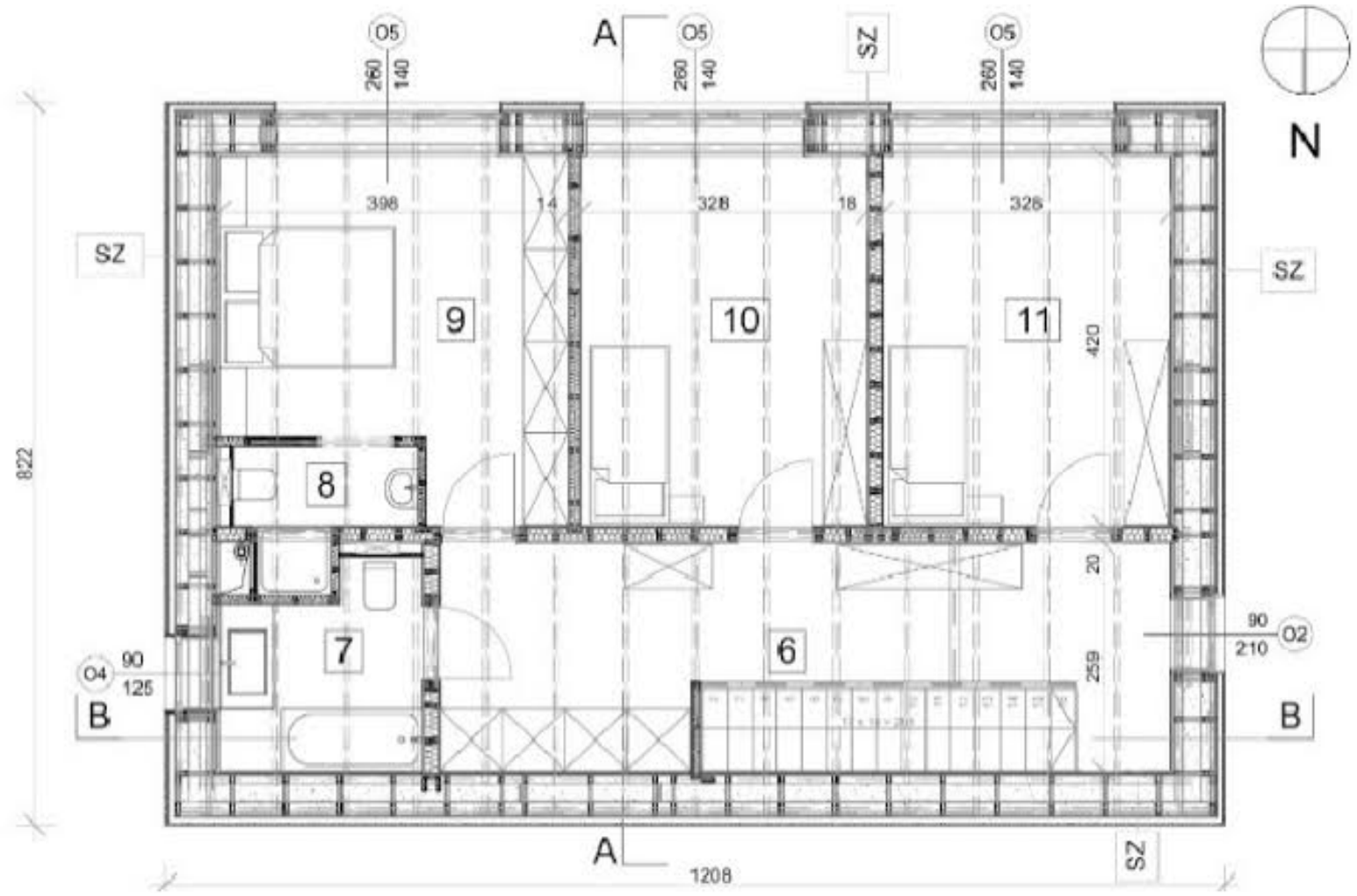
3.3 Material Selection and Safety Practices

Material selection and safety practices were critical components of my training at Archaliks Ventures, enhancing my understanding of construction quality and workplace safety. I participated in a material selection process for the residential building project, assisting the Design Unit in choosing finishes for interior spaces. Under guidance, I reviewed samples of ceramic tiles (e.g., 300 mm by 300 mm glossy finish), paint types (e.g., emulsion with UV resistance), and window frames (e.g., aluminum with 50 mm profiles). I compared their specifications-such as water absorption rates (below 3% for tiles) and thermal conductivity (low for aluminum)-against project requirements, noting my findings in a spreadsheet to support the decision-making process. This task introduced me to the balance between aesthetics, durability, and cost in architectural design.

Safety practices were rigorously enforced during site visits, and I received a one-day safety induction at the start of my training. I was trained to wear Personal Protective Equipment (PPE), including a hard hat (complying with EN 397 standards), steel-toe boots, and a high-visibility vest, which I used consistently on-site. I assisted in a safety briefing before the second site visit, helping to distribute spare PPE to workers and ensuring all team members signed an attendance log. I also learned to identify hazards, such as exposed rebar or uneven ground, and reported a loose scaffolding plank to the site supervisor, who secured it immediately.

