



MAKERERE UNIVERSITY

COLLEGE OF ENGINEERING, DESIGN ART AND TECHNOLOGY

SCHOOL OF THE BUILT ENVIRONMENT

DEPARTMENT OF CONSTRUCTION, ECONOMICS AND MANAGEMENT

MSC CONSTRUCTION MANAGEMENT

**MASTERS PROJECT FIELD REPORT ON THE PROPOSED URF/PPDA HEAD OFFICE
DEVELOPEMENT ON PLOT 39 NAKASERO ROAD
KAMPALA**



**BY ASIIMWE IVAN
2019/HD08/23366U**

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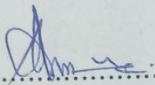
**A PROJECT FIELD REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF A MASTERS DEGREE IN
CONSTRUCTION MANAGEMENT OF THE COLLEGE OF ENGINEERING
DESIGN, ART & TECHNOLOGY, MAKERERE UNIVERSITY.**

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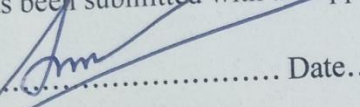
DECLARATION

I, Asiimwe Ivan declare that all the work contained in this report is a true reflection of what transpired during the project process and has not been presented to any institution for academic purposes.

Signature.......... Date.....22/12/2020.....

APPROVAL

This report has been submitted with the approval of the supervisor:

Signature.......... Date.....22.12.2020.....

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DEDICATION

I dedicate this report to my children Patricia Ainembabazi Lety, Asiimwe Kleith and to my Siblings.

ABSTRACT

This report contains construction and project management practices that the author participated in as Clerk of works/resident Engineer during the construction of Uganda Road Fund/Public Procurement and Disposal of Public Assets head office on Nakasero road in Kampala district.

Chapter One; lays out an introduction of the project, aims of the project, objectives of the report, discusses the project back ground, project description, funders, consultants, Government advisor, contractor, project organization chart, and project scope. This chapter also discusses the author's involvement on the project. The project was construction of a nine storey office block with three basement parking levels for URF/PPDA head office on Nakasero road in Kampala district.

Chapter Two; discusses the project implementation and construction methodologies, introduction, contract and documents, work program and mobilization schedule, contractor's establishment, execution of works. It discusses the project planning, mobilization and execution construction phases, methods and methodologies.

Chapter Three is a discussion of the project management practices used during implementation and administration of the contract, introduction, project scope management, project cost management, financial forecast and appraisals, project time management, project quality management, site inspection and meetings, dispute and dispute resolutions, communication, cooperation and consultation, stake holders and contract details.

Chapter Four; gives a general conclusion on the project occupation health and safety, health and safety considerations, regulations and standards, health, safety and environmental plan.

Chapter Five; this chapter gives a briefing on the project benefits.

Chapter Six; This Chapter discusses some challenges and how they were overcome, lessons learnt, conclusions and recommendations.

ACKNOWLEDGEMENT

My special thanks go to all those who have enabled me reach to a successful completion of my Master's Degree in construction management especially my employer, supervisor Dr Kenneth Ssemogerere, Mr George Ssali from Symbion and Eng Jessie Namara from Uganda Road fund. I do also acknowledge the psychological support of my family members throughout the course and my fellow course mates.

May the Almighty God richly bless you.

TABLE OF CONTENTS

DECLARATION	Error! Bookmark not defined.
APPROVAL	Error! Bookmark not defined.
DEDICATION	iii
ABSTRACT.....	iv
ACKNOWLEDGEMENT	v
LIST TABLES	x
LIST OF FIGURES	xi
ABBREVIATIONS/ACRONYMS.....	xiv
CHAPTER ONE; INTRODUCTION.....	1
1.0 Introduction.....	1
1.1 Aim of the report.....	1
1.2 Objectives of the report.....	1
1.3 Background of the project.....	1
1.3.1 General	1
1.4 Project Description.....	2
1.4.1 Funders.....	3
1.4.2 Consultants.....	3
1.4.3 Government Technical Adviser Ministry of Works and Transport.	3
1.4.4 Contractor	3
1.4.5 Project Organization Chart.	4
1.5 Project Scope.	4
1.6 Contract details	5
1.7 Author's involvement/role in the project.....	5
1.8 Supervising Team and their duties and responsibilities.....	7
CHAPTER TWO: PROJECT IMPLEMENTATION AND CONSTRUCTION	
METHODOLOGIES.....	11
2.0 Introduction.....	11

2.1 Contract Administration documents	11
2.1.1 Insurance bonds.	11
2.1.2 Advance payment.....	11
2.1.3 Key personnel	11
2.1.4 Performance bond	12
2.1.5 Work program & Mobilization schedule	12
2.1.6 Contractor's establishment.....	12
2.2 Execution of Works	14
2.2.1 Contract signing, Site possession, Commencement and completion.....	14
2.2.2 Project planning, mobilization and execution.....	14
2.3 Construction phases, methods and methodologies	15
2.3.1 Substructure works.....	15
2.3.1.1 Excavating/coring in the rock.	19
2.3.1.2 Mass excavation.....	19
2.3.1.3 Keeping surface free from rain water.	19
2.3.1.4 Water proofing to Pile surfaces.....	21
2.3.1.5 Rebar works to the Raft, lift shaft, shear walls, staircases and columns.	21
2.3.1.6 Retaining walls around perimeter of building.	21
2.3.1.7 Building services in the Raft	21
2.3.1.8 Mechanical Services.	22
2.3.1.9 Methodology of casting concrete to the Raft.....	22
2.3.1.10 Floor finishes in basements.....	22
2.3.1.11 Works in basement III.....	23
2.3.1.12 Curing of concrete members	23
2.3.1.13 Decking to slab and beams	24
2.3.1.14 Construction of Suspended Solid Slabs	24
2.3.1.15 French Drains.....	26
2.3.1.16 Damp proof membrane;	26
2.3.1.17 Movement, Contraction and Expansion joints;.....	26
2.3.2 Super-structure Works.	26
2.3.2.1 Construction of Suspended Hollow slab.....	27

2.3.3 Roofing and Insulation;.....	30
2.4 Finishes	31
2.4.1 Fixtures and Fittings	33
2.4.2 Electrical installations.....	34
2.4.2.1 First Fix.....	34
2.4.2.2 Second and third fix of Electrical installation consist of the	35
2.4.3 Mechanical installations.....	35
2.4.3.1 First Fix.....	35
2.5 External works	37
2.6 Aluminum works and cladding.....	37
 CHAPTER THREE: PROJECT MANAGEMENT PRACTICES.....	39
3.1 Introduction.....	39
3.2 Project Scope Management.....	39
3.3 Project Cost Management	40
3.3.1 Financial forecasts and Appraisals.....	41
3.3.2 Interim claims	41
3.3.3 Variations	43
3.4 Project Time Management.....	47
3.5 Project Quality Management	48
3.5.1 Project Quality Management processes included;	48
3.6 Project communication management.	51
3.7 Project personnel management.	51
3.8 Project Risk management.	52
3.9 Project Procurement.....	52
3.10 Site Inspections and Meetings	53
3.11 Dispute and Dispute resolutions	54
3.12 Stakeholder Engagement	54
 CHAPTER FOUR: OCCUPATIONAL HEALTH AND SAFETY.....	56
4.1 Occupational Health and Safety.....	56

4.1.1 Health and Safety consideration	56
4.2 Regulations And Standards	59
4.2.1 Public health and safety regulation	59
4.2.2 Local council regulations.	59
4.2.3 National Physical, Planning Standards and Guidelines, 2011	59
4.2.4 Environmental and Social Safeguards	59
4.2.4.1 NEMA Regulations.....	60
4.3 Health, Safety & Environment Plan.....	60
4.4 Environmental impact assessment for the project	60
 CHAPTER FIVE: BENEFITS OF THE PROJECT.....	64
5.1 SOCIAL AND ECONOMIC BENEFITS	64
5.1.1 Socially the development of URF/PPDA Tower came in with the following benefits;	64
5.1.2 Economic benefits gained through the development of URF/PPDA tower.	64
 CHAPTER SIX CHALLENGES, LESSONS LEARNT, CONCLUSIONS AND RECOMMENDATIONS.....	65
6.1 Challenges.....	65
6.2 Lessons learnt.....	66
6.3 CONCLUSION.....	66
6.4 Recommendations	67
REFERENCES	68
APPENDICES	69
APPENDIX A: Contract Drawings.	70
APPENDIX B: Bill of Quantities.	75
APPENDIX C: Site minutes.	83
APPENDIX D: Site approvals and permits.	93
APPENDIX F: Work Programs.	112
APPENDIX G: Photographs from site.	117

LIST TABLES

Table 1. 1 : Data for the Works Contract.....	5
Table 2. 1: Contractor's establishment of plant, tools and equipment.....	13
Table 3. 1 : Payment Status.....	42
Table 3. 2 : Variations on the project.....	44
Table 3. 3 : Summary of cost appraisal.....	45
Table 3. 4 : Summary of element appraised cost.	47
Table 3. 5: Materials Tests Carried Out to date	49
Table 4.1: Standard operating procedures to avert Covid19 on site.	58
Table 4.2: Proposed Mitigation Plan for the development URF/PPDA head office building.	61

LIST OF FIGURES

Fig 1; Project Location	1
Fig 2; Existing building before development.....	2
Fig 3; site excavation to road level.....	11
Fig 4; short Crete concrete applied to excavations embankments.....	11
Fig 5; Drilling for the pile pit.....	13
Fig6; Auger machine targeting the pile position.....	13
Fig7; Fixing the steel cage into the pile pit.....	13
Fig8; Steel cages lowered down into pits.....	13
Fig9; Steel cage ready to receive concrete.....	13
Fig10; Funnel being lowered into the steel cage.....	13
Fig13; Fixing steel and formwork to the pile beam.....	14
Fig14; Casting & vibrating pile cap beam.....	14
Fig15; Rebar works to the retaining wall.....	14
Fig16; Formwork to the retaining wall.....	14
Fig17; Drilling through the rock.....	16
Fig18; Inserting a coring bucket to the pile pit.....	16.
Fig19; Applying water to cool the bucket.....	16
Fig 20; Placing the cleaning bucket into the pit.....	16
Fig 21; Mass excavtion for basements.....	16
Fig 22; Concrete blinding to basement3.....	16
Fig 23; Applying water proof primer.....	17
Fig 24; Applying the APP membrane.....	17
Fig 25; Sumps fixed into raft steel.....	19
Fig 26; Laying the electrical copper tape.....	19

Fig 27; Casting concrete to 800mm depth.....	19
Fig 28; Casting concrete topping of 300mm.....	19
Fig 29; Fosroc nito floor hardener applied.....	19
Fig 30; Power floating the concrete surface.....	19
Fig 31; Fixed lift shaft reinforcements.....	22
Fig 32; Formwork fixed to columns.....	22
Fig 33; Formwork fixed to retaining walls.....	22
Fig 34; Formwork fixed to shear walls.....	22
Fig 35; Decking to slab.....	22
Fig 36; Reinforcements to solid slab fixed.....	22
Fig 37; Sleeves and conduits for service fixed.....	22
Fig 38; Casting concrete to solid slab.....	22
Fig 39; PVC pipe laid onto stone chippings.....	22
Fig 40; Construction of the dry wall.....	22
Fig 41; Formwork fixed to retaining wall.....	25
Fig 42; Rebar works to lift shaft walls.....	25
Fig 43; Rebar works to the shear wall.....	25
Fig 44; Casting concrete to lift shaft walls.....	25
Fig 45; Decking to beams and slab.....	25
Fig 46; Maxpan blocks laid onto the slab deck.....	25
Fig 47; Rebar works to slab.....	26
Fig 48; Sleeves and electrical conduits fixed.....	26
Fig 49; Rebar works to the sitting gallery.....	26
Fig 50; Casting concrete to the hollow slab.....	26
Fig 51; Block walling to office area.....	26

Fig 52; Block walling to washrooms.....	26
Fig 53; PVC pipes for rain water from roof.....	27
Fig 54; Rebar works to the roof gutter.....	27
Fig 55; Hacking concrete surfaces.....	28
Fig 56; Plastering to walls.....	28
Fig 57; Curing to plaster works.....	28
Fig 58; BMS conduits fixed to slab soffit.....	30
Fig 59; Conduits and mks fixed to wall.....	30
Fig 60; Cable trays fixed onto slab soffits.....	30
Fig 61; Fixing PPR pipes for fresh water.....	32
Fig 62; Pressure testing to PPR pipes.....	32
Fig 63; Securing rain water pipes from roof.....	32
Fig 64; Basement extraction ducts fixed.....	32
Fig 65; Making concrete tubes for crushing.....	43
Fig 66; Slump test done on fresh concrete.....	43
Fig 67; Team choosing and approving fixtures.....	43
Fig 68; Team conducting site inspection.....	45
Fig 69; Team in site meeting.....	45
Fig 70; Team conducting site inspection.....	54
Fig 71; Team in site meeting.....	54

ABBREVIATIONS/ACRONYMS

BoQ	Bill of Quantities
QS	Quantity Surveyor
DLP	Defects Liability Period
PM	Project Manager
CA	Contract Administrator
M&E	Mechanical and Electrical.
RFI	Request for Information
URF	Uganda Road Fund
PPDA	Public Procurement and Disposal of Public Assets Authority.
GCC	General Conditions of Contract
SCC	Specific Conditions of Contract
RC	Reinforced Concrete
MDD	Maximum Dry Density
PVC	Polyvinyl Chloride

CHAPTER ONE; INTRODUCTION

1.0 Introduction

This chapter discusses the introduction of the project, aims of the project, objectives of the report, project back ground, project description, funders, consultants, Government advisor, contractor, project organization chart, and project scope. This chapter also discusses the author's involvement throughout the project.

1.1 Aim of the report

This report was aimed at examining the construction methodologies, activities, implementation and contract administration procedures, hindrances faced and how they were mitigated during execution of URF/PPDA head office.

1.2 Objectives of the report

- I. To highlight the procedures followed during the construction phase and contract administration of the project;
- II. To examine the financial and physical progress of the works during the project execution stage;
- III. To point out challenges faced during project execution and how they were solved.

1.3 Background of the project

1.3.1 General

PPDA was established under the Public Procurement and Disposal of Public Assets Act, No 1 of 2003 and is the principal regulatory body for public procurement and disposal in Uganda. URF was established under the Uganda Road Fund Act, 2008, with the objective of financing routine and periodic maintenance of all public roads.

The PPDA Board and the URF Board with the approval of the Minister of Finance, Planning and Economic Development which supervises both institutions, partnered to achieve a common goal of finding a joint office building which is to be owned on a condominium basis. The joint office building located at Plot 39, Nakasero Road that has an area of approximately 0.6 acres.

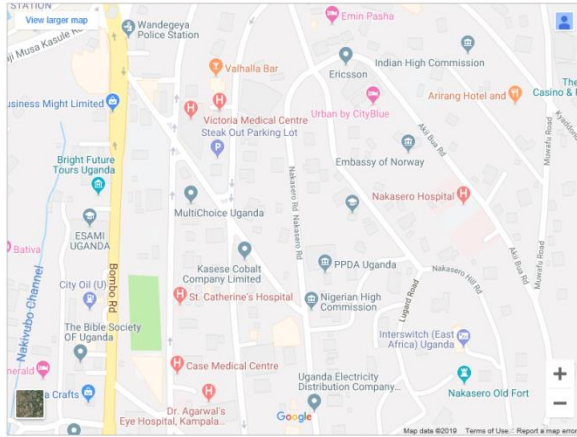


Figure 1: Project Location



Figure 2: Existing building before development

1.4 Project Description

The URF/PPDA head office is expected to provide office accommodation of one tower with two separate wings; one housing the URF and the other PPDA. The building consists of 12 levels (3 basement levels and 9 levels above ground including 2 mezzanine floors) and the two wings are connected by a central core that consists of common facilities such as lifts, the main staircase, lavatories and other shared facilities such as the staff cafeteria, Day Care Centre, common main entrance and exit, common entrance foyer, common reception counter and conference hall.

The functions, relationships and activities envisaged by URF and PPDA for occupants and users of the proposed office building suggest that the proposed building would consist of the types of spaces and areas listed below:

- (a) Workstations (areas for URF and PPDA staff to perform their duties – these will in principle be in private offices maximizing visual and acoustic privacy, with full height partitions for senior management. Open plan system or undivided space is to be used for other officers.
- (b) Ancillary needs immediate to workstations: washrooms, restrooms, pantries – 10% of workstation area.
- (c) Circulation space (horizontal and vertical) for workstations: corridors, passages, stairways, lift wells, emergency exits – 15% of workstation area.
- (d) Supportive facilities in the building:
 - i. Records and archives
 - ii. Library & Documentation Centre
 - iii. Reception, waiting areas (central and departmental)
 - iv. Boardrooms, meeting and training rooms with Air Ventilation equipment

- v. Stores
- vi. Canteen and kitchen
- vii. Fitness Centre
- viii. Visitors room
- ix. Day care Centre for Staff children
- (e) Ancillary space for the supportive facilities – 5% of special areas.
- (f) Technical services areas for the entire building, including rooms for Heating Ventilation and Air Conditioning (HVAC), electrical power, communications, water supply, building maintenance.
- (g) Vehicle parking outside and within the building

1.4.1 Funders

The project was fully funded by the Government of Uganda under Ministry of Finance, Planning and Economic development.

1.4.2 Consultants

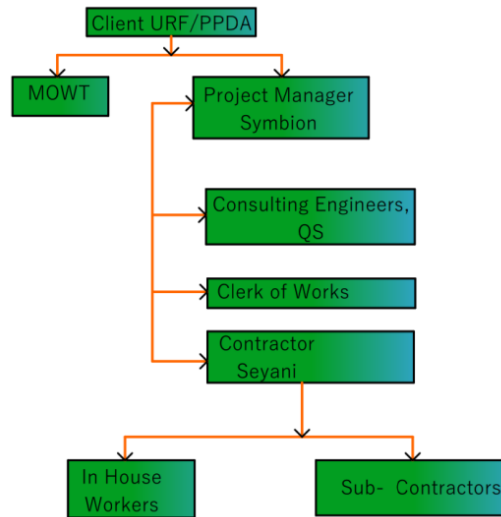
The project's design and supervision consultant was Symbion Uganda Ltd, Symbion patterned with Proman for Structural services, Buildcost Associates for Quantity surveying services and GEM Engineering Co. Ltd for Mechanical/ Electrical services.

1.4.3 Government Technical Adviser Ministry of Works and Transport.

1.4.4 Contractor

The project contractor was Seyani Brothers & CO. (U) Ltd & Parbat Siyani Construction Ltd (SBPSCCL) Joint Venture with Sub contractors Aluclad Limited for Aluminum, Glass and roof works, Kone Uganda Uganda Ltd for Lift installations, Central Electricals International Ltd for Electrical Installations, Mantra Technologies for Data & Voice installations, Pioneer Plumb (U) Ltd for plumbing works and Reliable Engineering & Décor Ltd for Stainless steel works.

1.4.5 Project Organization Chart.



1.5 Project Scope.

The scope of works under the project included the following:

- (a) Demolishing of the existing buildings/structures, salvaging selected items, clearing away debris and general site prepare for the new office development.
- (b) Reviewing of the existing design of a building with two separate wings and having 10 Storeys with gross total floor area of approx. 15,000 SqM, including three levels of basement parking.
- (c) Construction of floors for URF and PPDA Staff: 7 of the upper most levels above ground to be office accommodation for the URF and PPDA; each housing a separate Directorate and or department or combination thereof, with each of the 7 office floor levels being approx. 1100 SqM of built-up area.
- (d) Construction of vehicle parking for users of the building: 3No. basement levels each of approx. 2,440 SqM, built-up area as parking floors for vehicles within the building. Additional Parking for visitors was provided outside the building, but within the URF and PPDA premises.
- (e) Provision of special facilities in appropriate locations within the building including the fitness center, cafeteria, training rooms, conference centers, day care center for staff's children etc.

1.6 Contract details

The Contract data for the building construction contract is as listed in Table 3:

Table 1.1 : Data for the Works Contract

Consultant	Symbion Uganda Ltd
Contractor	Seyani Brothers & Co. (U) Ltd and Parbat Siyani Construction Ltd Joint Venture
Project Costs and Payments	
Original Contract Sum (VAT Inclusive)	UGX 47,233,427,266
Revisions Approved	Addendum No.1 approved
Revised Contract Sum (VAT Inclusive)	UGX 54,082,441,313
Actual Financial Progress as Per Revised Contract Sum	40.6%
Advance Payment Paid (3% of original contract sum)	UGX 1,417,002,818
Advance Recovered	UGX. 520,038,763
Outstanding Certified Payment	UGX 1,109,987,403 ¹
Project Duration	
Project Commencement Date	28 th November 2017
Original Project Completion Date	30 th November, 2020
Revised Project Completion Date:	30 th March 2021
Original Project Duration	157 Weeks (Three years)
Revised Project Duration	174 Weeks (Three years and 4 months)
Duration from Project Commencement Date and Time Progress	153 weeks/ 86.18.0%

1.7 Author's involvement/role in the project

The author was the Clerk of Works/Resident Engineer overseeing the quality and safety of work at the site, making sure that building plans and specifications are being followed correctly.

The key roles of the author during the execution of the project included,

- i. Monitor of materials and workmanship in association with the Project Architect. Notify the Project Architect immediately of materials and/or workmanship and occurrences on the site that could delay the project.

- ii. Ensure that the Contractor maintains a Site Diary as per the contract, and endorse the Site Diary of the Contractor on a daily basis.
- iii. Maintain my diary of events as per the format of Symbion Clerk of Works daily report, Key areas to report are physical progress, workmanship, labour force, plant and materials on site and weather conditions, stoppages etc.
- iv. Check drawings and specifications for discrepancies and seek the Architect's decision and clarification, particularly prior to commencement of construction. Also, ensure that the construction is carried out as per the drawings and specifications, and notify the Architect of any variances in construction immediately.
- v. Supervise tests required if instructed by the Architect and in association with the engineers of the disciplines such as Civil, Structural, Electrical and Mechanical.
- vi. Inform the Architect immediately of any problem arising, and of any decision or variation required.
- vii. Monitor, liaise and co-ordinate works with the Engineers of other disciplines required, such as Civil, Structural, Electrical and Mechanical.
- viii. Under the direction of the consultants check quality assurance as per the contractors approved quality assurance manual and ensure standards of workmanship and materials conform to the specifications in the Contract and the construction drawings.
- ix. Attend all progress/site meetings and co-ordination meetings as required on site
- x. Monitor the health and safety procedures of the Contractor and notify the Architect of any immediate hazards or shortfalls.
- xi. Responsible for co-coordinating the filing of hard copy drawings based on the system set out by the Architect, and as per the updated drawing list. To ensure that the drawings that are not in use are properly filed away.
- xii. To program and carry out snagging of all the buildings in an organized and systematic manner, so that the final snagging time programmed by the Contractor can be met without any delays to the Project. File away the snag list in an organized, systematic manner so that it can be retrieved/reviewed in the future by Architect.
- xiii. Monitor trades, e.g. installation, concealment, neatness and routing etc. quality assurance and standards of workmanship on finishes.

