UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

THE DEVELOPMENT OF A PROJECT MANAGEMENT PLAN FOR A FOUR-APARTMENT UNIT IN CHECKHALL, MASSACRE, COMMONWEALTH OF DOMINICA

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FINAL GRADUATION PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
MASTER IN PROJECT MANAGEMENT (MPM) DEGREE

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UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

This Final Graduation Project was approved by the University as partial fulfillment of the requirements to opt for the Master in Project Management (MPM) Degree

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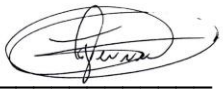
Tabitha Pierre 
Student full name
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DEDICATION

This research project is dedicated to my husband, Francis Pierre, and two sons Judah and Micah for giving extra meaning to living on this earth and added reason to do the unimaginable. To those who are deprived of the opportunity to tertiary education and to those who lack the fortitude to believe in themselves to strive for excellence.

ACKNOWLEDGMENTS

Firstly, I would like to thank my Lord and Savior Jesus Christ for the strength, courage and sustenance provided as I embarked upon and completed this project.

Special thanks to my colleagues, lecturers at UCI, Mr. Carlos Brenes, Mr. James Perez, and the staff at TFL for all forms of assistance and contributions to bringing this project to fruition. Additionally, I am indeed grateful to Ms. Schuyler Espirit for her expertise in editing and fine-tuning this document and making it worthy for presentation.

I am eternally grateful to my husband, Francis Pierre, who picked up the slack and dutifully managed the household while I labored on this project.

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ABBREVIATIONS AND ACRONYMS

EEF Enterprise Environmental Factors

FAU Four-Apartment Unit

FGP Final Graduation Project

OPA Organizational Process Assets

PMBOK® Guide Project Management Body of Knowledge Guide

PMI Project Management Institute

TFL TFL Construction & Design

UCI Universidad para la Cooperación Internacional

WBS work breakdown structure

EXECUTIVE SUMMARY (ABSTRACT)

For any company to succeed within the construction industry there needs to be a solid adherence to proper company structure and project management principles. The ultimate goal of this research is to create the proper company image for TFL Construction and Design that will successfully allow it to emerge above its competitors.

TFL has been in existence for approximately six years and has played a small but vital role within the construction industry with key roles such as small-scale construction, quantity surveying and property valuation services, electrical installations, and drafting and designing services. TFL has great potential for growth and expansion.

Presently on the island of Dominica, most small-scale construction companies like TFL do not operate using standard project management principles. Incorporating project management practices within the organization will allow the company to remain competitive, enhance its customer care, maximize quality assurance, and in return create a profit generating potential for the organization. Therefore, a project management plan for a typical construction project will allow the company to integrate and explore all the knowledge areas of project management according to the standards set by PMI, which will, in turn, minimize company losses and boost company profits. This project management plan can also serve as a template for other construction projects and allow TFL to grow in line with modern project management standards within the construction industry.

The general objective of the Final Graduation Project was to produce a project management plan for a Four-Apartment Unit. The specific objectives were:

1. To create the project charter in order to communicate the essence of the project to all stakeholders and sponsors with a shared understanding of the project.
2. To create a scope management plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.
3. To create a schedule management plan that exercises conscious control of time spent on specific activities of the project.
4. To create a cost management plan in order to plan and control the budget of the business.
5. To create a quality management plan that defines the quality policies and procedures relevant to the project.
6. To create a resource management plan in order to manage the most important resources of the project.
7. To create a communications management plan in order to provide accurate and timely information to all stakeholders.
8. To create a risk management plan in order to document the foreseen risks, estimate impacts and define responses to risks of the project.
9. To create a procurement management plan in order to describe how project items are procured and how vendors will be managed within the procurement process.

10. To create a stakeholder management plan to demonstrate how stakeholders will be engaged throughout the project.

The methodologies used in this research were analytical, inductive-deductive, and observation methods. Similar research conclusions were also studied in order to exercise proper navigation through the method techniques. A thorough analysis of the current structure of the organization was made, and then the observational method was applied to assess and record results. Tools such as interviews, meetings, analytical techniques were used to develop the needed templates for project management.

The main sources used to gather information included interviews, internet-based articles and templates, and the Guide to the Project Management Body of Knowledge (PMBOK ® Guide) Six Edition. The methodology used for the research was analytical. The information gathered was used to develop each section of the secondary plans (around each knowledge area) in order to create the Project Management Plan for the Four-Apartment Unit.

The Project Management Plan developed for the Four-Apartment Unit will serve as a guide to managing other projects at TFL Construction and Design. This will expose the staff to project management principles and to drastically improve the way projects are managed at this organization. It is recommended that management at TFL Construction & Design contemplate the use of the planning process and documents developed during the development of the Project Management Plan for the Building of the Four-Apartment Unit as a foundation for implementing an approach for similar projects in the future. The implementation of project management methodologies like the one set out in the PMBOK ® Guide will enhance the development of project scope, creating project schedules, costs, stakeholder communications, procurement principles, risk assessment, among other things at TFL Construction and Design.

INTRODUCTION

1.1. Background

TFL Construction and Design is a six-year-old family-owned small business within the construction industry. The company presently has two partners and hires temporary staff as projects are acquired over time. It is located within the small island of Dominica, geographically situated in the Lesser Antilles of the Caribbean, between the two French islands of Guadeloupe and Martinique.

The company undertakes projects on a diverse scale such as private housing construction projects, property valuations, quantity surveying, project management, and refurbishment projects.

Over the past three years, TFL has entered into contractual agreements with the local based branch of the First Caribbean International Bank, under employment with Nationwide Appraisals Services to provide property valuations and quantity surveying services.

As demands for various services increase there is a need to enhance the professional outlook and the organizational structure of the company.

A Project Management Plan for a typical construction project is a perfect way to introduce TFL team members to modern project management standards. The plan will compose of a comprehensive approach to managing a construction project using the standards set within the PMBOK Guide. TFL team members will be learn how to manage the various knowledge areas of a project such as the scope, time, cost, quality, risk resources, communications, procurement, and stakeholders. This Project Management Plan can serve as a template and a guide for future construction projects within the organization. This exposure will enhance project management skills among workers whereby they will be more proficient to manage projects on a wider scale and intern build a portfolio that will ultimately attract more qualified employees and meaningful clients.

1.2. Statement of the problem

TFL makes up a part of the local industry where many other small construction companies exist. Most of these construction companies have no formalized company profiling, they lack professionalism within their organizations and dutifully take on projects without signed contracts or binding agreements. These errors or setbacks are mostly due to management not possessing the “know how” to develop proper success strategies or to structure their companies for gradual increase in investments. Most small construction companies don’t follow project management standards as set by the PMI.

Similar to these construction companies, TFL lacks structure and does not possess a project management methodology for project management and implementation. The Project Management Plan will therefore be guided by the principles and standards set forth in the PMBOK® guide, ensuring that all knowledge areas are explored in order to make this plan modernized and of most benefit to the organization.

1.3. Purpose

The purpose of this research study is to create a comprehensive project management plan for construction projects in order to assist TFL to implement project management skills within the organization.

TFL has no formalized organizational structure and no set methodologies for project implementation and management. The absence of these project management capabilities creates a lack of competitiveness, poor customer service, low quality assurance, and minimal growth within the industry. For the purpose of improving the overall structure and development of the organization and to create competitiveness within the construction industry, a project management plan for construction projects, based on the standards set by the PMI, will be developed.

The proposed project management plan will allow TFL to formalize its organizational structure by developing team skills, organize project times, counter and minimize project risks, standardize work methods, and implement projects, which can be managed according to set schedules and expected deliverables.

1.4. General objective

To produce a Project Management Plan for a Four-Apartment Unit at Checkhall, Massacre, Commonwealth of Dominica.

1.5. Specific objectives

1. To create the project charter in order to communicate the essence of the project to all stakeholders and sponsors with a shared understanding of the project.
2. To create a scope management plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.
3. To create a schedule management plan that exercises conscious control of time spent on specific activities of the project.
4. To create a cost management plan in order to plan and control the budget of the business
5. To create a quality management plan that defines the quality policies and procedures relevant to the project.
6. To create a resource management plan in order to manage the most important resources of the project.
7. To create a communications management plan in order to provide accurate and timely information to all stakeholders.
8. To create a risk management plan in order to document the foreseen risks, estimate impacts and define responses to risks of the project.

9. To create a procurement management plan in order to describe how project items are procured and how vendors will be managed within the procurement process.
10. To create a stakeholder management plan in order to demonstrate how stakeholders will be engaged throughout the project.

THEORETICAL FRAMEWORK

2.1 Company/Enterprise framework

TFL Construction and Design is a small construction company registered under the Business Name Registration Act of Dominica.

2.1.1 Company background

TFL Construction and Design is a small family owned company within the construction industry in Dominica. The company was formed in 2013 and has been in operations for six years. The company provides services such as property valuations, architectural drawings, quantity surveying, project management, and building construction and refurbishments.

2.1.2 Mission and vision statements

TFL has operated over the past years with no formally developed mission and vision statements. The ideological mission of the company is to produce products of a high standard in an organized way within the industry. Its underdeveloped vision is to create an environment for growth and development within the industry.

2.1.3 Organizational structure

TFL presently consists of two partners and as services are required, staff is hired temporarily to complete projects. A typical organizational structure that would exist with the construction of a domestic building is depicted as follows:

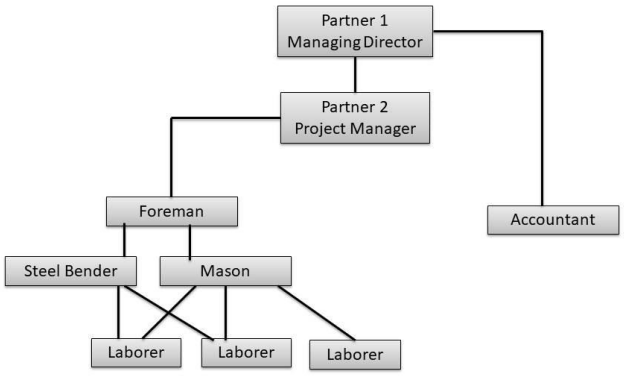

Figure 1 Organizational structure (Compiled by Author, T. Pierre)

2.1.4 Products offered

TFL offers a variety of products/services such as Building Construction, Property Valuations, Quantity Surveying, Electrical Installations/Repairs, and Architectural Drafting Services. The key objective is to analyze these products and to develop a project management plan in order to accurately manage construction projects within the organization. The methodology set out within the PMBOK Guide will allow for proper initiating, planning, executing, monitoring, controlling, and closing of any construction project within the organization.

2.2 Project Management concepts

2.2.1 Project

According to the Project Management Body of Knowledge (PMBOK® Guide), a project is “a temporary endeavor undertaken to create a unique product, service, or result” (Project Management Institute, 2013, p.1).

A project is **temporary** in that it has a defined beginning and end in time, and therefore defined scope and resources. (PMI ®).

A project is **unique** in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal. Therefore, a project team often includes people

who do not usually work together – sometimes from different organizations and across multiple geographies. (PMI ®).

2.2.2 Project management

Project Management is the application of knowledge, skills, tools, and techniques to project activities to meet the product requirements. (PMBOK®, Sixth Edition, p.4).

2.2.3 Project life cycle

The project life cycle is the series of phases that a project passes through from its start to its completion. (PMBOK®, Sixth Edition, p.18). The typical life cycle of most projects is:

- Initiating (starting a project)
- Planning (organizing and preparing)
- Executing (carrying out the project work)
- Monitoring and Control (monitoring and controlling aspects of the project)
- Closing (closing the project)

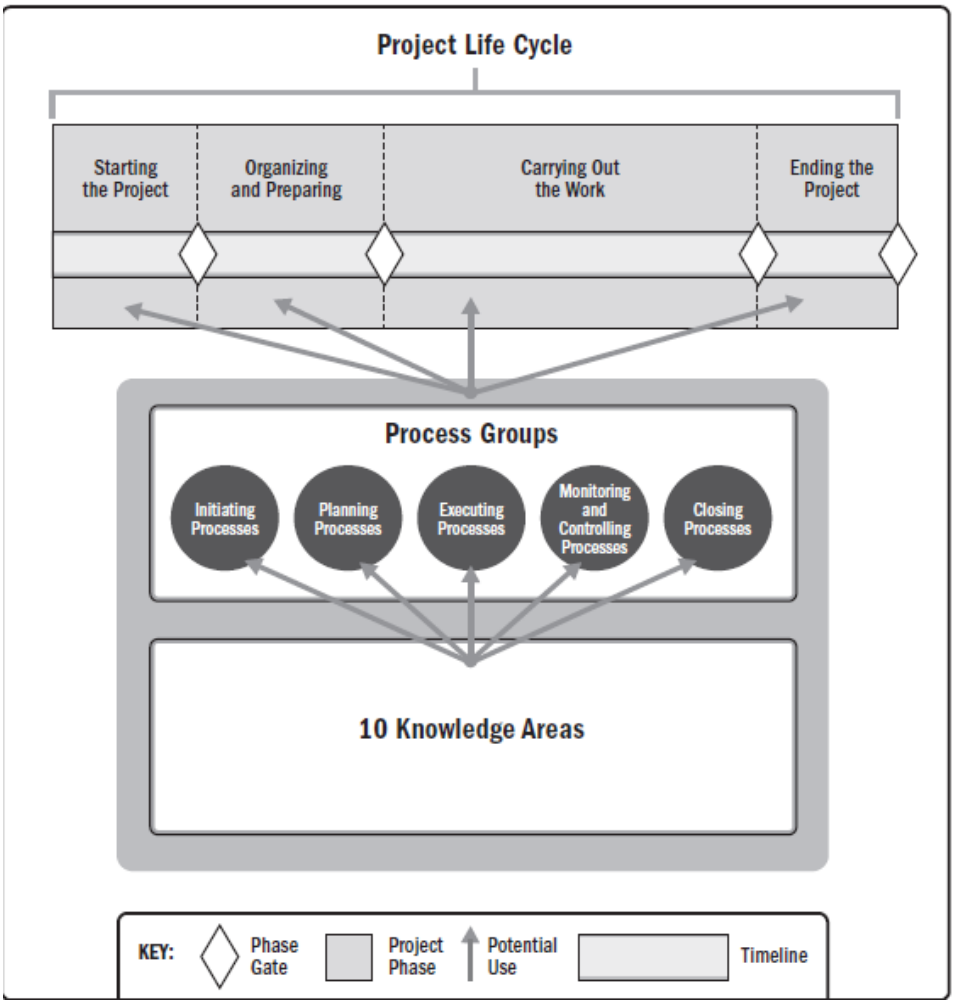

Figure 2 PMBOK® Guide Typical Project Life Cycle. Reprinted from A Guide to the Project Management Body of Knowledge (p. 19), Project Management Institute, 2013, Project Management Institute. Copyright 2013 by Project Management Institute, Inc.

2.2.4 Project management processes

The project life cycle is managed by executing a series of project management activities known as project management processes. Every project management process produces one or more outputs from one or more inputs using the appropriate project management tools and techniques. (PMBOK, Sixth Edition, p.22).

Figure 3 Project Management Processes Adapted from Project Cubicle. Retrieved September 16, 2019 from https://www.projectcubicle.com/project-management-processes/

2.2.5 Project management knowledge areas

A knowledge area is an identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques. (PMBOK, Sixth Edition, p.23).

The knowledge areas are defined as separate entities from a project management perspective although these areas are interrelated. The ten knowledge areas are as follows:

- *Project Integration Management*

This includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups. (PMBOK, Sixth Edition, p.23).

- *Project Scope Management*

These processes incorporate all the work required and only the work necessary to complete the project.

- Project Schedule Management

These processes manage the timely completion of the project.

- *Project Cost Management*

These processes involve planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project is completed within a specified budget.

- *Project Quality Management*

These processes ensure that product quality requirements incorporate the organization's policy in order to meet stakeholder's expectations.

- *Project Resource Management*

These processes identify, acquire, and manage the resources needed to complete a project successfully.

- *Project Communications Management*

This includes the processes required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and ultimate disposition of project information. (PMBOK, Sixth Edition, p.24).

- *Project Risk Management*

These processes conduct risk management planning, identification, analysis, response planning response implementation, and monitoring risk on a project. (PMBOK, Sixth Edition, p.24).

- *Project Procurement Management*

Includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team. (PMBOK, Sixth Edition, p.24).

- Project Stakeholder Management

Includes the processes required to identify the groups or organizations that can negatively or positively impact the project.

2.3 Project Management Plan

A project management plan is a document used to describe every phase of a project. The components may include initiating, planning, executing, monitoring and controlling, and closing. The project management plan adds structure to the process by assigning an order to all the important parts involved in the plan. The purpose of a project management plan (PMP) is to determine the project outcome, how a successful outcome will be achieved, who will be involved in the project, and how the project will be measured and communicated. Like any blueprint, you have to know what you are trying to accomplish; therefore, having a clear goal is important. Secondly, you have to know how you are going to achieve those goals by knowing which people in the process play which roles.(Jason Matyus, Project Management Plan.)

3. METHODOLOGICAL FRAMEWORK

3.1 Information sources

An information source is any system producing information or containing information intended for transmission; in information science, the conventional designation for scholarly documents or publications, which serve not only as important sources but also as the means of transmission of information in space and time. (*McGraw-Hill Dictionary of Scientific & Technical Terms, 6E*.)

3.1.1 Primary sources

A primary source is a direct source of information or research, a document not emended by a third party. (*Farlex Trivia Dictionary*.)

For the purpose of this graduation project, the primary sources are from interviews with the Managing Director, Partners and draftsperson of TFL.

3.1.2 Secondary sources

A secondary source is information or research that is derivative, such as a comment by a historian, an encyclopedia article, or a critical essay. (*Farlex Trivia Dictionary*.)

For the purpose of this graduation project, the secondary sources are PMBOK, Sixth Edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, and relevant documents from TFL.

Objectives	**Information sources**	
	Primary	**Secondary**
To create the project charter in order to communicate the	Interviews with Managing Director, Partners	The PMBOK, Sixth Edition, 2016, online publications, journals, documentaries, related literature

essence of the project to all stakeholders and sponsors and ensure a shared understanding of the project.	and Draftsperson.	studies on project management methodology, relevant documents from TFL.
To create a scope management plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.	Interviews with Managing Director and Partners	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, relevant documents from TFL.
To create a schedule management plan which exercises conscious control of time spent on specific activities of the project.	Interviews with Managing Director and Partners.	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, relevant documents from TFL.
To create a cost management plan in order to plan and control the budget of the project	Interviews with Managing Director and Partners.	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, relevant documents from TFL.
To create a quality management plan that defines the quality	Interviews with Managing Director, Partners	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature

policies and procedures relevant to the project.	and Draftsperson.	studies on project management methodology, relevant documents from TFL.
To create a resource management plan in order to manage the most important resources of the project.	Interviews with Managing Director, Partners and Draftsperson.	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, relevant documents from TFL.
To create a communications management plan in order to provide accurate and timely information to all stakeholders.	Interviews with Managing Director, Partners and Draftsperson.	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, relevant documents from TFL.
To create a risk management plan in order to document the foreseen risks, estimate impacts and define responses to risks of the project.	Interviews with Managing Director, Partners and Draftsperson.	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, relevant documents from TFL.
To create a procurement management plan in order to describe how	Interviews with Managing Director, Partners	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature

project items are procured and how vendors will be managed within the procurement process.	and Draftsperson.	studies on project management methodology, relevant documents from TFL.
To create a stakeholder management plan to demonstrate how stakeholders will be engaged throughout the project.	Interviews with Managing Director, Partners and Draftsperson.	The PMBOK, sixth edition, 2016, online publications, journals, documentaries, related literature studies on project management methodology, relevant documents from TFL.

