UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

PROJECT MANAGEMENT PLAN TO BUILD A MULTIFUNCTIONAL COMMUNITY CENTER FOR THE REGION PONT BUITEN IN PARAMARIBO, SURINAME

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DEDICATION

I dedicate this work to my mother Melita Thijm who has been my backbone, support and inspiration throughout the academic study. Furthermore, my family and friends who have inspired me to follow my dreams.

Saint gave me the knowledge, the wisdom and the opportunity to reach this dream.

Thank you, Mother, for you are the greatest blessing that God has given me.

Samantha D. M. Maaijen

ACKNOWLEDGMENTS

My acknowledgment goes out to my daughter Akeelah Richards who many times lacked attention due to my dedication to this project. I love you honey, mommy will make it up to you.

Special thanks to the distinguished tutors Paula Villalta Olivares and Carlos Ramirez Montero for their guidance and encouragement throughout the course of preparing for and conducting the research of this project. Their belief that it was, indeed, possible to finish kept me going. I am grateful for the helpful comments they provided on the draft.

Also, a special thanks to my colleagues at the Inter-American Development Bank in Suriname who kept reminding me not to give up.

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ABBREVIATIONS AND ACRONYMS

RCG – Rotaract Club Genesis

RI – Rotary International

RF - Rotary Foundation

PMI – Project Management Institute

PMBoK – project Management Body of Knowledge

WBS- Work Breakdown Structure

EXECUTIVE SUMMARY

This document describes the design of a project management plan for building a multifunctional community center in the resort Pont Buiten, in the country Suriname. The center is to facilitate recreational sports, training space rental and educational practices.

The expected benefits for the community, surrounding neighboring communities and children are the realization of social engagement and enhancement of social skills for children between 4 and 16 years; enhance life skills; more sport activities; means for income to maintain the building; and means to decrease the crime rate.

This work was made through research and analysis with a high degree of commitment, based on institutional information and application of tools, processes and methodologies of the Project Management Institute.
As a result, a characterization itself of a specific Project Management Plan for resort Pont Buiten based on the needs identified was obtained, taking as input all the information collected during the process of preparing the work. Similarly, it was possible to acquire information about the numerous benefits, advantages and problems of the community.

To carry out such research, the analysis- synthesis research method and applied research methods were conducted. This was done through surveys, interviews, and data collection. The questionnaires were aimed at institutional officials, leaders, coordinators, neighbors, parents and other stakeholders involved with project implementation.

The development of this project management plan was prepared under the framework of the development of one general objective and ten (10) specific objectives, which were initially directed to contribute to the final project proposal. The main objective is to create a project management plan within best practices of the Project Management Institute to build a multifunctional community center located in the region Pont Buiten.

The specific objectives are to create an Integration Management Plan to synchronize all the processes involved in the project management activities; to create a Project Scope Management Plan only for the work of building the multifunctional community center; to create a Project Time Management Plan to establish the policies, procedures, and documentation for executing and controlling the project schedule; to create a Project Cost Management Plan to plan, manage and control the project funds; to create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project; to create a Project Human Resource Management Plan to manage the recruitment and management of project resources; to create a Project Communications Management Plan to manage how the project will be driving its communication; to create a Project Risk Management Plan to manage risks and responses; to create a Project Procurement Management Plan to acquire products and services required for the project; to create Project

Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders.

The most important conclusion is that the use of the Project Management Institute Project Management methodology is very useful in the construction industry as it adds value and is very detailed if used correctly in knowing what process to follow under each stage. It is therefore important that the Integration Management Plan syncs all the processes to coordinate, manage and control the project activities. The sequence of activities and the preparation of the budget allowed for a clear timeline and budgeted cost of the project and the projected monthly cash flow, which enabled a clear control throughout the project to avoid cost overruns. It is also important to acquire qualified human resources and including training for these resources so that the project can be led as per the PMI´s methodology. The communication management plan should be in place, as this is an important guide for the project manager to know how and when to inform the project stakeholders. The foregoing coincides with the Stakeholders Management Plan for it is important for the project manager and its staff to know the influence of each stakeholder and how to engage and manage them. It is better to plan the risks of the project to minimize or maximize the likely hood of the negative or positive situations. For the efficient and effective acquisition of goods and services a procurement management plan should be in place. By summarizing the foregoing in a project management plan according to the guidelines of PMBoK, the Project Manager has a powerful tool to carry out the project efficiently.

The most important recommendations to the company are: to gather lessons learned from the execution of this Project management plan and implement the same structure in all new projects, a contingency calculation for possible contingencies in which the work is incurred to obtain better results. The PMBok methodology is based on basic concepts that fits into any project. The use of these concepts and the formats (templates) created for this project are only a unified guide of the concepts. So, it is recommended that they are reviewed for improvement with the incorporation of the lessons learned so that each project can fit into these templates; however, this is the minimum information they must contain. An efficient estimation of the reserves and application the guidelines of the risk management plan are necessary to deal with possible contingencies and risks in the construction work. The Project Manager should clearly follow that what is stipulated in the procurement management plan to avoid legal and cost issues that may arise if not implemented properly. An effective application of this Project management plan will maximize the project’s success.