- xiv. Check and verify the Contractor's time sheets, employees pay sheets and day work sheet for records.

1.7.1 Selection of clerk of Works.

Selection of the clerk of works was done at the time of bidding where the leading consultant attached credentials of the partnered consulting team; each consultant was vetted including the clerk of works and approved by the Construction Management team from PPDA and URF.

1.8 Supervising Team and their duties and responsibilities.

The following are the duties and responsibilities exhibited by the consulting team on the project;

Project Architect roles;

1. Working closely with the Client, design staff and contractors and subcontractors to ensure that project is completed on time, to budget and with appropriate technical rigor.
2. Providing a high level of technical and design input into a variety of civil related works, coordinating program requirements with and to manage all aspects of design, throughout construction phase.
3. Organizing, supervise and coordinating the project consultants and the onsite construction in accordance with construction programme and resolution of design queries from site as they arise.
4. Representing Client's interests, providing leadership and establishing and maintaining effective and harmonious working relationships with all those involved in the project.
5. Coordinating the functions of other consultants.
6. Preparing architectural designs for any variations within the scope on the project.
7. Reviewing statutes, regulations, codes and by-laws applicable to the construction and where necessary reviewing the same with the Authorities having jurisdiction in order that the required consents, approvals, licenses and permits.
8. Reviewing Shop Drawing from contractor and suppliers.
9. Issuing Certificates for Payment.
10. Reviewing Contractor's design Documentations.
11. Carrying out Site visits and inspections in accordance to the project programme.

Civil- Structural Engineer (Proman) roles;

1. Preparing quality control system to be adopted in the project for structural and civil engineering works and ensuring that only approved materials are used by the contractor and that they are used to the required specifications.
2. Stage inspections to ensure that the contractor carries out the works in accordance with the issued drawings so that the contractor only proceeds with the works after stage approvals.
3. Providing any special details if need arises during construction.
4. Reviewing contractor's methodology of work in relation to civil/structural activities.
5. Reviewing contractor's health and safety provisions in relation to civil/structural activities.
6. Reviewing test concrete and other material test results.
7. Attending of formal site meetings and inspections.
8. Providing any additional technical structural advice and information to the team.
9. Preparing of civil engineering designs for storm water drainage.
10. Pavement design for the appropriate loading. Vertical and horizontal alignments, turning circles, and durability of surfacing shall be considered. Pavement drainage and underground water shall be carefully assessed and designed.
11. Assisting in the production of the necessary periodic valuations related to Civil and structural Engineering.
12. Advising on progress in the performance of the services and of any issue that may materially affect the delivery, the cost or quality of the project.

Electrical Engineer (Gems Engineering) roles;

1. Inspecting first fix works before casting of slabs, plastering of walls etc;
2. Inspecting second fix works before installation of fixtures.
3. Inspecting fixture installations for correct installation.
4. Reviewing shop drawings, specifications material samples and product data sheets;
5. Preparing and updating all Electrical designs and BOQs for any variations on the project.
6. Attending site , project meetings and inspections.
7. Supervising and guiding pre-commissioning tests for the entire installation;

8. Reviewing working drawings and as-built drawings and Assist the client on any issues pertaining Electrical Services.
9. Evaluating contractor claims for interim and final payments;
10. Reviewing quotations (such as for variation works) for appropriateness.
11. Preparing Cost variations controls, variation BOQs; approvals and confirmations.
12. Preparing final account for the project on the basis of which the Project Manager certifies final payments.

Mechanical Engineer (Gems Engineering) roles;

1. Preparing and updating all Mechanical designs and BOQs for any variations on the project.
2. Attending site , project meetings and inspections.
3. Supervising and guiding of pre-commissioning tests for the entire installation;
4. Reviewing working drawings and as-built drawings and Assist the client on any issues pertaining mechanical services.
5. Evaluating contractor claims for interim and final payments;
6. Reviewing quotations (such as for variation works) for appropriateness.
7. Inspecting first fix works before casting of slabs, plastering of walls etc;
8. Inspecting of second fix works before installation of fixtures.
9. Inspecting of fixture installations for correct installation.
10. Reviewing shop drawings, specifications material samples and product data sheets;
11. Preparing Cost variations controls, variation BOQs; approvals and confirmations.
12. Preparing final account for the project on the basis of which the Project Manager certifies final payments.

Quantity Surveyor (Buildcost) roles;

1. Measuring Works done & Interim Payment Valuations / certificates
2. Preparing Cost variations controls, variation BOQs; approvals and confirmations.
3. Financial statements/appraisals - cost reports, Cost forecasts and budget tracking.
4. Preparation of final account for the project on the basis of which the Project Manager certifies final payments.
5. Attending site meetings and routine supervisions when need arises.

6. Reviewing contractor's work progress; provide measurements of work done, prepare monthly reports with all supporting documents.
7. Assist Project Management Team to provide the Contractor' possession of site according to approved design and scope of work with clear boundaries, coordinates, levels and access route as predefined.
8. Inspecting and confirm the contractor's setting-out of works to ensure construction is in-line with the approved design.
9. Monitoring contractor' adherence to safety, health and environmental compliance with NEMA policies and national building control standards and record of incidents /accidents.
10. Providing full-time daily site supervision of the construction progress on all works related to civil engineering including electrical-plumbing networks to ensure that the work done is as per the pre- defined specifications.
11. Advising the Project consultants or his delegated authority for action on technical contractual issues incase of deviations from site instruction.
12. Coordinating and collaborating with other site supervisors (such as Site Supervisor for Electromechanical works) to ensure that cross cutting issues are addressed on time.
13. Tracking all change requests by the project manager, contractor and record variations/omissions; maintain a master list of all proposed changes and the approval records; Inspect the material samples, witness tests and evaluate laboratory test results provided by the Contractor to ensure conformity to specifications and make recommendations to Project Manager.
14. Reviewing and evaluating technical submissions (related to civil and plumbing related items) from contractors applicable to the project. These include survey reports, time schedules, shop drawings, quality assurance/control plan, work methodologies and make appropriate recommendations to the Project Consultants.
15. Reviewing the potential changes in final quantity that may affect the project cost and inform the Project Manager.
16. Reviewing contractor's work progress; provide measurements of work done and monthly reports with all supporting documents, preparation of As-built drawings.

CHAPTER TWO: PROJECT IMPLEMENTATION AND CONSTRUCTION METHODOLOGIES

2.0 Introduction

The successful implementation of a construction project almost solely relies on the competences and site management practices of the main contractor. Supervising consultants are required to review and advise accordingly and protect the project from failing.

This is done to ensure that the project is carried out within the stipulated time, cost and quality is maintained as specified in the contract.

This chapter explains the major construction activities undertaken on and off site from commencement of works to completion of the project.

- Project contract cost is guided by the Bills of Quantities.
- Project contract time is guided by the Work schedule/ work program.
- Project quality is guided by the specifications.

2.1 Contract Administration documents

2.1.1 Insurance bonds.

The contractor was required to acquire insurance for particular items according to the terms of Contract, Insurance was obtained for the following;

Equipment, personal injury or death to human resource, Works and materials, loss of or damage to nearby property during execution of the contract.

2.1.2 Advance payment

The contractor before commencement of works was given an agreed upon lump sum figure of Advance Payment (3% of original contract sum) UGX 1,417,002,818 to enable him conduct mobilization and start the works.

2.1.3 Key personnel

The contract required the contractor to have key personnel of specified competence, experience and academic background to execute the project. These included a full-time project manager, registered engineers for all disciplines, a site engineer and two experienced foremen. The client interviewed the personnel at commencement and found them satisfactory.

2.1.4 Performance bond

A performance bond was a contractual requirement for this project.

2.1.5 Work program & Mobilization schedule

The contractor submitted a work program showing the schedule of construction works and how the agreed project duration was going to be achieved. An updated program was submitted monthly for further tracking and guidance from the project manager.

A mobilization schedule showing availability and deployment for key equipment and personnel was also prepared and submitted for approval.

2.1.6 Contractor's establishment

The Contractor had an average monthly work force of 118 people of which 11 were women (9.3%) and 107 were men (90.7%). The work force was also composed of 107 Ugandans (90.7%) and 11 were foreign nationals (9.3%).

Particular key equipment was required to be in the possession of the contractor during execution of the work. However, due to the nature of the construction work with different equipment required at different stages, the contractor demonstrated that he had enough equipment and yards to enable him execute the work, this was confirmed by the consultants and client's visit.

The Contractor's establishment of plant, tools and equipment is as shown in Table 1.

Table 2.1: Contractor's establishment of plant, tools and equipment

SN	PLANT, TOOLS & EQUIPMENT ON SITE
1	Makita Roofing Drill-09 1no
2	Indian Dry Welding Machine Double Phase-06 2no
3	Scaffold Stands with Middle Sleeve 40no
4	Additional Height 1050mm 20no
5	Makita 9" Grinder 3no
6	All PPE available in Stock
7	Kwik Scaffolding(With all its Components)
8	Cross Bars 2.2mm 90No
9	Additional Height 1050mm 20no
10	Hilti Drilling Machine 1no
11	Motor Vehicle UBE780X 1no
12	Scaffold pipes with Middle Sleeve 50no
13	China Dynapac Poker 50mm 7No,30MM 2No,35mm 1No
14	Theodolite 1no
15	Scaffolding Clamps Ordinary 700no
16	SCM Tower Crane Full Set 1no
17	Makita 4" Grinder 1no
18	Dumpy Level Stand only 1no
19	Honda Water Pump 1no
20	MS Column Mould Plates 36no
21	Column Mould Plates with Plywood 74no
22	Honda Vibrator Petrol 2no
23	China Electric Vibrator 3no
24	Generator 2no
25	Makita Circular Saw 1no
26	Makita Air Blower 1no
27	Wall Shutter Plates & RHS 686no
28	Lift Mould Plates 40no
29	I-Beam 152x152x6m 7no
30	Shuttering Plates 230no
31	Bottom Adjusters(OPP) 3oonos
	PLANT, TOOLS & EQUIPMENT OFF SITE
32	Mould Plates,(400mmX3.4M 8No, 550mmx3.4m 2No, 650mmx3.4m 7No, 700x3.4m 6No, 750mmx3.4m 4No).
33	Concrete Batching Plant 1no
34	Concrete Transit Mixer 1no
35	Heavy duty tippers 10 Ton 5no
36	Concrete Pump – 10 stories 1no
37	Tower crane- 1no

2.2 Execution of Works

2.2.1 Contract signing, Site possession, Commencement and completion.

Contract signing took place on 17th October 2017, the client handed over the site to the contractor on 18th December 2017 in a ceremony held on the site grounds and many stakeholders were invited including members from ministry of works and transport and ministry of finance, planning and economic development. Site possession was done on 19th December and contract start date was 28th November 2017.

The project initial duration was 40 months including of mobilization period hence the project was scheduled to end on 27th November 2020 but was extended to 30th March 2021.

2.2.2 Project planning, mobilization and execution.

After site handover, submission and approvals of the necessary contract document requirements, mobilization of personnel, equipment and materials started.

The contractor's construction manager and other key technical staff participated in coming up with a work program to guide the project, a procurement schedule was then developed basing on this.

Preliminary works such as hoarding, site clearance, connection of power and water to the site, erecting temporary structures for office, storage and sanitary facilities were done in the initial week of mobilization.

The contractor experienced a small delay by the client not removing his materials on site, diversion of the sewerage line by the National water and the granite rock that was found in the ground during drilling for the concrete piles, this was captured and time was extended to the contractor.

A site layout was drafted and discussed to devise the most suitable layout basing on the works that were to be carried out, preliminary structures that were to be setup, size and orientation of the land that was to be used, the plot area was not enough for the facilities or structures to be constructed since it involved excavation for three basement levels that were covering 80% of the plot size. The contractor had to seek permission from KCCA to use the road reserve by hoarding it off and use the area for temporary site offices and ablutions, The Client also engaged the neighbor (UEDCL Towers) to allow contractor demolish the boundary wall along no man's land

and use the space for diverting the sewerage line, it was agreed that the contractor will reinstate the boundary wall in an agreed period of time.

Site clearance was done and preliminary temporary structures were set up such as site hoarding, contractor's site offices, offices for the clerk of works and meeting room, toilets for the staff, material stores and shed, accommodation for the site engineer and foreman on site.

There was water and electricity on the site so the contractor continued to use the meters that were already installed on site since the client was renting out the existed structure.

Construction works commenced with earthworks, mass excavation to the road level.

2.3 Construction phases, methods and methodologies

2.3.1 Substructure works

Construction works commenced with earthworks, mass excavation to level the site, mass excavations had to be done using chain excavators and wheel loaders to level the site up to the road level.

The excavated embankments were protected by applying short Crete concrete that was reinforced with chain link, and then the contractor proceeded with setting out for piles.

Setting out the extents of the piles and building, was done using coordinates method. Pegs were fixed at each four corner coordinates which were transferred to the Profile boards using nails, and building strings. Setting out was done based on architectural drawings but in close consultation with structural drawings as well.



Figure 3: Site excavation to road level.



Fig4; short Crete concrete applied to excavations embankments.

Positions for piles were transferred to the ground at an interval of 2meters, Alternate Excavation for piles commenced using the auger machine to a depth not exceeding 22m from the reduced level. Pile excavation was done at alternate points to avoid collapse of pile pits. During excavation, the auger machine was calibrated with depths that would help the operator to know the depth of excavation reached.

After excavation, a cage of steel measuring 12m would be lowered and supported at a certain height by a fork lifter as they connect another steel cage of 9m long, after tying them tighter, the cage was lowered down until it touched the bottom of excavation, fixed and supported to the sides of excavation using binding wire.

A funnel of considerable length was inserted in the steel cage to help flow of concrete to the deeper depth, a concrete truck then discharged concrete onto the funnel as it moves down the bottom of the pit, at a certain depth, the funnel was pulled up and its depth was reduce by removing some parts off the funnel, concrete was casted to a depth of 1.3m below the top of cage reinforcements, vibrations was done using the pork vibrator and concrete left to set. This was repeated at alternate positions on the following day until the whole line was finished.

In case it rained, the pit excavations were protected by inserting a welded plate all around the pit and supported with concrete to avoid water entering the pit.

Upon completing casting concrete to all piles around the building perimeter, excavation for the pile cap beam began using pick axes to a depth of 1.3m and width 1.3m. Upon reaching level of 1.3m, surface treatment was done using Termidor. This was followed by placement of pile cap

reinforcements all around the building perimeter, the retaining wall starter bars were also fixed into position on the pile cap reinforcements, shuttering done using steel plates to the sides of excavation and concrete casted.

Rebar works to the retaining wall begun as the pile cap concrete was curing. After fixing retaining wall reinforcements, the shuttering commenced and the concrete was poured to the retaining wall all around the building perimeter.

High tensile reinforcement bars of 25mm, 20mm, 16mm, 12mm and 10mm diameters were used in the pile cages and retaining wall as shown below.

Concrete grade 30 was used for all sub-structure concrete works. Curing was done for a minimum of 14 days to ensure adequate hydration and strength development for the concrete.

The above described processes are elaborated in the following photos;



Fig5; Drilling for the pile pit.



Fig6; Auger machine targeting the pile position.

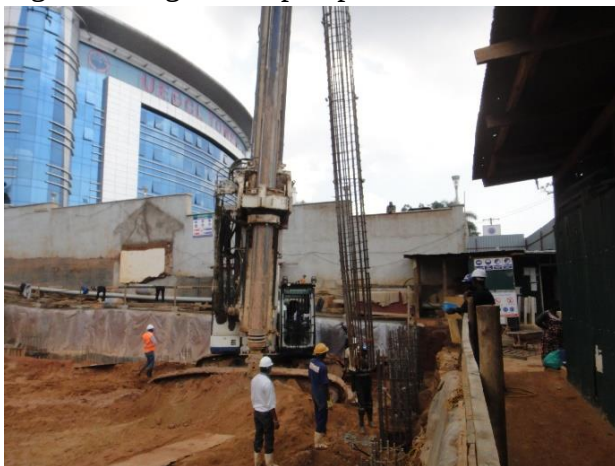


Fig7; Fixing the steel cage into the pile pit.



Fig8; Steel cages lowered down into pits.



Fig9; Steel cage ready to receive concrete.



Fig10; Funnel being lowered into the steel cage.



Fig11; Casting concrete to the pile.



Fig12; Excavating for the pile cap beam.



Fig13; Fixing steel and formwork to the pile beam

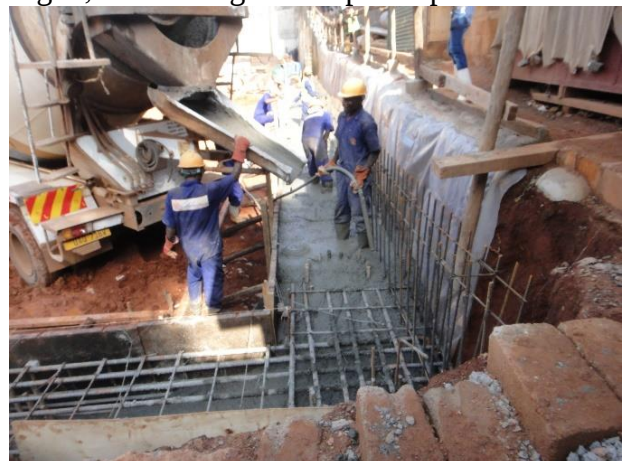


Fig14; Casting & vibrating pile cap beam.



Fig15; Rebar works to the retaining wall.



Fig16; Formwork to the retaining wall.

2.3.1.1 Excavating/coring in the rock.

The drilling machine would first drill the rock using the drilling auger and exchanged with another coring bucket that would help break the rocks into smaller particles, then the coring bucket is replaced with the cleaning bucket for removing the debris from the pile pit. The process of fixing steel and casting concrete to the pile was repeated as describe above.

2.3.1.2 Mass excavation.

The excavation for basements commenced after the 21 days of complete curing to the pile cap beam, mass excavations was done using four chain excavators and they would load soil onto awaiting trucks until the excavation level of 10m below the road level was reached. The 10m depth was for the three basements.

Upon reaching the final third basement level, a pedestrian roller was used to compact soil residue to ensure the surface is leveled and ready to receive concrete blinding. Surface treatment was done using Termidor and followed by concrete blinding.

2.3.1.3 Keeping surface free from rain water.

I ensured that a sump was created to enable settling of silt and water where it would be pumped to the public drain system. This helped in keeping the reinforcements and working environment clean as it would also improve on our workmanship on concrete works.

Pictures



Fig17; Drilling through the rock.



Fig18; Inserting a coring bucket to the pile pit.



Fig19; Applying water to cool the bucket



Fig20; Placing the cleaning bucket into the pit.



Fig21; Mass excavtion for basements.



Fig22; Concrete blinding to basement3.

2.3.1.4 Water proofing to Pile surfaces.

Mass excavation enabled all pile surfaces to be exposed as required and cement mortar was applied onto the gap between the piles to create an even surface that would enable applying of a water proofing material. Upon finishing plastering, the water proof primer was applied across all pile surfaces and two layers of 3mm APP membrane was applied to the piles surfaces using the torch.



Fig23; Applying water proof primer.



Fig24; Applying the APP membrane.

2.3.1.5 Rebar works to the Raft, lift shaft, shear walls, staircases and columns.

Upon finishing the concrete blinding, the bars of 25mm, 32mm, 12mm and 20mm diameter bars were laid to form a mat of the raft, Column, shear and staircase positions were marked on the raft and their steel was placed in their positions.

2.3.1.6 Retaining walls around perimeter of building.

The reinforcement steel for the skin retaining wall would be fixed immediately after the water proof is done, then formwork fixed one side since the other side had piles. Formwork was supported well to avoid uplift during casting by holding the formwork onto the slab by dowels driven into the slab.

2.3.1.7 Building services in the Raft.

Electrical Earthing,

Eight pits for earthing were dug in which charcoal and salt were added into the soil and an electrode was driven into the pit, the copper tape was connected to the electrode and run along

the perimeter of the building and came out through columns. Electrical conduits supplying power to different points were laid through the raft reinforcements.

2.3.1.8 Mechanical Services.

Formwork fixing for sumps was done and each sump was connected to the other using a 250mm pipe that was running through the raft reinforcements slopping towards the main sump.

2.3.1.9 Methodology of casting concrete to the Raft

The contractor provided a methodology of casting concrete to the Structural Engineer and it was approved. The methodology included supply of ready mix concrete and be pumped using a concrete pump, Casting of concrete was done in phases, first phase was casting concrete to a depth of 800mm since it wasn't possible to supply all that volume of concrete at once. Second phase was applying a bonding solution and cast the balance depth of 300mm to make a total depth of raft of 1100mm.

2.3.1.10 Floor finishes in basements

As concrete in the second phase (second layer of concrete of depth 300mm) starts to set, they applied Fosrocnilo floor hardener to improve on concrete setting after which a powered floating machine was passed on top of concrete and finally apply a steel float to give a fair finish on concrete.

The following day sand is applied to the floor surface and damped with water for 14days to help curing on concrete.



Fig 25; Sumps fixed into raft steel.



Fig 26; Laying the electrical copper tape.



Fig 27; Casting concrete to 800mm depth.



Fig 28; Casting concrete topping of 300mm.



Fig 29; Fosroc Nitro floor hardener applied



Fig 30; Power floating the concrete surface.

2.3.1.11 Works in basement III

Works in basement3 commenced with reinforcement fixing to columns, staircases, shear walls, retaining walls, lift shaft walls and after which steel formwork would be secured around the columns, staircases, shear walls, lift shaft walls and concrete casted and vibrated to have these all these members in place. In casting, an approved lap length of reinforcements would be left exposed at the top of the columns to provide anchor for beams and continuation for the columns at subsequent levels above.

2.3.1.12 Curing of concrete members

This was done through fixing the hessian cloth all around the members and soaked with water every morning and evening for 14 consecutive days.

2.3.1.13 Decking to slab and beams

Decking for slab and beams would commence with fixing steel scaffolding and laying steel plates on top of the scaffolding followed by applying the mould oil and sealing the steel plate joints using the tape to avoid seepage of concrete through the formwork and then the rebar works to beams and slab would follow, Mechanical and electrical services too would be fixed through the slab reinforcements. As soon as the rebar works and MEP services are done, the structural, electrical and mechanical engineers would inspect the works and sanction the casting of concrete to the slab. This process was repeated for the basement2 and basement1 slabs.

2.3.1.14 Construction of Suspended Solid Slabs

Definition, a solid slab is a reinforced, full concrete slab which is used in residential, commercial, office, institutional or industrial construction.