Chart 1 Information Sources (Compiled by Author, T. Pierre)

3.2 Research methods

A research method is an investigative technique employed within an academic discipline. In a particular study, the methods chosen will depend upon a variety of considerations, including the following:

a. The nature of the problem addressed
b. The theoretical stance and the preferred methods of the researcher or research team
c. The time and money available
d. The type of research and evidence likely to carry conviction with the sponsors of the research and the audience for the research

research methods. (*Collins Dictionary of Sociology, 3rd ed).*

The research methods used in this graduation project are:

- Analytical Method
- Inductive-Deductive Method
- Observation Method

3.2.1 Analytical method

The analytical method is a generic process combining the power of the scientific method with the use of formal process to solve any type of problem. Use of the analytical method is critical to solving the sustainability problem because it appears that current processes are inadequate. They are intuitive, simple, and based on how activists approach everyday problems. (Twink.Org. Analytical Method.)

3.2.2 Inductive-Deductive method

Deductive reasoning works from the more general to the more specific. Sometimes this is informally called a “top-down” approach. Inductive reasoning works the other way, moving from specific observations to broader generalization and theories. Informally, we sometimes call this a “bottom-up” approach. (Web Center for Social Research Methods).

3.2.3 Observation method

Observational research is defined as the method of viewing and recording the actions and behaviors of participants. It is described as being a systematic observation method, which implies that the observation techniques are sensible and replicable procedures so that the research could be reproduced. (Center for Innovation & Research in Teaching.)

Objectives	**Research methods**		
	Analytical Method	Inductive-Deductive Method	Observation Method
To create the project charter in order to communicate the essence of the project to all stakeholders and sponsors and ensure a shared	This method was used to gather organizational information to develop the project charter	This method was used to make conclusions about the project management needs	

understanding of the project.			
To create a scope management plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.	This method was used to gather information to develop plan specific to scope	This method was used to make conclusions about the project management needs	
To create a schedule management plan which exercises conscious control of time spent on specific activities of the project.	This method was used to gather information to develop plan specific to timeline of work	This method was used to make conclusions about the project management needs	
To create a cost management plan in order to plan and control the budget of the project	This method was used to gather information to develop project budget	This method was used to make conclusions about the project management needs	
To create a quality management plan that defines the quality policies and procedures relevant to the project.	This method was used to gather information to develop plan specific to quality of the product	This method was used to make conclusions about the project management needs	
To create a resource management plan in order to manage the most	This method was used to gather information to	This method was used to make conclusions	

important resources of the project.	develop plan specific to project resources	about the project management needs	
To create a communications management plan in order to provide accurate and timely information to all stakeholders.	This method was used to gather information to develop plan specific to communications among stakeholders	This method was used to make conclusions about the project management needs	
To create a risk management plan in order to document the foreseen risks, estimate impacts and define responses to risks of the project.	This method was used to gather information to develop plan specific to project risks	This method was used to make conclusions about the project management needs	
To create a procurement management plan in order to describe how project items are procured and how vendors will be managed within the procurement process.	This method was used to gather information to develop plan specific to project procurement	This method was used to make conclusions about the project management needs	
To create a stakeholder management plan to demonstrate how stakeholders will be	This method was used to gather information to develop plan	This method was used to make conclusions about the project	

engaged throughout the project.	specific to managing project stakeholders	management needs	

Chart 2 Research Methods (Compiled by Author, T. Pierre)

3.3 Tools

A tool is anything that becomes a means of collecting information for your study. (Civil Engineering Terms.)

The tools used in this graduation project are meetings, interviews, expert judgment, alternatives analysis, document analysis, analytical techniques.

Objectives	Tools
To create the project charter in order to communicate the essence of the project to all stakeholders and sponsors with a shared understanding of the project.	Meetings, interviews, analytical techniques, Expert judgment, document analysis
To create a scope management plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.	Expert judgment, analytical techniques, meetings, focus groups, document analysis, facilitated workshops
To create a schedule management plan which exercises conscious control of time spent on specific activities of the project.	Expert judgment, analytical techniques, meetings, focus groups, document analysis, decomposition
To create a cost management plan in order to plan and control the budget of the project	Expert judgment, analytical techniques, meetings, focus groups, document analysis, estimating, cost aggregation
To create a quality management plan that defines the quality policies and procedures relevant to the project.	Benchmarking, planning tools, cost-benefit analysis, cost of quality, meetings
To create a resource management plan in order to manage the most important resources of the project.	Negotiation, acquisition, pre-assignment
To create a communications management plan in order to provide accurate and timely information to all stakeholders.	Expert judgment, communication methods, communication requirements analysis
To create a risk management plan in order to document the foreseen risks, estimate impacts and define responses to risks of the project.	Risk identification, expert judgment, quality risk analysis, risk response planning, assumptions analysis, information gathering, risk monitoring and control

To create a procurement management plan in order to describe how project items are procured and how vendors will be managed within the procurement process.	Make or buy analysis, expert judgment, market research, meetings
To create a stakeholder management plan to demonstrate how stakeholders will be engaged throughout the project.	Expert judgment, analytical techniques, meetings, stakeholder analysis, interpersonal skills, management skills

Chart 3 Tools (Compiled by Author, T. Pierre)

3.4 Assumptions and constraints

An assumption is a factor in the planning process that is considered to be true, real or certain, without proof or demonstration. A constraint is a limiting factor that affects the execution of a project, program, portfolio or process. *(PMBOK guide)*.

The assumptions for this graduation project are:

- The project charter specific to project details will be developed.
- The project scope will include all works to be done within the project
- A time management plan will be developed according to project size
- A comprehensive budget will be developed for the project
- Work will be done as per design produced and as per stakeholder requirements
- Roles and responsibilities will be assigned according to skill requirements
- Stakeholders will be informed with up to date project information
- A detailed risk management plan will be developed to eliminate all project risks
- All project goods/resources will be procured locally

- Stakeholders will be classified according to their level of interest and power within the project

The constraints for this graduation project are:

- Information to produce the charter may not be readily available.
- The scope may change as the project evolves.
- The timeline for the project may change based on unforeseen delays in schedules
- Expected resources may not be available on time
- Workers may not be able to produce quality required
- Resources may not be available
- There may be a breakdown in communications medium at any time
- Unforeseen risks may occur if not planned for properly
- Some goods/resources may not be available locally
- Stakeholders interest/power may change during the project

Objectives	Assumptions	Constraints
To create the project charter in order to communicate the essence of the project to all stakeholders and sponsors with a shared understanding of the project.	The project charter specific to project details will be developed.	Information to produce the charter may not be readily available.
To create a scope management plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.	The project scope will include all works to be done within the project	The scope may change as the project evolves.
To create a schedule management plan which exercises conscious control of time spent on specific activities of the project.	Schedule management plan will be developed according to project size	The timeline for the project may change based on unforeseen delays in schedules
To create a cost management plan in order to plan and control the budget of the project	A comprehensive budget will be developed for the project	Expected resources may not be available on time
To create a quality management plan that defines the quality policies and procedures relevant to the project.	Work will be done as per design produced and as per stakeholder requirements	Workers may not be able to produce quality required
To create a resource management plan in order to manage the most important resources of the project.	Roles and responsibilities will be assigned according to skill	Resources may not be available

Objectives	Assumptions	Constraints
	requirements	
To create a communications management plan in order to provide accurate and timely information to all stakeholders.	Stakeholders will be informed with up to date project information	There may be a breakdown in communications medium at any time
To create a risk management plan in order to document the foreseen risks, estimate impacts and define responses to risks of the project.	A detailed risk management plan will be developed to eliminate all project risks	Unforeseen risks may occur if not planned for properly
To create a procurement management plan in order to describe how project items are procured and how vendors will be managed within the procurement process.	All project goods/resources will be procured locally	Some goods/resources may not be available locally
To create a stakeholder management plan to demonstrate how stakeholders will be engaged throughout the project.	Stakeholders will be classified according to their level of interest and power within the project	Stakeholders interest/power may change during the project

Chart 4 Assumptions and Constraints (Compiled by Author, T. Pierre)

3.5 Deliverables

A deliverable is any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project. *(PMBOK guide)*.

The deliverables for the graduation project are:

- A project Charter

- A Scope Management Plan
- A Schedule Management Plan
- A Cost Management Plan
- A Quality Management Plan
- A Resource Management Plan
- A Communications Management Plan
- A Risk Management Plan
- A Procurement Management Plan
- A Stakeholders Management Plan

Objectives	Deliverables
To create the project charter in order to communicate the essence of the project to all stakeholders and sponsors with a shared understanding of the project.	The Project Charter
To create a scope management plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.	Scope Management Plan
To create a Schedule management plan which exercises conscious control of time spent on specific activities of the project.	Schedule Management Plan
To create a cost management plan in order to plan and control the budget of the project	Cost Management Plan
To create a quality management plan that defines the quality policies and procedures relevant to the project.	Quality Management Plan
To create a resource management plan in order to manage the most important resources of the project.	Resource Management Plan
To create a communications management plan in order to provide accurate and timely information to all stakeholders.	Communications Management Plan
To create a risk management plan in	Risk Management Plan

Objectives	Deliverables
order to document the foreseen risks, estimate impacts and define responses to risks of the project.	
To create a procurement management plan in order to describe how project items are procured and how vendors will be managed within the procurement process.	Procurement Management Plan
To create a stakeholder management plan to demonstrate how stakeholders will be engaged throughout the project.	Stakeholders Management Plan

Chart 5 Deliverables (Compiled by Author, T. Pierre)

RESULTS

4.1 PROJECT CHARTER

PROJECT CHARTER

BUILDING OF A FOUR-APARTMENT UNIT

TFL CONSTRUCTION & DESIGN

CHECKHALL, MASSACRE,

COMMONWEALTH OF DOMINICA

November 2019

PURPOSE OF THE DOCUMENT:

TFL Construction & Design was selected to construct a four-apartment unit in the Checkhall, Massacre area in the Commonwealth of Dominica. The project arises from the client wanting to expand his business in the local real estate industry to provide additional rental properties to the capable citizens of the Commonwealth of Dominica. This will provide surplus revenue for the client and create a positive impact on the country's economy by extension.

PROJECT CHARTER

Project Name: **Construction of Four-Apartment Unit at Checkhall, Massacre, Commonwealth of Dominica**

Date: **January 2019**

1. PROJECT OBJECTIVE

To build a one and a half storey reinforced concrete structure that will house four individually self-contained apartment units.

2. DELIVERABLES

1. Preliminaries
2. Substructure erected
3. First floor slab erected
4. Frame erected
5. External/Internal Walls & Stairs erected
6. Roof erected
7. Windows & Doors Installation
8. Surface Finishes applied
9. Electrical Installation
10. Plumbing Installation
11. External Works, Cabinetry & Commissioning of Structure delivered

3. SCOPE DEFINITION

The client is known for constructing real estate options in order to generate alternative revenue opportunities for his business goals. This four-apartment unit will be the first real estate option for the client in the urban area of the country. This will make alternative housing preferences available to potential tenants. The client desires to construct a four-apartment unit comprising of one and a half floors. The first floor will contain two two-bedroom apartments self-contained with living, dining, and kitchen spaces with single bathroom options. The ground floor will consist of two one-bedroom apartments also self-contained with living, dining, and kitchen spaces with single bathroom options.

The project will include:
The construction of a four-apartment unit at Checkhall, Massacre, Commonwealth of Dominica.
The project will not include:
Maintenance of the apartment units after construction is complete.

4. PROJECT MILESTONES

Milestone	Commencement Date
1. Preliminaries	January 28, 2019
2. Substructure	February 1, 2019
3. External/Internal Walls Ground Floor	March 11, 2019
4. Frame	March 29, 2019
5. Upper Floor	April 10, 2019
6. Stairs	May 14, 2019
7. External/Internal Walls First Floor	May 14, 2019
8. Roof	May 29, 2019
9. Surface Finishes	June 28, 2019
10. Electrical Installation	September 9, 2019
11. Plumbing Installation	September 9, 2019
12. External Works / Provisional Sums	September 23, 2019

5. ASSUMPTIONS &CONSTRAINTS

Assumptions:

- Weather – it is assumed that there will be rainfall that will delay works since the construction phase of the project is scheduled to run through the annual Atlantic hurricane season.
- Finance – It is assumed that the budgeted amount will complete all project works.
- Budget – it is assumed that the project can be designed and constructed on the EC$606,262.00.
- Workers Skill Set – It is assumed that the workers possess the adequate skill set to fulfill construction requirements.
- Timeline – It is assumed that the project will be designed and completed within the scheduled 15 months.

Constraints:

- The project should not exceed the budgeted amount of $604,146.40. The duration of the project should not exceed 9 months in total.
- The project duration extends throughout the hurricane season (June to October) so there may be unforeseen weather delays in the project

6. PROJECT BUDGET

8. <u>Project Budget</u>

ITEM **PROJECT COSTS (EC$)**
Preliminaries - $4000.00
Building Construction – $549,224.00
Contingency (10%) – $54,922.40

Total **$604,146.40**

7. PROJECT ORGANIZATIONAL STRUCTURE

Key Stakeholders

Function	**Name**	**Role**
Contractor	TFL Construction & Design	Ensure design and construction works are fulfilled as per drawing specification
Project Manager	Tabitha Pierre	Coordinate, monitor, control construction works
Client	Justine Jno Baptiste	
Sponsor(s)	Justine Jno Baptiste & National Cooperative Credit Union	Provide finance to construction works and ensure that works are done per budgeted amount
Main Supplier(s)	J. Astaphan & Co. Ltd E.H. Charles & Co. Ltd	Supply materials for construction works
Subcontractor(s)	Carpenter – Sherman Ismael Tile man – Angus Joseph	To fulfill work requirements as per contractor's requests

1. PROJECT AUTHORIZATION

Approved by:	Business Manager	Date
Approved by:	Project Manager	Date

Figure 4 – Four-Apartment Unit Project Charter. Adapted from The Project Charter, Retrieved September 22, 2019 from https://www.procept.com/library/samplecharter.doc

4.2 SCOPE MANAGEMENT PLAN

SCOPE MANAGEMENT PLAN

FOUR-APARTMENT UNIT

TFL CONSTRUCTION AND DESIGN

CHECKHALL, MASSACRE,

COMMONWEALTH OF DOMINICA

NOVEMBER 2019

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INTRODUCTION

The following Scope Management Plan will highlight the overall structure of the scope for the project. The plan seeks to detail a specific approach to scope management; the roles and responsibilities as they relate to the scope; scope definition; scope verification and control procedures; scope change control; and the work breakdown structure as it relates to the project. Any form of communication within the project that is scope related should follow the guidelines as documented in the Scope Management Plan.

This project is for the construction of a one and a half story structure comprising of four apartments; two two-bedroom apartments on the first floor and two one-bedroom apartments on the ground floor. The construction of these apartments is geared towards providing alternative housing options for prospective tenants. This project includes the building construction of a four-apartment unit. The project does not include any maintenance of the unit after construction is complete.

SCOPE MANAGEMENT APPROACH

The Project Manager will assume sole responsibility for the scope management for this project. The Scope Statement, Work Breakdown Structure (WBS) and WBS Dictionary will all define the scope for this project. The Project Manager, Sponsors and Stakeholders will establish and approve documentation for measuring project scope. This may be in the form of quality checklists and work performance measurements. Any scope changes that is proposed may be initiated by the Project Manager, Stakeholders or any member of the project team. All change requests will be submitted to the Project Manager who will then assess the requested scope change. Once the change request is accepted the Project Manager will submit the scope change request to the Project Sponsors for acceptance. The Project Manager will then update all project documents once the Project Sponsors approve these changes. The Project Manager must communicate all scope changes to all stakeholders. The Project

Sponsors, guided by the feedback from the Project Manager, are responsible for accepting all final project deliverables and project scope.

ROLES AND RESPONSIBILITIES

The Project Manager, Sponsors and team will all play key roles in managing the scope of this project. It is therefore imperative that the key stakeholders such as the Project Sponsor, Project Manager, and team members be aware of their responsibilities in order to ensure that work performed on the project is within the recognized scope throughout the entire duration of the project. The table below defines the roles and responsibilities for the scope management of this project.

Name	Role	Responsibilities
Justine Jno Baptiste NCCU	Sponsor	Approve or deny scope change requests as necessary Evaluate need for change requests Accept project deliverables
Tabitha Pierre	Project Manager	Measure and verify project scope Facilitate scope change requests Facilitate impact assessments of scope change requests Organize and facilitate scheduled change control meetings Communicate outcomes of scope change requests Update project documents upon approval of all scope changes
Clatus Baron	Foreman	Participate in defining change resolutions

	(Team Leader)	Evaluate the need for scope changes and communicate them to the Project Manager as necessary
Lawrence Jerome Simeon Fevrier Byes Toussaint	Skilled Workmen (Team members)	Participate in defining change resolutions Evaluate the need for scope changes and communicate them to the Project Manager as necessary

Chart 6 Roles and Responsibilities (Compiled by Author, T. Pierre)

SCOPE DEFINITION

The scope for this project was defined through a comprehensive requirements collection process. First, a thorough analysis was performed on the company's data collection on previous projects, industry standards and building codes. From this information, the project team developed the project requirements documentation, the requirements management plan, and the requirements traceability matrix for the building terms.

The project description and deliverables were developed based on the requirements collection process and expert judgment from the Quantity Surveyor, Draftsman, Subcontractors, Government Guiding Personnel. This process of expert judgment provided feedback on the most effective ways to meet the original requirements of providing a Four Apartment Unit that ensures client satisfaction and boost business portfolio.

PROJECT SCOPE STATEMENT

The project scope statement provides a detailed description of the project, deliverables, constraints, exclusions, assumptions, and acceptance criteria. Additionally, the scope statement includes what work should not be performed in order to eliminate any implied but unnecessary work which falls outside the of the project's scope.

The scope of the project includes as follows:
Location – The structure will be located at Checkhall, Massacre on 5000 square feet of land.

Description of project – The building will be a one and a half storey reinforced concrete structure containing four self-contained apartments measuring a total of 2,700 square feet. The apartments on the top floor will both contain two bedrooms, one bathroom, living, dining and kitchen areas while the apartments on the ground floor will both contain one bedroom, one bathroom, living, dining, and kitchen areas. The structure will be enveloped internally and externally with precast concrete blockwork which will be rendered and finished in emulsion paint. The external doors will be hardwood timber with the internal doors being solid core flush type. The windows will be of aluminum sash type. Floor finishes will be large homogeneous ceramic tiles while kitchen walls and bathroom walls will be glazed ceramic tiles. The roof of the structure will be reinforced concrete. The electrical installation will cater for both 220 and 110 voltage accommodation. A septic tank and soak pit will facilitate all sewerage.

Proposed date and duration of project

Start Date: January 28th 2019
Duration of Construction: 180 Days

Contractor – TFL Construction & Design

Assumptions for this project are that support will be provided by the Project Sponsor and all team members, and that adequate internal resources are available for the successful completion of this project.