Additionally, I participated in a mock emergency drill, practicing the use of a 4kg dry powder extinguisher to simulate a small fire scenario near the site office. I followed the PASS technique (Pull, Aim, Squeeze, Sweep) and maintained a safe distance of 3 meters, completing the drill in under 2

minutes. This exercise reinforced my awareness of fire safety protocols. I also monitored dust levels post-construction activity, noting a reading of approximately 20 mg/m³ using a handheld dust meter, and suggested wetting the ground to reduce dust, a recommendation adopted by the team. These experiences enhanced my practical knowledge of safety management and material application in architectural projects.



CHAPTER FOUR: EXPERIENCES GAINED

4.1 Tasks Performed and Skills Acquired

My 4-week SIWES training at Archaliks Ventures, from July 2024 to August 20, 2024, provided a robust platform to perform
a variety of tasks that significantly enhanced my technical and professional skills in Architectural Technology.
One of my primary tasks was architectural drafting using AutoCAD, where I contributed to the design of a residential building.
I created a floor plan with a scale of 1:100, drafting walls (300 mm thick) using the "Line" and "Offset" commands, and added doors
(900 mm by 2100 mm) and windows using the "Block" tool for reusable symbols. I also annotated the drawing with room labels
(e.g., "Living Room: 4m x 5m") and dimension lines, ensuring clarity for construction teams. Additionally, I drafted a front elevation,
outlining a pitched roof (30-degree slope) and adding window placements, which improved my precision in translating 3D concepts into 2D drawings.

In site supervision, I participated in two site visits to a construction site 10 kilometers from the firm's office at E54 Emirs Road, Ilorin.
I measured foundation dimensions (10 meters by 15 meters) using a 30-meter tape measure, confirming a tolerance of ±5 cm, and used a theodolite
to check levelness, recording a 0.8 cm slope over 15 meters. I assisted in marking wall positions with chalk and a string line, maintaining
a 300 mm offset from the foundation edge, and documented the layout in a field notebook, noting environmental conditions
(e.g., clear skies, 28°C). These tasks developed my skills in site measurement, documentation, and spatial awareness, ensuring designs were accurately implemented.

Material selection was another key task, where I assisted in choosing finishes for the residential project. I evaluated ceramic tiles
(300 mm by 300 mm, glossy finish, water absorption below 3%), emulsion paint (UV-resistant, matte finish), and aluminum window frames
(50 mm profiles, low thermal conductivity). I compiled a spreadsheet comparing their specifications against project requirements, such as durability and cost, which honed my analytical skills in balancing aesthetics and functionality.

4.2 Challenges Encountered

The SIWES training at Archaliks Ventures, while rewarding, presented several challenges that tested my adaptability and resilience.

One significant challenge was the steep learning curve with AutoCAD, as I had limited prior experience. During the first week, I struggled with aligning walls accurately in my floor plan, often misplacing elements by 10-15 cm due to incorrect snapping settings. This led to multiple revisions, delaying my submission by a day, and caused initial frustration. I overcame this by studying AutoCAD tutorials provided by the firm and practicing grid snapping, eventually reducing alignment errors to within 2 cm by the second week.

On-site, time constraints posed a challenge during site supervision. The first site visit coincided with a tight construction schedule, leaving only 1.5 hours to complete foundation measurements and levelness checks. Measuring a 10-meter by 15-meter foundation with a tape measure and theodolite under this pressure was demanding, especially with laborers working nearby, creating distractions. I once misread the theodolite's vertical drop as 0.5 cm instead of 0.8 cm due to haste, which I corrected after a second check, highlighting the need for precision under pressure.