The design provided for solid slabs for Ground floor, basement1 and basement2 slabs due to the nature of loading since these areas are to be used as parking slots for the entire building.



Fig 31; Fixed lift shaft reinforcements.



Fig 32; Formwork fixed to columns.



Fig 33; Formwork fixed to retaining walls.



Fig 34; Formwork fixed to shear walls.



Fig 35; Decking to slab

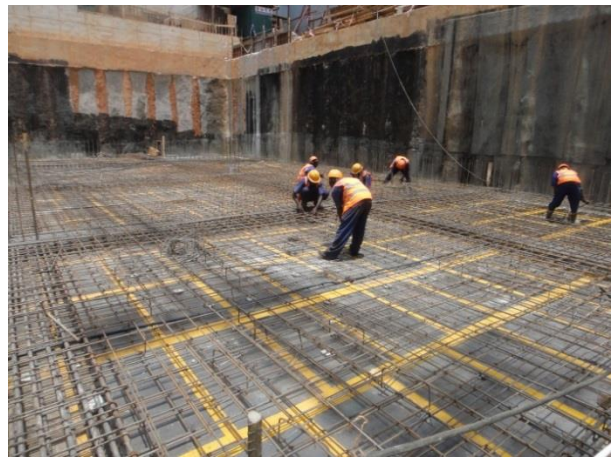


Fig 36; Reinforcements to solid slab fixed.



Fig 37; Sleeves and conduits for service fixed.



Fig 38; Casting concrete to solid slab.

2.3.1.15 French Drains

Machine crash aggregates (20mm) were placed at a slope behind the retaining walls upon finishing water proof and a perforated 200mm diameter UPVC pipe rapped around using a geotextile membrane is laid onto the aggregates to slope and connected to the sump. Pipe is again surrounded with more machine aggregates to a depth of 300mm. A dry skin of Hard-core measuring to 300mm thickness is then placed onto the aggregates from the bottom to the level of the ground level. Backfilling is done in conjunction with placement of hardcore; a geotextile membrane is placed vertically along the hardcore to prevent soil from blocking the pores in the hardcore as backfilling is ongoing.



Fig 39; PVC pipe laid onto stone chippings.



Fig 40; Construction of the dry wall.

2.3.1.16 Damp proof membrane;

100 gauge polythene sheeting was laid on blinded hardcore at ground level an APC of 30mm thickness was provided where a layer of bituminous membrane was laid before placing of blocks.

2.3.1.17 Movement, Contraction and Expansion joints;

This was done using a saw cut movement joint 6mmx25mm deep and sealed with mastic sealant 6x25mm in floors, beams and slabs.

2.3.2 Super-structure Works.

This project was a twelve storey building, most of the superstructure construction consisted of reinforced concrete columns, lift shaft walls, shear walls, retaining walls, beams, suspended hollow slab from mezzanine floor to sixth floor slab.

Work on the superstructure commenced with steel reinforcement fixing and erection for columns, staircases, shear walls, lift shaft walls after which formwork would be secured around the columns, staircases, shear walls, lift shaft walls and concrete cast and vibrated to have the columns, staircases, shear walls, lift shaft walls in place. In casting, an approved lap length of reinforcements would be left exposed at the top of the columns to provide anchor for beams and continuation for the columns, staircases, shear walls, lift shaft walls at subsequent levels above.

2.3.2.1 Construction of Suspended Hollow slab

Construction of hollow slab would commence with fixing formwork system for beams, such that the beam bottoms and sides were placed first secured in place with struts and nails, then this would be followed by steel plates to the sides of beam formwork, support by steel props, fixing steel scaffolding and then laying steel plates, once steel plates are fixed in position, sealing the steel plate joints using the tape to avoid seepage of concrete through the formwork and applying the mould oil commences. Upon finishing sealing the joints, hollow maxpan concrete blocks measuring 300x200x200mm were placed onto the slab decking in their respective bays. This was followed by placement of steel reinforcements in ribs, laying of electrical conduits and fixing plumbing sleeves and floor drains. A layer of BRC A142 was laid onto hollow maxpan concrete blocks and tied into position using the tying wire of 1.8mm.

However washroom areas were completely done with solid slabs to minimize leakages in slabs. Cleaning is done throughout the area ready for casting and then gauges to guide masons casting concrete to slab are fixed. The inspection was done by Structural, MEP engineers and in case of any comments, I would ensure that pending issues are worked on and I sign a concrete pour card for the contractor to enable him proceed with casting concrete.

Once I signed the concrete pour card, the contractor would supply ready mix concrete class 30 and pump it using the mobile concrete pump to pump concrete to elevated heights and vibrated as casting was going on.

Ready mix concrete was used due to limited space on site and large quantities of concrete as to avoid unnecessary joints in the slab. It was pumped using a concrete pump to

- **Steel reinforcement;** High yield ribbed bars of 10mm,12mm,16mm,20mm,25mm,32mm diameter bars, mild steel round bars of 8mm, 10mm diameter bars and A142 Fabric mesh reinforcement weighing 2.22kg per square meter were used.

- **Curing;** Concrete requires curing for at least 14 days to ensure complete hydration and full-strength development. Curing also helps to keep the concrete cool and maintain its colour. On this particular project, curing was done with the help of tying hessian cloth around the concrete columns, shear and retaining walls and keeping them constantly wet with water for the entire 14dayperiod.
- **Walling;** This consisted of reinforced concrete 200mm thick for shear walls, dwarf walls and walls of 200mm, 150mm, 100mm thick made out of solid concrete blocks including hoop iron wall ties every alternate course and precast concrete lintels. Concrete blocks would be cured 15minutes before placement to remove dust and facilitate proper bonding. A plumb bob, building line and builder's square were used to ensure that the walls are straight and flush with the edges of the structural frame, the following day the block work would also be cured to enhance cement mortar setting.
- **Water proofing to retaining walls;** the solvent base primer was applied across all retaining wall surfaces and two layers of 3mm APP membrane were torch applied to surfaces of retaining walls and lift shaft base. Bituminous water base emulsion was applied to walls that were to be cladded with granite and glass and EPDM APP modified bituminous water membrane fully bonded and torch applied onto solvent base primer to dwarf walls, part of roof and terrace floors.

Bellow are illustrations of superstructure works for mezzanine, first, second, third, fourth, fifth, sixth and seventh floors.



Fig 41; Formwork fixed to retaining wall.



Fig 42; Rebar works to lift shaft walls.



Fig 43; Rebar works to the shear wall.



Fig 44; Casting concrete to lift shaft walls.



Fig 45; Decking to beams and slab.



Fig 46; Maxpan blocks laid onto the slab deck.



Fig 47; Rebar works to slab.



Fig 48; Sleeves and electrical conduits fixed.



Fig 49; Rebar works to the sitting gallery.

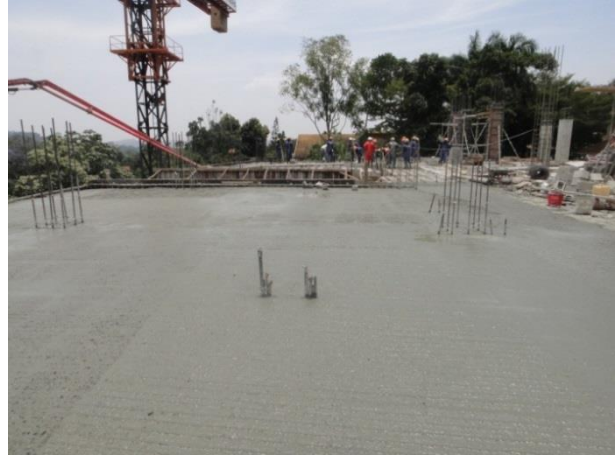


Fig 50; Casting concrete to the hollow slab.



Fig 51; Block walling to office area.

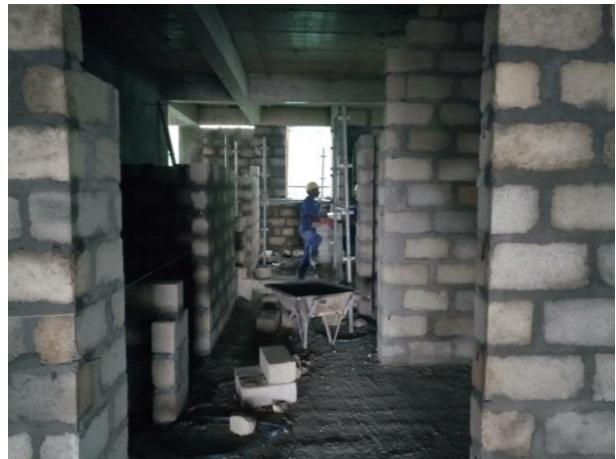


Fig 52; Block walling to washrooms.

2.3.3 Roofing and Insulation;

The roof consisted of a steel structural frame that was covered with 24-guage super V Galvanized pre-painted sheets laid over an insulation (420) industrial grade thermal insulation sheets over purlins with galvanized tying wire that were fixed with self-tapping screws onto Z purlins which were fixed onto roof girders.

- **Rain water disposal;** A 160mm diameter UPVC PN6 heavy duty drainage pipe was introduced underside of RCC and steel gutters, 110 mm diameter UPVC PN6 heavy duty down pipe were fixed in ducts and 110mm diameter fulboras cast iron outlet were put at terraces to drain water down into pipes.



Fig 53; PVC pipes for rain water from roof.



Fig 54; Rebar works to the roof gutter.

2.4 Finishes

Internal finishes;

Internally, walls, columns and beams were first hacked with axes to create keys for proper bonding and roughcast applied to them since these were smooth walls casted using steel plates. A mix with cement sand plaster (1:3) was applied to walls and steel floated to obtain a relatively smooth finish. After plastering curing was done using a jet of water for a period of 7 days, when walls attained their strength, a material called “Gyproc filler” was applied to the walls with a steel float. This filler is hard, protective and good in penetrating. It removes all imperfections in the wall plaster and provides a near perfectly smooth surface ready to receive undercoat paint.

Ceiling finishes

The finish was plaster to the staircase soffits, ceiling and basement parking area.



Fig 55; Hacking concrete surfaces.



Fig 56; Plastering to walls.



Fig 57; Curing to plaster works.

External finishes;

External walls were finished with cement sand render (1:3) steel floated to obtain a relatively smooth finish on areas that have no cladding, finishes on other areas include granite stone cladding, Aluminum cladding. Rendering, painting and the ceiling consists of Aluminum paneled eaves and canopy.

2.4.1 Fixtures and Fittings

- **Doors;** Doors consisted of 45mm thick solid cored flush doors faced both sides with Wenge Lacewood veneer including 10mm stainless steel U-channel strips with and without 4mm thick glass vision panel all to be fixed to Wrot mahogany frames and linings, steel louvred doors and Aluminum doors.
- **Windows;** They consisted of Wrot Mahogany, steel, frameless glass and Aluminum windows.
- **Joinery fittings;** Vanity tops were casted in concrete and are to be finished with granite top, Fascia and skirting. Kitchen worktop finished with Italian galaxy black granite, high- and low-level hardwood kitchen cupboard will be fixed, and will also include the cleaners' high-level hardwood shelving and a reception desk.

2.4.2 Electrical installations.

2.4.2.1 First Fix.

First fix involved laying electrical/conduits through slab reinforcements that would help connection links for lights, sockets, data, fire detection and alarm system, building management system and this would be done before casting concrete to the slabs. It also involved fixing of electrical conduits and mks onto walls, fixing cable trays onto slab soffits and laying conduit pipes onto slab soffits to be used for the building management system.



Fig 58; BMS conduits fixed to slab soffit.



Fig 59; Conduits and mks fixed to wall.



Fig 60; Cable trays fixed onto slab soffits.

2.4.2.2 Second and third fix of Electrical installation consist of the following elements;

- Umeme mains power supply of 11kv/415 3-phase and 750hVA distribution transformer.
- Providing power distribution boards, consumer units, provided a separate distribution board for the lift, staircase and external lights, lighting and wiring accessories including providing wiring for all fixed appliances and Air conditioning, light fittings, fire detection and alarm system for every floor, Earthing/bonding and lightening protection and security lighting installation.
- Voice and Data installation
This consists of installing a data system including data cabling trays and a telephone system with its accessories.
- Building management system.

2.4.3 Mechanical installations

2.4.3.1 First Fix.

First fix involved fixing of sleeves and floor drains through slab reinforcements before casting concrete, fixing of rain water pipes in ducts, fixing waste pipes and PPR pipes onto walls, fixing flush valves and pressure testing onto PPR pipes. During testing of PPR pipes the water would be injected into the pipes using the pressure machine until the bar of the meter reads 6bars and it is left for 3hours to check if there was decrease in pressure. When bar does not change, then the pipes are considered to have passed the pressure and incase of change the process is repeated and testing redone.



Fig 61; Fixing PPR pipes for fresh water.



Fig 62; Pressure testing to PPR pipes.



Fig 63; Securing rain water pipes from roof.



Fig 64; Basement extraction ducts fixed.

Second and third fix involved installing of the following elements;

- Water tanks and water mains, consisted of supplying and installing 2 tanks of 32,000 litres and 64,000 litres all braith pressed steel cold water storage tanks and installed a cold water services.
- Sanitary Appliances consist of supplying and installing sanitary appliances.
- Installation of domestic waste water drainage, Rain water disposal system.
- Firefighting installation consist of supplying, fixing and commissioning electric automatic hose reel, portable extinguishers, dry/wet riser system and the sprinkling system in the basements.

- Air conditioning; consisted of supplying, installing and commissioning air conditioning units both outdoor and indoor units, installation of refrigerant pipe work and terminal units, air conditioning ducts, toilet extraction and car park extraction ducting systems.
- Lift installation consisted of supplying, installation and commissioning of the four 13 passenger lifts.
- Cleaning cradle; a cleaning cradle to be supplied to the project.

2.5 External works

External works on this project mainly involved the following activities;

- **Demolitions and removal;** Consisted of careful cut, break and demolition of existing structures on site, removing arising debris from site and making good disturbed areas.
- **Cutting trees;** Trees were cut down, grubbed up roots and removed all arising from site.
- **Mass Excavation;** consisted of mass excavation to reduce levels commencing from stripped level; depositing in temporary spoil heaps on site, loaded and carted away surplus excavated material from site.
- **Fill to make up levels;** consisted of loading from spoil heaps murrum, spreading and leveling excavated material including compacting in layers not exceeding 150mm thick using 15ton vibrating roller to 95% MDD ASHTO.
- **Suspended parking;** The construction consisted of reinforced concrete, water proofed with a 4mm thick EPDM APP modified bituminous membrane, applying water proof cement and screed and mechanically power floated the floor finish and applied Tek-crete EFC-Epoxy putty.
- **Tarmac;** The construction consists of applying a 50mm dense bitumen macadam premix base, wearing course and priming surface of blinding with MCO bitumen.
- **Painting and decoration;** Three coats of road marking paint to be applied to the road kerbs, roads and parking.
- **Paved walkways;** construction consists of excavating to formation levels, murrum fill, compacting, blinding with sand bed and laying of thick heavy-duty paving blocks.

2.6 Aluminum works and cladding

- **Doors;** Power coated aluminum section for single glazing and frameless glass doors are being fixed.

- **Windows;** Glass Concealed Aluminum and frameless glass windows are being used.
- **Partitioning and curtain walling;** construction will consist of structural glazing with laminated tempered glass and frameless glass.
- **Cladding;** Cladding consists of cladding columns with aluminum panels and stainless steel, walls, ceiling soffits, external beams and concrete surfaces cladded with 4mm thick aluminum composite coated panels.
- **Cleaning base;** A 3mm thick anti-skid pressed stainless perforate safety grating to be fixed onto mild steel I-sections hanger anchored to concrete.
- **Sunshades;** horizontal profiled aluminum blade solar shades and decorative fins to be fixed to the vertical framing anchored to concrete.
- **Canopy;** The construction will consist of steel framing and aluminum panels.

CHAPTER THREE: PROJECT MANAGEMENT PRACTICES

3.1 Introduction

A project is made up of a group of interrelated work activities constrained by a specific scope, budget and schedule to deliver capital assets needed to achieve the strategic goals of an agency.

Project management involves planning and organizing of a company's resources to move a specific task, event or duty towards completion. In the construction industry, the project management process includes the initiation, planning, execution, monitoring, controlling and closing.

In any project, there are key constraints that affect the project implementation and success in achieving the project objectives. These are; cost, time, quality and scope, and successful project implementation depends on how well these are managed.

This chapter looks at how the different aspects of the project were handled using project management tools and techniques by the author and contractor's team in order to successfully achieve the project.

3.2 Project Scope Management

A project is a “temporary endeavor undertaken to create a unique product or service”. It further defines project management as “the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations of a project”. Meeting or exceeding stakeholder needs and expectations invariably calls for a management style that enables the project implementers to strike a balance between the project constraints, key among which are; cost, time, quality and resource productivity. Project management also involves project planning, implementation, monitoring and control.

Project Scope Management processes include:

- I. Plan scope management – The process of creating a scope management plan that documents how the project scope will be defined, validated and controlled.
- II. Collect Requirements—The process of defining and documenting stakeholders' needs to meet the project objectives.
- III. Define Scope—The process of developing a detailed description of the project and product.
- IV. Create WBS—The process of subdividing project deliverables and project work into smaller, and more manageable components.

- V. **Verify Scope**—The process of formalizing acceptance of the completed project deliverables.
- VI. **Control Scope**—The process of monitoring the status of the project and product scope and managing changes to the scope baseline.

3.3 Project Cost Management

Construction projects are complex, involving several professional participants and stakeholders. Also, construction projects unlike other projects become more elaborate with progress during implementation hence making it difficult to fully execute a project without variations or changes arising along the way.

The two party's privy to a construction project contract, the contractor and the client have differing objectives both leading to the same goal. The contractor aims at achieving the project at maximum profits while the client aims at getting the project at the least cost.

Despite all this, the different key participants should strive to ensure that the project is achieved within the stipulated time and cost.

Project Cost Management includes the processes involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget. Project Cost Management processes include:

- **Estimate Costs**—The process of developing an approximation of the monetary resources needed to complete project activities.
- **Determine Budget**—the process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline.
- **Control Costs**—the process of monitoring the status of the project to update the project budget and managing changes to the cost baseline.

For the contractor, the first costs estimates were done by his quantity surveyor and rates were built in including cost of materials, machinery involved, labor, transport, overheads and profit markups. These rates were priced against the different quantities in the BOQ were the basis for getting the contract sum.

The consultant quantity surveyor's goal was to produce cost estimates that guided the client on the possible cost of the project and tendering process, the consultant Q.S also helped the client to achieve the project at the least cost. Controlling costs involved ensuring that the cost of

materials, labor and machinery were as low as possible without compromising the quality of works.

3.3.1 Financial forecasts and Appraisals

This project had an admeasurement contract therefore where works done were measured and paid not necessary sticking to paying the BOQ quantity unlike in a lump sum contract where only the quantity in the original contract is paid for whether or less is done. The consultant quantity surveyor had to re-measure works, forecast and prepare financial appraisals at intervals when milestones are covered to determine whether the contractor was likely to exceed the contract sum (cost overrun) or finish within the contract sum implying a (cost saving).

In case of a cost overrun, the contractor had to alert the client and consultant to get confirmation if they are willing to provide additional funds.

3.3.2 Interim claims

The contract stipulated that monthly interim claims and measurements for works done on site had to be prepared and submitted for valuation by the consultant and certified for payment. Interim valuations are not final and they can be revised in subsequent interim valuations which can all be overridden by a Final Account with signed off measurements.

10% of the value of the works done was retained by the client. This retention was specified in the contract and was meant to compensate the client incase the contractor failed to remedy any defects that arose during works execution and also in the defects liability period. 5% of this retained money is to be paid upon achieving practical completion and the remaining half to be paid upon issuing of the certificate of making good the defects by the project manager or completion of defects liability period without any defects.

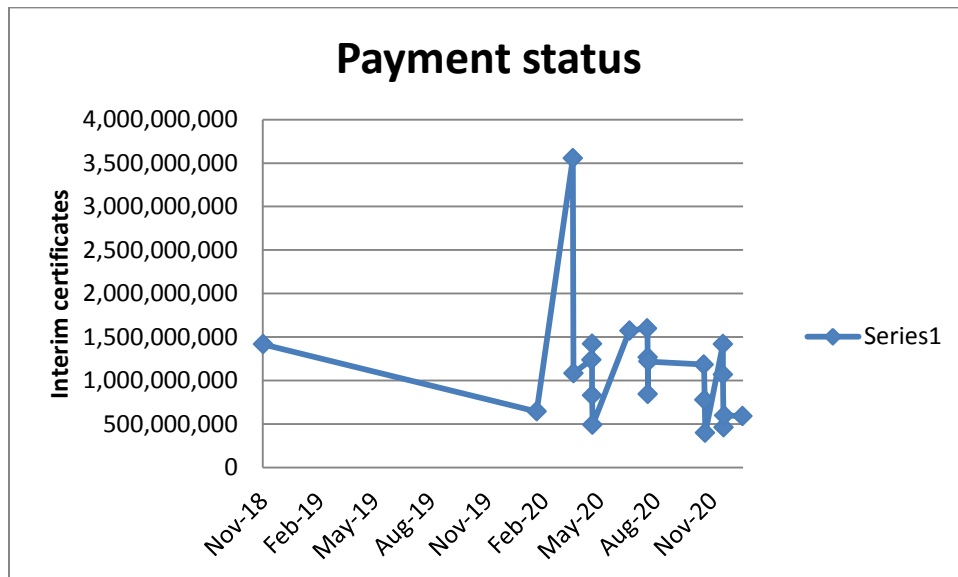
15% of the value of works was deducted towards advance recovery. This was done for every interim claim and valuation until full recovery of the advanced money.

The consultant would meet up with the contractor's quantity surveyor from time to time to reconcile and agree on measurements of works done. This was done at different stages like after completion of substructure, during frame construction, after roofing, and finally to be done on practical completion to prepare Final Account.