WORK BREAKDOWN STRUCTURE

In order to effectively manage the work required to complete this project, it will be subdivided into individual work packages. The project is broken down into twelve phases: preliminaries, substructure, frame, stairs, roof, upper floor, external/internal walls ground floor, external/internal walls first floor surface finishes, electrical installation, plumbing installation, external works, and provisional sums. Each of these phases is then subdivided further down into work packages. The WBS was done in Microsoft Word 2010.

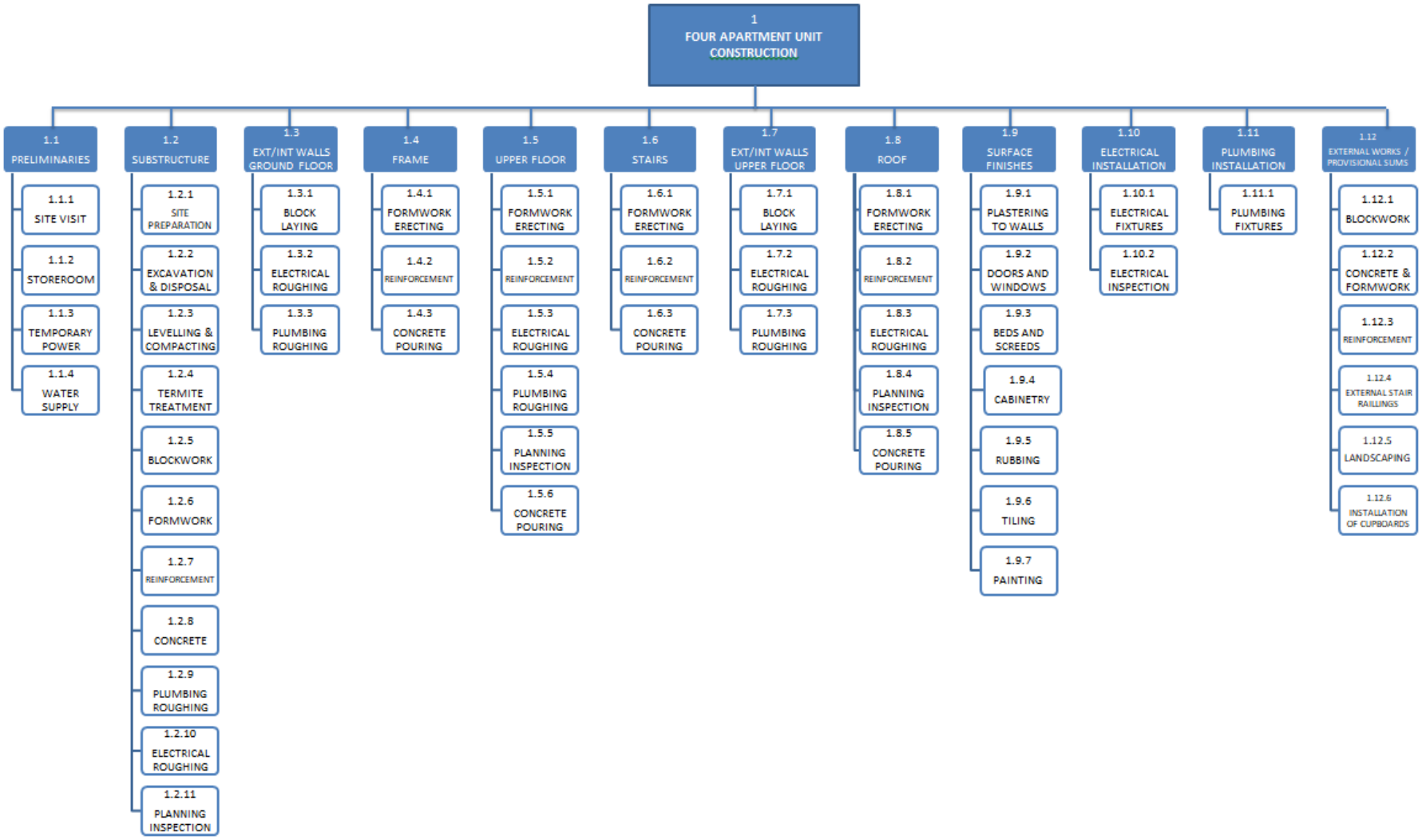

Figure 5 Work Breakdown Structure (Compiled by Author, T. Pierre)

In order to more clearly define the work necessary for project completion, the WBS Dictionary is used. The WBS Dictionary includes an entry for each WBS element. The WBS Dictionary includes a detailed description of work for each element and the deliverables, budget and resource needs for that element. The project team will use the WBS Dictionary as a statement of work for each WBS element.

Level	WBS Code	Element Name	Description of Work	Deliverables	Budget	Resources

Chart 7 WBS Dictionary Adapted from Project Management Docs. Retrieved October 21, 2019 from https://www.projectmanagementdocs.com/template/project-planning/scope-management-plan/#axzz63h7T7a7B

SCOPE VERIFICATION

As this project progresses, the Project Manager will verify interim project deliverables against the original scope as defined in the scope statement, WBS and WBS Dictionary. Once the Project Manager verifies that the scope meets the requirements defined in the project plan, the Project Manager and Sponsor will meet for formal acceptance of the deliverable. During this meeting the Project Manager will present the deliverable to the Project Sponsor for formal acceptance. The Project Sponsor will accept the deliverable by signing a project deliverable acceptance document. This will ensure that project work remains within the scope of the project on a consistent basis throughout the life of the project.

SCOPE CONTROL

The Project Manager and the project team will work together to control the scope of the project. The project team will leverage the WBS Dictionary by using it as a statement of work for each WBS element. The project team will ensure that they

perform only the work described in the WBS dictionary and generate the defined deliverables for each WBS element. The Project Manager will oversee the project team and the progression of the project to ensure that this scope control process if followed.

If a change to the project scope is needed the process for recommending changes to the scope of the project must be carried out. Any project team member or sponsor can request changes to the project scope. All change requests must be submitted to the Project Manager in the form of a project change request document. The Project Manager will then review the suggested change to the scope of the project. The Project Manager will then either deny the change request if it does not apply to the intent of the project or convene a change control meeting between the project team and Sponsor to review the change request further and perform an impact assessment of the change. If the change request receives approval by the Project Sponsor, the Project Sponsor will sign the project change control document. The Project Manager will then update all project documents and communicate the scope change to all project team members stakeholders.

REQUIREMENTS TRACEABILITY MATRIX

The requirements traceability matrix is a tool to ensure that deliverables meet the requirements of the project. The matrix provides a thread from the established and agreed upon project requirements, through the project's various phases, and through to completion/implementation. This ensures that the product specifications and features satisfy the requirements on which they were based. Any interim project tasks associated with the requirements should be included.

REQUIREMENTS TRACEABILITY MATRIX							
Project Name:				Construction of a Four-Apartment Unit			
Project Manager Name:				Tabitha Pierre			
Project Description:				The construciton of an apartment building containing four self contained apartment units			
WBS ID	Customer Needs	Functional Requirements	Technical Assumption(s) Technical Requirements	Verification	Drafting Document	Priority	Additional Comments
1.1.2	Storeroom must be built onsite and be able to accommodate tools and high risk of stealing materials.	Foreman to ensure that storeroom is durable and buglar proof				High	
1.2.1	Ensure that building is laid out as per drawings specifications	Use site plan to ensure that building is laid out for excavation paying close attention to planning setbacks	Site plan will indicate all setbacks to follow		Site Plan	High	
1.2.4	ensure that termite treatment is done before concrete is poured to foundations	Project Manager to ensure that Terminix is contacted before concrete formworks begin				High	
1.2.11	Ensure that all reinforcement meet planning regulations for inspection	Project Manager to ensure that reinforcement to foundation meet drawing specifications	Foundations drawings will indicate reinforcement arrangements		Foundation Plan	High	

Figure 6 Four-Apartment Unit Requirements Traceability Matrix. Adapted from the Center of Disease Control and Prevention. Retrieved December 23, 2019 from https://www.projectmanagementdocs.com/template/project-planning/requirements-management-plan/#axzz68tXtBdbL

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

_____ Date:_____

Justin Jno Baptiste

Client

Figure 7 Four-Apartment Unit Scope Management Plan. Adapted from Project Management Docs. Retrieved October 21, 2019 from https://www.projectmanagementdocs.com/template/project-planning/scope-management-plan/#axzz63h7T7a7B

4.3 SCHEDULE MANAGEMENT PLAN

SCHEDULE MANAGEMENT PLAN

FOUR-APARTMENT UNIT

TFL CONSTRUCTION AND DESIGN

CHECKHALL, MASSACRE,

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NOVEMBER 2019

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Project Schedule Management includes the processes required to manage the timely completion of the project. This includes various processes such as plan schedule management, define activities, sequence activities, estimate activity durations, develop schedule and control schedule. The first thing that will be established is the plan schedule management process where all policies, procedures and documentation for planning, developing, managing, executing, and controlling the project schedule will be established. In the define activities process, all specific actions to be performed to produce the project deliverables will be identified and documented. In sequence activities, the relationship among the project activities will be identified and documented. In estimate activity durations, the number of work periods needed to complete each individual activity will be estimated. In the develop schedule process, the main project schedule model for monitoring, executing and controlling the project will be developed based on the analysis of activity sequences, durations, resource requirements and schedule constraints. In the control schedule process, the project schedule is monitored and any changes to the schedule baseline are managed.

SCHEDULE MANAGEMENT APPROACH

Project schedules will be created using MS Project 2016, starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages which must be performed to complete each deliverable. Activity sequencing will be used to determine the order of work packages and assign relationships between project activities. Activity duration estimating will be used to calculate the number of work periods required to complete work packages. Resource estimating will be used to assign resources to work packages in order to complete schedule development.

Once a preliminary schedule has been developed, it will be reviewed by the project team and any resources tentatively assigned to project tasks. The project team and resources must agree to the proposed work package assignments, durations, and schedule. Once this is achieved the Project Sponsor will review and approve the schedule and it will then be baselined.

The following will be designated as milestones for the project schedule:
Substructure
External/Internal Walls Ground Floor
Frame Ground Floor
Upper Floor
Stairs
External/Internal Walls First Floor
Frame First Floor
Roof
Surface Finishes
Electrical Installation
Plumbing Installation
External Works & Provisional Sums

Roles and responsibilities for schedule development are as follows:

The Project Manager will be responsible for facilitating work package definition, sequencing, and estimating duration and resources with the project team. The Project Manager will also create the project schedule using MS Project 2016 and validate the schedule with the project team, stakeholders, and the Project Sponsor. The Project Manager will obtain schedule approval from the Project Sponsor and baseline the schedule.

The Project Team is responsible for participating in work package definition, sequencing, and duration and resource estimating. The project team will also

review and validate the proposed schedule and perform assigned activities once the schedule is approved.

The Project Sponsor will participate in reviews of the proposed schedule and approve the final schedule before it is baselined.

The project stakeholders will participate in reviews of the proposed schedule and assist in its validation.

SCHEDULE CONTROL

The project schedule will be reviewed and updated as necessary on a weekly basis with actual start, actual finish, and completion percentages which will be provided by task owners.

The Project Manager is responsible for holding weekly schedule updates/reviews; determining impacts of schedule variances; submitting schedule change requests; and reporting schedule status in accordance with the project's communications plan.

The project team is responsible for participating in weekly schedule updates/reviews; communicating any changes to actual start/finish dates to the Project Manager; and participating in schedule variance resolution activities as needed.

The Project Sponsor will maintain awareness of the project schedule status and review/approve any schedule change requests submitted by the Project Manager.

SCHEDULE CHANGES AND THRESHOLDS

If any member of the project team determines that a change to the schedule is necessary, the Project Manager and team will meet to review and evaluate the change. The Project Manager and project team must determine which tasks will be impacted, variance as a result of the potential change, and any alternatives or variance resolution activities they may employ to see how they would affect the scope, schedule, and resources. If, after this evaluation is complete, the Project Manager determines that any change will exceed the established boundary conditions, then a schedule change request must be submitted.

Submittal of a schedule change request to the Project Sponsor for approval is required if either of the two following conditions is true:

1) The proposed change is estimated to reduce the duration of an individual work package by 10% or more, or increase the duration of an individual work package by 10% or more.
2) The change is estimated to reduce the duration of the overall baseline schedule by 10% or more, or increase the duration of the overall baseline schedule by 10% or more.

Any change requests that do not meet these thresholds may be submitted to the Project Manager for approval.

Once the change request has been reviewed and approved, the Project Manager is responsible for adjusting the schedule and communicating all changes and impacts to the project team, Project Sponsor, and stakeholders. The Project Manager must also ensure that all change requests are archived in the project records repository.

SCOPE CHANGE

Any changes in the project scope, which have been approved by the Project Sponsor, will require the project team to evaluate the effect of the scope change on the current schedule. If the Project Manager determines that the scope change will significantly affect the current project schedule, he/she may request that the schedule be re-baselined in consideration of any changes that need to be made as part of the new project scope. The Project Sponsor must review and approve this request before the schedule can be re-baselined.

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

Date:

Justin Jno Baptiste
Client

Figure 8 Four-Apartment Unit Schedule Management Plan. Adapted from Project Management Docs. Retrieved October 21, 2019 from https://www.projectmanagementdocs.com/template/project-planning/schedule-management-plan/#axzz62QPa7bYI

The second process required in the development of the schedule management plan is the define activities process. The key benefit of this process is that it decomposes work packages into schedule activities, which in turn provides a basis for proper estimating, scheduling, executing, monitoring and controlling of the project work. The key inputs into this process entail the schedule management plan, the scope baseline, enterprise environmental factors and organizational process assets. The tools and techniques utilized in defining the activities were expert judgment and decomposition. Outputs to this process produced a detailed activity list for the project as depicted in chart 8 below.

The Activity List is a document which itemizes all scheduled activities for a particular project and provides a detailed description of the work to be performed for each activity. The list includes an activity identifier and a scope of work description for each activity in detail to ensure that the project team members fully comprehend what work must be completed.

Activity ID Number	**Activity Name**	**Description of Work**	**Responsibility**
1.1	**Preliminaries**		
1.1.1	Site Visit	visit to site to verify location and logistics	Project Manager, Managing Director, Foreman
1.1.2	Set up Site Storeroom	erect storeroom for storing all tools and materials on site	Project Manager, Foreman, Laborer
1.1.3	Apply for Temporary Electrical Supply	Install electrical box and apply for temporary electrical installation to storeroom for construction use	Project Manager
1.1.4	Apply for Commercial Water Supply	Install external standing pipe and apply for water supply	Project Manager
1.2	**Substructure**		
1.2.1	Site Preparation	Set up batter board for outlining building	Foreman, laborer
1.2.2	Excavation & Disposal	excavating to foundation level and trucking out	Hired Excavator subcontractor,

		waste material also leaving the necessary backfill material for reuse	Foreman, Laborer
1.2.3	Leveling & Compacting	Ensure that ground is horizontal to receive concrete for foundation trenches and foundation bases	Foreman, carpenter, Laborer
1.2.4	Termite Treatment	Treat surface of foundation to ensure that its free of any termite infestation	Terminix Company
1.2.5	Purchase precast concrete blocks	Purchase 8" wide precast concrete blocks from P.H Williams Co. for foundation	Project Manager
1.2.6	Formwork erecting	Set up formwork for casting foundation trenches and foundation pads	Carpenter, Foreman, laborer
1.2.7	reinforcement	Lay steel work for foundation	Steel man, Foreman, laborer
1.2.8	Order Concrete	Set date for casting and order concrete from concrete company	Project Manager, Caribbean Construction Company Ltd
1.2.8	concrete pouring	Pour concrete to foundation trenches and bases	Concrete company, Project Manager, Foreman, Mason, Laborer
1.2.2	Filling to Excavations	Backfill material to make up levels for preparation for casting of ground floor	Hired Excavator subcontractor, Foreman, Laborer

		level	
1.2.5	block laying	Lay foundation blocks and filling all cores with concrete	Mason, Foreman, laborer
1.2.5	Plastering to walls	Render outside surface of retaining wall	Mason, Foreman, laborer
1.2.5	Waterproofing	Apply waterproofing material to outside surface of retaining wall and necessary drainage material	Foreman, Laborers
1.2.6	Formwork erecting	Set up formwork to side of flooring	Carpenter, Foreman, laborer
1.2.7	Reinforcement	Lay steel work for floor slab	Steel man, Foreman, laborer
1.2.9	Plumbing roughing	Lay of pvc pipe and fittings to accommodate plumbing fixtures	Plumber
1.2.10	Electrical roughing	Layof electrical conduit to accommodate electrical wires	Electrician
1.2.8	Order Concrete	Set date for casting and order concrete from concrete company	Project Manager, Caribbean Construction Company Ltd
1.2.5	Purchase precast concrete blocks	Purchase 6" and 4" wide precast concrete blocks from P.H Williams Co. for external and internal walls	Project Manager

1.2.11	Inspection by Planning Division	Allow for inspection of formwork and reinforcement arrangement by local planning division	Representative from Planning Division
1.2.8	Concrete pouring	pouring of concrete to ground floor slab	Concrete company, Project Manager, Foreman, Mason, Laborer
1.2.5	Purchase precast concrete blocks	Purchase 6" and 4" wide precast concrete blocks from P.H Williams Co. for external and internal walls	Project Manager
1.2.8	Concrete curing process	Allow for curing of concrete	Foreman, Laborer
1.3	**External/ Internal Walls ground floor**		
1.3.1	Block laying	laying of all Blockwork to external walls and internal walls on ground floor	Mason, Foreman, laborer
1.3.2	electrical roughing	laying of electrical conduit in walls to accommodate electrical wires	Electrician
1.3.3	plumbing roughing	laying of pvc pipe and fittings in walls to accommodate plumbing fixtures	Plumber
1.4	**Frame**		
1.4.1	Formwork erecting	erecting formwork for casting of columns and stiffeners	Carpenter, Foreman, laborer

1.4.2	Reinforcement	laying steel for columns and stiffeners	Steel man, Foreman, laborer
1.4.3	concrete pouring	pouring of concrete to columns and stiffeners	Concrete company, Project Manager, Foreman, Mason, Laborer
1.5	**Upper Floor**		
1.5.1	Formwork erecting	erecting formwork for first floor level area	Carpenter, Foreman, laborer
1.5.2	Reinforcement	laying of steel to floor slab	Steel man, Foreman, laborer
1.5.3	electrical roughing	laying of electrical conduit in floor to accommodate electrical wires	Electrician
1.5.4	plumbing roughing	laying of pvc pipe and fittings in floor to accommodate plumbing fixtures	Plumber
1.5.6	Order Concrete	Set date for casting and order concrete from concrete company	Project Manager, Caribbean Construction Company Ltd
1.5.5	Inspection by Planning Division	Allow for inspection of formwork and reinforcement arrangement by local planning division	Representative from Planning Division
1.5.6.1	concrete pouring	pouring of concrete to first floor slab	Concrete company, Project Manager, Foreman, Mason, Laborer