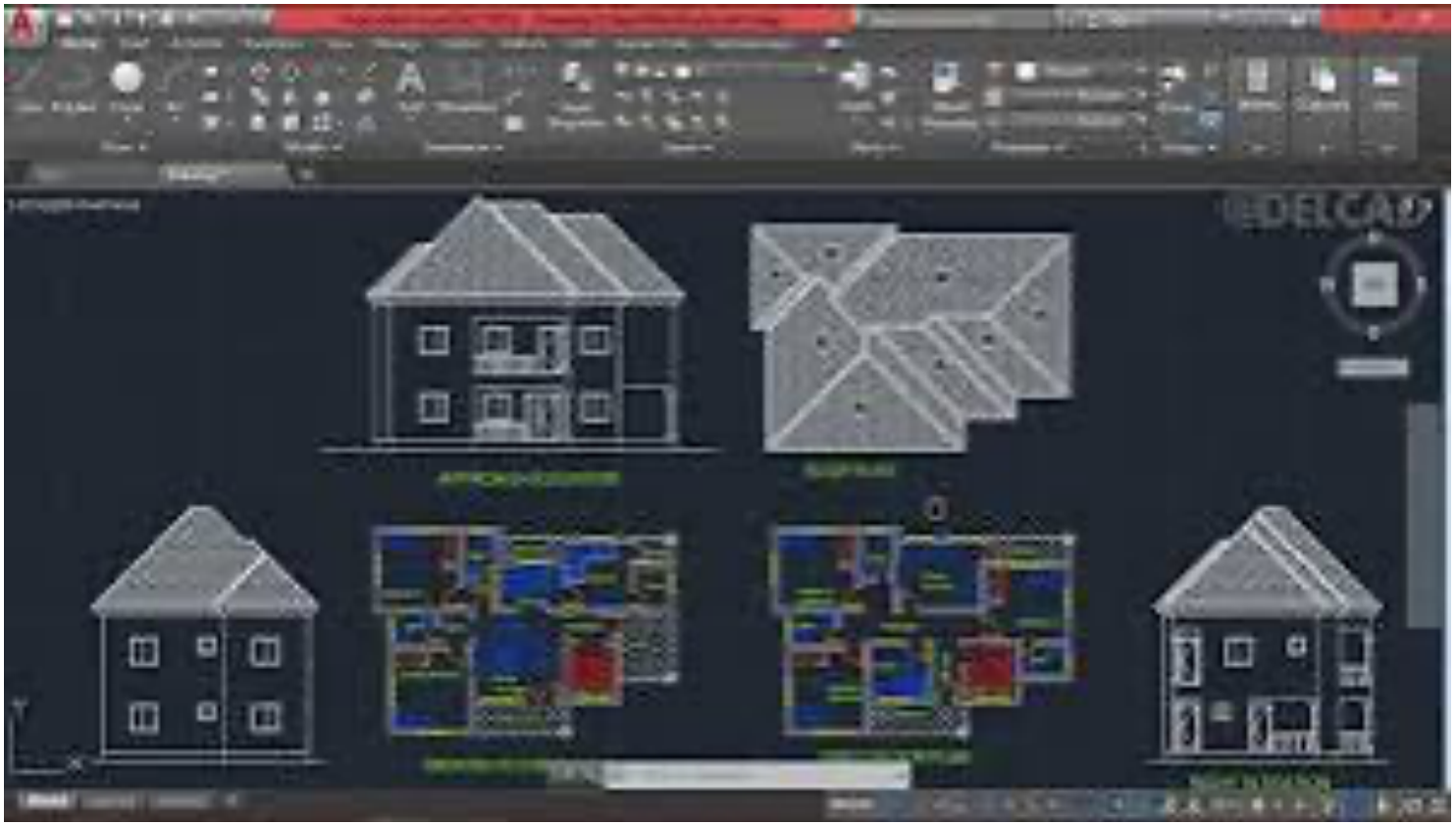
4.3 Lessons Learned

The tasks and challenges during my SIWES training at Archaliks Ventures provided invaluable lessons that have shaped my professional growth and understanding of architectural practice. One key lesson was the importance of precision and attention to detail in architectural drafting.

My initial struggles with AutoCAD taught me to double-check measurements and alignments, reducing errors from 15 cm to 2 cm by the end of the training.

I also learned the critical role of effective communication and teamwork in architectural projects. Coordinating with laborers to mark wall positions during site visits required clear instructions, such as specifying a 300 mm offset, to avoid errors. During a client meeting, I observed Arc Ibrahim

Lasisi Ayo adjusting a floor plan to accommodate a larger living room (from 4m x 5m to 5m x 5m), which taught me the importance of listening to client feedback and collaborating with the design team to implement changes.

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CHAPTER FIVE: SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Attachment Activities

My 4-week SIWES training at Archaliks Ventures, conducted from July 2024 to August 20, 2024, as part of the
requirements for my National Diploma in Architectural Technology at Kwara State Polytechnic, Ilorin, was a transformative experience that bridged theoretical learning with practical application in the architectural field. The training encompassed a range of activities that provided hands-on exposure to architectural design, site supervision, and safety practices, aligning with the objectives of SIWES to prepare students for professional practice.

...

Supervised by Arc Ibrahim Lasisi Ayo (CEO) and Mrs. Adeoye Olamide Toluwani (Lecturer), these activities developed my skills in AutoCAD drafting, site measurement, material analysis, safety management, and teamwork. The training provided a realistic preview of architectural practice,
preparing me for future roles in the industry.

5.2 Problems Encountered During the Program

The training period presented several challenges that tested my adaptability and highlighted areas for improvement. One notable issue was the steep learning curve with AutoCAD, as I had limited prior

experience. In the first week, I struggled with aligning walls in my floor plan, misplacing elements by 10-15 cm due to incorrect snapping settings, which required multiple revisions and delayed submission by a day. ...

Finally, limited access to advanced equipment, such as laser levels, meant relying on manual tools like the theodolite, which extended leveling tasks by 30 minutes compared to what a laser level could achieve, reflecting resource constraints at Archaliks Ventures.

5.3 Suggestions for Improvement of the Scheme

Based on my experiences, I propose several improvements to enhance the SIWES program and its implementation at firms like Archaliks Ventures. Firstly, pre-training workshops on essential software like AutoCAD should be introduced for students. A one-week crash course before the internship, focusing on basic commands (e.g., "Line," "Offset," "Dimension"), would have reduced my initial struggles, allowing me to contribute more effectively from the start. ...

These suggestions aim to make SIWES more effective and aligned with the evolving needs of the architectural industry.

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