Table 3.1 : Payment Status

No	Item	Submitted	Certified	Expected	Payment	Remarks
1	Payment interim certificate no.1	8-Feb-18	15-Feb-18	1-Apr-18	1,238,329,699	Received
2	Payment interim certificate no.2	10-May-18	17-May-18	1-Jul-18	1,599,681,014	Received
3	Payment interim certificate no.3	19-Sep-18	19-Sep-18	3-Nov-18	1,417,002,818	Received
4	Payment interim certificate no.4	2-Oct-18	10-Oct-18	20-Oct-18	1,182,796,223	Received
5	Payment interim certificate no.5	5-Oct-18	10-Oct-18	24-Nov-18	1,068,190,147	Received
6	Payment interim certificate no.6	14-Jan-19	4-Feb-19	21-Mar-19	3,554,598,135	Received
7	Payment interim certificate no.7	10-Feb-19	18-Feb-19	4-Apr-19	1,423,193,110	Received
8	Payment interim certificate no.8	1-Mar-19	6-Mar-19	20-Apr-19	830,138,862	Received
9	Payment interim certificate no.9	11-Apr-19	18-Apr-19	2-Jun-19	1,574,003,050	Received
10	Payment interim certificate no.10	15-May-19	6-Jun-19	21-Jul-19	842,485,352	Received
11	Payment interim certificate no.11	10-June-19	18-June-19	30-Jul-19	1,267,271,726	Received
12	Payment interim certificate no.12	14-Aug-19	28-Aug-19	9-Oct-19	777,839,869	Received
13	Payment interim certificate no.13	26-Sep-19	1-Oct-19	15-Nov-19	461,533,761	Received
14	Payment interim certificate no.14	30-Oct-19	4-Nov-19	24-Jan-20	644,256,790	Received
15	Payment interim certificate no.15	6-Dec-19	10-Dec-19	20-Dec-20	591,793,559	Received
16	Payment interim certificate no.16	15-Jan-20	28-Jan-20	9-Mar-20	1,083,399,379	Received
17	Payment interim certificate no.17	16-Mar-20	18-Mar-20	28-Apr-20	490,544,767	Received
18	Payment interim certificate no.18	12-Jun-20	15-Jun-20	27-Jul-20	1,218,093,989	Received
19	Payment interim certificate no.19	17-Aug-20	20-Aug-20	1-Oct-20	397,709,226	Received
20	Payment interim certificate no.20	22-Sep-20	28-Sep-20	9-Nov-20	598,783,589	Received
21	Payment interim certificate no.21	16-Nov-20	23-Nov-20	4-Jan-21	598,783,589	Pending

Graph showing money received by the contractor to date.



3.3.3 Variations

A variation is a deviation or alteration in the scope of works. It is sometimes referred to as change order.

Variations arose due to change orders and cost implications of the design review, a variation report was provided as a synopsis of the cost implications of the design review and development of the signed contract for Construction of Public Procurement & Disposal of Public Assets Authority (PPDA) and Uganda Road Fund (URF) head office.

3.3.3.1 Change/Variation Orders.

Table 3. 2 : Variations on the project

Item	Description	Justification	Valued Amount
1	Basement		
1.1	Removing the Rockcrop and increased pile depths.	Affected Basement construction.	2,431,827,977
2	Electrical		
2.1	Upgrade the power supply from 750KWA to 1250KWA	Under estimated	762,010,470
2.2	Provide cleaning cradle Monorail as upgrade from Gantry.	Efficiency	477,049,843
3	Time		
3.1	Extension of time from 30 th Nov 2020 to 30 th Mar 2021	Delay in Issuance of excavation permits due to pile design review	296,409,444

3.3.3.2 Design review cost appraisal

Design review cost was structured as follows:-

Financial section - Highlighted the figures per work item illustrating how the redesigned works deviated from the contracted sums awarded.

Executive summary - Highlighted the key points on the contract sums and additional works included changes to the building structure as presented, interior design improvements and additional items deemed necessary for consideration not captured in the contract.

Categorization of Costs - The categories included Revised Structure (structure re-design), Design Improvement (interior design enhancements) and Contract Omissions (works deemed necessary for consideration not captured in the contract)

Contract sum

The Contract Sum for the works was Uganda Shs 47,233,427,266 (Inclusive of VAT).

- **Variation and additional works**

The Project Cost became Uganda Shs 51,212,884,300 which reflected a cost increase of Uganda Shs 3,979,457,034 on the Contract Amount of Uganda Shs 47,233,427,266. The cost increase was categorized into 4 major triggers as tabulated below: -

Table 3.3 : Summary of cost appraisal.

Item	Category Description	Contract (UGx)	Appraised Design	Increase/Decrease	Remarks
1	Revised structure	16,979,385,902	19,560,449,663	2,581,063,761	Added (2No) floors, revised building façade and additional lift.
2	Design improvements	20,051,866,632	20,979,814,154	927,947,522	Upgraded product specification and building functionality
3	Omissions in the contract	114,704,260	1,120,838,253	1,006,133,993	Items not captured in the contract deemed required
4	Unchanged Items	10,087,470,472	9,551,782,231	-535,688,241	Items maintained in the contract with the exception of contingencies provisions.
	Total	47,233,427,266	51,212,884,300	3,979,457,034	Cumulative cost increase.

(A) Office building variation

The Contract Amount for Office Building increased and was due to the following reasons;

The element of Reinforced Concrete Superstructure increased from addition of two (2) No. levels (mezzanine and 7th floor levels), introduction of sheer walls and additional staircase as measured, arised from increased scope of walling both from additional floors and building re-design. The element of Fittings and Balustrades, the element of Internal Finishes, the element of External finishes arising from increase in building size (height) and improvement of surface finish from weather guard paint to aluminum panel cladding to safe guard the integrity of the

building against the elements of weather and use of a washable surface against the predominantly dusty environment.

(B) Mechanical installations variation

The Contract Amount for Mechanical Installations reflected a cost increase and was due to the following reasons; arising from revision of sprinkler system, firefighting, sanitary fittings and plumbing and drainage as per appraised design.

(C) Electrical installations

The Contract Amount for Electrical Installations increased and was due to revised cabling for extraction fan points, introduction of Distribution board & associated cabling for Mechanical services and isolators not captured in the contract.

The associated electrical installations element of Standby Generators increased arising from introduction of rising bus bar for UPS power and associated cabling provided for both wings in appraised design in the contract.

(D) Ict/cctv installations variation

The element of Access Control increased arising from review of Emergency break glass, Bio entry and access control points from 12 to 48No, deemed more adequate for purpose upon design review.

(E) Air condition installations variation

The Contract Amount for Air Condition Installations increased arising from addition of extraction ducts and louvers deemed necessary for efficient extraction of the basement, review of the ventilation and extraction systems, rationalization of the various Air Conditioning installations, pressurization of the second set of stairs, Increase in capacity of Toilet extraction fan mounted on roof, Provision of UPS room air-conditioning for centralized UPS introduced in the appraised design. The element of Server Room air conditioning was an addition to the contract deemed as required for functioning of the room and Provision of Fresh Air but not captured in the contract.

Lift installations variation

The Contract Amount for Lift Installations cost increased arising from an additional lift as designed to balance lift usage from 3No. to 4No. such that each wing of the building is served by two lifts and considerations for additional 2No. stops per lift.

(G) External works variation

This reflected a cost reduction arising from rationalization of driveways as per appraised design and omission of double measured carpark under external finishes in the Office Building Bill, The element of Gatehouse increased arising from the increase of building size to accommodate security measures & traffic management and improvement of entrance building aesthetics as per appraised design. The element of Landscaping increased arising from Increase in planters to enhance the green space on the premises as per design review, Revision of the provisional sum for planting deemed to be unrealistic for the works.

Table 3.4 : Summary of element appraised cost.

ITEM	DESCRIPTION	CONTRACT AMOUNT	APPRAISAL AMOUNT	SAVINGS/OVERRUN
1	PRELIMINARIES	6,885,000,000	6,885,000,000	0
2	OFFICE BUILDING	17,395,534,189	21,236,702,639	3,841,168,451
3	MECHANICAL INSTALLATION	2,576,746,077	3,046,773,915	470,027,838
4	ELECTRICAL INSTALLATION	3,084,896,800	3,819,285,500	734,388,700
5	ICT/CCTV INSTALLATION	2,612,154,495	2,289,652,572	-322,501,923
6	AIR CONDITION INSTALLATION	2,804,409,400	3,086,839,800	282,430,400
7	LIFT INSTALLATION	682,434,000	1,009,912,000	327,478,000
9	EXTERNAL WORKS	348,214,305	293,809,771	-54,404,534
	SUB TOTAL	36,389,389,265	41,667,976,197	5,278,586,932
	ADD: CONTINGENCIES 5 %			
	ADD: 18% VAT			
	TOTAL	47,233,427,266	51,212,884,300	3,979,457,034

3.4 Project Time Management

Construction projects are invariably time bound in large part because the projects are intended to achieve specific objectives within a stipulated time. Therefore, time is a key constraint on every construction project. At the beginning of the project, the scope is assumed to be fixed as stipulated in the contract documents and all other factors assumed to remain constant, therefore a period of time is specified within which the work should be completed.

Originally, the project was intended to be completed within 37 months. The contractor prepared a work program to this effect which was among the preliminary documents submitted to the consultant for approval. This work program having been discussed and agreed upon with the contractor's key participants on this project formed the time baseline.

However, due to the variations/ change orders as discussed in the earlier sub-section 3.3.3.1, these changes in scope interrupted the planned work schedule and also introduced additional works that required more time to complete and the contractor requested for time extension of 2 months which was granted and Change orders attached in Appendix E.

The following reasons triggered the extension of time.

- Covid19 impact lead to site closure for six weeks under lock down.
- The pandemic affected the pre inspection and since most finishing materials say Glass, electrical items could not be procured and delivered as Factories had closed.
- Change in design depths of the piles.
- Delayed approval of the design reviewed.

Therefore, the project is still going until 30th March, 2021 when it is supposed to be commissioned.

3.5 Project Quality Management

Project Quality Management includes the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. It implements the quality management system through policy and procedures with continuous process improvement activities conducted throughout, as appropriate.

3.5.1 Project Quality Management processes included;

- **Plan Quality**—the process of identifying quality requirements and/or standards for the project and product and documenting how the project will demonstrate compliance. On this project, this was done by studying the contract specifications, Drawings, Bills of Quantities and the relevant building regulations on side of the consultants and the contractor Seyani provided the quality plan to the project manager.
- **Perform Quality Control/Quality Assurance**—the process of auditing the quality requirements and the results from quality control measurements to ensure appropriate quality standards and operational definitions are used. This was not a onetime operation but a continuous effort throughout the project where i ensured that the materials, workmanship and methodologies being used are constantly aiming to achieve the required quality. Materials especially sand, aggregates, cement, steel and water were tested at the beginning of the project

by Smat Tech services Lab. Concrete cubes were also continuously tested depending on the major concrete tasks being undertaken. Workability tests were done on site using a slump test. In case of any deviation of the results from the set standards, measures were taken to correct and improve quality.

Materials tests for quality control and quality assurance carried out are as shown in Table 2.

Table 3.5: Materials Tests carried out to date

SN	Material Description, Make/Source	Tests Undertaken	Remarks
1	Steel and tube industries	Chemical and physical tests as per BS 4449:2005	Approved
2	Gravel	Soil Tests as per BS 1377: Part 2&4: 1990	Approved
3	Solid Block test	BS 881:1983	Approved
4	Kampala Cement Co. Ltd	Chemical and Physical tests as per BS EN 196-7: 2007, BS EN 196-1: 2005, BS EN 196-3: 2005	Approved
5	Trial Mix Designs	BS 881:1983	Approved
6	Concrete	Cube Test BS 881:1983	Smat Tech services Lab
7	Concrete	Slump Tests	Smat Tech services Lab



Fig 65; Making concrete tubes for crushing



Fig 66; Slump test done on fresh concrete



Fig 67; Team choosing and approving fixtures.

Other methods used to achieve quality on site.

There are various methods employed by the team to ensure quality was achieved on site and these included the following;

- Through displaying sample boards.
- Signing off confirmation tests and pour cards.
- Approval of samples by consultants and client.
- Issuing of site instructions.
- Approval of stages on construction.

A copy for some of the approvals and instructions are attached in **Appendix D**



Fig 68; Electrical sample board



Fig 69; Catalogue sample board

3.6 Project communication management.

Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. It provides the critical links among people, ideas, and information that are necessary for success. Everyone involved in the project must be prepared to send and receive communications in the project “language” and must understand how the communications they are involved in as individuals affect the project as a whole.

Site Documentation

Most of the key documents on this project originated from the Architect. These included drawings, meeting minutes, and site instructions. Other documents that the author was directly involved in generating, disseminating and storing include; monthly and quarterly progress reports, joint measurement sheets and other site correspondences. The Consultancy Terms of Reference set timelines for submitting reports and other deliverables which had to be adhered to

3.7 Project personnel management.

Project human resource management involves the processes required to make the most effective use of people on a project. It includes all the project stakeholders i.e Funders, Beneficiaries, Contractors and Consultant. The key steps in project human resource management include; Organisational planning, Staff acquisition and team development.

On this project, a labour chart was developed and included in weekly reports following the work

program and continuously updated to reflect the staffing needs at different stages of the project. This helped to maintain adequate staffing levels and to reduce on loss from excess labour costs. Contractor was encouraged to employ more women on site so as to encourage gender balance.

3.8 Project Risk management.

Project Risk Management includes the processes concerned with identifying, analyzing, and responding to project risk. It involves maximizing the results of positive events and minimizing the consequences of adverse events. Construction is inherently risky but, it is argued, is less technically complex than projects in industries such as software, defence and engineering. This is because it is simply about using specialists in design and construction to produce a project within a specified timescale

On a typical construction project, there are numerous sources of risk originating from almost several aspects. On this project, the major risks identified included; loss of capital, time overruns and breakdown of equipment. At the risk response development phase, mechanisms were developed to mitigate the occurrence of the risks. For example, all workmen and equipment were insured for the entire duration of the project as well as emphasizing and exercising safe construction practices and methodologies. Personal protective equipment like helmets, gloves, googles, safety belts and safety shoes as well as reflector jackets were availed to all workmen and they were required to have them on before executing work. The site was fully hoarded off and security guards were employed. These helped a lot to mitigate possible cases of loss of materials through petty theft. When the risks did occur, for example injury to persons, measures were in place to mitigate it. A first aid kit was available and means of transport to the nearby health center. A mechanic was also available whenever the equipment broke down to reduce on the time lost. Key equipment was installed at site, regularly serviced to reduce the possibility of breakdown and use of tower crane to lift materials to higher levels thereby ensuring no loss time.

3.9 Project Procurement.

Procurement is the act of obtaining goods, supplies, and/or services. Therefore, project procurement is obtaining all of the materials and services that are required for the project. Project procurement management encompasses the processes used for making sure project procurement is successful.

Procurement for the consultancy and construction services was done in three phases;

Phase one, Procurement process for the project was conducted following public procurement act where firms were invited to bid/tender for providing design services that would help them procure the contractor that who would implement the construction dream of PPDA/URF head office. Eco shelter as the lead consultant won the contract, did the designs and provided the cost of the project.

Phase two was to procure the contractor following the same procurement procedures and Seyani Brothers won the contract for construction.

Phase three is where design review consultancy and supervision services were advertised following procurement act and this was taken by Symbion Uganda as the lead consultant.

3.10 Site Inspections and Meetings

Site meetings and supervisions were carried out to ensure that the client's needs were satisfactorily addressed. These were done every two weeks in order to monitor the progress of the works. A copy for some of the site minutes are attached in **Appendix C**.

An inspection of works was carried out before the sit-down meeting. The following items were discussed in the meetings:

- Main contractor's report: contractor's report, program and progress and causes of any delays.
- Site matters: site organization, health and safety, site instructions, site photographs and setting out.
- Contract matters: value of contract, commencement and completion date of contract, main contract documentation, bonds and insurances, valuations, certificates and bills of quantities.
- Consultant's reports: Project manager/architect's report, Structural engineer's report, Mechanical &Electrical engineer's report and Quantity surveyor's report.
- Clerk of works/Resident Engineer's reports.
- Any other business.

Any queries or observations made on site were noted and discussed in the meeting or addressed later. Queries and revisions were addressed through the project manager Symbion. The contractor was required to submit a query list to the pertinent consultant, copied to the Project Manager, so that issues could be redressed. If queries required making changes, revisions were made on the drawing and re-submitted/re-issued indicating the revision date, mark, description and initials of the reviewer.



Fig 70; Team conducting site inspection.



Fig 71; Team in site meeting.

3.11 Dispute and Dispute resolutions

Disputes could rise because of uncertainties encountered in due course as the project progresses and Negotiation was used to work out an agreement by direct communication. This involved a focused discussion on the dispute among the Consultants, Contractor and the Client, with the intention of resolving differences without the involvement of third parties and agreement would be reached. The discussions could be held between the parties across the table in a cordial and peaceful atmosphere.

3.12 Stakeholder Engagement

The project implementation team including the Contractor, the construction supervision Consultant, the Contracts Management Team and the Joint Management has ensured constant engagement with stakeholders particularly the immediate neighbours and KCCA for purposes of ensuring harmony and local support for the project. Key areas of concern had been working hours, noise levels, traffic management and monitoring of cracks and plumbness of adjacent buildings.

The Ministry of Finance and Economic Development as a key stakeholder was routinely informed of the progress of the project and engaged on matters concerning funding.

CHAPTER FOUR: OCCUPATIONAL HEALTH AND SAFETY

4.1 Occupational Health and Safety

The Contractor employed a full time health and safety officer and ensured that all workers on site and visitors to the site are provided with Personal Protective Equipment (PPE) including protective footwear, reflective jackets, safety helmets, protective gloves, goggles and nose protection caps.

Tool box talks for all workers are undertaken every week and include training on use of PPE, working at heights, alertness of the crane when lifting, electrical hazards, covid-19, cleaning of all tools and machinery.

4.1.1 Health and Safety consideration

- Fire prevention, fire extinguishers and signage were at strategic positions around the site, this helped direction of traffic in and around the site.
- Medical services: a first aid kit was provided for and this included well-equipped medical room with a nurse and a safety office.
- Site canteen and places of convenience were positioned where is minimal construction works and mindful of sanitation related issues. This allowed staff and workers to have a secure place for breakout.
- A designated location for waste collect materials was earmarked to minimize movement of heavy trucks deep into the construction that could increase the risk of accidents.
- Mini pillars were provided for at certain points within the building to minimize on using damaged electrical cables.
- Use of steel scaffoldings that are more suited for high rise buildings since they won't break causing accidents. A safety net was also fixed to control stray objects from spouting out of construction zone, and control movement of dust particles that could cause air pollution in and around the site.

4.1.2 Health and safety measures implemented on site.

The following were implemented as part of health and safety management on site;

- Fixing of a safety net
- Provision of Workers with PPE like gloves, gum boots & safety belts to ensure they work safely
- Provision of security cones, warning tapes to alert pedestrians to keep a distance from the construction area.
- Site hazard recognition for example slips, trips, and cuts.
- Erection of scaffolds for workers to access heights above them during work.
- Ensure workers report accident so that first aid can be provided to the causality.
- Awareness on site rules and regulation, emphasis communication of abscentisim to site in-charge.
- Awareness about unsafe conditions, unsafe acts during work on site.
- Hazards Identification & Mitigation Measures.
- Awareness on RAMS to be put in action as per work piece for all workers on site.
- Emergency Evacuation Training & Safety Procedures.
- Emphasise Respect and Discipline prevails on site.
- Awareness of unsafe acts, unsafe conditions during work on site.
- Direct contact of concrete with bare hands is highly not allowed as it may cause skin diseases, use of rubber glooves is better.
- Proper Covering of open ducts at the site and balcating Risky places.
- Induction of all workers about safety during piling work.
- Riggers & Safety Procedures.
- Awareness of workers about the presence of a well updated First Aid Kit on site, and workers are not expected to take it for granted, they still have to observe Health and Safety on site to prevent accidents/injuries.
- Drivers Rules & Regulations to be observed either with in site or at any other places.(i.e Always obey speed limits on site).
- Machinery Usage & All Operators i.e one must use the right tool for the right job, keep all tools in good conditions, operate according to the manufactures instruction.
- Emphasise discipline at work by settling differences amongst workers if any by site in-charge/foreman.
- Educate members on chemical safety procedures, storage of chemicals like petroleum & diesel oil.
- No listening to music & use of headsets/earphones on site as it might result into accidents, & any other misconduct.
- Risk Assessment Training For All Workers
- Safety Procedures for The Tower Crane

- Induction of all workers about safety during work at Heights i.e 2m AND above.
- Speed limit 10km/hr to 15km/hr for vehicles on site.
- Safety Procedures for the erection of scaffolds, Covering of open ducts at the site.
- Ensure proper House Keeping on site by all workers.
- Emphasise members on waste collection & disposal to be placed in dust bins to promote hygiene.
- Proper Daily Signing in and out at the gate by all workers & visitors on site.

4.1.3 Standard operating procedures toward prevention of covid-19 pandemic

The following measures are implemented on site on a daily basis towards prevention of the spread of COVID-19 Pandemic.

Table 4.1: Standard operating procedures to avert Covid19 on site.

1	An Infrared Thermometer for screening body temperatures for worker, visitors or other authorised persons accessing the site, if one's body temperature is above the normal body temperature, the person is given a chance to relax for 30minutes, may be it could have been due to running or walking fast. Then these people are screened again for atleast 3times, If temperatures persists, the site health & safety team contacts Ministry of Health on a Toll free 0800203033 to take responsibility. NOTE; We have not received any cases on site.
2	Hand washing place; clean water and soap for all persons on site to frequently wash hands. procedure; wash front, back, between fingers & palm for 20 seconds.
3	Wearing a nose mask as a MUST for all authorised persons accessing & departing site.
4	Small grouped tool box talks or induction for only 10 workers at a time and also observing social distance
5	Social distance as a MUST, atleast 1m apart during work, lunch time and all times.
6	No greeting of close contact is allowed ie shaking hands, hugging, only greeting from a far distance is allowed i.e waving.
7	Discouraging workers from sharing drinking facilities ie cups, bottles etc, tools, phones as this practice of sharing can easily lead to transimission of COVID-19.
9	Maintaing Regular House Keeping practices ie disinfecting with soap and clean water and sanitizing of the following; in offices; tables, computers, mouse, keyboards, doors and door handles for offices, stores, dressing room ,main gates, and around site atleast 2times a day ie Morning and Evening.
10	Encouraging all workers to carry out self monitoring so that incase any of them has signs and symptoms, of COVID-19,they can report to their line supervisors, to act accordingly. NOTE; we have not received any case on site.
11	We have stopped regular signing in and out at the gate,this is because a big group of people is to use one book and one pen to sign which can cause the spread of COVID-19,INSTEAD the foreman is responsible of signing cards for all the workers on a daily basis.
12	Regular Inspection for the above listed procedures at all times by the site Health & Safety team, all foremen, supervisors and security personnels to ensure compliance.

4.2 REGULATIONS AND STANDARDS

The following regulations affected the site layout and temporary facilities

4.2.1 Public health and safety regulation

- Hoarding, the site was fenced off to protect the people who are not part of the construction team from injuries that could result from construction activities and this was done on site.
- Use of safety gear, majority of the workers were using safety gears to protect themselves from injuries and accidents.
- Heavy plant locations were demarked so that traffic is not interrupted and cause safety issues, accidents to the by passers and the team involved in the construction.
- Washrooms with proper discharging system were put in place for proper sanitation on site and to the neighbours.