1.5.6.2	Concrete curing process	allow for curing of concrete	Foreman, Laborer
1.6	**Stairs**		
1.6.1	Formwork erecting	erecting of formwork to external stairs	Carpenter, Foreman, laborer
1.6.2	Reinforcement	laying of steel work to step	Steel man, Foreman, laborer
1.6.3	concrete pouring	pouring of concrete to external steps; landing, treads and risers	Concrete company, Project Manager, Foreman, Mason, Laborer
1.6.3.1	Concrete curing process	allow for curing of concrete	Foreman, Laborer
1.7	**External/ Internal Walls upper floor**		
1.7.1	block laying	laying of all Blockwork to external walls and internal walls on first floor	Mason, Foreman, laborer
1.7.2	electrical roughing	laying of electrical conduit in walls to accommodate electrical wires	Electrician
1.7.3	plumbing roughing	laying of pvc pipe and fittings in wall to accommodate plumbing fixtures	Plumber
1.8	**Roof**		
1.8.1	Formwork erecting	erecting formwork for first floor level area	Carpenter, Foreman, laborer
1.8.2	Reinforcement	laying of steel to floor slab	Steel man, Foreman, laborer

1.8.3	electrical roughing	laying of electrical conduit in roof to accommodate electrical wires	Electrician
1.8.5	Order Concrete	Set date for casting and order concrete from concrete company	Project Manager, Caribbean Construction Company Ltd
1.8.4	Inspection by Planning Division	Allow for inspection of formwork and reinforcement arrangement by local planning division	Representative from Planning Division
1.8.5.1	Concrete pouring	Pour concrete to roof slab	Concrete company, Project Manager, Foreman, Mason, Laborer
1.8.5.2	Concrete curing process	Allow for curing of concrete	Foreman, Laborer
1.9	**Surface Finishes**		
1.9.1	Plastering to walls	Render walls surfaces, both inside and outside of structure, to accommodate painting	Mason, Foreman, laborer
1.9.2	Purchase Doors and Windows	Purchase Doors and Windows from local supplier	Project Manager, E.H Charles & Company Ltd
1.9.4	Cabinetry	Allow for Carpenter to take measurements for kitchen cupboards, bedroom closets and bathroom vanities	Project Manager, Foreman, Laborer

1.9.5	Rubbing	Smoothing of all surfaces of concrete to ensure desirable surface for paint application	Mason, Foreman, laborer
1.9.6	Purchase Tiles	Purchase all materials for tiling; tile, tile cement and grout	Project Manager, Tile man (Hired Subcontractor)
1.9.3	Beds and Screeds to floor	Render floor to ensure horizontal surface to accommodate tiling and terrazzo work	Mason, Foreman, laborer
1.9.6.1	Tiling to floor	Lay tiles to all floor area	Tile man (Hired Subcontractor)
1.9.6.2	Tiling to Bathroom Walls	Lay tiles to all bathroom walls	Tile man (Hired Subcontractor)
1.9.2.1	Door jams and window jams	Create window and door jams to ensure vertical and horizontal levels to accommodate doors and windows	Mason, Foreman, laborer
1.9.7	Painting of cement rendered surfaces	Paint all rendered surfaces of structure and polishing of all wooden doors	Painter (Hired Subcontractor)
1.9.2.2	Installation of Doors	fitting in place all doors	Carpenter, Foreman, laborer
1.9.7.1	Polishing of wood surfaces	painting of doors and door frames	Foreman, Laborer
1.9.2.3	Installation of Windows	fitting in place all windows	Window Supplier
1.10	**Electrical**		

	Installation		
1.10.1	Purchase Electrical Fixtures	Purchase all electrical fixtures; lighting, sockets, switches, wire, conduit	Project Manager, Electrician
1.10.1.1	Electrical wiring	Run all wires through conduits to accommodate the necessary electrical fixtures	Electrician
1.10.1.2	Lighting, switches, sockets	Install all lighting fixtures and ensure all proper connections are established	Electrician
1.10.2	Electrical Inspection	Allow for inspection of electrical wiring work by local electrical division	Representative from electrical division
1.11	**Plumbing Installation**		
1.11.1	Purchase Plumbing Fixtures	Purchase all plumbing fixtures; water closets, all faucets and taps, kitchen sinks, face basins, pvc piping and fittings	Project Manager, Plumber
1.11.2	Water closet, kitchen sink, face basins, showers	Fitting of all plumbing fixtures	Plumber
1.12	**External Works & Provisional Sums**		
1.12.2	Formwork erecting	Erect formwork for septic tank and soak away	Carpenter, Foreman, laborer
1.12.3	Reinforcement	Lay steel work for septic	Steel man,

		tank	Foreman, laborer
1.12.1	Block laying	Lay block for septic tank	
1.12.2.1	Concrete pouring	Pour concrete to base and top slab of tank	Concrete company, Project Manager, Foreman, Mason, Laborer
1.12.6	Cabinetry	Installation of all kitchen cupboards, bedroom closets and bathroom vanities	Mason, Foreman, laborer
1.12.4	Railings	Installation of railings to step	Mason, Foreman, laborer
1.12.5	Landscaping	Provide parking accommodation for tenants	Mason, Foreman, laborer

Figure 9 Four-Apartment Unit Activity List. Adapted from Project Management Docs. Retrieved October 22, 2019 from https://www.projectmanagementdocs.com/template/project-documents/activity-list/#axzz632Y4EtkA

Resource allocation is the process of assigning all resources – time, people and tools – across various tasks in a project in order to work towards a set deadline. For the FAU Project only human resources were assigned to each task. The chart below shows resource assignments and activity durations.

Task Name	**Duration**	**Resource Names**
Four-Apartment Unit Project	**180 days**	
Preliminaries	**5 days**	
Site Visit	1 day	Project Manager, Managing Director, Foreman
Set up Site Storeroom	1 day	Project Manager, Foreman, Laborer
Apply for Temporary Electrical Supply	1 day	Project Manager
Apply for Commercial Water Supply	1 day	Project Manager
Order Construction Materials	1 day	Project Manager
Substructure	**25 days**	
Site Preparation	1 day	Foreman, laborer
Excavation & Disposal	3 days	Hired Excavator subcontractor, Foreman, Laborer
Levelling & Compacting	0 days	Foreman, carpenter, Laborer
Termite Treatment	0 days	Terminix Company
Purchase precast concrete blocks	0 days	Project Manager
Formwork erecting	10 days	Carpenter, Foreman, laborer
Reinforcement	6 days	Steelman, Foreman, laborer
Order Concrete	o days	Project Manager, Caribbean

		Construction Company Ltd
Concrete pouring	1 day	Concrete company, Project Manager, Foreman, Mason, Laborer
Formwork removal	1 day	Laborer
Filling to Excavations	1 day	Hired Excavator subcontractor, Foreman, Laborer
block laying	5 days	Mason, Foreman, laborer
Plastering to walls	1 day	Mason, Foreman, laborer
Waterproofing	1 day	Foreman, Laborers
Formwork erecting	1 day	Carpenter, Foreman, laborer
reinforcement	2 days	Steelman, Foreman, laborer
plumbing roughing	1 day	Plumber
electrical roughing	1 day	Electrician
Order Concrete	0 days	Project Manager, Caribbean Construction Company Ltd
Purchase precast concrete blocks	0 days	Project Manager
Inspection by Planning Division	1 day	Representative from Planning Division
concrete pouring	1 day	Concrete company, Project Manager, Foreman, Mason, Laborer
Purchase precast concrete blocks	0 days	Project Manager
Concrete curing process	1 day	Foreman, Laborer
External/ Internal Walls ground floor	**14 days**	
block laying	10 days	Mason, Foreman, laborer
electrical roughing	2 days	Electrician
plumbing roughing	2 days	Plumber
Frame	8 days	

Formwork erecting	6 days	Carpenter, Foreman, laborer
Reinforcement	4 days	Steelman, Foreman, laborer
concrete pouring	2 days	Concrete company, Project Manager, Foreman, Mason, Laborer
Formwork removal	1 day	Laborer
Upper Floor	**23 days**	
Formwork erecting	10 days	Carpenter, Foreman, laborer
Reinforcement	4 days	Steelman, Foreman, laborer
electrical roughing	2 days	Electrician
plumbing roughing	2 days	Plumber
Order Concrete	0 days	Project Manager, Caribbean Construction Company Ltd
Inspection by Planning Division	0 days	Representative from Planning Division
concrete pouring	1 day	Concrete company, Project Manager, Foreman, Mason, Laborer
Concrete curing process	2 days	Foreman, Laborer
Formwork removal after 21 days	2 days	Laborer
Stairs	**5 days**	
Formwork erecting	2 days	Carpenter, Foreman, laborer
Reinforcement	1 day	Steelman, Foreman, laborer
concrete pouring	1 day	Concrete company, Project Manager, Foreman, Mason, Laborer
Concrete curing process	2 days	Foreman, Laborer
Formwork removal after 10 days	1 day	Laborer
External/ Internal Walls upper floor	**10 days**	
block laying		Mason, Foreman, laborer

electrical roughing		Electrician
plumbing roughing		Plumber
Roof	**21 days**	
Formwork erecting	10 days	Carpenter, Foreman, laborer
Reinforcement	6 days	Steelman, Foreman, laborer
electrical roughing	2 days	Electrician
Order Concrete	0 days	Project Manager, Caribbean Construction Company Ltd
Inspection by Planning Division	1 day	Representative from Planning Division
concrete pouring	I day	Concrete company, Project Manager, Foreman, Mason, Laborer
Concrete curing process	5 days	Foreman, Laborer
Formwork removal after 21 days	2 days	Laborer
Surface Finishes	**70 days**	
Plastering to walls	30 days	Mason, Foreman, laborer
Purchase Doors and Windows	0 days	Project Manager, E.H Charles & Company Ltd
Cabinetry	3 days	Project Manager, Foreman, Laborer
Rubbing	15 days	Mason, Foreman, laborer
Purchase Tiles	0 days	Project Manager, Tileman (Hired Subcontractor)
Beds and Screeds to floor	10 days	Mason, Foreman, laborer
Tiling to floor	15 days	Tileman (Hired Subcontractor)
Tiling to Bathroom Walls	10 days	Tileman (Hired Subcontractor)
doors jams and window jams	10 days	Mason, Foreman, laborer
painting of cement rendered surfaces	20 days	Painter (Hired Subcontractor)

Installation of Doors	4 days	Carpenter, Foreman, laborer
polishing of wood surfaces	5 days	Foreman, Laborer
Installation of Windows	3 days	Window Supplier
Electrical Installation	**10 days**	
Purchase Electrical Fixtures	0 days	Project Manager, Electrician
Electrical wiring	7 days	Electrician
Lighting, switches, sockets	3 days	Electrician
Electrical Inspection	1 day	Representative from electrical division
Plumbing Installation	**10 days**	
Purchase Plumbing Fixtures	0 days	Project Manager, Plumber
Water closet, kitchen sink, face basins, showers	10 days	Plumber
External Works & Provisional Sums	**15 days**	
Formwork erecting	1 day	Carpenter, Foreman, laborer
reinforcement	1 day	Steelman, Foreman, laborer
blocklaying	2 days	Mason, Foreman, laborer
concrete pouring	1 day	Concrete company, Project Manager, Foreman, Mason, Laborer
Cabinetry Installation	5 days	Mason, Foreman, laborer
Railings	10 days	Mason, Foreman, laborer
Landscaping	5 days	Mason, Foreman, laborer

Chart 8 Resource Allocation List. (Compiled by Author, T. Pierre)

The Project Schedule was developed in Microsoft Project Professional 2019.

See project Schedule in Appendix.

4.4 COST MANAGEMENT PLAN

COST MANAGEMENT PLAN

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The Project Manager will be responsible for managing and reporting on the project's cost throughout the duration of the project. During the monthly project status meeting, the Project Manager will meet with management to present and review the project's cost performance for the preceding month. Performance will be measured using earned value. The Project Manager is responsible for accounting for cost deviations and presenting the Project Sponsor with options for getting the project back on budget. The Project Sponsor has the authority to make changes to the project to bring it back within budget.

COST MANAGEMENT APPROACH

Costs for this project will be managed at the second level of the Work Breakdown Structure (WBS). Control Accounts (CA) will be created at this level to track costs. Earned Value calculations for the CA's will measure and manage the financial performance of the project. Although activity cost estimates are detailed in the work packages, the level of accuracy for cost management is at the second level of the WBS. Credit for work will be assigned at the work package level. Work started on work packages will grant that work package with 50% credit; whereas, the remaining 50% is credited upon completion of all work defined in that work package. Costs may be rounded to the nearest dollar and work hours rounded to the nearest whole hour.

Cost variances of +/- 0.1 in the cost and schedule performance indexes will change the status of the cost to cautionary; as such, those values will be changed to yellow in the project status reports. Cost variances of +/- 0.2 in the cost and schedule performance indexes will change the status of the cost to an alert stage; as such, those values will be changed to red in the project status reports. This will require corrective action from the Project Manager in order to bring the cost and/or schedule performance indexes below the alert level. Corrective actions will require

a project change request and be must approved by the Project Sponsor before it can become within the scope of the project.

MEASURING PROJECT COSTS

Performance of the project will be measured using Earned Value Management. The following four Earned Value metrics will be used to measure to projects cost performance:

- Schedule Variance (SV)
- Cost Variance (CV)
- Schedule Performance Index (SPI)
- Cost Performance Index (CPI)

If the Schedule Performance Index or Cost Performance Index has a variance of between 0.1 and 0.2 the Project Manager must report the reason for the exception. If the SPI or CPI has a variance of greater than 0.2, the Project Manager must report the reason for the exception and provide management with a detailed corrective plan to bring the project's performance back to acceptable levels.

Performance Measure	**Yellow**	**Red**
Schedule Performance Index (SPI)	Between 0.9 and 0.8 or Between 1.1 and 1.2	Less Than 0.8 or Greater than 1.2
Cost Performance Index (CPI)	Between 0.9 and 0.8 or Between 1.1 and 1.2	Less Than 0.8 or Greater than 1.2

REPORTING FORMAT

Reporting for cost management will be included in the monthly project status report. The Monthly Project Status Report will include a section labeled, “Cost Management”. This section will contain the Earned Value Metrics identified in the previous section. All cost variances outside of the thresholds identified in this Cost Management Plan will be reported on including any corrective actions which are planned. Change Requests which are triggered based upon project cost overruns will be identified and tracked in this report.

COST VARIANCE RESPONSE PROCESS

The Control Thresholds for this project is a CPI or SPI of less than 0.8 or greater than 1.2. If the project reaches one of these Control Thresholds a Cost Variance Corrective Action Plan is required. The Project Manager will present the Project Sponsor with options for corrective actions within five business days from when the cost variance is first reported. Within three business days from when the Project Sponsor selects a corrective action option, the Project Manager will present the Project Sponsor with a formal Cost Variance Corrective Action Plan. The Cost Variance Corrective Action Plan will detail the actions necessary to bring the project back within budget and the means by which the effectiveness of the actions in the plan will be measured. Upon acceptance of the Cost Variance Corrective Action Plan it will become a part of the project plan and the project will be updated to reflect the corrective actions.

COST CHANGE CONTROL PROCESS

The cost change control process will follow the established project change request process. Approvals for project budget/cost changes must be approved by the Project Sponsor.

PROJECT BUDGET

The budget for this project is detailed below:

ITEM	PROJECT COSTS (EC$)
Preliminaries -	$4000.00
Building Construction –	$549,224.00
Contingency (10%) –	$54,922.40
Total	**$604,146.40**

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

_____ Date:_____

Justin Jno Baptiste

Client

Figure 10 Four-Apartment Unit Cost Management Plan. Adapted from Project Management Docs. Retrieved October 22, 2019 from https://www.projectmanagementdocs.com/template/project-planning/cost-management-plan/#axzz632Y4EtkA

The authorized cost baseline was determined using input documents such as the cost management plan, resource management plan, project documents such as the cost estimates, project schedule, risk register. The tools and techniques employed in this process were expert judgment, cost aggregation, and data analysis. All cost reflected in the figure below include both materials and labor costing for the FAU Project.

Item	Item Description	Unit	Qty	Rate	Amount
	PRELIMINARIES	Item	1	$4,000.00	$4,000.00
	SUBSTRUCTURE				
	Site Preparation	Item	1	$1,600.00	$1,600.00
	Excavation & Disposal	Item	1	$8,200.00	$8,200.00
	Surface Treatments	Item	1	$4,000.00	$4,000.00
	Disposal of Water	Item	1	$2,000.00	$2,000.00
	Levelling & Compacting	Item	1	$898.00	$898.00
	Filling to Excavations	Item	1	$6,300.00	$6,300.00
	Formwork	Item	1	$6,350.00	$6,350.00
	Reinforcement	Item	1	$7,640.50	$7,640.50
	Concrete	Item	1	$22,345.00	$22,345.00
	Blockwork	Item	1	$13,379.00	$13,379.00
	FRAME				
	Formwork	Item	1	$4,900.00	$4,900.00
	Reinforcement	Item	1	$7,087.50	$7,087.50
	Concrete	Item	1	$4,455.00	$4,455.00
	UPPER FLOOR				
	Formwork	Item	1	$8,050.00	$8,050.00
	Reinforcement	Item	1	$18,203.50	$18,203.50
	Concrete	Item	1	$14,610.00	$14,610.00
	ROOF				
	Formwork	Item	1	$17,500.00	$17,500.00
	Page 1	**To Collection**			**$151,518.50**

Item	Item Description	Unit	Qty	Rate	Amount
	ROOF				
	Reinforcement	Item	1	$34,825.00	$34,825.00
	Concrete	Item	1	$33,440.00	$33,440.00
	EXTERNAL WALLS, WINDOWS & DOORS				
	Blockwork	Item	1	$37,607.50	$37,607.50
	Doors	Item	1	$18,795.00	$18,795.00
	Windows	Item	1	$21,075.00	$21,075.00
	SURFACE FINISHES				
	Rendering to Walls & Floor	Item	1	$35,580.00	$35,580.00
	Tiling	Item	1	$32,320.00	$32,320.00
	Painting	Item	1	$31,460.00	$31,460.00
	ELECTRICAL INSTALLATION				
	Electrical Work	Item	1	$32,540.00	$32,540.00
	PLUMBING INSTALLATION				
	Plumbing Work	Item	1	$27,808.00	$27,808.00
	EXTERNAL WORKS & PROVISIONAL SUMS				
	Kitchen Cupboards & Bar Counter Top	Item	1	$35,000.00	$35,000.00
	Bedroom Closets	Item	1	$21,700.00	$21,700.00
	External steps	Item	1	$16,000.00	$16,000.00
	Ballustrades to porches	Item	1	$8,000.00	$8,000.00
	Parking Lot and Landscaping	Item	1	$11,555.00	$11,555.00
	CONTINGENCIES	Item	1	$54,922.40	$54,922.40
	Page 2	**To Collection**			**$452,627.90**

GENERAL SUMMARY	EC $
PAGE 1	$151,518.50
PAGE 2	$452,627.90
PROJECT BUDGET	$604,146.40

Figure 11 Project Cost Baseline (Compiled by Author, T. Pierre)

The S-Curve below tracks the progress of the project over time and allows a quick graphical representation to determine the project status.