4.2.2 Local council regulations.

- Site office, was constructed for the site stuff to run the daily management of the site and where the relevant authorizes would reach in case certain information is required.
- Signage posts were put in place clearly stating the key participants on the project for proper directions.

4.2.3 National Physical, Planning Standards and Guidelines, 2011

- Access to the site, was properly demarked so that there is safe entry and exit from the site without causing accidents and interfering with the traffic that is not involved in the construction.
- Effect position of hoarding line thus respecting the designated road reserves.

4.2.4 Environmental and Social Safeguards

The project adhered to the minimum environmental protection measures set by NEMA and KCCA, who undertook routine monitoring to ensure compliance. In addition, the Consultant was required to undertake annual environmental audits, for which the Terms of Reference were submitted to NEMA for approval.

4.2.4.1 NEMA Regulations

- Designated collection point, the site provided for waste collection and disposal mechanism by allocating a point of collection.
- An Environmental impact assessment of the project was made.

4.3 Health, Safety & Environment Plan

The contractor attached great importance to health, safety and environment and implement policies that comply with the current Uganda and International Regulations on site. The staffs were provided with protective gear. The site had a trained nurse and an experienced safety officer all supervised by Engineering liaison, Safety and Health Manager. There are written guidelines and instructions on health and safety available to all site personnel.

The Health, Safety & Environment Plan captured the following areas;

- Statement of Safety, Health and Environment Policy
- Notification to Department of Safety and Health
- Project Safety, Health and Environment Requirements and Objectives
- Description and Nature of the Project
- Project Directory
- Project Management Structure and Responsibilities
- Project Planning and Organizing
- Administrative Controls (Operational Procedures and Practices)
- Risk Assessment and Mitigation Measures Relating to Main Areas of Risk of the Project

4.4 Environmental impact assessment for the project

URF/PPDA prepared the Environmental Impact Statement for presenting to NEMA as one of the steps of the Environmental Impact Assessment process through the project manager Symbion. This was one of the outputs of Echo-shelter and Environmental consultants (ESEC) which the client contracted to design their proposed office building. Preparation of this environmental Impact Statement was led by one of the consultancy team members; Dr BallaTuryahumura who is a registered and certified environmental practitioner with NEMA.

Other members he worked with to prepare this EIS are Mr. Lubega John Bosco who is a Geologist and Mr Murwany Happy Peter, an Environmental Expert.

Environmental impact assessment and mitigation plan

Here, impacts expected to arise from the development of head office building along Nakasero road were assessed and preventive/mitigation measures against significant adverse impacts proposed.

Table 4.2: Proposed Mitigation Plan for the development URF/PPDA head office building.

No.	Potential Negative Impact	Mitigation measure(s)	Residual Impact (s)	Responsibility
1	Disconnection of public utilities (if necessary)	-Advance warning to those affected by planned disconnection -Ensure that disconnection period is minimal	Some inconveniences	-Utility providers - URF/PPDA.
2	Accidents on site along Army Avenue road	-Provide adequate safety measures on site and warnings along the road. - Contractor ensures that the measures are implemented	Minimized accidents	-Contractor - URF/PPDA
3	Excessive vibrations from construction equipment and landslides	-Use correct equipment with vibrations which are factory set/recommended to avoid high vibration levels; -Excavation plans to be approved by KCCA and Ministry of works and proper monitoring by site engineer.	Workers still experience Vibrations	-Contractor - URF/PPDA
4	Excessive noise, traffic interruptions and accidents during project development	-Construction work to be mainly during daylight hours; -Workers to be enlightened about potential dangers before commencement of work. -Sign posts and warnings of construction work to be put in place and provide hoarding of the site.	-Noise will remain during the day; -Truck drivers may remain careless	-Project Manager -Contractor - URF/PPDA
5	Pollution from accidental oil spillages/leakage during office	Construction vehicles must be refilled and lubricated off-site	Some accidental leakage possible	-Contractor

	block construction			
6	Lost Vegetation	Developer may plant trees elsewhere in the surrounding area after consulting with KCCA	Loss of green cover in the area	-KCCA - URF/PPDA
7	Storm water from plot 16 blocking storm water inlets	-Developer to lobby KCCA to build proper storm water drainage trenches along the two roads. -Contract to ensure inlets remain open -Use sand gabions to reduce silt in storm water	Non	-Contractor - URF/PPDA
8	Waste generation and disposal during construction of office block.	-Demolition debris shall be separated and disposed of at authorized (By KCCA) sites; -Workers shall use emergency toilet facilities on site and -Excavated soil shall be taken to appropriate dumping sites approved by KCCA.	None if waste collection and disposal are carried out properly	-Contractor - URF/PPDA
9	Fire accidents; Starting from Plot 16 and spreading to adjacent neighbours	-Use of, preferably, fire resistant materials (including paint) for walls of high fire risk premises (e.g restaurants, kitchen, switch rooms) is recommended; -Full time functioning fire detectors and extinguishers (of different classes) to be hang in visible and easily accessible places;	Reduced fire accidents on station	- URF/PPDA properties -Operator
10	Noise and security lights during operation of the Lotis office block	-Install sound proofed generator set; -Noise levels from stand-by power generator shall be reduced incase levels exceed the maximum standards.	Minimal noise	URF/PPDA.
11	Storage and disposal of expired or damaged processed foods/household chemicals	URF/PPDA shall issue directives (to tenants) demanding that damaged or expired processed food stuffs/chemicals from kitchen are not carried away in storm water or thrown together with ordinary garbage	None	URF/PPDA
12	Indoor air	Avoid using materials during	Minimal indoor	URF/PPDA

	pollution	construction which lead to indoor air pollution and ensure proper ventilation (convectional or forced) in all rooms and restaurants	air pollution	
13	Poor disposal of hazardous wastes	-Marked trash bins (for direct identification of wastes) -Disposal of hazardous wastes (expired or spoiled/damaged processed food stuffs and house hold chemicals) to be done in the presence of KCCA and NEMA		URF/PPDA

CHAPTER FIVE: BENEFITS OF THE PROJECT.

5.1 SOCIAL AND ECONOMIC BENEFITS

5.1.1 Socially the development of URF/PPDA Tower came in with the following benefits;

- Functional and operational needs of URF and PPDA (space requirements)
- Work environment for enhanced productivity and future growth
- Aesthetic pleasantness along Nakasero road hence Kampala city.
- Accessibility for persons with disabilities (PWDs)
- Security and safety neighbours are benefitting on the security that was provided on the building including the armed personal, security lights and security cameras hence making the area safe for human life.

5.1.2 Economic benefits gained through the development of URF/PPDA tower.

- There has been reduction in Government expenditure on monthly rent.
- Government agencies benefited in payments that were made for different permits for example plant certificates, authority approvals, service certificates, environmental impact assessments and extra.
- People involved in project implementation say workers, insurances, project manager, consultants benefited in being employed hence contributing to economic development.
- There was a benefit on side of materials and equipment suppliers.

CHAPTER SIX CHALLENGES, LESSONS LEARNT, CONCLUSIONS AND RECOMMENDATIONS.

6.1 Challenges

There were a number of challenges which impeded the progress. The author tries to discuss some of these challenges and measures which were taken below,

- The project faced a challenge of delayed approval of reviewed design and appraised costs when the contractor was already on site executing works, this was overcome by allowing the contractor to proceed with basement works since there was change in basements design.
- The project faced a challenge of the AC subcontractor who came in late and started requesting to core drill in beams and fix his sleeve, this was solved by changing some routes.
- Discrepancies between Architectural and structural drawings, structural drawings would be missing details say service ducts and critical elevation points, this would be solved through site meetings and issuance of request for information by the contractor.
- To maintain the level of quality that the client wanted, a lot of time would be spent choosing the appropriate samples of materials for the project.
- Most materials especially Aluminum cladding, first class tiles, Metallic ceilings and lifts were imported from overseas, procurement of the materials took more time hence affecting the project progress.
- The site faced a challenge of temporary closure by Ministry of Gender and Labour since the contractor had not requested for inspection of his plants and equipments on site such as tower crane.
- At the beginning of the project, rain delayed excavations since there was mass excavation for the three basements.
- At initial stages of project execution, the contractor had few workers at site. This was addressed during the site meeting and the contractor increased the number of workers.

The major challenge was with the time factor of the project. Quality and cost of the project was not compromised in any way since consultants would approve the samples prior to final fixing.

Generally dragging speed of the contractor was due to covid-19 lock down where the contractor closed the site for six weeks and delayed approvals by URF/PPDA boards that contributed to the time overrun of the project.

6.2 Lessons learnt

- There should be through checking into contractor's material procurement schedule and if need be advised to avoid overseas procurement delays.
- Consequences of time overrun such as liquidated damages should be clearly stated to the contractor and bonuses should be mentioned to motivate him during signing of contract.
- Contractor should be encouraged to place cameras at all areas covering the whole hoarding to minimize theft on site.
- There is need for government agencies and all stakeholders to ensure that constructors use professionals on site since this affects workmanship and quality of works.

6.3 CONCLUSION

With the task assigned to me to supervise the twelve floor office tower on plot 39 Nakasero road as a clerk of works/Resident Engineer on the project team through overseeing the quality and safety of work at the site, making sure that building plans and specifications are being followed correctly, I was involved in all the project stages from implementation. Below is a summary of my experiences on this project:

- My involvement on this project enlightened me on how to deal with the construction of retaining walls that require deep excavations next to neighbour's property, without causing accidents and ensuring safety at all levels.
- Use of aluminum and granite cladding on the structure gave me more knowledge on different ways of fixing them.
- The structure was supervised at all stages by ensuring the materials used were meeting the minimum requirements of the standards and that the contractor was following the drawings provided to him before any casting was done. All these checks were done to satisfaction and in case of any discrepancy, the contractor would request for information(R.F.IS)

- My skills were sharpened through interacting with the different people on the design and construction team and how our work is interlinked in order to overcome the challenges that come up on sites.
- I learnt how the changes in design affect the project both in time and cost, the project cost went high and also the project delayed by extra two months due to contractor management challenges.

This project has given me great experience to grow in my career as a construction manager who can solve more challenges associated with any project development.

6.4 Recommendations

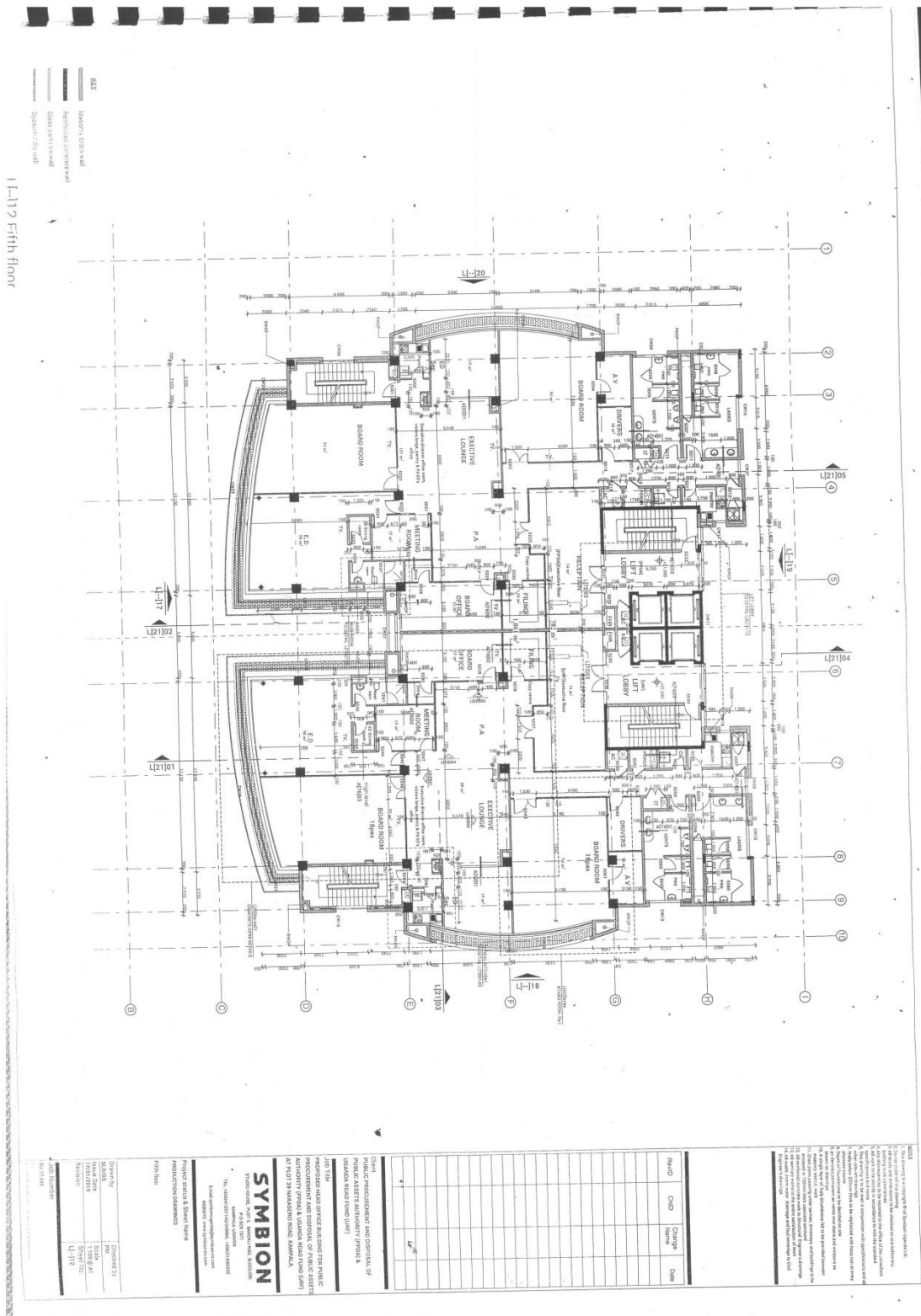
- There should be thorough checking into contractor's material procurement schedule and if need be advised to avoid overseas procurement delays.
- Consequences of time overrun such as liquidated damages should be clearly stated to the contractor and bonuses should be mentioned to motivate him during signing of contract.
- Contractor should be encouraged to place cameras at all areas covering the whole hoarding to minimize theft on site.
- Ample time should be given to the designing team so that they can gather enough information that would help them in designing other than using some quotations of previous projects.
- There is need for government agencies and all stakeholders to ensure that constructors use professionals on site since this affects workmanship and quality of works.
- Government agencies should speed up in making their decisions so as to avoid delays for works.

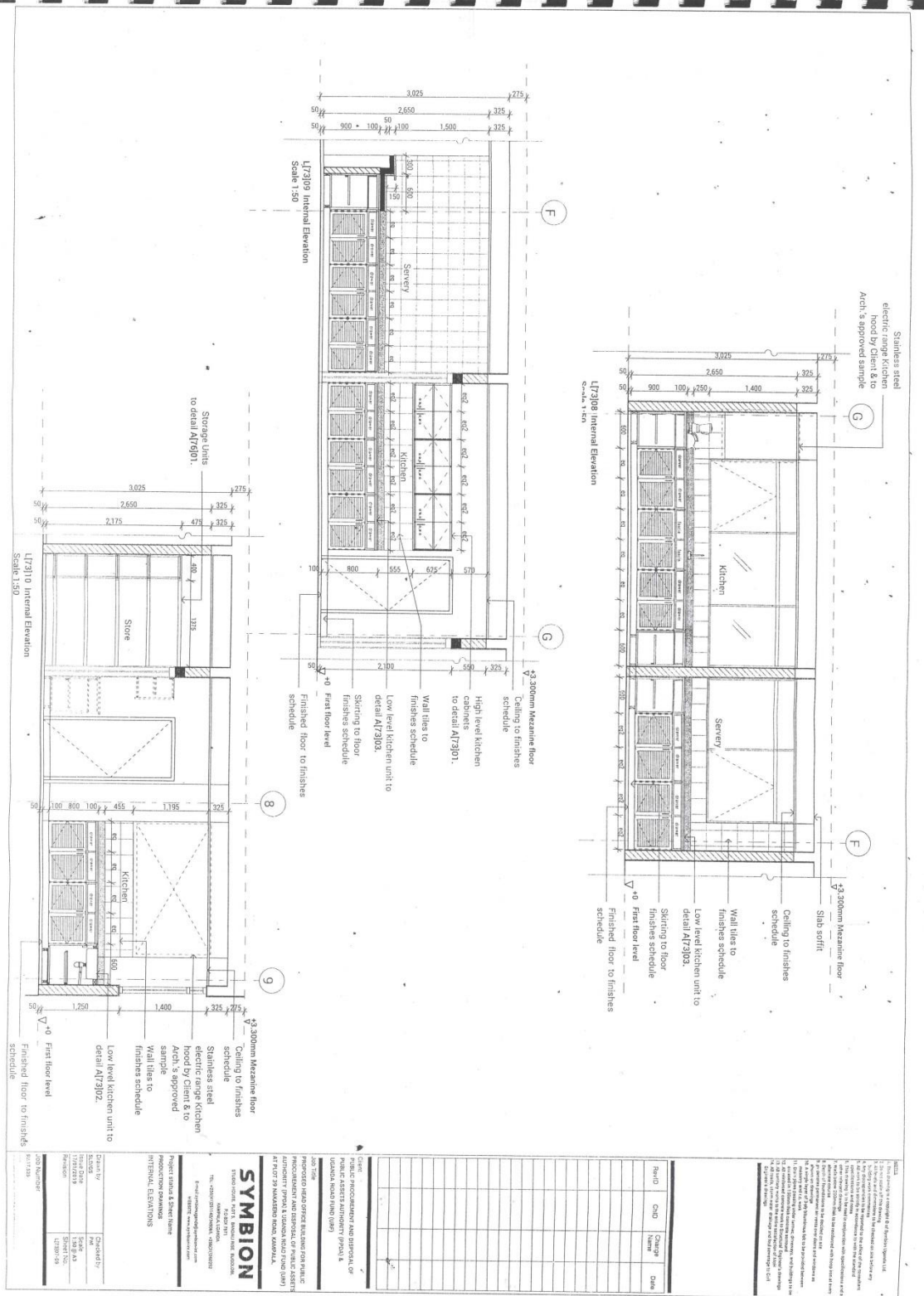
REFERENCES

1. Smith, J, Love, P.E.D, and Wyatt, R. (2001). To build or not to build? Assessing the needs of construction industry clients and their stakeholders. *Structural Survey*, **19**(2), pp.121-132.
2. Turner, A. (1990). Building Procurement. Macmillan, UK

APPENDICES

APPENDIX A: Contract Drawings.







Rev'd	Child	Change Name	Date
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SLO/ES	PM
Issue Date	Scale
17/01/2019	1:50 @ A3
Revision	Sheet No.
	LIT427-03

APPENDIX B: Bill of Quantities.

Page 4

Item	Description	CONTRACT AMOUNT UGX	APPRAISED DESIGN UGX	ADDITION/ (OMISSION) UGX
	CONTRACT PARTICULARS			
	CLAUSES			
	A. GENERAL			
1	Definitions			
2	Interpretation			
3	Language and Law			
4	Project Manager's Decisions			
5	Delegation			
6	Notices			
7	Subcontracting			
8	Other Contractors			
9	Personnel			
10	Employer's and Contractor's Risks	583,000,000	583,000,000	0
11	Employer's Risks			
12	Contractor's Risks			
13	Insurance			
14	Site Investigation Reports			
15	Queries about the Special Conditions of Contract			
16	Contractor to Construct the Works	183,000,000	183,000,000	0
17	Works to Be Completed by the Intended Completion Date			
18	Approval by the Project Manager			
19	Safety			
20	Discoveries			
21	Possession of the Site			
22	Access to the Site			
23	Instructions, Inspection and Audits			
24	Disputes			
25	Procedure for Disputes			
26	Replacement of Adjudicator			
	TOTAL CARRIED TO SUMMARY	766,000,000	766,000,000	0
	CONDITIONS OF CONTRACT			

Item	Description	CONTRACT AMOUNT UGX	APPRAISED DESIGN UGX	ADDITION/ (OMISSION) UGX
	BILL No 1 PRELIMINARIES AND CONDITIONS OF CONTRACT			
	SUMMARY			
	Total Carried From Page 1/1	0	0	0
	Total Carried From Page 1/2	766,000,000	766,000,000	0
	Total Carried From Page 1/3	0	0	0
	Total Carried From Page 1/4	299,000,000	299,000,000	0
	Total Carried From Page 1/5	0	0	0
	Total Carried From Page 1/6	0	0	0
	Total Carried From Page 1/7	0	0	0
	Total Carried From Page 1/8	0	0	0
	Total Carried From Page 1/9	0	0	0
	Total Carried From Page 1/10	0	0	0
	Total Carried From Page 1/11	1,935,000,000	1,935,000,000	0
	Total Carried From Page 1/12	0	0	0
	Total Carried From Page 1/13	0	0	0
	Total Carried From Page 1/14	0	0	0
	Total Carried From Page 1/15	0	0	0
	Total Carried From Page 1/16	0	0	0
	Total Carried From Page 1/17	0	0	0
	Total Carried From Page 1/18	3,885,000,000	3,885,000,000	0
	Total Carried From Page 1/19	0	0	0
	TOTAL FOR BILL No 2 CARRIED TO MAIN SUMMARY	6,885,000,000	6,885,000,000	0
PRELIMINARIES				
				1/s

ITEM NO	DESCRIPTION	UNIT	CONTRACT (UGX)				AIR CONDITIONING AND VENTILATION				ADDITION/ (OMISSION) (UGX)			
			QTY	RATE	AMOUNT		QTY	RATE	AMOUNT		QTY	RATE		AMOUNT
	Provide all materials, install, connect and set to work the following all as described in the Specifications and Drawings.													
	Summary													
1	Total for Level 1: Basement -3	AC1/1			120,639,000				122,982,000					2,343,000
2	Total for Level 2: Basement -2	AC2/1			120,639,000				127,490,000					6,851,000
3	Total for Level 3: Basement -1	AC3/1			120,639,000				129,090,000					8,451,000
4	Total for Level 4: Ground Floor	AC4/2			168,139,400				62,978,400					(105,161,000)
4A	Total for Level 4A: mezzanine level	AC4A/2			-				365,282,200					365,282,200
5	Total for Level 5: First Floor	AC5/2			284,464,200				82,302,200					(202,162,000)
6	Total for Level 6: Second Floor	AC6/2			178,956,200				194,825,200					15,869,000
7	Total for Level 7: Third Floor	AC7/2			457,606,200				312,696,200					(144,910,000)
8	Total for Level 8: Fourth Floor	AC8/2			457,606,200				331,373,200					(126,233,000)
9	Total for Level 9: Fifth Floor	AC9/2			363,604,200				335,667,200					(27,937,000)
10	Total for Level 10: Sixth Floor	AC10/1			344,957,000				318,254,000					(26,703,000)
10A	Total for level 10A: Seventh Floor	AC10A/2			-				275,780,200					275,780,200
11	Total for Miscellaneous	AC11/2			187,159,000				366,119,000					178,960,000
12	Server room and data centre air conditioning	AC12/1			-				62,000,000					62,000,000
	Total for Air Conditioning and Ventilation Carried to Form of Tender	ACS/1			2,804,409,400				3,086,839,800					282,430,400

	PAGE No.	EXTERNAL WORKS		
		CONTRACT AMOUNT UGX	APPRAISED DESIGN AMOUNT UGX	ADDITION/ (OMISSION) UGX
BILL NO.9				
SUMMARY				
Element No.				
1	9/1/2	89,271,500	23,939,145	(65,332,355)
2	9/2/3	122,824,948	78,139,028	(44,685,920)
3	9/3/6	29,472,412	80,125,528	50,653,116
4	9/4/3	40,782,740	40,782,740	0
5	9/5/2	16,754,580	16,754,580	0
6	9/6/2	28,410,000	49,993,250	21,583,250
7	9/7/2	20,698,125	4,075,500	(16,622,625)
TO MAIN SUMMARY		UGX. 348,214,305	293,809,771	(54,404,534)
Summary External Works				

ITEM NO	DESCRIPTION	UNIT	MECHANICAL INSTALLATIONS						ADDITION / (OMISSION) (UGX)		
			CONTRACT (UGX)			APPRAISED DESIGN (UGX)					
			QTY	RATE	AMOUNT	QTY	RATE	AMOUNT	QTY	RATE	AMOUNT
	Provide all materials, install, connect and set to work the following all as described in the Specifications and Drawings.										
	Summary										
1	Total for Level 1: Basement -3	M1/1			39,863,159			42,434,208			2,571,049
2	Total for Level 2: Basement -2	M2/1			39,863,159			42,434,208			2,571,049
3	Total for Level 3: Basement -1	M3/1			39,863,159			42,434,208			2,571,049
4	Total for Level 4: Ground Floor	M4/4			117,482,126			144,149,782			26,667,656
4A	Total for Level 4A: Mezzanine Floor	M4A/4			0			107,759,231			107,759,231
5	Total for Level 5: First Floor	M5/4			108,882,037			114,143,045			5,261,008
6	Total for Level 6: Second Floor	M6/4			189,356,781			178,669,224			(10,687,557)
7	Total for Level 7: Third Floor	M7/4			123,997,970			135,285,529			11,287,559
8	Total for Level 8: Fourth Floor	M8/4			123,552,206			133,930,041			10,377,835
9	Total for Level 9: Fifth Floor	M9/4			123,942,206			128,120,041			4,177,835
10	Total for Level 10: Sixth Floor	M10/4			109,262,206			113,440,041			4,177,835
10A	Total for Level 10A: Seventh Floor	M10A/4			0			125,010,041			125,010,041
11	Total for Level 11: Roof	M11/1			5,654,069			5,654,069			0
12	Total for Water Supply and Fire Fighting	M12/4			483,996,000			744,150,248			260,154,248
13	Total for Sewer	M13/1			42,480,000			51,164,000			8,684,000
14	Total for Storm Water and Rain Water Harvesting	M14/1			157,686,000			137,131,000			(20,555,000)
15	Total for Miscellaneous	M15/2			870,865,000			800,865,000			(70,000,000)
	Total Carried to Grand Summary	M5/1			2,576,746,077			3,046,773,915			470,027,838

ITEM NO	DESCRIPTION	UNIT	ELECTRICAL INSTALLATIONS					
			CONTRACT (UGX)			APPRAISED DESIGN (UGX)		
			QTY	RATE	AMOUNT	QTY	RATE	AMOUNT
	Provide all materials, install, connect and set to work the following all as described in the Specifications and Drawings.							
	SUMMARY							
1	Total for Level 1: Basement -3	E1/3			52,968,500			61,420,400
2	Total for Level 2: Basement -2	E2/3			52,491,500			54,963,800
3	Total for Level 3: Basement -1	E3/3			53,803,300			57,341,200
4	Total for Level 4: Ground Floor	E4/4			138,816,300			85,638,100
4a	Total for Level 4a: Mezzanine Floor	E4A/6			0			102,733,300
5	Total for Level 5: First Floor	E5/4			84,821,100			110,356,400
6	Total for Level 6: Second Floor	E6/4			93,655,900			125,624,100
7	Total for Level 7: Third Floor	E7/4			90,409,100			134,851,900
8	Total for Level 8: Fourth Floor	E8/4			86,905,500			130,076,000
9	Total for Level 9: Fifth Floor	E9/4			89,412,300			142,796,000
10	Total for Level 10: Sixth Floor	E10/4			68,231,600			120,825,100
10a	Total for Level 10a: Seventh Floor	E10A/5			0			91,865,500
11	Total for Level 11: Roof	E11/2			9,096,900			11,534,000
12	Total for Miscellaneous	E12/2			82,265,400			71,944,000
13	Total for Power Supply	E13/1			399,133,200			424,066,600
14	Total for Cabling	E14/6			738,968,700			778,144,300
15	Total for Standby Generators	E15/1			602,055,000			626,895,000
16	Total for Voltage Stabiliser	E16/1			204,925,200			444,222,400
17	Total for PV Solar System for Public area lighting	E20/1			236,933,300			243,987,400
	Total Carried to Main Summary	ES/1			3,094,896,800			3,819,285,500
								734,388,700

ELEMENT No.	BILL NO.3	PAGE No.	OFFICE BUILDING CONTRACT AMOUNT UGX	OFFICE BUILDING APPRAISED DESIGN AMOUNT UGX	OFFICE BUILDING ADDITION/ (OMISSION) AMOUNT UGX
	SUMMARY				
	OFFICE BUILDING				
1	BASEMENT STRUCTURE	3/1/6	5,943,453,308	6,052,440,267	108,986,959
2	REINFORCED CONCRETE SUPERSTRUCTURE	3/2/4	2,767,395,414	2,951,841,479	184,446,065
3	WALLING AND PARTITIONS	3/3/1	351,382,865	514,572,370	163,189,505
4	ROOFING AND RAINWATER DISPOSAL	3/4/3	604,217,990	594,853,102	(9,364,888)
5	DOORS	3/5/3	1,218,824,388	1,439,413,412	220,589,024
6	WINDOWS	3/6/4	1,324,712,400	3,839,209,815	2,514,497,415
7	OFFICE PARTITIONING	3/7/3	1,139,752,926	487,238,910	(652,514,016)
8	FITTINGS AND BALUSTRADES	3/8/3	386,003,035	431,541,656	45,538,621
9	INTERNAL FINISHES	3/9/5	2,505,400,878	3,574,450,751	1,069,049,873
10	EXTERNAL FINISHES	3/10/2	267,842,085	1,082,204,177	814,362,092
11	PRIME COSTS AND PROVISIONAL SUMS	3/11/2	886,548,900	886,548,900	0
	TO MAIN SUMMARY	UGX	17,395,534,189	21,954,314,839	4,458,780,651
	Summary				

MAIN SUMMARY		Page No.	CONTRACT AMOUNT UGX	APPRAISED DESIGN AMOUNT UGX	ADDITION/ (OMISSION) AMOUNT UGX
BILL No.					
1	PRELIMINARIES	1/27	6,885,000,000	6,885,000,000	0
2	SPECIFICATIONS	2/1/1			
3	OFFICE BUILDING	3/5/1	17,395,534,189	21,854,314,839	4,458,780,651
4	MECHANICAL INSTALLATION	MS/1	2,576,746,077	3,046,773,915	470,027,838
5	ELECTRICAL INSTALLATION	ES/1	3,084,896,800	3,819,285,500	734,388,700
6	ICT/CCTV INSTALLATION	ICT/1	2,612,154,495	2,289,652,572	(322,501,923)
7	AIR CONDITION INSTALLATION	ACS/1	2,804,409,400	3,086,839,800	282,430,400
8	LIFT INSTALLATION	LFT/1	682,434,000	1,009,912,000	327,478,000
9	EXTERNAL WORKS	9/5/1	348,214,305	293,809,771	(54,404,534)
	SUB-TOTAL I	UGX	36,389,389,265	42,285,588,397	5,896,199,132
	PROVISIONAL SUM FOR CONTINGENCIES @10% CHANGED TO 5%		3,638,938,927	2,114,279,420	(1,524,659,507)
	SUB-TOTAL II	UGX	40,028,328,192	44,399,867,817	4,371,539,625
	VALUE ADDED TAX @ 18% OF SUB TOTAL II		7,205,099,075	7,991,976,207	786,877,133
	SUB-TOTAL III		47,233,427,266	52,391,844,024	5,158,416,758
	TOTAL TENDER SUM : CARRIED TO FORM OF TENDER	UGX	47,233,427,266	52,391,844,024	5,158,416,758

APPENDIX C: Site minutes.

	PROJECT: Proposed URF/PPDA Head Office Development on Plot 39, Nakasero Rd, Kampala SUBJECT: Minutes of Site Meeting No.32 JOB NO.: SU.17.535			DATE: 12.11.2020 TIME: 10:00am LOCATION: Site
ITEM	CONTENTS			ACTION
1.0	ATTENDANCE	ORGANIZATION	TELEPHONE	EMAIL
	Eng. Justine Ongom	URF	0752695324	jongom@roadfund.ug
	Eng. Jessie J.Namara	URF	0772623116	jnamara@roadfund.ug
	Mr. Robert Kigozi	URF	0772933000	rkigozi@roadfund.ug
	Mr. Osbert Kagurutana	URF	0774592498	osebertkagurutana@gmail.com
	Mr. Stephen Busulwa	PPDA	0784292664	sbusulwa@ppda.go.ug
	Arch. Geoffrey Muhanguzi	MOWT	0772424259	bmuhanguzi12@gmail.com
	Mr. Raymond Katungi	MOWT	0782106154	rkatungi@gmail.com
	Arch. Pius Muli	Symbion Uganda	0755911432	pius.muli@symbion-int.com
	Arch. George Ssali	Symbion Uganda	0782985514	george.ssali@symbion-int.com
	Eng. Tutu Cara Tibaleka	Symbion Uganda	0774562246	tutu.tibaleka@gem-engineering.com
	Mr. Ivan Asiimwe	Clerk of Works	0773831940	asiimweivan190@gmail.com
	Mr. Laxman Pawar	SBPSCL	0772470815	cc1.sbc@seyani.com
	Mr. Dev Rao	SBPSCL	0755789071	hvac.sbcu@seyani.com
	Eng. Caleb Tugumisirize	SBPSCL	0772509885	tugumisirizecaleb@yahoo.co.uk
	Ms. Moreen Tusiime	SBPSCL	0788203239	tmoralee55@gmail.com
	Mr. Jenti Kerai	SBPSCL	0755789035	ppda.sbcu@gmail.com
	Mr. Vinod Patel	SBPSCL	0772747366	vinashani8190@gmail.com
	Mr. Vinit Patel	SBPSCL	0772735508	vinit@pioneerplumb.co.ug
	Mr. Peter Kyambadde	SBPSCL	0702867530	peter@pioneerplumb.co.ug
	Ms. Mildred Nakayondo	SBPSCL	0781507127	mildmuwonge@gmail.com
	Mr. Yasin Bagenda	SBPSCL	0777380215	bagendaqq@gmail.com
	Mr. Samson Oluoch	SBPSCL	0773052377	samsunonyango.oluoch@kone.com
	Apologies:			
	Mr. Simon Busingye	PPDA		
	Mr. Uthman Segawa	PPDA		
	Mr. Moses Ojambo	PPDA		
	Arch. Susan Atai	Symbion Uganda		
	Mr. Manish Siyani	SBPSCL		
	Mr. Sarfaraz Jiwani	SBPSCL		
2.0	The meeting started with a prayer led by Mr. Ivan Asiimwe at 11.16 am.			
3.0	CONFIRMATION OF MINUTES OF PREVIOUS SITE MEETING			
	Minutes of the previous site meeting were read out and confirmed as a true record of that meeting.			All
4.0	SCHEDULE OF SITE MEETINGS / INSPECTIONS			
4.1	Site meetings will be held once a month every second Thursday of the month at 10.00 am . The next site meetings are scheduled for Thursday 10th December 2020, Thursday 10th December 2020 and Thursday 11th February 2020.			All
4.2	Site inspections will be held every fourth Thursday of the month at 10.00am . The next site inspections are scheduled for Thursday 26th November 2020, Thursday 28th January 2020 and Thursday 25th February 2020.			All

ITEM	CONTENTS	ACTION																												
5.0	MAIN CONTRACTOR'S REPORT																													
5.1	General Report Seyani Brothers & Parbat Siyani Construction Ltd (SBPSCL) P.O. Box 21745, Kampala, Uganda, Tel: +256 414 266218 / 266142, Email: sbcu@seyani.com <u>Contractor's representatives:</u> - <table><tr><td>a) Managing Director</td><td>-</td><td>Manish Siyani</td><td>Tel: 0755789004</td></tr><tr><td>b) General Manager</td><td>-</td><td>Sarfarazi Jiwani</td><td>Tel: 0755789006</td></tr><tr><td>c) Contract Coordinator</td><td>-</td><td>Laxman Pawar</td><td>Tel: 0755789046</td></tr><tr><td>d) Site Engineer</td><td>-</td><td>Tusiime Moreen</td><td>Tel: 0788203239</td></tr><tr><td>e) Health and Safety Manager</td><td>-</td><td>Inangut Samson</td><td>Tel: 0784416709</td></tr><tr><td>f) Quantity Surveyor</td><td>-</td><td>Victoria Nammadu</td><td>Tel: 0774442493</td></tr><tr><td>g) Site Main Foreman</td><td>-</td><td>Jenti Kerai</td><td>Tel: 0755119035</td></tr></table> Main Contractor to revise the above list and include the people within the contract.	a) Managing Director	-	Manish Siyani	Tel: 0755789004	b) General Manager	-	Sarfarazi Jiwani	Tel: 0755789006	c) Contract Coordinator	-	Laxman Pawar	Tel: 0755789046	d) Site Engineer	-	Tusiime Moreen	Tel: 0788203239	e) Health and Safety Manager	-	Inangut Samson	Tel: 0784416709	f) Quantity Surveyor	-	Victoria Nammadu	Tel: 0774442493	g) Site Main Foreman	-	Jenti Kerai	Tel: 0755119035	SBPSCL
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g) Site Main Foreman	-	Jenti Kerai	Tel: 0755119035																											
5.2	Specialist Supervisors The main contractor confirmed the following list of specialist supervisors.	SBPSCL																												
5.2.1	Aluminium, Glass and Roof Steel works C/o Aluclad Limited Plot 3, Martin Rd. P.O. Box 71994, Kampala. Email: alucladltd@gmail.com <u>Representatives:</u> Mr. Musa Raza Virk, Tel: 0782486162, Email: alucladltd@gmail.com The progress on procurement is as follows; <table><tr><td>a) All glass already in the country and fixing has commenced with approximately 10% done.</td><td rowspan="5">}</td><td rowspan="5">SBPSCL</td></tr><tr><td>b) Roof structure construction is 70% done.</td></tr><tr><td>c) Aluminum cladding currently in Mombasa and expected on site by the close of November 2020.</td></tr><tr><td>d) Preparation of external walls to receive cladding has commenced and is approximately 30% done</td></tr><tr><td>e) Laying of roof sheets to commence on 16th November 2020.</td></tr></table>	a) All glass already in the country and fixing has commenced with approximately 10% done.	}	SBPSCL	b) Roof structure construction is 70% done.	c) Aluminum cladding currently in Mombasa and expected on site by the close of November 2020.	d) Preparation of external walls to receive cladding has commenced and is approximately 30% done	e) Laying of roof sheets to commence on 16 th November 2020.																						
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5.2.2	Lift Installations C/o KONE Uganda Ltd Plot 23, Lumumba Avenue P.O. Box 10927, Kampala. Tel: +256 312 370855/6 <u>Representatives:</u> Mr. Samson Oluoch, Tel: 0773052377, Email: samsononyango.oluoch@kone.com <table><tr><td>a) Lift installation has commenced with 2no. lifts on the PPDA side.</td></tr><tr><td>b) Contractor was requested to do all 4no. lifts co-currently.</td></tr></table>	a) Lift installation has commenced with 2no. lifts on the PPDA side.	b) Contractor was requested to do all 4no. lifts co-currently.																											
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ITEM	CONTENTS	ACTION
5.2.3	Electrical Installations C/o Central Electricals International Ltd P.O. Box 6700, Kampala, Uganda Tel: 0414 505891/2, Email: info.kla@centraelectricals.com Representatives:- Mr. Sadiq Rajwani, Tel: 0751127437, Email: sadiq@centraelectricals.com The Contractor is to confirm the solar power battery solutions at the roof level.	SBPSCL
5.2.4	Data & Voice Installations/ BMS Mantra Technologies Sia Amara Plaza Plot No 20-24 Spring Road, Bugolobi P.O. Box 8623, Kampala, Uganda Tel +256 200 906 905/906 Representatives:- Mr. Retnakaran Karutha, Tel: 0751720562 Email: retna@mantratechno.com, support@mantratechno.com The Client is to revert with formal approvals or comments on the submitted ICT and BMS options report.	URF/PPDA
5.2.5	Plumbing works C/o Pioneer Plumb (U) Ltd P.O. Box 28716, Kampala Tel: 0414543167 email: info@pioneerplumb.co.ug Representatives:- Mr. Vinit Patel Tel: 0772735508, Email: vinit@pioneerplumb.co.ug a) The Contractor is to connect all the rainwater drainage pipes to reduce on site flooding. b) Contractor to confirm route for the Kitchen fan external extraction.	SBPSCL SBPSCL
5.2.6	Stainless Steel works C/o Reliable Engineering & Décor Ltd P. O. Box 4452, Kampala Email: reliable.ug.co@gmail.com Representatives: Mr. Mohammad Rony Shahin, Tel: 0752555522 / 0701555522, Email: shahinazimpur@yahoo.com Plot 8, Nalukolongo	
5.2.7	The Main Contractor confirmed that air-conditioning, Terrazzo, and joinery works will be done in-house.	SBPSCL

ITEM	CONTENTS	ACTION
5.2.8	Under Air- Conditioning. a) Contractor to re-affirm the following at the roof terrace • Conference hall AHU sleeves • Pressurization fan placement detail	SBPSCL
5.2.9	Under Terrazzo works the Contractor is to revise the current sample to match what was approved by the Client.	
5.3.0	<u>Programme and Progress</u>	
5.3.1	The contractor submitted a work programme showing a completion date of 30 th March 2021.	FIO
5.3.2	The contractor gave a tentative revised completion date of 26 th May 2021 caused by the temporary site Closure due to Covid- 19 and its possible impact on the procurement processes. This is to be confirmed in due course once the full extent due to covid-19 is established.	FIO
5.3.3	The contractor indicated 88.51% as the elapsed time as per work programme.	FIO
5.3.4	The overall progress cost wise was 38.54%.	
5.3.4	The actual progress was 71% compared to a programmed progress of 83% along the critical path.	SBPSCL
5.3.5	Main Contractor to revise the work planned section to include only the pre-programmed aspects.	SBPSCL
5.3.6	Main Contractor to revise the tests carried on site/ off site section to reflect only tests done in the month.	
5.4	<u>Delays to the Project</u> The Contractor reported tentative delays to the project totaling to 60 days due to the temporary site situation due to the Covid -19 outbreak from 27 th March 2020 to 14 th May 2020.	FIO
5.5	<u>Procurement Schedule</u> The Contractor reported the following setbacks to the procurement process; a) Delays from SGS in the UAE for pre inspection which has affected aluminum cladding. b) Possible delays in the approval of ICT, BMS and lighting design. The Contractor was requested to confirm any impact to the project from the above items in due course.	
5.6	<u>Pre-shipment inspections and Factory Acceptance lists</u> The exercise is currently deferred due to the ongoing global travel restrictions. The Client will revert in due course if the exercise can be restarted assuming travel restrictions are relaxed.	FIO
5.7	<u>Project Cashflow</u> Main Contractor to submit a revised cashflow projection to enable the Client plan accordingly by 26 th November 2020. Main Contractor in the same regard should give proposal for payment towards materials on site.	SYMBION/SBPSCL
5.8	<u>Clerk of Works Report</u> a) The following is a summary of events for the months September/October. • The average number of workers was 113 per week. • 13hrs and 55 min man hours were lost due to rain. • For this month, the main activities carried out were; - Floor screeding is done 15%. - Undercoat application to internal walls is done 25%.	