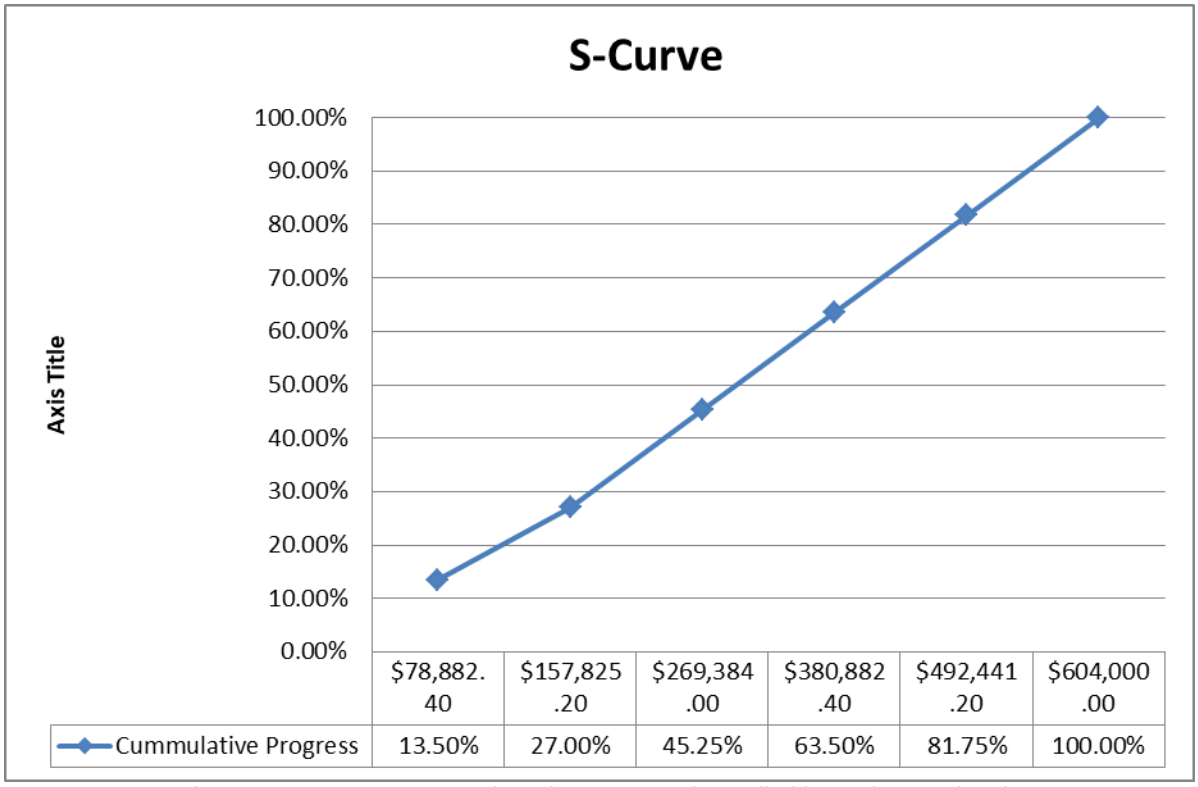

Figure 12 Four-Apartment Unit Project S-Curve (Compiled by Author, T.Pierre)

4.5 QUALITY MANAGEMENT PLAN

QUALITY MANAGEMENT PLAN

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The Quality Management Plan for the Four-Apartment Unit (FAU) project will establish the activities, processes, and procedures for ensuring a quality product upon the conclusion of the project. The purpose of this plan is to:

- Ensure quality is planned
- Define how quality will be managed
- Define quality assurance activities
- Define quality control activities
- Define acceptable quality standards

QUALITY MANAGEMENT APPROACH

The quality management approach for the Four-Apartment Unit project will ensure quality is planned for both the product and process. In order to be successful, this project will meet its quality objectives by utilizing an integrated quality approach to define quality standards, measure quality and continuously improve quality.

Product quality for the Four-Apartment Unit project will be defined by the company's current standards and criteria based on standards from the construction industry. The focus is on the project's deliverable and the standards and criteria being used will ensure the product meets established quality standards and client satisfaction.

Process quality for the Four-Apartment Unit project will focus on the processes by which the project deliverable will be constructed. Establishing process quality standards will ensure that all activities conform to organizational and industry standards, which results in the successful delivery of the product.

The Project Manager will define and document all organizational and project specific quality standards for both product and processes. All quality documentation will become part of the Four-Apartment Unit Project Management

Plan and will be transitioned into a building operation management document upon the successful completion of the project.

Metrics will be established and used to measure quality throughout the project life cycle for the product and processes. The Project Manager will be responsible for working with the project team to define these metrics, conduct measurements, and analyze results. These product and process measurements will be used as one criterion in determining the success of the project and must be reviewed by the Project Sponsor. Metrics will include:

- Schedule
- Resources
- Cost
- Process performance
    - Fabrication
- Product performance
    - Attenuation
    - Compression strength
- Customer Satisfaction

Quality improvements will be identified by any member of the project team. Each recommendation will be reviewed to determine the cost versus benefit of implementing the improvement and how the improvement will impact the product or processes. If an improvement is implemented, the Project Manager will update all project documentation to include the improvement.

QUALITY REQUIREMENTS / STANDARDS

Product Quality:

The product quality standards and requirements will be determined by the Project Manager. These standards will primarily be based on the company's documented standards. There may be product-specific quality standards identified that are not currently part of the documented organizational standards. In this case, the Project

Manager will review these newly identified standards and incorporate them into organizational documentation if approved. The Project Manager will also document any newly identified quality standards into the Four-Apartment Unit project management plan and ensure communication with all stakeholders.

Process Quality:

The process quality standards and requirements will be determined by the Project Manager. Many of these standards will be based on existing company process standards. The Four-Apartment Unit project team will work with the Project Manager to establish acceptable standards and document these standards for incorporation into both organizational process documents as well as the Four-Apartment Unit project plan. These standards will be communicated to all project stakeholders.

QUALITY ASSURANCE

The quality assurance of the Four-Apartment Unit Project focuses on the processes used in the construction of the building. In order to ensure quality, an iterative quality process will be used throughout the project life cycle. This iterative process includes measuring process metrics, analyzing process data, and continuously improving the processes.

The Project Manager and the project team will perform assessments at planned intervals throughout the project to ensure all processes are being correctly implemented and executed. The table below provides the key quality assurance metrics for the Project.

Process Action	**Acceptable Process Standards**	**Process Phase**	**Assessment Interval**
Concrete slump test	Required psi strength	On site delivery	Batch of concrete
Compression testing of concrete cubes	- 4000 psi compressive strength yield at 28 days	Make cubes onsite	Sent to respective testing department for assessment

The Project Manager will provide day-to-day quality management and conduct process audits on a weekly basis, monitor process performance metrics, and assure all processes comply with project and project standards. If discrepancies are found, the Project Manager will review the identified discrepancies.

The Project Manager will schedule regularly occurring project, management, and document reviews. In these reviews, an agenda item will include a review of project processes, any discrepancies and/or audit findings, and a discussion on process improvement initiatives.

Process improvement is another aspect of quality assurance. Quality assurance reviews, findings, and assessments should always result in some form of process improvement and, as a result, product improvement. All process improvement efforts must be documented, implemented, and communicated to all stakeholders as changes are made.

QUALITY CONTROL

The quality control of the Four-Apartment Unit project focuses primarily on the construction of the building. The quality performance standards for the Four-Apartment Unit Project are in accordance with the organizational standards. Additionally, all physical measurements will be conducted to ensure compliance with established quality standards.

The project team will perform all physical measurements on site and ensure that all they are on par with all physical and performance standards.

The Project Manager will schedule regularly occurring project, management, and document reviews. In these reviews, an agenda item will include a review of products, any discrepancies and/or audit findings from the Project Manager, and a discussion on product improvement initiatives.

It is imperative to the success of the project that all of the established physical and performance standards are met. By doing so, the Four-Apartment Project Team will ensure that the product achieves the high level of client satisfaction anticipated and that future construction projects will be in line with budget and resource allocations.

QUALITY CONTROL MEASUREMENTS

All Four-Apartment Project deliverables and processes must be measured and fall within the established standards and tolerances. The below logs will be used by the project and quality teams in conducting these measurements and will be maintained for use as supporting documentation for the project's acceptance.

Quality Assurance Log

Process inspection #1	Date	Process Measured	Required Value	Actual Measured	Acceptable? (Y/N)	Recommendation	Date Resolved

Quality Control Log

Deliverable #1	Date	Item Measured	Required Value	Actual Measured	Acceptable? (Y/N)	Recommendation	Date Resolved

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

_____ Date:_____

Justin Jno Baptiste

Client

Figure 13 Four-Apartment Unit Quality Management Plan. Adapted from Project Management Docs. Retrieved October 26, 2019 from https://www.projectmanagementdocs.com/template/project-planning/quality-management-plan/#axzz632Y4EtkA

4.6 RESOURCE MANAGEMENT PLAN

RESOURCE MANAGEMENT PLAN
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Resources management is an important part of the Four-Apartment Unit Project. The resources management plan is a tool which will aid in the management of this project's resource activities throughout the project until closure. The resources management plan includes:

- Roles and responsibilities of team members throughout the project
- Project organization charts
- Staffing management plan to include:
    a. How resources will be acquired
    b. Timeline for resources/skill sets
    c. Training required to develop skills
    d. How performance reviews will be conducted
    e. Recognition and rewards system

The purpose of the resource management plan is to achieve project success by ensuring the appropriate resources are acquired with the necessary skills, resources are trained if any gaps in skills are identified, team building strategies are clearly defines, and team activities are effectively managed.

ROLES AND RESPONSIBILITIES

The roles and responsibilities for the Four-Apartment Unit Project are essential to project success. All team members must clearly understand their roles and responsibilities in order to successfully perform their portion of the project. For the Four-Apartment Unit Project the following project team roles and responsibilities have been established:

Project Manager (PM), (1 position): responsible for the overall success of the Four-Apartment Unit Project. The PM must authorize and approve all project expenditures. The PM is also responsible for approving that work activities meet

established acceptability criteria and fall within acceptable variances. The PM will be responsible for reporting project status in accordance with the communications management plan. The PM will evaluate the performance of all project team members and communicate their performance to functional managers. The PM is also responsible for acquiring human resources for the project through coordination with functional managers. The PM must possess the following skills: leadership/management, budgeting, scheduling, and effective communication.

Accountant (A), (1 position): responsible for all financial transactions and financial reporting pertaining to the project.

E**lectrician, (E) (1 position):** responsible for installing all building an site lighting are per electrical plans and schedules.

Plumber, (P), (1 position): responsible for executing works involving the installation of water closets, face basins, kitchen sinks, showers, supply lines, waste water lines in accordance with layout drawings and schedules.

Tiling Subcontractor (TS), (1 position): responsible for reading the floor plan drawings and installing tiles as per layouts and in accordance with acceptable industry standards and within schedule constraints.

Foreman (F), (1 position): responsible for the technical requirements as per the specifications and drawings. The Foreman ensures that each skilled worker carries out the work per the specifications.

Mason, (M), (2 positions): responsible for the laying of all works involving bricks, stone or concrete as per instructions from the project foreman.

Carpenter, (1 position): responsible for all works involving woodworking and the like as per instructions from the project foreman.

Steelman, (1 position): responsible for all works involving steel reinforcement and the like as per instructions from the project foreman.

Laborer, (4 positions): responsible for assisting all skilled workers onsite as per instructions from the project foreman, mason, carpenter, and steel man

PROJECT ORGANIZATIONAL CHARTS

The following RACI chart shows the relationship between project tasks and team members. Any proposed changes to project responsibilities must be reviewed and approved by the Project Manager. Changes will be proposed in accordance with the project's change control process. As changes are made, all project documents will be updated and redistributed accordingly.

	Project Manager	Accountant	Electrician	Plumber	Tiling Subcontractor	Foreman	Mason	Carpenter	Steel Man	Laborer
Site Management	A					I	I	I	I	I
Change Requests	A					I	I	I	I	I
Project Scope	A		I	I	I	I	I	I	I	I
Project Communications	A		I	I	I	I	I	I	I	I
Project Quality	A		I	I	I	I	I	I	I	I
Stakeholder Management	A					I				
Accounting	A	R								
Status Reports	A		I	I	I	I	I	I	I	I
Manage Site Workers	A									
Procurements	A		I	I	I	I				

Key: R – Responsible for completing the work

A – Accountable for ensuring task completion/sign off

C – Consulted before any decisions are made

I – Informed of when an action/decision has been made

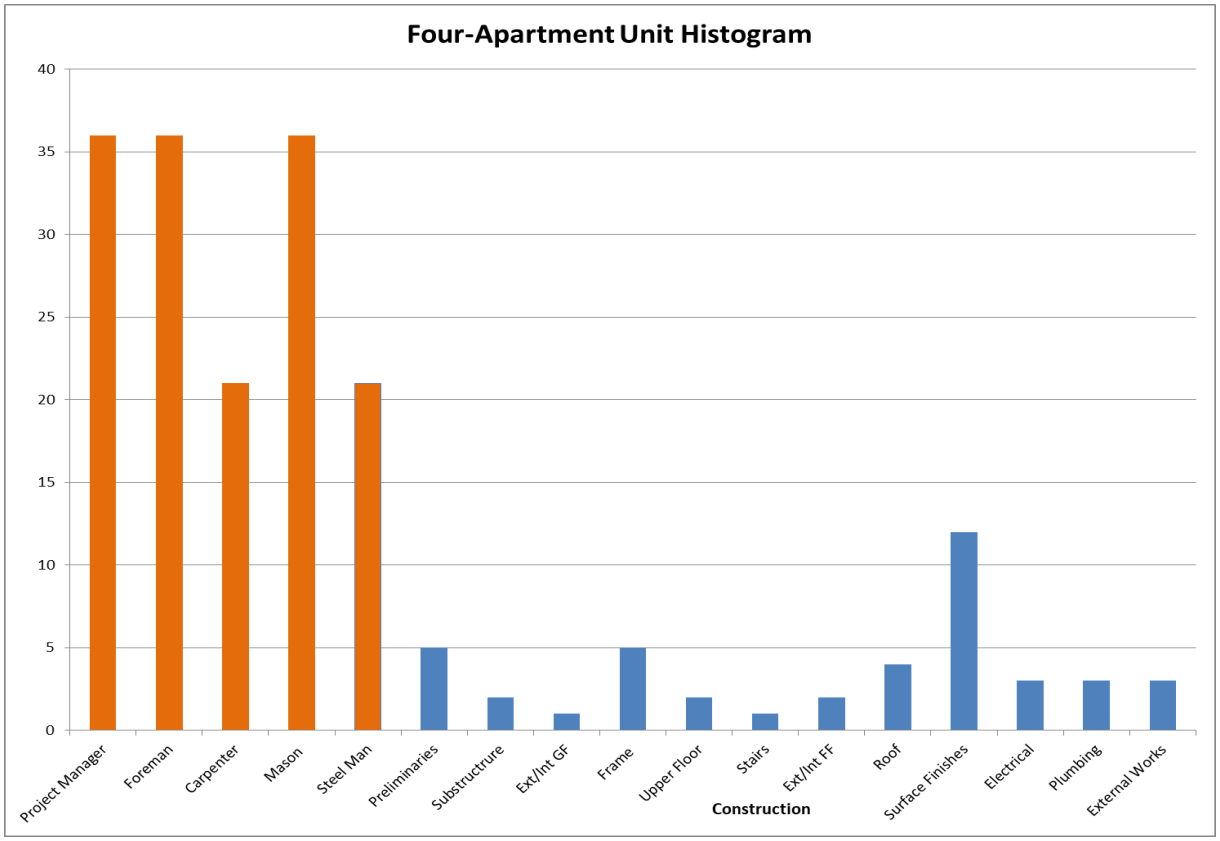
STAFFING MANAGEMENT

Staff Acquisition:

For the Four-Apartment Unit Project the project staff will consist entirely of internal resources. However, some of the work will be subcontracted to external resources. There will be outsourcing/contracting performed within the scope of this project. The Project Manager will negotiate with various companies in order to identify and assign resources in accordance with the project. The Project Manager must approve all resources. All site workers and subcontractors will be required to work onsite until contract completion.

Resource Calendars:

The Four-Apartment Unit Project will last for 36 weeks. All resources are required before the project can begin. The resource histogram below illustrates the number of weeks required for project management and construction of the Four-Apartment Unit.



Training:

There is currently no training scheduled with regards to the Four-Apartment Unit since the organization hires adequate staff with required skill sets.

Performance Reviews:

The Project Manager will review each team member's assigned work activities at the onset of the project and communicate all expectations of work to be performed. The Project Manager will then evaluate each team member throughout the project to evaluate their performance and how effectively they are completing their assigned work. Prior to releasing project resources, the Project Manager will meet with the project foreman and provide feedback on employee project performance. The project foreman will then perform a formal performance review on each team member.

Recognition and Rewards:

Although the scope of this project does not allow for ample time to provide cross-training or potential for monetary rewards, there are several planned recognition and reward items for project team members.

- Upon successful completion of various milestones on the Four-Apartment Unit Project, a site party will be held to celebrate the success of each team member.

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

_____ Date:_____

Justin Jno Baptiste

Client

Figure 14 Four-Apartment Unit Resource Management Plan. Adapted from Project Management Docs. Retrieved October 26, 2019 from https://www.projectmanagementdocs.com/template/project-planning/human-resource-plan/#axzz63TWA9Zzw

4.7 COMMUNICATIONS MANAGEMENT PLAN

COMMUNICATIONS MANAGEMENT PLAN

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This Communications Management Plan sets the communications framework for this project. It will serve as a guide for communications throughout the life of the project and will be updated as communication needs change. This plan identifies and defines the roles of persons involved in this project. It also includes a communications matrix which maps the communication requirements of this project.

COMMUNICATIONS MANAGEMENT APPROACH

The Project Manager will take a proactive role in ensuring effective communications on this project. The communications requirements are documented in the Communications Matrix presented in this document. The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it and to whom to communicate.

As with most project plans, updates or changes may be required as the project progresses or changes are approved. Changes or updates may be required due to changes in personnel, scope, budget, or other reasons. Additionally, updates may be required as the project matures and additional requirements are needed. The Project Manager is responsible for managing all proposed and approved changes to the communications management plan. Once the change is approved, the Project Manager will update the plan and supporting documentation and will distribute the updates to the project team and all stakeholders. This methodology is consistent with the project's Change Management Plan and ensures that all project stakeholders remain aware and are informed of any changes to communications management.

COMMUNICATIONS MANAGEMENT CONSTRAINTS

All project communication activities will occur within the project's approved budget, schedule, and resource allocations. The Project Manager is responsible for ensuring that communication activities are performed by the project team and without external resources which will result in exceeding the authorized budget. Communication activities will occur in accordance with the frequencies detailed in the Communication Matrix in order to ensure the project adheres to schedule constraints. Any deviation of these timelines may result in excessive costs or schedule delays and must be approved by the Project Sponsor.

STAKEHOLDER COMMUNICATION REQUIREMENTS

As part of identifying all project stakeholders, the Project Manager will communicate with each stakeholder in order to determine their preferred frequency and method of communication. This feedback will be maintained by the Project Manager in the project's Stakeholder Register. Standard project communications will occur in accordance with the Communication Matrix; however, depending on the identified stakeholder communication requirements, individual communication is acceptable and within the constraints outlined for this project.

In addition to identifying communication preferences, stakeholder communication requirements must identify the project's communication channels and ensure that stakeholders have access to these channels. If project information is communicated via secure means or through internal company resources, all stakeholders, internal and external, must have the necessary access to receive project communications.