ITEM	CONTENTS	ACTION
	- Roof construction is done 70% - Casting concrete to roof slab is done 100%. - Block walling on ground, Mezzanine, first, and second floor is 100%, while third, fourth, fifth and sixth floor 98% and seventh floor 90%. - Plaster to walls Basement 1,2,3 is done 95%, ground, mezzanine, first, second, third and fourth floor 95%. Fifth and sixth floor 80% and 75% done respectively. - Electrical first fix ground, mezzanine, first, second, third and fourth 80% done while fifth and sixth floor 70% and 60% done, respectively. - Mechanical first fix ground, mezzanine, first, second, third, fourth, fifth and sixth floor 95% done. - Mechanical second fix Basement 1, first, second, third, fourth, and fifth floor is 45% done while ground, mezzanine and sixth floor 40%. b) Key issues. Contractor to attend to the hairline cracks defect under plastered walls between columns and walling.	SBPSCL
6.0	<u>ITEMS OBSERVED DURING THE SITE INSPECTION</u>	
6.1	The Contractor was continuing with the roof steel structure trusses and girders	} SBPSCL
6.2	The Contractor had commenced with the parapet wall at the roof level.	
6.3	The Contractor had commenced with black paint on the external walls to receive cladding.	
7.0	<u>ITEMS DISCUSSED DURING SITE MEETING AND INSPECTION</u>	
7.1	The Consultant is to issue the pending side boundary details.	SYMBION
7.2	The Contractor is to ensure that all RWDPs are diverted and connected to the road side drainage by the next site inspection.	SBPSCL
7.3	The Contractor will confirm at a later date whether the existing road drainage points can be expanded when undertaking the slip road works.	SYMBION/SBPSCL
7.4	The Contractor to finalize preparations to have cashflow absorptions improved for the current financial year by having payments for materials on site.	
8.0	<u>SITE MATTERS</u>	
8.1	<u>Organization, Facilities and Planning</u>	
	a) <u>Site Access:</u> Main access is off Nakasero road with 2no alternating access gates.	FIO
	b) <u>Site office:</u> Provided on mezzanine floor/parking within basement 1.	FIO
	c) <u>Site Security:</u> The main contractor provides site security with effect from the site possession date.	FIO
	d) <u>Temporary services:</u> i) Water – Available on site. ii) 3-Phase power – Available on site. iii) Sewer line – connection done.	FIO

ITEM	CONTENTS	ACTION
	e) Demolitions and Salvaging Nothing arising. f) Set of Construction drawings Nothing arising. g) Site Sanitation Nothing arising. h) Site Restrictions Nothing arising.	
8.2	Health and Safety plan and Quality control policy a) As per contract provisions. b) Contractor was reminded to ensure that safety precautions are improved especially on top floors. c) Contractor to issue revised health & safety report to all relevant parties. d) Contractor was urged to have appropriate sanitizers and awareness due to the COVID-19 outbreak in line with the guideline issued by the MOWT. e) The contractor is to immediately barricade the space under the crane to counter traffic. f) The contractor confirmed to have an acceptable safety net that will be in place by 27th August 2020. g) The contractor added that from the above guidelines the following have been introduced. • Sanization pumps • Temperature gauge • Re-usable masks • Awareness signs • Hand sanitizing h) Contractor to provide an additional temperature gauge for the second gate. i) For subsequent monthly meetings, the contractor will be required to give an update on the above. j) Main Contractor to enforce safety while doing roof works.	SBPSCL SBPSCL
8.3	Statutory Undertakings a) The Consultant urged the contractor to have signed job cards at all times. b) Copies for all approved drawings have been shared to both the client and main contractor for records.	
8.4	Site Photographs Contractor is to produce site photographs on a monthly basis covering the main aspects of the work. Generally, this should cover the works where there has been some progress.	
8.5	Site Signboard Nothing arising.	
8.6	Setting out Nothing arising.	
8.7	Samples The contractor submitted the following samples for review.	SBPSCL

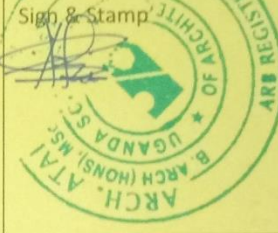
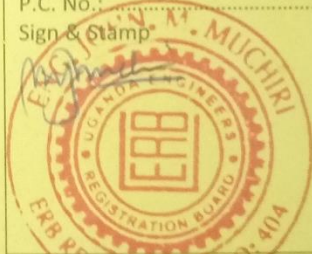
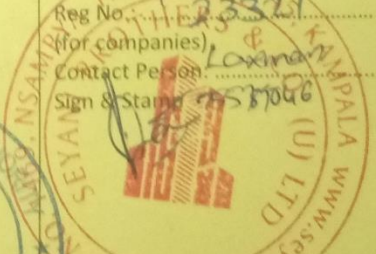
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1. Wooden SCF	Rationalize beading and decorative strips	Approved with comments.									
2. Staircase Terrazzo	Light Grey	Contractor yet to match approved sample.									
8.8	Information required Nothing arising.										
9.0	CONTRACT MATTERS										
9.1	Commencement Date of Contract Contract signing date: - 17 th October 2017 Site handover date: - 18 th December 2017 Site possession date: - 19 th December 2017 Contract start date: - 28 th November 2017.										
9.2	Duration of Contract 40 months (inclusive of mobilization period)										
9.3	Intended Completion Date of Contract 30 th March 2021										
9.4	Projected Completion date of contract 30 th May 2021										
9.5	Value of Main Contract The revised contract sum is UGX 54,082,441,313 (VAT inclusive) as indicated in the addendum to the main contract.										
9.6	Main Contract Documentation Nothing arising										
9.7	Bonds and Insurances Contractor to note the respective expiry dates here below:- a) Advance Payment Security - 30 th November 2020 b) Contractor's All risk Insurance - 30 th November 2020 c) Performance Guarantee - 31 st December 2020 Contractor to check and renew where necessary as per the Contract provisions.	SBPSCL SBPSCL									
9.8	Level of Liquidated and Ascertained Damages 0.025% per day to limit of 5% of Contract sum.	FIO									
9.9	Valuations Nothing arising.	SYMBION									

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9.10	Bills of Quantities Nothing arising.																																																																																					
9.11	Set of Approved Drawings Nothing arising.																																																																																					
9.12	Site Instructions Nothing arising.																																																																																					
9.13	Hours of Work The hours of work are clearly stipulated in the contract and are as follows: - 8.0 m – 5.00 pm Monday to Saturday. Restriction by neighbors is not affecting progress.	FIO																																																																																				
9.14	All dates to be denoted as 30 working days not 30 calendar days.	FIO																																																																																				
9.15	Communication Procedures a) Any request for information should be issued to the consultants at least 48 hours before implementation. b) Queries should be issued to the consultant at least 24 hours before implementation. c) A 24-hour notice is acceptable for structural inspections. d) Distribution of information to be done by email. e) Hard copy documents to be delivered on site (with receipt / stamp).	FIO																																																																																				
9.16	Certificates <table><tr><th>Certificate No.</th><th>Amount (UGX)</th><th>Date of Certificate</th><th>Payment status</th></tr><tr><td>Certificate 1</td><td>1,238,329,699.00</td><td>15.2.2018</td><td>Paid</td></tr><tr><td>Certificate 2</td><td>1,599,681,014.00</td><td>16.5.2018</td><td>Paid</td></tr><tr><td>Certificate 3</td><td>1,417,002,818.00</td><td>19.9.2018</td><td>Paid</td></tr><tr><td>Certificate 4</td><td>1,182,796,223.00</td><td>4.10.2018</td><td>Paid</td></tr><tr><td>Certificate 5</td><td>1,068,190,147.00</td><td>10.10.2018</td><td>Paid</td></tr><tr><td>Certificate 6</td><td>3,554,598,135.00</td><td>04.2.2019</td><td>Paid</td></tr><tr><td>Certificate 7</td><td>1,423,193,110.00</td><td>18.2.2019</td><td>Paid</td></tr><tr><td>Certificate 8</td><td>830,138,862.00</td><td>06.3.2019</td><td>Paid</td></tr><tr><td>Certificate 9</td><td>1,574,003,050.00</td><td>18.4.2019</td><td>Paid</td></tr><tr><td>Certificate 10</td><td>842,485,352.00</td><td>06.6.2019</td><td>Paid</td></tr><tr><td>Certificate 11</td><td>1,267,271,726.00</td><td>18.6.2019</td><td>Paid</td></tr><tr><td>Certificate 12</td><td>777,839,869.00</td><td>28.8.2019</td><td>Paid</td></tr><tr><td>Certificate 13</td><td>461,533,761.00</td><td>1.10.2019</td><td>Paid</td></tr><tr><td>Certificate 14</td><td>644,256,790.00</td><td>4.11.2019</td><td>Paid</td></tr><tr><td>Certificate 15</td><td>591,793,559.00</td><td>10.12.2019</td><td>Paid</td></tr><tr><td>Certificate 16</td><td>1,083,399,379.00</td><td>28.01.2020</td><td>Paid.</td></tr><tr><td>Certificate 17</td><td>490,544,767.00</td><td>18.3.2020</td><td>Paid.</td></tr><tr><td>Certificate 18</td><td>1,218,092,989.00</td><td>15.6.2020</td><td>Paid.</td></tr><tr><td>Certificate 19</td><td>397,709,226.00</td><td>20.8.2020</td><td>Paid.</td></tr><tr><td>Certificate 20</td><td>598,783,589.00</td><td>28.9.2020</td><td>Outstanding</td></tr></table>	Certificate No.	Amount (UGX)	Date of Certificate	Payment status	Certificate 1	1,238,329,699.00	15.2.2018	Paid	Certificate 2	1,599,681,014.00	16.5.2018	Paid	Certificate 3	1,417,002,818.00	19.9.2018	Paid	Certificate 4	1,182,796,223.00	4.10.2018	Paid	Certificate 5	1,068,190,147.00	10.10.2018	Paid	Certificate 6	3,554,598,135.00	04.2.2019	Paid	Certificate 7	1,423,193,110.00	18.2.2019	Paid	Certificate 8	830,138,862.00	06.3.2019	Paid	Certificate 9	1,574,003,050.00	18.4.2019	Paid	Certificate 10	842,485,352.00	06.6.2019	Paid	Certificate 11	1,267,271,726.00	18.6.2019	Paid	Certificate 12	777,839,869.00	28.8.2019	Paid	Certificate 13	461,533,761.00	1.10.2019	Paid	Certificate 14	644,256,790.00	4.11.2019	Paid	Certificate 15	591,793,559.00	10.12.2019	Paid	Certificate 16	1,083,399,379.00	28.01.2020	Paid.	Certificate 17	490,544,767.00	18.3.2020	Paid.	Certificate 18	1,218,092,989.00	15.6.2020	Paid.	Certificate 19	397,709,226.00	20.8.2020	Paid.	Certificate 20	598,783,589.00	28.9.2020	Outstanding	
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10.0	FINANCIAL APPRAISAL These shall be prepared as per contract. Financial appraisal No. 4 expected to be done by the end of November 2020.	FIO																														
11.0	PROJECT MANAGER/ARCHITECT Symbion Uganda Limited P.O. Box 7671, Kampala Tel: +256 414251142/349065, Fax: +256 414251126, Email: symbionuganda@symbion-int.co.ug																															
11.1	Representatives: - <table> <tr> <td>Arch. Pius Muli</td><td>- Project Manager</td><td>Tel: 0755911432</td></tr> <tr> <td>Arch. Susan Atai</td><td>- Project Architect</td><td>Tel: 0751563258 assisted by</td></tr> <tr> <td>Arch. George Ssali</td><td>- Assistant Architect</td><td>Tel: 0782985514</td></tr> <tr> <td>Mr. Victor Odongo</td><td>- Project Quantity Surveyor</td><td>Tel: 0772487791 assisted by</td></tr> <tr> <td>Mr. Oscar Walubi</td><td>- Assistant Quantity Surveyor</td><td>Tel: 0777 595960</td></tr> <tr> <td>Eng. Richard Drakuma</td><td>- Mechanical Engineer</td><td>Tel: 0772648890 Assisted by</td></tr> <tr> <td>Eng. Tutu Cara Tibaleka</td><td>- Assistant Mech. Engineer</td><td>Tel: 0774562246</td></tr> <tr> <td>Eng. Earnest Kusiima</td><td>- Electrical Engineer</td><td>Tel: 0773212021</td></tr> <tr> <td>Eng. John Muchiri</td><td>- Structural & Civil Engineer</td><td>Tel: 0772 778211 assisted by</td></tr> <tr> <td>Eng. Rebecca Nakiyingi</td><td>- Assistant Structural Engineer</td><td>Tel: 0701447755</td></tr> </table>	Arch. Pius Muli	- Project Manager	Tel: 0755911432	Arch. Susan Atai	- Project Architect	Tel: 0751563258 assisted by	Arch. George Ssali	- Assistant Architect	Tel: 0782985514	Mr. Victor Odongo	- Project Quantity Surveyor	Tel: 0772487791 assisted by	Mr. Oscar Walubi	- Assistant Quantity Surveyor	Tel: 0777 595960	Eng. Richard Drakuma	- Mechanical Engineer	Tel: 0772648890 Assisted by	Eng. Tutu Cara Tibaleka	- Assistant Mech. Engineer	Tel: 0774562246	Eng. Earnest Kusiima	- Electrical Engineer	Tel: 0773212021	Eng. John Muchiri	- Structural & Civil Engineer	Tel: 0772 778211 assisted by	Eng. Rebecca Nakiyingi	- Assistant Structural Engineer	Tel: 0701447755	
Arch. Pius Muli	- Project Manager	Tel: 0755911432																														
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Eng. Earnest Kusiima	- Electrical Engineer	Tel: 0773212021																														
Eng. John Muchiri	- Structural & Civil Engineer	Tel: 0772 778211 assisted by																														
Eng. Rebecca Nakiyingi	- Assistant Structural Engineer	Tel: 0701447755																														
12.0	CLIENT / CLIENT REPRESENTATIVE Uganda Road Fund (URF) P.O. Box 7501, Kampala Tel: +256 414257072/+256 312229009, Email: info@roadfund.ug Representative Eng. Justine Ongom Co-Chairman CMT Tel: 0752695324 assisted by Eng. Robert Kigozi AND Public Procurement and Disposal of Public Assets Authority (PPDA) P.O. Box 3925, Kampala Tel: +256 414311100 Email: info@ppda.go.ug Representative: Mr. Uthman Segawa Chairman CMT Tel: 0700869885																															

APPENDIX D: Site approvals and permits.

Card No 2

 KAMPALA CAPITAL CITY AUTHORITY DIRECTORATE OF PHYSICAL PLANNING P.O.BOX 7010, KAMPALA WORKS INSPECTION CARD		Serial No. 00493
Plot No. 39 Road Nakasero Rd		Project Supervising Consultants & Contractor:
Name of developer: PPDA & Ufada Road Fund Reg. No. (for non-individuals): Contact Person: Luxman ID no. * of Developer/contact person: 0755789046 Tel. No.: Signature: Approval date: 4/5/17 Approval Number: 424/17 Plan No.: 017/17 Project Location: Nakasero Rd Project Description: Proposed offices. Division: Central Issuing Building Inspector: Paul Ruseke Tel: 0794 660924 Signature: Date: Stamp: * NIN or Passport No. for foreign nationals		Architect Name: SUSAN ATAI Reg No.: 076 P.C. No.: 2922 Sign & Stamp:  Structural Engineer Name: JOHN MUCHIRI Reg No.: 404 P.C. No.: Sign & Stamp:  Contractor Name: SEXYA LTD Reg No.: 23321 (for companies) Contact Person: Luxman Sign & Stamp: 
Note: By signing this inspection/job card, the parties acknowledge having read and understood the permit conditions printed at the back hereof and agree to abide by them throughout the construction of the building. Any breach of applicable rules and/or the conditions hereof shall lead to action from the authority including, but not limited to prosecution and removal of the building. Parties shall be jointly and severally liable for any breach of the applicable rules and conditions. (June 2018 Edition)		

POST CARD	 KAMPALA CAPITAL CITY AUTHORITY DIRECTORATE OF PHYSICAL PLANNING. P. O. BOX 7010 KAMPALA.		
			Project Supervising Consultants: SUSAN Architect: SUSAN Name: SUSAN ATAI Reg No.: 070-... Sign & Stamp: [Stamp]
Division: CIVILIAN Name of Issuing Building Inspector: WAICA RUKA Tel: No 0794660906 Signature: [Signature] Stamp: [Stamp] Name & Contact of Developer: Sign:		Structural Engineer: [Name] Name: [Name] Reg No.: [Reg No.] Sign & Stamp: [Stamp]	
Approval /Permit Details: 424/17 of 4/5/2017 - PRE 205 Project Location & Description: Offices in Nakasero. Remarks / Conditions: - Request for inspection at all stages of the works - Provide safety gear to all workers all the time & install a project information board.		M & E Engineer: [Name] Name: [Name] Reg No.: [Reg No.] Sign & Stamp: [Stamp]	



DIRECTORATE OF ENGINEERING
AND TECHNICAL SERVICES

Your ref:

Our ref: DETS/KCCA/1303/23-jw-19-01

4th March 2019

Ms Seyani Brothers & Co. (U) Ltd
P. O. Box 21745
Plot 1469, Ggaba Road Nsan.bya
Tel: 0414-266142/226218, 0755789000
Kampala

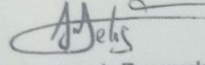
Attn: Mr. Laxman Pawar

RE: CONSTRUCTION OF THE PPDA-URF HEAD OFFICE BUILDING AT
PLOT 39 NAKASERO ROAD

Subject: PERMISSION TO CLOSE HALF OF NAKASERO ROAD DURING
LOADING AND OFF LOADING MATERIALS

Reference is made to your letter dated 7th January 2019 requesting for permission to allow trucks to park along Nakasero road side during loading and off-loading of materials for your construction site. Following the joint site inspection carried out by KCCA staff and your representative on 28th March 2019, KCCA hereby grants you permission to close half of the road during loading and offloading under the following conditions: -

1. Kampala Capital City Authority shall be indemnified from any accidental damage or loss of property and life incidental to your works.
2. The loading and off loading operations shall be undertaken by a competent service provider under your direct supervision. No debris shall be disposed on the road surface. In addition, the works will be inspected occasionally by a representative from the Directorate of Engineering and Technical Services (Eng. Joel Wasswa -0794660989) to ensure compliance to standards.
3. All contractor's workers and traffic guides shall be in reflector jackets and easily identifiable and shall have a copy of this permit on site.
4. You shall liaise with the Traffic Police to make necessary arrangements for proper traffic management in case any of your major activities impact on the traffic flow within the area.
5. This permit shall be valid for a period of **six (6) months** from the 4th March 2019. Renewal of this permit shall be based on satisfactory compliance to the above conditions. Note that KCCA shall not take responsibility for any activities that are done in disregard of the above mentioned requirements.


Eng. Jacob Byamukama
For: Director Engineering and Technical Services
cc. Deputy Director Roads Management, KCCA

P. O. Box 7010 Kampala - Uganda

7. Ensure a dustproof and noise proof environment without any inconvenience within the neighbourhood. The Authority shall not permit generation of excessive and disruptive noise from the execution of the work.
8. The demolition shall be carried out strictly during the weekends and off peak hours to avoid interruption of traffic and other businesses within in the vicinity of the site. Use of simple conventional plants and tools for demolition shall be preferred.
9. Ensure safety precaution for the neighbouring structures and safety plan for cases of deep excavations.
10. All existing service lines on or near the site are to be protected during the course of execution of the works.
11. The **Authority reserves the right to revoke this permit any time** in case of breach of any of the above stipulated provisions and any other provision in the building rule.

Please keep in touch with this Office and that of the Division Building Inspector for further guidance and supervision.



Ivan Katongole
FOR DIRECTOR PHYSICAL PLANNING

cc: Town Clerk, Central Division
Director Revenue Collection
Supervisor Development Control
Building Inspector, Central Division

KCCA/PHY PLG/DC/016

Email: engineering@kcca.go.ug
Our Ref: DETS/KCCA/EP/JS/ROK-19-01

5th February, 2019

To:

Architect	Structural Engineer	Contractor
Arch. Susan Atai Symbion Uganda P.O Box 7671 Kampala	Eng. John Muchiri C/o Proman Consult Limited P.O Box 7810 Kampala Tel: 0392778211	Seyani Brothers Ltd P.O. BOX 21745, Kampala

**PROPOSED PPDA & UFW HEAD OFFICE BUILDING ON PLOT 39,
NAKASERO ROAD, CENTRAL DIVISION.**

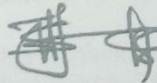
PERMISSION TO CARRY OUT EXCAVATION WORKS

Refer to your application for renewal of excavation permit.

Permission is hereby granted to carry out the following:

**Excavation works for the Proposed Office Development on Plot
39, Nakasero road, Central Division.**

These works shall be done subject to the conditions attached
herewith.



Eng. Dr. James Semuwemba
Ag. DEPUTY DIRECTOR BUILDING AND DRAINAGE MANAGEMENT
Copy Director Legal Affairs, KCCA
 Director Physical Planning, KCCA
 Division Town Clerk – Central Division, KCCA

P.O. Box 7010 Kampala - Uganda
Plot 1-3 Apollo Kaggwa Road
Tel: 0204 660 000



DIRECTORATE OF PHYSICAL PLANNING

PPDA 617

Our Ref:

Your Ref:

29th December 2017

PPDA & UGANDA ROAD FUND
P.O. Box 3925
KAMPALA

**PERMISSION TO CARRYOUT DEMOLITION OF EXISTING STRUCTURES ON PLOT NO.
39 NAKASERO ROAD – CENTRAL DIVISION.**

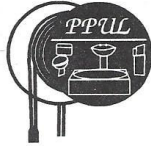
Refer to your application regarding the above mentioned subject.

Permission is granted to you to carry out the following

- i) Demolition of existing structures for redevelopment.

The above work shall be done subject to the following general conditions:-

1. The Authority shall be indemnified from any accidental damages and/or loss to property and lives incidental to the said works. The client and contractor(s) shall both individually and severally be liable for any such occurrences.
2. The Authority is indemnified from any complaint(s) or conflict(s) that may arise as a result of the above demolition works being carried out.
3. Ensure that there are no people living in the structures at the time of demolition.
4. Pay a fee of Ug. Shs. 50,000/= (Shillings one hundred thousand) only plus VAT in the designated Bank before any work starts
5. This permit shall be valid for a period of **only 2(two) months** from the date of issue of this permit.
6. There shall be no littering on the roads and neighboring areas during the carting of demolition debris and demolition is to be done carefully to avoid damages to the neighboring properties. All toxic material shall be disposed of carefully.



PIONEER PLUMB (U) LTD.

PLUMBERS AND SANITARY ENGINEERS

INSTALLATION OF STEAM, SOLAR HEATING, FIRE FIGHTING, SPRINKLER SYSTEMS,
SWIMMING POOLS, WATER TREATING AND FILTRATION PLANTS

P. O. Box 28716, Plot - 16, Ngabo Road, Wampewo Avenue, Kololo, Kampala - UGANDA
Tel/Fax: +256 - 414 543167 Mobile: +256 - 772 735508
E-mail: info@pioneerplumb.co.ug

TEST CERTIFICATE

NO. **160**
PROJECT: **PPDA / URF**
AREA: **URF AREA GROUND FLOOR**

THIS IS TO CERTIFY THAT THE FOLLOWING SECTIONS OF PIPE WORK HAVE BEEN
TESTED IN ACCORDANCE WITH THE SPECIFICATIONS AND TO SATISFACTION OF
THE ENGINEER.

**PPR Piping Connecting WC's, Wash hand
basins, Urinals and Kitchen Sink and
Cleaner Sink.**

TEST PRESSURE: BARS **6 bars** / PSI

CLERK OF WORKS/SITE AGENT

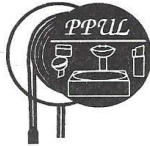
SIGNATURE **[Signature]** NAME **Asimwe Ivan** DATE **2/11/2019**

SITE FOREMAN

SIGNATURE **[Signature]** NAME **Hamid Abdu** DATE **2/11/2019**

COMMENTS IF ANY

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.....
.....
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PIONEER PLUMB (U) LTD.

PLUMBERS AND SANITARY ENGINEERS

INSTALLATION OF STEAM, SOLAR HEATING, FIRE FIGHTING, SPRINKLER SYSTEMS,
SWIMMING POOLS, WATER TREATING AND FILTRATION PLANTS

P. O. Box 28716, Plot - 16, Ngabo Road, Wampewo Avenue, Kololo, Kampala - UGANDA
Tel/Fax: +256 - 414 543167 Mobile: +256 - 772 735508
E-mail: info@pioneerplumb.co.ug

TEST CERTIFICATE

161
NO.

PROJECT: PPDA / URF

AREA: MEZZANINE FLOOR PPDA AREA

THIS IS TO CERTIFY THAT THE FOLLOWING SECTIONS OF PIPE WORK HAVE BEEN
TESTED IN ACCORDANCE WITH THE SPECIFICATIONS AND TO SATISFACTION OF
THE ENGINEER.