Once all stakeholders have been identified and communication requirements are established, the project team will maintain this information in the project's

Stakeholder Register and use this, along with the project communication matrix as the basis for all communications.

PROJECT TEAM DIRECTORY

The following table presents contact information for all persons identified in this communications management plan. The email addresses and phone numbers in this table will be used to communicate with these people.

Role	Name	Organization/ Department	Email	Phone
Project Sponsor(s)	NCCU J. Jno Baptiste	External External	memberservices@nccudominica.com jbnet@gmail.com	(767)2552172 (646)6898041
Project Manager	F. Pierre	TFL Construction & Design	francispierre@gmail.com	(767)2253973
Project Stakeholders	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register
Foreman	Clatus Baron	TFL	nil	nil
Mason	Simeon Fevrier	TFL	nil	(767)2773058
Carpenter	Byes Toussaint	TFL	nil	nil
Steel Man	Lawrence Jerome	TFL	Chez2luvit@hotmail.com	(767)6122960

COMMUNICATION METHODS AND TECHNOLOGIES

The main communication tools are e-mail, phone, face-to-face (personal communication) meetings, reports, presentations and announcements.

COMMUNICATIONS MATRIX

The following table identifies the communications requirements for this project.

Communication Type	**Objective of Communication**	**Medium**	**Frequency**	**Audience**	**Owner**	**Deliverable**	**Format**
Kickoff Meeting	Introduce the project team and the project. Review project objectives and management approach.	• Face to Face	Once	• Project Sponsor • Project Team • Stakeholders	Project Manager	• Agenda • Meeting Minutes	• Soft copy archived on project SharePoint site and project web site
Project Team Meetings	Review status of the project with the team.	• Face to Face • Conference Call	Weekly	• Project Team	Project Manager	• Agenda • Meeting Minutes • Project schedule	• Soft copy archived on project SharePoint site and project web site
Technical Design Meetings	Discuss and develop technical design solutions for the project.	• Face to Face	As Needed	• Project Technical Staff	Technical Lead	• Agenda • Meeting Minutes	• Soft copy archived on project SharePoint site and project web site

Monthly Project Status Meetings	Report on the status of the project to management.	• Face to Face • Conference Call	Monthly	• PMO	Project Manager	• Slide updates • Project schedule	• Soft copy archived on project SharePoint site and project web site
Project Status Reports	Report the status of the project including activities, progress, costs and issues.	• Email	Monthly	• Project Sponsor • Project Team • Stakeholders • PMO	Project Manager	• Project Status Report • Project schedule	• Soft copy archived on project SharePoint site and project web site

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

_____ Date: _____

Justin Jno Baptiste

Client

Figure 15 Four-Apartment Unit Communications Management Plan. Adapted from Project Management Docs. Retrieved October 26, 2019 from https://www.projectmanagementdocs.com/template/project-planning/communications-management-plan/#axzz63TWA9Zzw

4.8 RISK MANAGEMENT PLAN

RISK MANAGEMENT PLAN

FOUR-APARTMENT UNIT

TFL CONSTRUCTION AND DESIGN

CHECKHALL, MASSACRE,

COMMONWEALTH OF DOMINICA

NOVEMBER 2019

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As organizations begin new projects they begin operating in an area of uncertainty that comes along with developing new and unique products or services. By doing so, these organizations take chances which results in risk playing a significant part in any project. The purpose of the risk management plan is to establish the framework in which the project team will identify risks and develop strategies to mitigate or avoid those risks. However, before risks can be identified and managed, there are preliminary project elements which must be completed. These elements are outlined in the risk management approach.

Before risk management begins, it is imperative that a foundation is established for providing structured project information, thus, the following project elements were completed and defined prior to developing this Risk Management Plan:

- Define work scope, schedule, resources, and cost elements
    - Develop project WBS/WBS dictionary
    - Develop master schedule and detailed schedules
    - Estimate project cost and finalize budget
    - Identify required and available resources
    - Establish performance measurement metrics

- Define minimum and maximum baseline thresholds
    - Schedule
    - Resources
    - Cost

- Baseline reporting requirements
    - Format
    - Frequency of distribution

- Distribution list

- Define Risk Management Roles and Responsibilities
  - Project Manager chairs the risk assessment meetings
  - Project team participates in risk assessment meetings and members serve as meeting recorder and timekeeper
  - Key stakeholders participate in risk assessment meetings
  - Project Sponsor may participate in risk assessment meetings

RISK MANAGEMENT APPROACH

The approach we have taken to manage risks for this project included a methodical process by which the project team identified, scored, and ranked the various risks. Risk managers will provide status updates on their assigned risks in the weekly project team meetings. Upon the completion of the project, during the closing process, the Project Manager will analyze each risk as well as the risk management process. Based on this analysis, the Project Manager will identify any improvements that can be made to the risk management process for future projects. These improvements will be captured as part of the lessons learned knowledge base.

RISK IDENTIFICATION

For this project, risk identification was conducted through a meeting which was chaired by the Project Manager. The Project Manager distributed notepads to each member of the team and allowed several minutes for all team members to record as many risks as possible.

Risk Assessment Meeting

A risk assessment meeting was held with key team members and stakeholders. The risks identified during this meeting were added to the project plan and Risk Register.

Historical Review of Similar Projects

The project team reviewed the history of similar projects in order to determine the most common risks and the strategies used to mitigate those risks.

RISK QUALIFICATION AND PRIORITIZATION

In order to determine the severity of the risks identified by the team, a probability and impact factor was assigned to each risk. This process allowed the Project Manager to prioritize risks based upon the effect they may have on the project. The Project Manager utilized a probability-impact matrix to facilitate the team in moving each risk to the appropriate place on the chart.

RISK MONITORING

The most likely and greatest impact risks have been added to the project plan to ensure that they are monitored during the time the project is exposed to each risk. During the weekly project team meeting, the Risk Manager for each risk will discuss the status of that risk. Risk monitoring will be a continuous process throughout the life of this project.

RISK MITIGATION AND AVOIDANCE

The Project Manager has led the project team in developing responses to each identified risk. As more risks are identified, they will be qualified and the team will

develop avoidance and mitigation strategies. These risks will also be added to the Risk Register and the project plan to ensure they are monitored at the appropriate times and are responded to accordingly.

The risks for this project will be managed and controlled within the constraints of time, scope, and cost. All identified risks will be evaluated in order to determine how they affect this triple constraint. The Project Manager, with the assistance of the project team, will determine the best way to respond to each risk to ensure compliance with these constraints.

Risk Register

The Risk Register for this project is a log of all identified risks, their probability and impact to the project, the category they belong to, and response strategy. The register was created through the initial project risk management meeting led by the Project Manager. During this meeting, the project team identified and categorized each risk. Additionally, the team assigned each risk a score based on the probability of it occurring and the impact it could potentially have. The Risk Register also contains the response strategy for each risk.

Risk Identification		**Qualitative Rating**				**Risk Response**		
Risk	Risk Category	Probability	Impact	Risk Score	Risk Ranking	Risk Response/Strategy	Trigger	Owner
change in building regulations/standards	Legal	1	2	2	12	**Mitigate:** Keep abreast with regulations and standards	New laws	Project Manager
change in cost of resources/materials	Financial	2	7	14	8	**Accept:** Procure materials or resources from another supplier at similar costs	Inflation	Accountant

safety hazards that lead to worker accidents and injuries	Health & safety	5	8	40	1	**Avoid:** Give safety tips at regular site meetings and constantly remind workers of safety	workers not adhering to site rules	Foreman / Project Manager
incomplete drawings	Project Management	2	2	4	11	**Avoid:** Ensure all drawings are completed before project initiation	poor project planning	Project Manager
poorly defined scope	Project Management	5	5	25	5	**Mitigate:** Use historical data from similar projects in order to define scope	Lack of sufficient planning time	Project Manager
Managing change orders	Project Management	5	5	25	6	**Mitigate:** Use expert advice	Lack of time management	Project Manager
Labor shortages	Human	3	3	9	10	**Avoid:** Have multiple skilled workers onsite who can substitute in various positions	Boom in Construction industry	Project Manager

Damage or theft to equipment or tools	Financial	2	5	10	9	**Accept:** Have security lights onsite / promote careful use of tools and equipment	No security presence after working hours	Project Manager
Natural Disasters	Natural	7	4	28	4	**Accept:** Have a disaster response plan available	Weather conditions	Project Manager
Availability of building materials	Financial	6	6	36	2	**Avoid:** Procure materials or resources off shore	Boom in Construction industry	Project Manager
Poor finance budgeting control	Financial	2	8	16	7	**Mitigate:** Always review cost baseline or budget with current expenses	poor financial management	Accountant
Delay in Subcontractors work	Schedule	5	6	30	3	**Mitigate:** Ensure subcontractor is kept abreast with schedule	Lack of time management	Subcontractor

Figure 16 Risk Register Adapted from Project Management Docs. Retrieved October 21, 2019 from https://www.projectmanagementdocs.com/template/project-planning/risk-register/#axzz63h7T7a7B

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

_____ Date:_____

Justin Jno Baptiste

Client

Figure 17 Four-Apartment Unit Risk Management Plan. Adapted from Project Management Docs. Retrieved October 28, 2019 from https://www.projectmanagementdocs.com/template/project-planning/risk-management-plan/#axzz63TWA9Zzw

4.9 PROCUREMENT MANAGEMENT PLAN

PROCUREMENT MANAGEMENT PLAN

FOUR-APARTMENT UNIT

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This Procurement Management Plan sets the procurement framework for this project. It will serve as a guide for managing procurement throughout the life of the project and will be updated as acquisition needs change. This plan identifies and defines the items to be procured, the types of contracts to be used in support of this project, the contract approval process, and decision criteria. The importance of coordinating procurement activities, establishing firm contract deliverables, and metrics in measuring procurement activities is included. Other items included in the procurement management plan include: procurement risks and procurement risk management considerations; how costs will be determined; how standard procurement documentation will be used; and procurement constraints.

ROLES AND RESPONSIBILITIES

Due to the nature of the FAU Project, the Project Manager is responsible for procuring all the necessary materials and resources for the project.

PROJECT PROCUREMENT PLAN TEMPLATE

Project Name:	
Prepared by:	
Date (MM/DD/YYYY):	

Project Initiation Phase – This portion of the Procurement Plan document is used to provide the project selection team with general information about the possible purchase of goods and services. No approval signatures are required.

Procurement Statement
Describe, in general terms, what products or services are being considered for procurement:

Estimated Cost
Provide an estimated total cost of all procurements in this project. Include confidence limits for your estimate (e.g. plus/minus dollars or percent of estimate). Example: $1,567,000 +/- 20%

Vendor Selection
Describe what approach the project team will take to select a product or vendor (e.g. RFI, RFP, IFB).

Procurement Definition
Describe, in specific terms, what items will be procured and under what conditions:

Selection Process & Criteria

Describe the selection process. List selection criteria. Describe any analytical selection tool that you will use. 🕮

Project Procurement Team

List all stakeholders who are involved in the Procurement Process, along with contact information and a description of their Procurement Role. Enter an [X] next to each project team member who is authorized to enter into contract agreements or purchase for the Team (insert rows as needed):

X here	Name:	Phone / email:	Procurement Role: 🕮
[ ]			
[ ]			
[ ]			
[ ]			

Contract Type

Document which types of contract(s) will be used and the actions required to initiate the contract. 🕮

Contract Standards

Provide the standards for documentation that will be used for each contract. 🕮

Vendor Management

Describe what steps the project team will take to ensure that the vendor provides all of the products and/or services (and only the products and/or services) that were agreed upon, and that appropriate levels of quality are maintained.

Links to related planning documents
Provide hyperlinks to related documents, such as the Change Request Management Plan, Vendor Payment Plan, etc., or attach as addenda.

Project Procurement Plan / Signatures	
Project Name:	
Project Manager:	

I have reviewed the information contained in this Project Procurement Plan *and agree:*

Name	Role	Signature	Date (MM/DD/YYYY)

The signatures above indicate an understanding of the purpose and content of this document by those signing it. By signing this document, they agree to this as the formal Project Procurement Plan.

Figure 18 Four-Apartment Unit Procurement Management Plan Adapted from Columbian Southern https://online.columbiasouthern.edu › courses › Business › BBA › BBA4326

4.10 STAKEHOLDER MANAGEMENT PLAN

STAKEHOLDER MANAGEMENT PLAN

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The Stakeholder Management Strategy for the Four-Apartment Unit Project will be used to identify and classify project stakeholders; determine stakeholder power, interest, and influence; and analyze the management approach and communication methodology for project stakeholders. This will allow us to identify key influential stakeholders to solicit input for project planning and gain support as the project progresses. This will benefit the project by minimizing the likelihood of encountering competing objectives and maximizing the resources required to complete the project.

Early identification and communication with stakeholders is imperative to ensure the success of the FAU Project by gaining support and input for the project. Some stakeholders may have interests which may be positively or negatively affected by the FAU Project. By initiating early and frequent communication and stakeholder management, we can more effectively manage and balance these interests while accomplishing all project tasks.

IDENTIFY STAKEHOLDERS

The FAU Project Team will conduct a brainstorming session in order to identify stakeholders for the project. The brainstorming session will include the primary project team and Project Sponsor. The session will focus on both internal and external stakeholders. Internal stakeholders may include any staff within TFL Construction & Design while external stakeholders may include suppliers, sponsors, subcontractors, or any other individuals who reside outside of TFL Construction & Design.

The following criteria will be used to determine if an individual will be included as a stakeholder:

1) Will the person or their organization be directly or indirectly affected by this project?
2) Does the person or their organization hold a position from which they can influence the project?
3) Does the person have an impact on the project's resources (material, personnel, funding)?
4) Does the person or their organization have any special skills or capabilities the project will require?
5) Does the person potentially benefit from the project or are they in a position to resist this change?

Any individual who meets one or more of the above criteria will be identified as a stakeholder.

KEY STAKEHOLDERS

As a follow on to identify stakeholders, the project team will identify key stakeholders who have the most influence on the project or who may be impacted the most by it. These key stakeholders are those who also require the most communication and management which will be determined as stakeholders are analyzed. Once identified, the Project Manager will develop a plan to obtain their feedback on the level of participation they desire, frequency and type of communication, and any concerns or conflicting interests they have.

Based on the feedback gathered by the Project Manager, the determination may be made to involve key stakeholders on steering committees, focus groups, gate reviews, or other project meetings or milestones. Thorough communication with key stakeholders is necessary to ensure all concerns are identified and addressed and that resources for the project remain available.

STAKEHOLDER ANALYSIS

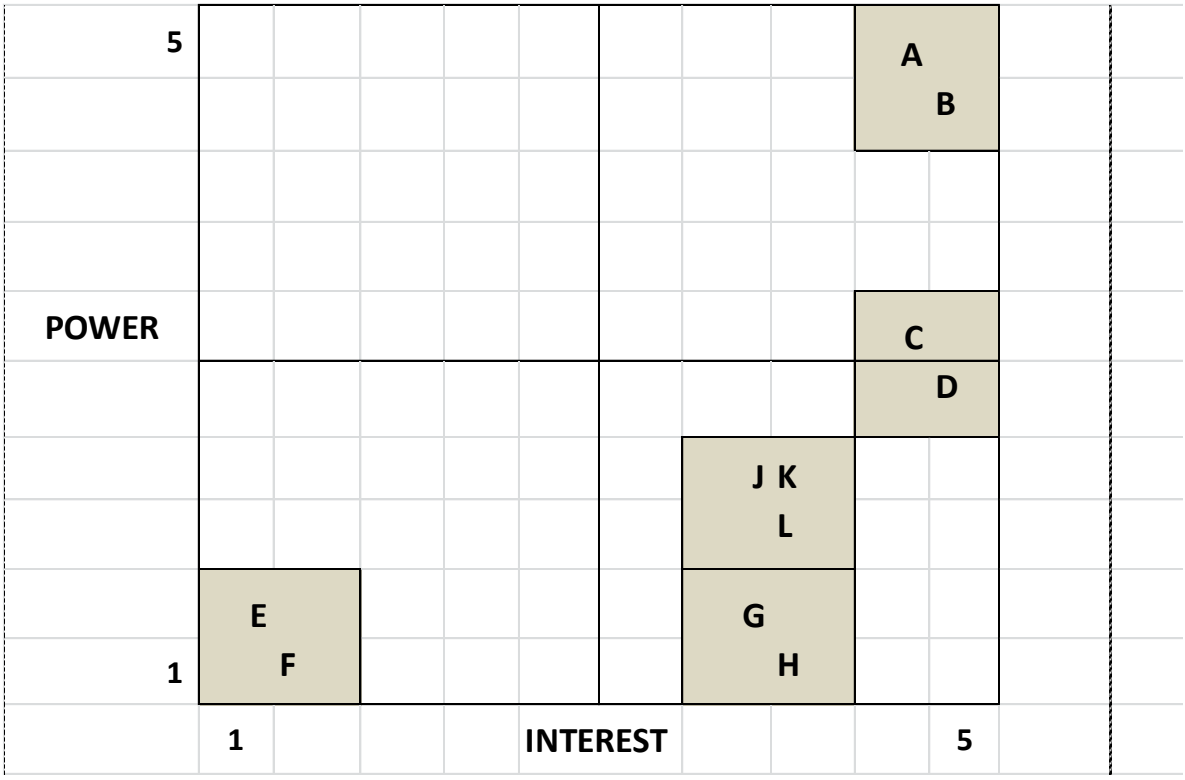
Once all the Four-Apartment Unit Project stakeholders have been identified, the project team will categorize and analyze each stakeholder. The purpose of this analysis is to determine the stakeholders' level of power or influence, plan the management approach for each stakeholder, and to determine the appropriate levels of communication and participation each stakeholder will have on the project.

The project team will categorize stakeholders based on their organization or department. Once all stakeholders have been categorized, the project team will utilize a power/interest matrix to illustrate the potential impact each stakeholder may have on the project. Based on this analysis, the project team will also complete a stakeholder analysis matrix which illustrates the concerns, level of involvement, and management strategy for each stakeholder.

The chart below will be used to establish stakeholders and their levels of power and interest for use on the power/interest chart as part of the stakeholder analysis.

Key	Name	Function	Power (1-5)	Interest (1-5)
A	TFL Construction & Design	Contractors	5	5
B	Tabitha Pierre	Project Manager	5	5
C	Justine Jno Baptiste	Client/Sponsor	3	5
D	National Cooperative Credit Union	Sponsor	3	5
E	J. Astaphans & Co. Ltd	Supplier	1	1
F	E.H Charles & Co. Ltd	Supplier	1	1
G	Sherman Ismael	Carpenter	1	4
H	Angus George	Tile Man	1	4
J	Clatus Baron	Foreman	2	4
K	Simeon Fevrier	Mason	2	4
L	Lawrence Jerome	Draftsman	2	4

Below is the power/interest chart for the Four-Apartment Unit Project stakeholders. Each letter represents a stakeholder in accordance with the key in the chart above.



Based on the power and interest analysis and chart above, stakeholders E and F will require minimal management effort as they reside in the lower left quadrant of the matrix. Stakeholders J, K, L, G, and H in the lower right quadrant, must be kept informed through frequent communication on project status and progress. Stakeholders A, B, C and D, in the upper right quadrant, are key players and must be involved in all levels of project planning and change management. Additionally, stakeholders A, B, C and D should be participatory members in all project status meetings, gate reviews, and ad hoc meetings as required.