PPR Pipe work connecting both male &
female toilets, wash hand basins,
Urinals and cleaner sink.

TEST PRESSURE: BARS 6 / PSI

CLERK OF WORKS/SITE AGENT

SIGNATURE: [Signature] NAME: ASIMWE IVAN DATE: 09/01/2020

SITE FOREMAN

SIGNATURE: [Signature] NAME: HAMIS ABDA DATE: 09/01/2020

COMMENTS IF ANY

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.....
.....
.....
.....
.....



SEYANI BROTHERS & CO. (U) LTD.

GENERAL BUILDING & CIVIL ENGINEERING CONTRACTORS

P.O. BOX: 21745, PLOT: 1469 GGABA ROAD, NSAMBYA, KAMPALA, UGANDA
Tel: +256 41 4266142/4266218 Mob: +256 755 789000 Fax: +256 41 4267097/4266142
E-mail: sbcu@seyani.com, Website: www.seyani.com

Job Proposed Head office
for PPDA SURF

DATE 9*/03 20 20

SITE INSTRUCTION VARIATION ORDER

The following instructions were given by:-

- Roof slab & structure
- 1) Beam as depth should be increased to 800mm maintaining the reinforcement
 - 2) Beams 16 & 17 should be changed to section 300x200mm
 - 3) Beam 13 should be omitted.
 - 4) Girders Beam 14 should be raised and girders cast with the beam.

Sr. No: **14772**

[Signature]
Kassim (Prman)

[Signature]
Seyani Kamm

Distribution:-

Architect ☐

Quantity Surveyor ☐

Engineer ☒

Clerk of Work ☐

Sub-Contractor ☐



SEYANI BROTHERS & CO. (U) LTD.

GENERAL BUILDING & CIVIL ENGINEERING CONTRACTORS

P.O. BOX: 21745, PLOT: 1469 GGABA ROAD, NSAMBYA, KAMPALA, UGANDA
Tel: +256 41 4266142/4266218 Mob: +256 755 789000 Fax: +256 41 4267097/4266142
E-mail: sbcu@seyani.com, Website: www.seyani.com

Job Proposed Head office
for IPDAS URF

DATE 26/11 20 20

**SITE INSTRUCTION
VARIATION ORDER**

The following instructions were given by:-

Mechanical Cutouts

- Contractor can proceed to
Core drill for the revised
toilet positions along
grids S/E & G/E for the
typical floor. *[Signature]*

- Contractor can Core drill ^{Khassim (Prona)} 50mm through
beam OGB at 5th floor. *[Signature]*

Sr. No: **14783**

[Signature]

Distribution:-

Architect ☐

Quantity Surveyor ☐

Engineer ☒

Clerk of Work ☐

Sub-Contractor ☐



SEYANI BROTHERS & CO. (U) LTD.

GENERAL BUILDING & CIVIL ENGINEERING CONTRACTORS

P.O. BOX: 21745, PLOT: 1469 GGABA ROAD, NSAMBYA, KAMPALA, UGANDA

Tel: +256 41 4266142/4266218 Mob: +256 755 789000 Fax: +256 41 4267097/4266142

E-mail: sbcu@seyani.com, Website: www.seyani.com

Job Proposed Head office
Sr. PPDA

DATE 26/11 2020

**SITE INSTRUCTION
VARIATION ORDER**

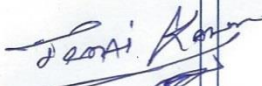
The following instructions were given by:-

AC DUCTS

The Contractor can proceed
to cut the ducts as
we agreed and issued
an instruction on email.


Khasson (Romer)

Sr. No: **14782**


Seoni Karon

Distribution:-

Architect ☐

Quantity Surveyor ☐

Engineer ☒

Clerk of Work ☐

Sub-Contractor ☐

APPENDIX E: Change Orders.

SYMBION

30th September 2020

Our ref: SU.17. 535 CO (GC)
Post contract

Seyani Brothers & Co. (U) Ltd and
Parbat Siyani Construction Ltd Joint Venture
P.O. Box 21745
Kampala, Uganda

Attention: Mr. Laxman Pawar

Dear Sir,

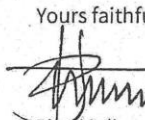
RE: CONSTRUCTION OF PPDA-URF HEAD OFFICE BUILDING AT PLOT No. 39, NAKASERO ROAD - Procurement Ref: URF/WORKS/16-17/00001

CHANGE ORDER NO.03 – Electrical Load and Cleaning Cradle/Gantry

Please find attached herewith Change Order No.03 – Electrical load and Cleaning Cradle/Gantry, for the above project for your action.

Also attached for your reference is the Client's approval of Change Order No.03, upgrading the Power Supply system and providing for a complete Cleaning Cradle Monorail system as an upgrade from Gantry, with the associated costs of Ushs. 1,239,060,313/- exclusive of VAT to be charged against Part of the Contingency Sum and Provisional Sum for Pre-shipment Inspections, respectively.

Yours faithfully,


Pius Muli
Project Manager
Symbion Uganda Ltd.



Encls.

cc. The Ag. Executive Director, URF
The Ag. Executive Director, PPDA
Symbion Uganda Limited

- Attn: Dr. Eng. Andrew Naimanye
- Attn: Mr. Benson Turamye
- Attn: Ms. Susan Atai / Mr. Victor Odongo/
Mr. John Muchiri / Mr. Richard Drakuma.

PM/nr

DIRECTORS:

PIUS MULI MAAK(A)MUSA | SUSAN ATAİ MUSA | OSCAR OGUNDE MAAK(A)
CPM)MUSA.PMP TITUS KIPSANG MAAK(A) | MUTUA MUTUKU MAAK(A)
WILFRED KABBALA MUSA.MBA.PMP | RONALD KATABIRA MCIOR.MUSA

Symbion Uganda Ltd. Studio House, 5 Bandali Rise, Bugolobi. P.O Box 7671 Kampala, Uganda.
T: +256 (0) 414 251142, 393 260252, 757 251142. symbionuganda@symbion-int.com
www.symbion-int.com

SYMBION

Issued By: Symbion Uganda Ltd.

Address: Studio House, 5 Bandali Rise, Bugolobi, P.O. Box 7671, Kampala, Uganda

PROJECT MANAGER'S INSTRUCTION (Change Order)

Employer: Uganda Road Fund

Address: P.O. Box 7501
Kampala

Job Ref: SU.17.535

Contractor: Seyani Brothers & Co. (U) Ltd and Parbat Siyani Construction Ltd Joint Venture

Address: P.O. Box 21745, Kampala

Instruction No: CO 03

Issue Date: 30th September 2020

Works: Construction of PPDA-URF Head Office Building

Procurement Ref - URF/WORKS/16-17/00001

Situated at: Plot 39, Nakasero Road, Kampala

Contract Dated: 28th November 2017

Sheet: 1 of 1

Under the terms of the above mentioned Contract, I/We issue the following instruction:

ELECTRICAL LOAD AND CLEANING CRADLE/GANTRY	Office Use : Approximate Costs	
	Omit UGX	Add UGX
ITEM 1 Add: Upgrade the power supply system from 750 KVA to 1250 KVA Dual Unitised System comprising of 2 no. 630 KVA Transformers, 2 no. 500 KVA Stabilisers, and 2 no. 500 KVA Generators. Omit: Part of Contract Contingency Amount	762,010,470	762,010,470
ITEM 2 Add: Provide for a complete Cleaning Cradle Monorail System as an upgrade from the Gantry only provided in the Contract. Omit: Provision for Pre-shipment Inspection (Ref: Item F- Bill No.3/11 Page 48)	477,049,843	477,049,843
Total	1,239,060,313	1,239,060,313
Total value on instruction excluding VAT	0	0
Signed:  Phos Muli Symbion Uganda Ltd.		
Amount of Contract Sum,		54,082,441,313
± Approximate value of previous Instructions		0
Sub Total		54,082,441,313
± Approximate value of this Instruction		0
± Percentage increase/reduction in Contract Price by this PMI		0%
Approximate adjusted total		54,082,441,313

Distribution:

Original to:

Seyani Brothers & Parbat Siyani Construction ✓

Copies to:

Uganda Road Fund ✓

Symbion File ✓

Our ref: URF/WORKS/16-17/00001
Date: 28/09/2020

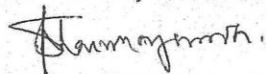
The Project Manager/ Team Leader
Symbion Uganda Limited
Studio House, Plot 5 Bandali Rise, Bugolobi,
P. O. Box 7671, Kampala

**CONSTRUCTION OF THE URF/PPDA JOINT OFFICE BUILDING ON PLOT 39, NAKASERO ROAD
Change Order No.3 – Electrical Load, Cleaning Cradle/Gantry**

Reference is made to your ref: SU.17.535 Client (GC) of 12.08.2020 on Electrical Load and that of 18.08.2020 on the Cleaning Cradle/Gantry. In line with the Change Order 2 herewith attached, I hereby approve the changes as follows:

- i) Upgrading the power supply system from 750KVA to 1250KVA Dual Unitised System comprising of 2no. 630 KVA Transformers, 2no. 500KVA Stabilisers, and 2no. 500KVA Generators at a revised price of UGX 1,907,478,870 (VAT Excl.). The attendant cost increment of UGX 762,010,470 (VAT Excl.) to be charged against the contingency amount in the Contract.
- ii) Providing for a complete Cleaning Cradle Monorail System as an upgrade from the Gantry only provided in the Contract, at a revised cost of UGX 635,382,343 (VAT Excl.). The attendant increment in cost of UGX 477,049,843 (VAT Excl.) will be charged against the Provisional Sum for Pre-shipment Inspections, which were not undertaken due to the Covid-19 outbreak.

You are hereby authorized to instruct the Contractor to undertake the above works.



Dr. Eng. Andrew Naimanye
Ag. EXECUTIVE DIRECTOR

c.c. Chairperson, Uganda Road Fund Board
Executive Director, PPDA

SYMBION

18th October 2019

Our ref: SU.17. 535 CO (GC)
Post contract

Seyani Brothers & Co. (U) Ltd and
Parbat Siyani Construction Ltd Joint Venture
P.O. Box 21745
Kampala, Uganda

Attention: Mr. Laxman Pawar

Dear Sir,

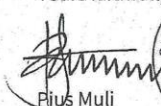
RE: CONSTRUCTION OF PPDA-URF HEAD OFFICE BUILDING AT PLOT No. 39, NAKASERO ROAD - Procurement Ref: URF/WORKS/16-17/00001

CHANGE ORDER NO.02 – Extension of Time of Works Contract

Please find attached herewith Change Order No.02- Extension of Time of works contract, for the above project for your action.

Also attached for your reference is the Client's approval of Change Order No.02, extending the completion date of the Construction Works Contract from 30th November 2020 to 30th March 2021, with the associated costs of Ushs. 296,409,444/- inclusive of VAT to be charged from the contingencies.

Yours faithfully,


Pius Muli
Project Manager
Symbion Uganda Ltd.



Encls.

cc. The Executive Director, URF
The Ag. Executive Director, PPDA
Symbion Uganda Limited

- Attn: Eng. Dr. Michael M. Odongo
- Attn: Mr. Benson Turamye
- Attn: Ms. Susan Atai / Mr. Victor Odongo/
Mr. John Muchiri / Mr. Richard Drakuma.

PM/nr

DIRECTORS:

PIUS MULI MAAKIA/MUSA | SUSAN ATAII MUSA | OSCAR OGUNDE MAAKIA/
CPH/MUSA.PMP/TITUS KIPSANG MAAKIA | MUTUA MUTUKU MAAKIA/
WILFRED KABBALE MUSA.MBA.PMP | RONALD KATABIRA MCIIB.MUSA

Symbion Uganda Ltd. Studio House, 5 Bandalia Rise, Bugolobi. P.O Box 7671 Kampala, Uganda.
T: +256 (0) 414 251142, 393 260252, 757 251142. symbionuganda@symbion-int.com
www.symbion-int.com

SYMBION

Issued By: Symbion Uganda Ltd.

Address: Studio House, 5 Bandali Rise, Bugolobi, P.O. Box 7671, Kampala, Uganda

PROJECT MANAGER'S INSTRUCTION (Change Order)

Employer: Uganda Road Fund

Address: P.O. Box 7501
Kampala

Job Ref: SU.17.535

Contractor: Seyani Brothers & Co. (U) Ltd and Parbat Siyani Construction Ltd Joint Venture

Address: P.O. Box 21745, Kampala

Instruction No: CO 02

Works: Construction of PPDA-URF Head Office Building

Procurement Ref - URF/WORKS/16-17/00001

Situated at: Plot 39, Nakasero Road, Kampala

Issue Date: 18th October 2019

Contract Dated: 28th November 2017

Sheet: 1 of 1

Under the terms of the above mentioned Contract, I/We issue the following instruction:

		Office Use : Approximate Costs	
		Omit UGX	Add UGX
Add:	Extension of Time (EOT) of works contract to change completion date from 30th November 2020 to 30th March 2021 with associated costs.		251,194,444
	Add: 18% VAT		45,215,000
	Total value on instruction Including VAT		296,409,444
Signed:  Pius Muli Symbion Uganda Ltd. 			
Amount of Contract Sum,			
± Approximate value of previous Instructions			
Sub Total			
± Approximate value of this Instruction			
± Percentage increase/reduction in Contract Price by this PMI			
Approximate adjusted total			

Distribution: Original to:
Seyani Brothers & Parbat Siyani Construction ✓

Copies to:
Uganda Road Fund ✓
Symbion File ✓



5th Floor, Twed Towers
Plot 10, Kafu Road, Nakasero
P.O. Box 7501,
KAMPALA, Uganda
T: +256 (0)414 257072/0312 229009
F: +256 (0)414 257071
E: info@ugadfund.org
W: www.ugadfund.org

Our ref: URF/WORKS/16-17/00001
Date: 16th August 2019

The Project Manager/ Team Leader
Symbion Uganda Limited
Studio House, Plot 5 Bandali Rise, Bugolobi,
P. O. Box 7671, Kampala

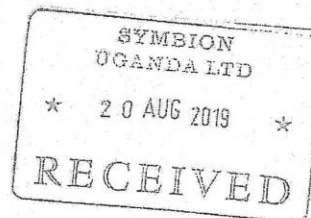
**CONSTRUCTION OF THE URF/PPDA JOINT OFFICE BUILDING ON PLOT 39,
NAKASERO ROAD – Application for Extension of Time**

Reference is made to your ref: SU.17.535 Client (GC) of 08.05.2019 regarding the Contractor's application for extension of time and associated costs.

In line with SCC (GCC) 4.2, we hereby communicate our approval for the award extending the completion date of the Construction Works Contract to 30th March 2021, with the associated costs of UGX 296,409,444/- to be charged from the contingencies. Attached herewith is the associated Change Order No. 2.


Eng. Dr. Michael M. Odongo
EXECUTIVE DIRECTOR

c.c. Chairperson, Uganda Road Fund Board
Executive Director, PPDA
Seyani Brothers & Co. (U) Ltd and Parbat Siyani Construction Ltd Joint Venture



SYMBION

15th October 2018

Our ref: SU.17. 535 CO (GC)
Post contract

Seyani Brothers & Co. (U) Ltd and
Parbat Siyani Construction Ltd Joint Venture
P.O. Box 21745
Kampala, Uganda

Attention: Mr. Laxman Pawar

Dear Sir,

RE: CONSTRUCTION OF PPDA-URF HEAD OFFICE BUILDING AT PLOT No. 39, NAKASERO ROAD - Procurement Ref: URF/WORKS/16-17/00001

CHANGE ORDER NO.01 – Rock Drilling works

Please find attached herewith Change Order No.01- Rock Drilling works, for the above project for your action. The details are as per attached document.

Also attached for your reference is the Client's approval of Change Order No.01.

Yours faithfully,



Pius Muli
Project Manager
Symbion Uganda Ltd.

Encls.

cc. The Executive Director, URF
The Ag. Executive Director, PPDA
Symbion Uganda Limited

- Attn: Eng. Dr. Michael M. Odongo
- Attn: Mr. Benson Turamye
- Attn: Ms. Susan Atai / Mr. Victor Odongo/
Mr. John Muchiri / Mr. Richard Drakuma.

PM/nr

DIRECTORS:

PIUS MULI HAAKIA HUSA | SUSAN ATAI HUSA | OSCAR OGUNDE HAAKIA/KIPIL HUSA/PHIP
TITUS KIPSANG HAAKIA | MUTUA MUTUKU HAAKIA | WILFRED KABBALE HUSA |
RONALD KATABIRA HICOB HUSA

Symbion Uganda Ltd. Studio House, 5 Bandali Rise, Bugolobi, P.O Box 7671 Kampala, Uganda.
T: +256 (0) 414 251142, 393 260252, 757 251142. symbionuganda@symbion-int.com
www.symbion-int.com

APPENDIX F: Work Programs.

STANLEY BROTHERS & CO. BUILDERS
10000 1000

APPENDIX G: Photographs from site.



Fig 72; Starter bars for lift shaft walls.



Fig 73; Columns bars fixed onto raft reinforcements.



Fig 72; Putting charcoal in earthing pits.



Fig 73; Laying electrical conduits into raft reinforcements.



Fig 74; Column reinforcements fixed.



Fig 75; Works in basement3.



Fig 76; Casting concrete to columns.

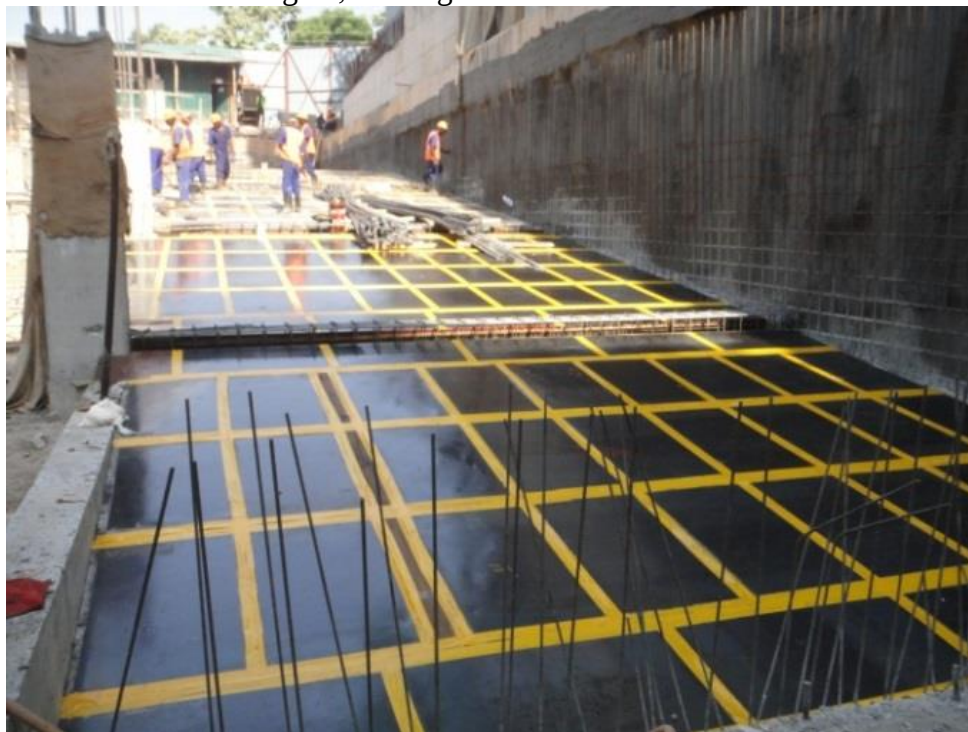


Fig 77; Sealing formwork joints to avoid slurry seepage.



Fig 78; Casting concrete to staircases.



Fig 79; Fixing formwork to beams.



Fig 80; Purlins fixed onto roof girders.



Fig 81; Painting works in basement.



Fig 82; Fixing door frames.

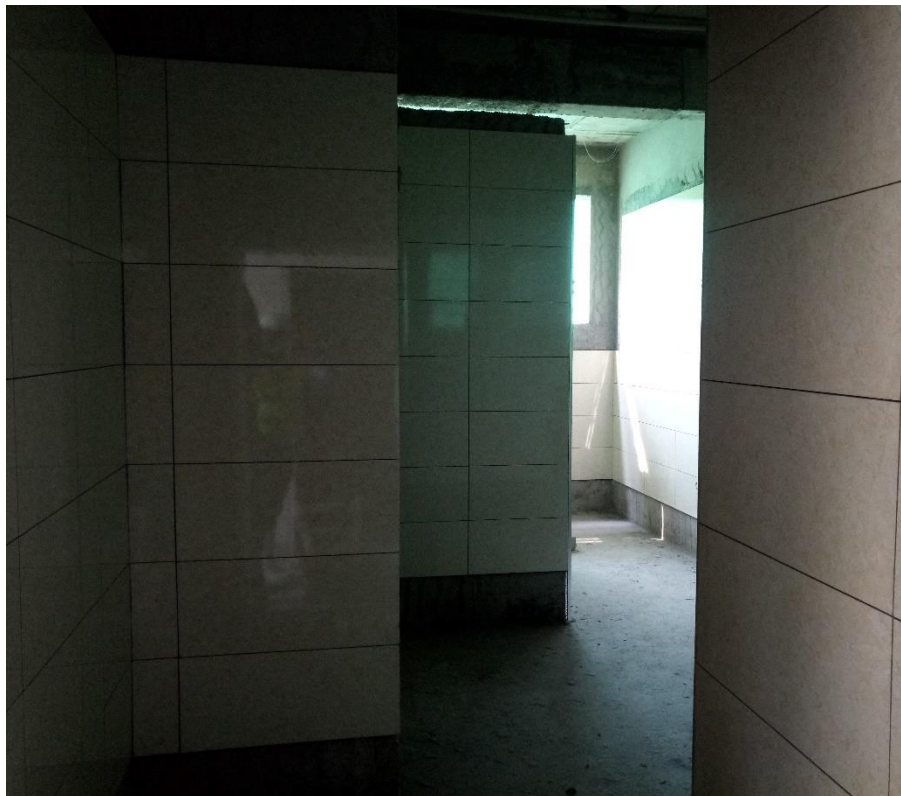


Fig 83; Fixing wall tiles in washrooms.



Fig 84; Fixing lift doors.



Fig 85; Laying floor tiles.



Fig 86; Painting works progressing.



Fig 87; Sprinkler pipes fixed onto the slab soffit.



Fig 88; Pressurization ducts fixed along staircases.



Fig 89; In door AC machines fixed onto slab soffits.



Fig 90; Fixing window aluminium frames.



Fig 91; Displaying samples for selection.



Fig 92; Displaying samples for selection.



Fig 93; Basement extraction fans fixed.



Fig 94; Assembling the water tank at the roof slab.



Fig 95; Artistic impression of the building.