The stakeholder analysis matrix will be used to capture stakeholder concerns, level of involvement, and management strategy based on the stakeholder analysis and power/interest matrix above. The stakeholder analysis matrix will be reviewed and updated throughout the project's duration in order to capture any new concerns or stakeholder management strategy efforts.

Stakeholder	Concerns	Quadrant	Strategy
A	Ensuring proper handover of project to team	Key Player	Communicate project specifications as required
B	Resource and scheduling constraints for production once project operational	Key Player	Solicit stakeholder as member of steering committee and obtain feedback on project planning. Frequent communication and addressing concerns are imperative
C	Product must meet client desires and interests	Key Player	Communicate project progress consistently and obtain client feedback. Provide frequent status reports and updates.
D	Project must stay within project budget	Key Player	Communicate project progress consistently and obtain client feedback. Provide frequent status reports and updates.
E	Ensuring on time delivery of materials	Minimal Effort	Communicate project schedule and material

			requirements ahead of time to ensure delivery
F	Ensuring on time delivery of materials	Minimal Effort	Communicate project schedule and material requirements ahead of time to ensure delivery
G	Ensure works keeps within schedule on a daily basis	Keep Informed	Communicate construction specifications constantly as schedule unfolds
H	Ensure works keeps within schedule on a daily basis	Keep Informed	Communicate construction specifications constantly as schedule unfolds
J	Ensure works keeps within schedule on a daily basis	Keep Informed	Communicate construction specifications constantly as schedule unfolds
K	Ensure works keeps within schedule on a daily basis	Keep Informed	Communicate construction specifications constantly as schedule unfolds
L	Ensure works meet design specifications	Keep Informed	Communicate construction specifications constantly as schedule unfolds

SPONSOR ACCEPTANCE

Approved by the Project Sponsor:

_____ Date:_____

Justin Jno Baptiste

Client

Figure 19 Four-Apartment Unit Stakeholder Management Plan. Adapted from Project Management Docs. Retrieved October 28, 2019 from https://www.projectmanagementdocs.com/template/project-initiation/stakeholder-management-strategy/#axzz63h7T7a7B

CONCLUSIONS

1. The main deliverable of this Final Graduation Project is a Project Management Plan that encompasses individual plans from each knowledge area within the project management methodology found in the PMBOK Guide. TFL Construction & Design will use this Project management plan as a developmental tool for the construction of a Four-Apartment Unit.
2. Deliverable number 1 for the FGP is the Project Charter. This document formally authorizes the existence of the Four-Apartment Unit Project and provides the Project Manager the authority needed to relate organizational resources to project activities. The Project Charter is quite beneficial to a project in that it creates a formal record of the project, shows the company's commitment to the project, and provides a direct link between the project and the strategic objectives of the organization.
3. The deliverable for specific objective number two is the Scope Management Plan. A template was used as a guide to develop the Scope Management Plan, the WBS, and WBS Dictionary while taking into account any form of expert judgment or information that was gathered during any interviews or meetings with project stakeholders.
4. The Schedule Management Plan is the deliverable for specific objective number three. A template was also used as a guide to develop the Schedule Management Plan. The Schedule Management Plan was then used to develop and comprehensive activity list and a resource allocation and activity durations' list. These were then used to develop the actual project schedule.
5. A Cost Management Plan was the deliverable for specific objective number four. This plan clearly defined how the costs of the project were to be estimated, budgeted, managed, monitored and control. Elements

of the cost management plan were used to develop the cost baseline for the project also known as the Project Budget.

6. Specific objective number five required the development of a Quality Management Plan. Using a template as a guide this plan was developed and used to create quality reports, test and evaluation documents, quality control measurements. This plan documents how the project will demonstrate compliance with quality standards.
7. The Resource Management Plan was the deliverable for specific objective number six. The various human resources specific to the FAU Project were identified and categorized in a list based on their roles and responsibilities. The plan also highlights staffing management details such as staffing acquisition, resource calendar, performance reviews and recognition and rewards.
8. Specific Objective number seven materialized also using a template. The development of a Communications Management Plan was this deliverable. A project team directory was developed that documented the contact information for all stakeholders of the project. Various communications methods and technologies were listed and a communications matrix was developed that identifies the communications requirements for the project.
9. The Risk Management Plan, which was the deliverable for specific objective number eight, was created using a template. A Risk Register was developed to capture and classify project risks, their probability and impact on the project, and responses and strategies were developed to help mitigate these risks.
10. The Procurement Management Plan was the deliverable for specific objective number nine. The Procurement Management Plan essentially describes how items will be procured for the project and the approach that will be used to manage suppliers to the project.
11. The deliverable for specific objective number ten is the Stakeholder Development Plan. A template was used as a guide to develop this

plan. The various stakeholders for the project were identified among which only the key stakeholders were listed. An analysis was performed on the key stakeholders, there were categorized and a power/interest matrix was developed to illustrate the potential impact these stakeholders could have on the project. A stakeholder analysis matrix was also developed to capture stakeholder concerns, level of involvement and management strategy.

12. The Project Management Plan is expected to deliver a high rate of investment since its implementation is at a low cost of investment to the organization but is expected to maximize profit for the project if followed thoroughly. Future projects following similar plans can generate high rates of investments for TFL.

RECOMMENDATIONS

1. It is recommended that TFL Construction & Design implement project management methodologies such as the one outlined in the PMBOK ® Guide into project management at the organization.
2. TFL Construction & Design should introduce the initiation of the project charter before every project to ensure that the project is aligned with organization objectives and to obtain a clear definition of project outcomes.
3. TFL Construction & Design should invest in tools required for planning scope management to facilitate productive communications with stakeholders and project team.
4. TFL Construction and Design should use a project management schedule plan to increase productivity and efficiency on projects. Project scheduling will help the company stay on track with getting important projects done and reduce any unforeseen financial penalties that can arise.
5. TFL Construction & Design should always develop a cost management plan for every project since this plan is important to predict project's future expenses and costs, maintain a central record of all predicted expenses, and to ensure that all project costs are approved before purchases are made.
6. TFL Construction & Design should incorporate planning for quality management into each project to ensure better and consistent control of business processes, better understanding of current and future clients, and to improve risk management within the organization. Possible iso certification can be implemented as a quality differentiation strategy in other to gain competitive advantage in the local industry.

7. TFL Construction & Design should ensure that a project management team heads all projects to increase accountability among organization members.
8. TFL Construction & Design should implement a communications management plan not only in projects but also as an organizational process asset to create a culture on communication within the organization. This will encourage employees to be more productive and add value and meaning to their work.
9. TFL Construction & Design should implement risk planning into every project to ensure that there are fewer surprises on projects, better quality data for decision making, and to make it much easier to spot projects that are in trouble.

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APPENDIX 1: FGP CHARTER

PROJECT CHARTER	
Date	**Project Name**
Issue date: 13 May 2019	The development of a Project Management Plan for a Four-Apartment Unit to be built in Checkhall, Massacre, Commonwealth of Dominica
Knowledge Areas / Processes	**Application Area (Sector / Activity)**
Knowledge areas: Project Integration Management, Project Scope Management, Project Schedule Management, Project Cost Management, Project Quality Management, Project Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management, Project Stakeholder Management **Process groups:** Initiating, Planning, Executing, Monitoring & Controlling and Closing	Construction
Start date	**Finish date**
Is the same as the issue date	24 October 2019

Project Objectives (general and specific)

General objective:
To produce a Project Management Plan for a Four-Apartment Unit to be built in Checkhall, Massacre, Commonwealth of Dominica

Specific objectives:

1. To create the project charter in order to communicate the essence of the project to all stakeholders and sponsors with a shared understanding of the project.
2. To create a scope mangement plan in order to describe how the scope of the project will be defined, developed, monitored, controlled and verified.
3. To create a time management plan which exercises conscious control of time spent on specific activities of the project.
4. To create a cost management plan in order to plan and control the budget of the project.
5. To create a quality management plan that defines the quality policies and procedures relavant to the project.
6. To create a resource management plan in order to manage the most important resources of the project.
7. To create a communications management plan in order to provide accurate and timely information to all stakeholders.
8. To create a risk management plan in order to document the forseen risks,estimate impacts and define responses to risks of the project.
9. To create a procurement management plan in order to describe how project items are procured and how

vendors will be managed within the procurement process.

10. To create a stakeholder management plan to demonstrate how stakeholders will be engaged throughout the project.

Project purpose or justification (merit and expected results)

TFL Construction and Design is a small company within the construction industry which offers a wide variety of services to the public. The company has no formalized organizational structure and no set methodologies for project implementation and management. The absence of these management capabilities creates a lack of competitiveness, poor customer care, and minimal quality assurance for services provided. For the purpose of improving the overall structure and growth of the organization and to create competitiveness within the construction industry, a project management plan for a typical building construction project, based on the stantards set by the Project Management Institute, will be developed for presentation to the department.

Description of Product or Service to be generated by the Project – Project final deliverables

The Project Management Plan for the building of a Four-Apartment Unit will be generated by this project. The plan will consist of all the individual plans covering all the knowledge areas: scope, schedule, cost, quality, resource, communications, risk, procurement and statekholders.

Assumptions

It is assumed that the period given for this project is sufficient to complete the project.
It is assumed that the document produced will enhance project planning at TFL Construction & Design.

Constraints

Time: time should be allocated daily for the preparation of this project
Resources: TFL Construction & Design being a small construction company may not have the adequate information needed to assist in the development of this document.

Preliminary risks

If insufficient time is not dedicated to this project then this might affect the quality of the document produced.
If inadequate guidance is not given or adhered to then this might affect the scope of the overall project.
If the proper information is not available from the organization then this might affect the scope of the project.

Budget

Undefined

Milestones and dates

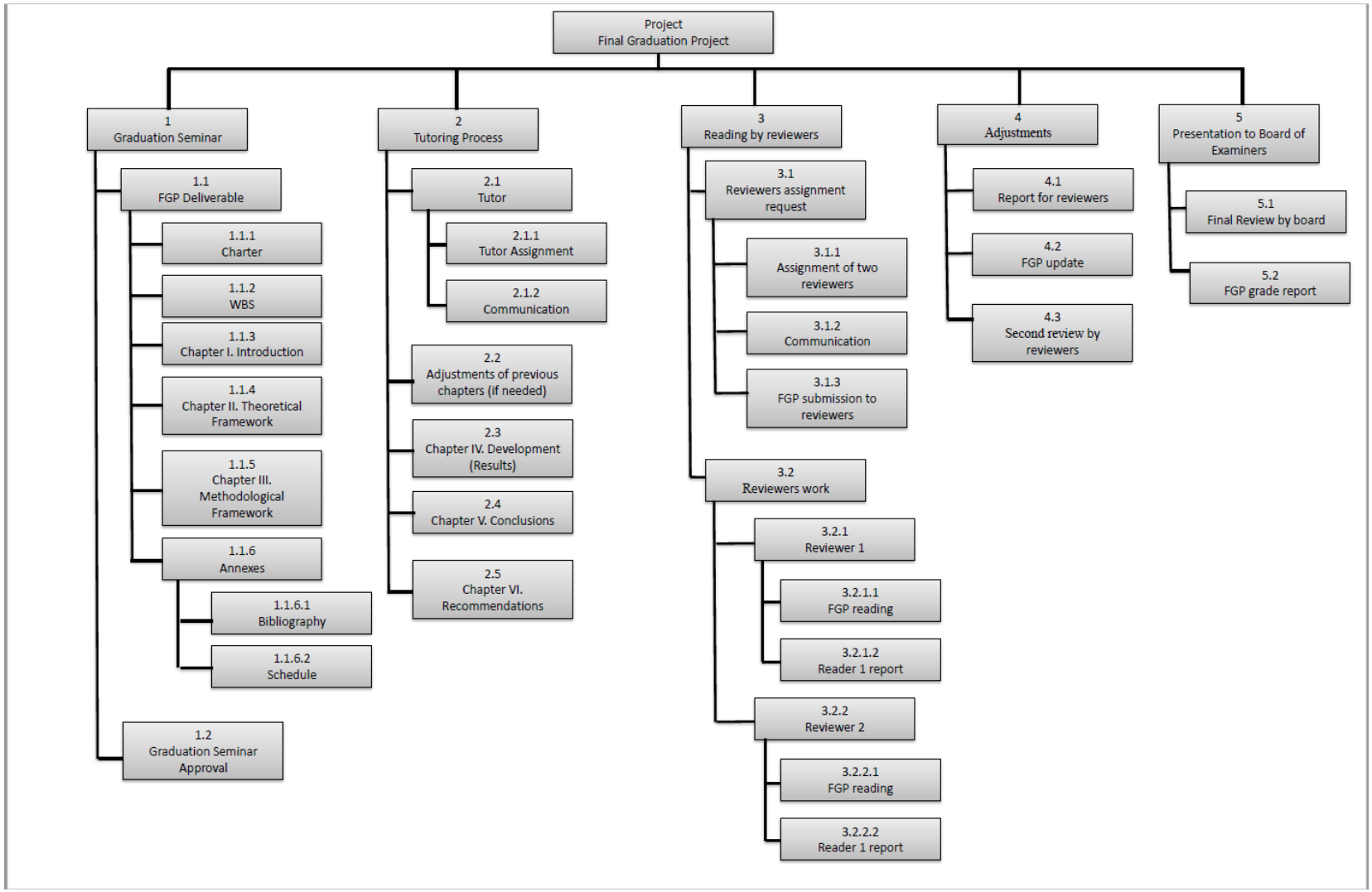
Milestone	Start date	End date
Graduation Seminar	13 May 2019	16 June 2019
Tutoring Process	17 June 2019	18 September 2019
Reading by reviewers	19 September 2019	3 October 2019
Adjustments	4 October 2019	17 October 2019
Presentation to Board of Examiners	18 October 2019	24 October 2019

Relevant historical information

TFL Construction & Design is a small construction company located in the Caribbean. The company consists currently of two permanent partners and hires additional staff as projects are acquired. Most small construction companies don't follow project management standards as set by the Project Management Institute. It is believed that creating a project management plan for building construction projects for TFL Construction & Design will enhance marketability of the company and allow the company to compete for projects on a wider and greater scale.

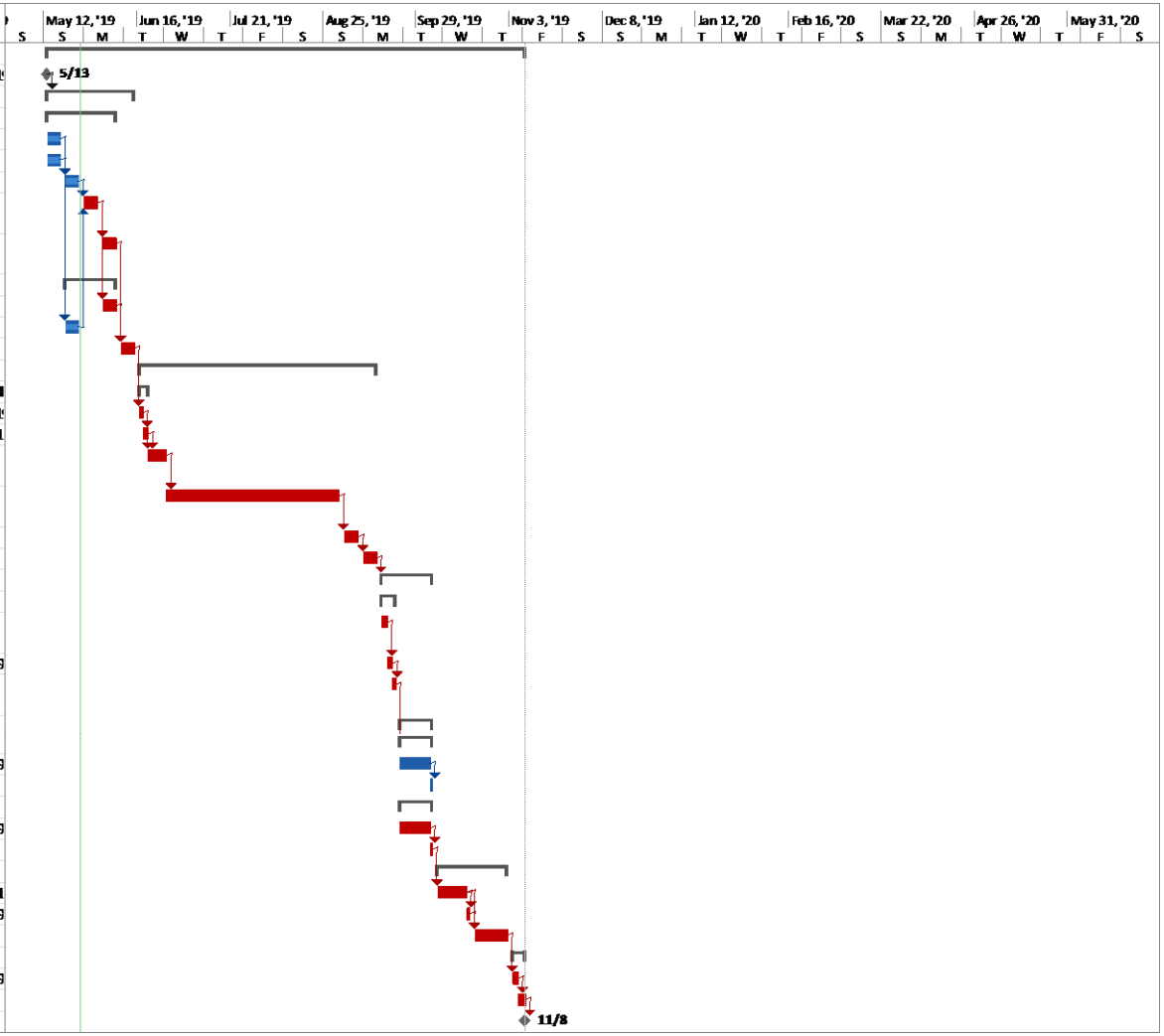
Stakeholders	
Direct stakeholders: TFL Construction & Design Partners FGP Professor Tutors Academic Assistant Project Manager Indirect stakeholders: Other Small Construction Companies Classmates	
Project Manager: Tabitha Pierre	**Signature:** 
Authorized by:	**Signature:**

APPENDIX 2: FGP WBS



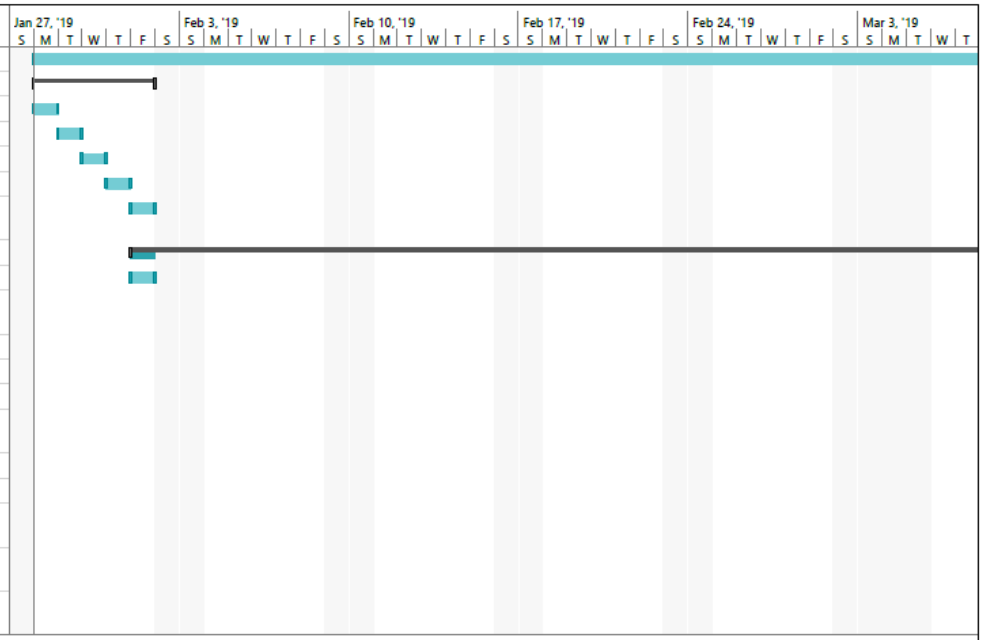
APPENDIX 3: FGP SCHEDULE

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Final Graduation Project**	**130 days**	**Mon 5/13/19**	**Fri 11/8/19**
2		FGP Start	0 days	Mon 5/13/19	Mon 5/13/19
3		**1,Graduation Seminar**	**25 days**	**Mon 5/13/19**	**Fri 6/14/19**
4		**1.1,FGP Deliverables**	**20 days**	**Mon 5/13/19**	**Fri 6/7/19**
5		1.1.1,Charter	5 days	Mon 5/13/19	Fri 5/17/19
6		1.1.2,WBS	5 days	Mon 5/13/19	Fri 5/17/19
7		1.1.3,Chapter I. Introducti	5 days	Mon 5/20/19	Fri 5/24/19
8		1.1.4,Chapter II. Theoretical framework	5 days	Mon 5/27/19	Fri 5/31/19
9		1.1.5,Chapter III. Methodological	5 days	Mon 6/3/19	Fri 6/7/19
10		**1.1.6,Annexes**	**15 days**	**Mon 5/20/19**	**Fri 6/7/19**
11		1.1.6.1,Bibliography	5 days	Mon 6/3/19	Fri 6/7/19
12		1.1.6.2,Schedule	5 days	Mon 5/20/19	Fri 5/24/19
13		1.2,Graduation Seminar app	5 days	Mon 6/10/19	Fri 6/14/19
14		**2,Tutoring process**	**65 days**	**Mon 6/17/19**	**Fri 9/13/19**
15		**2.1,Tutor**	**3 days**	**Mon 6/17/19**	**Wed 6/19/19**
16		2.1.1,Tutor assigment	1 day	Mon 6/17/19	Mon 6/17/19
17		2.1.2,Communication	2 days	Tue 6/18/19	Wed 6/19/19
18		2.2,Adjustments of previous chapters (If	5 days	Thu 6/20/19	Wed 6/26/19
19		2.3,Charter IV. Development (Results)	47 days	Thu 6/27/19	Fri 8/30/19
20		2.4,Chapter V. Conclusions	5 days	Mon 9/2/19	Fri 9/6/19
21		2.5,Chapter VI. Recommend	5 days	Mon 9/9/19	Fri 9/13/19
22		**3,Reading by reviewers**	**15 days**	**Mon 9/16/19**	**Fri 10/4/19**
23		**3.1,Reviewers assigment re**	**5 days**	**Mon 9/16/19**	**Fri 9/20/19**
24		3.1.1,Assigment of two reviewers	2 days	Mon 9/16/19	Tue 9/17/19
25		3.1.2,Communication	2 days	Wed 9/18/19	Thu 9/19/19
26		3.1.3,FGP submission to reviewers	1 day	Fri 9/20/19	Fri 9/20/19
27		**3.2,Reviewers work**	**10 days**	**Mon 9/23/19**	**Fri 10/4/19**
28		**3.2.1,Reviewer 1**	**10 days**	**Mon 9/23/19**	**Fri 10/4/19**
29		3.2.1.1,FGP reading	9 days	Mon 9/23/19	Thu 10/3/19
30		3.2.1.2,Reader 1 report	1 day	Fri 10/4/19	Fri 10/4/19
31		**3.2.2,Reviewer 2**	**10 days**	**Mon 9/23/19**	**Fri 10/4/19**
32		3.2.2.1,FGP reading	9 days	Mon 9/23/19	Thu 10/3/19
33		3.2.2.2,Reader 2 report	1 day	Fri 10/4/19	Fri 10/4/19
34		**4,Adjustments**	**20 days**	**Mon 10/7/19**	**Fri 11/1/19**
35		4.1,Report for reviewers	9 days	Mon 10/7/19	Thu 10/17/19
36		4.2,FGP update	1 day	Fri 10/18/19	Fri 10/18/19
37		4.3,Second review by reviev	10 days	Mon 10/21/	Fri 11/1/19
38		**5,Presentation to Board of Exa**	**5 days**	**Mon 11/4/19**	**Fri 11/8/19**
39		5.1,Final review by board	2 days	Mon 11/4/19	Tue 11/5/19
40		5.2,FGP grade report	3 days	Wed 11/6/19	Fri 11/8/19
41		FGP End	0 days	Fri 11/8/19	Fri 11/8/19



APPENDIX 4: FOUR APARTMENT UNIT PROJECT SCHEDULE

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		Project Schedule	185 days	Mon 1/28/19	Fri 10/18/19		
2		**Preliminaries**	**5 days**	**Mon 1/28/19**	**Fri 2/1/19**		
3		Site Visit	1 day	Mon 1/28/19	Mon 1/28/19		
4		Set up Storeroom	1 day	Tue 1/29/19	Tue 1/29/19		
5		Temp Electricity	1 day	Wed 1/30/19	Wed 1/30/19		
6		Water Connection	1 day	Thu 1/31/19	Thu 1/31/19		
7		Order Construction	1 day	Fri 2/1/19	Fri 2/1/19		
8		**Substructure**	**25 days**	**Fri 2/1/19**	**Mon 3/11/19**		
9		Site Preparation	1 day	Fri 2/1/19	Fri 2/1/19		
10		**External/Internal Walls Ground Floor**	**14 days**	**Mon 3/11/19**	**Thu 3/28/19**		
12		**Frame**	**8 days**	**Fri 3/29/19**	**Tue 4/9/19**		
14		**Upper Floor**	**23 days**	**Wed 4/10/19**	**Mon 5/13/19**		
16		**Stairs**	**5 days**	**Tue 5/14/19**	**Mon 5/20/19**		
18		**External/Internal Walls First Floor**	**10 days**	**Tue 5/14/19**	**Mon 5/27/19**		
20		**Roof**	**21 days**	**Wed 5/29/19**	**Thu 6/27/19**		
22		**Surface Finishes**	**70 days**	**Fri 6/28/19**	**Fri 10/4/19**		
24		**Electrical Installation**	**10 days**	**Mon 9/9/19**	**Fri 9/20/19**		
26		**Plumbing Installation**	**10 days**	**Mon 9/9/19**	**Fri 9/20/19**		
28		**External Works & Provisional Sums**	**15 days**	**Mon 9/23/19**	**Fri 10/11/19**		

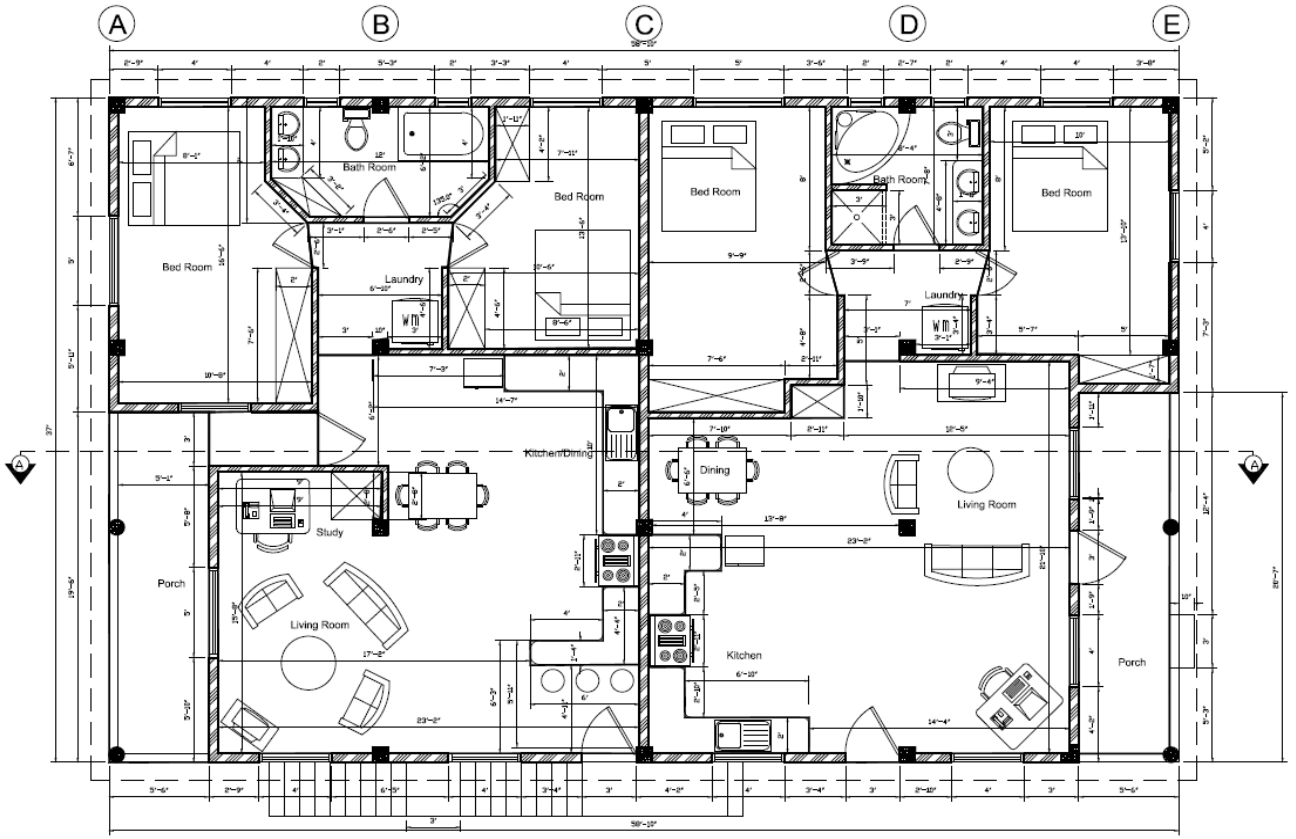


Project: Four Apartment Unit Sc
Date: Wed 10/30/19

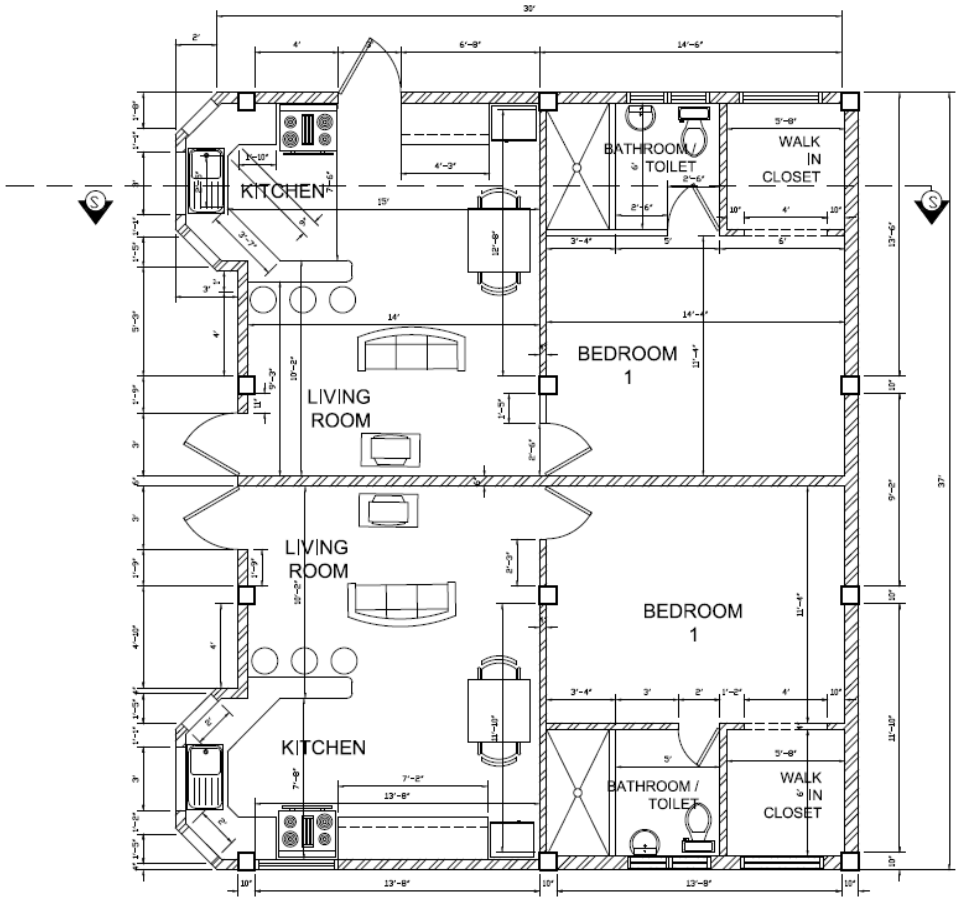
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Page 1

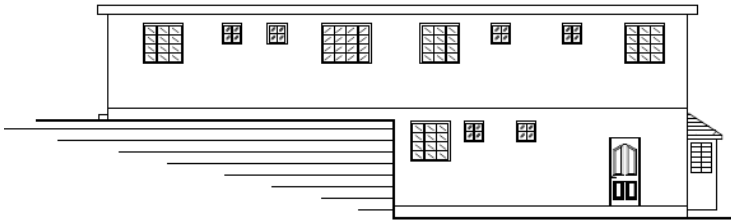
APPENDIX 5: FOUR-APARTMENT UNIT SAMPLE DRAWINGS



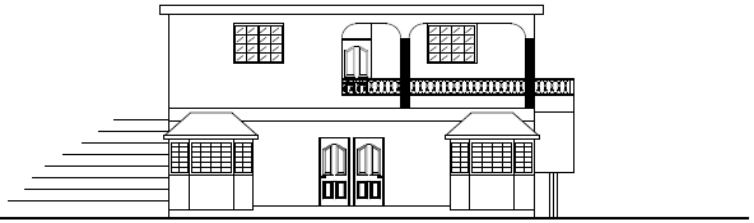
First Floor Layout



Ground Floor Layout

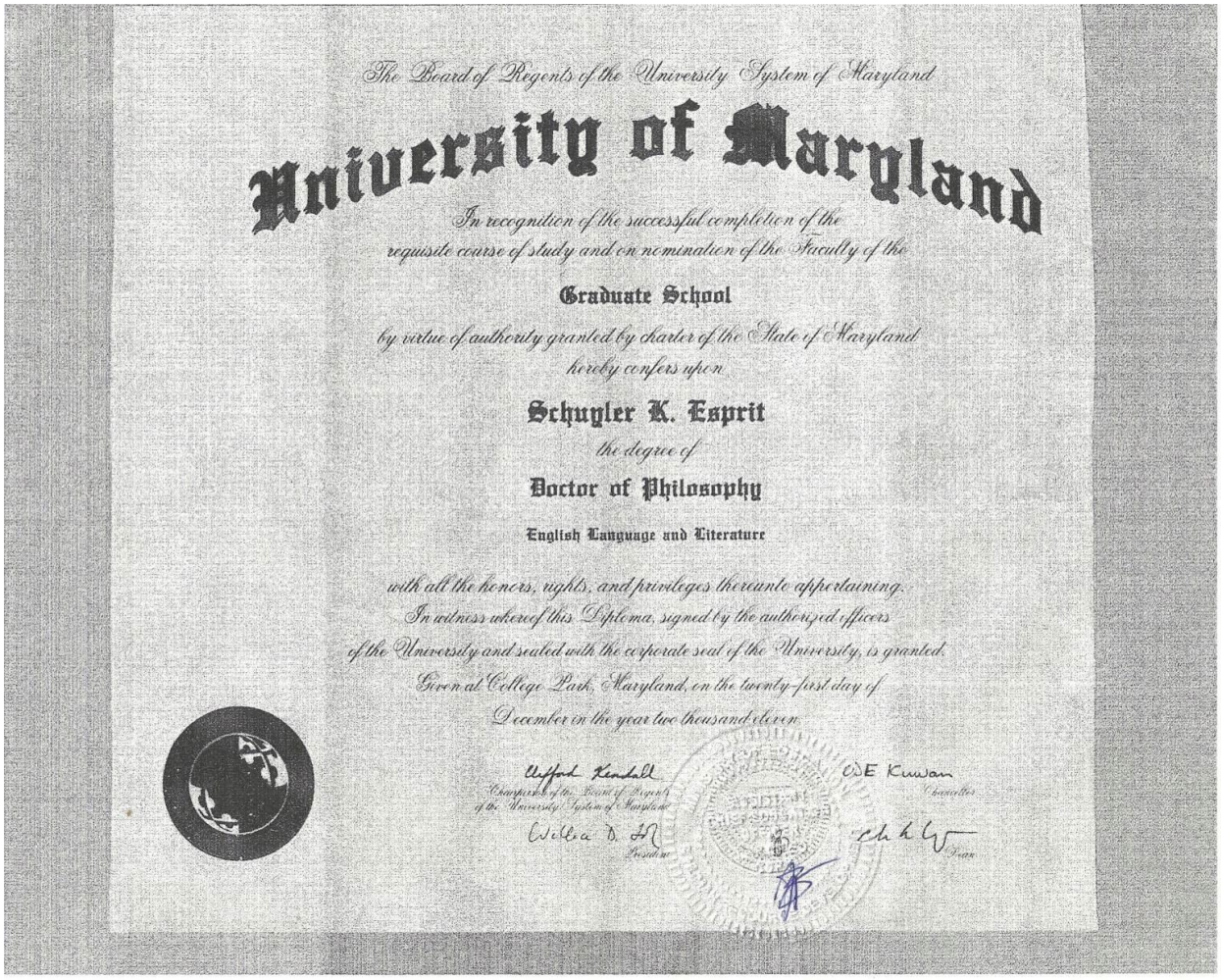


West Elevation



South Elevation

APPENDIX 6: PHILOLOGIST CREDENTIALS



The Board of Regents of the University System of Maryland

University of Maryland

In recognition of the successful completion of the
requisite course of study and on nomination of the Faculty of the

Graduate School

by virtue of authority granted by charter of the State of Maryland
hereby confers upon

Schuyler K. Esprit

the degree of

Doctor of Philosophy

English Language and Literature

with all the honors, rights, and privileges thereunto appertaining.
In witness whereof this Diploma, signed by the authorized officers
of the University and sealed with the corporate seal of the University, is granted.
Given at College Park, Maryland, on the twenty-first day of
December in the year two thousand eleven

Clifford Kendall
Chairman of the Board of Regents
of the University System of Maryland

O.E Kwoan
Secretary

Wallace D. Loh
President

Dean