1. INTRODUCTION

This study is done in collaboration with the Rotaract Club Genesis (RCG) located in Paramaribo, Suriname. The RCG is part of Rotary International (RI).
RI is an organization founded in 1905, in the United States of America. With the support of RI, Rotary Foundation (RF) and the Member Association, funds the effort of its members and partners around the world. To maximize their impact, they have limit their focus on the areas to promote peace, fight against diseases, provide clean water, good health of mothers and children, support education activities, and support the growth of local economies (Rotary International, 2016).

The Rotaract is a club within the RI network, which stands for "*Rotary in Action*". Per the RI structure, a Rotary Club charters a Rotaract Club. It is a club for young adults ages 18-30, who act on issues in their communities, enhance their professional and leadership skills, and most of all have fun while doing so. The Rotaract handbook is their leading guide. (Rotary International, 2016).

1.1 Background

Per the Directorate for Building works (1992) the resort Pont Buiten is in the south-west district Paramaribo, Suriname. It belongs to one of the twelve resorts of District Paramaribo. Between 1986 and 1992, the urbanization number to Paramaribo was high because of those who were seeking for safety due to the Civil War. Due to this, the government decided to develop public housing project for the less fortunate to address the urbanization problem. The neighborhood Pont Buiten was among those public housing projects. Unfortunately, approximately, 35% of the houses in the neighborhood Pont Buiten (a neighborhood within the resort Pont Buiten) were illegally occupied before the government could finish them. Years after, the government tried completing this project. However, the social need of the illegal occupants was higher. They had to contend with serious disease threats due to the poor hygienic conditions of the neighborhood. The neighborhood had deteriorated to what is generally known as a Ghetto (Ministry of Public Works, 2003)

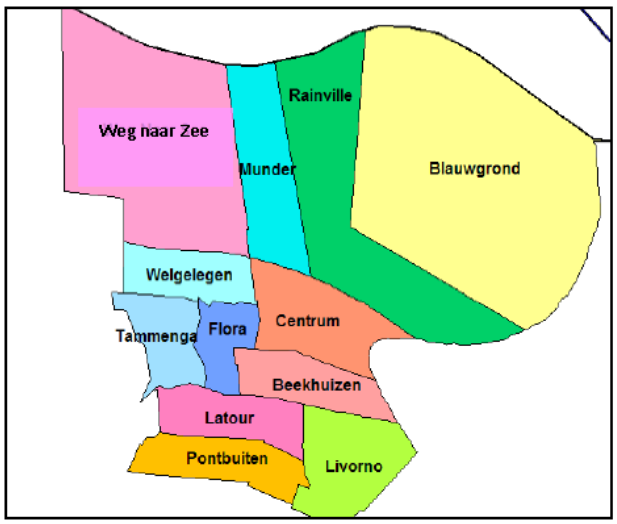

Figure 1: The twelve (12) resorts of Paramaribo sept 4, 2016

(Source: Suriname.nu, 2016)

According to the Stichting Plan Bureau Suriname (2014) approximately 228,887.00 residences live in Paramaribo (p. S-4). Following this, the neighborhood Pont Buiten had 21,693.00 residences in 2011. (Stichting Plan Bureau Suriname 2014).

Ressort	2009	2010	2011	2012	2013	dichtheid 2013
Blauwgrond	25599	25845	26059	26331	26620	626
Rainville	22445	22316	22432	22378	22345	728
Munder	15971	16043	16170	16090	16197	1182
Centrum	253893	25169	25127	24806	24837	2614
Beekhuizen	17354	17355	17337	17173	17060	2708
Weg naar Zee	13201	13450	13544	13660	13832	337
Welgelegen	18003	17803	17833	17833	17706	2567
Tammenga	13216	13340	13476	13512	13676	2305
Flora	17403	17131	17325	17290	17294	4118
Latour	27407	14226	29300	29828	30476	4417
Pontbuiten	19732	10188	21019	21347	21693	3337
Livorno	7088	3514	7225	7218	7151	822
Totaal	222802	224572	226888	227466	228887	1250

Figure 2: Population density of the twelve (12) resorts of Paramaribo reference period 2009-2013

(Source: Stichting Plan Bureau Suriname, 2014)

The social conditions of this resort are shocking. Apart from the poor hygiene, the crime rate is very high. In a research of the foundation Young in Prison concerning youth who are in prison, the results showed that most youths are from the resort Pont Buiten and neighboring resorts Nieuw Weergevondenweg and Ramgoelam. The education level of the youth in the resort Pont Buiten is very low. Most youths barely finish primary school (Redjosentono, 2012).

1.2 Statement of the problem

The social and living conditions of the residences in resort Pont Buiten worsens day by day. Due to the low education level and poverty, the crime rate increases, the number of teenage pregnancies increases, a great deal of youths is loitering and with no funds to work on their own development.

It is important that systematic planning is done to improve the development and living conditions of this resort. Project management is one way to achieve the latter. Therefore, to work towards a solution of this problem, a project management plan is created for the region Pont Buiten that entails the building of a multifunctional community center.

It is time for a sustainable plan to enhance the living conditions of the residence and realize social engagement to enhance the social skills of the residence of resort Pont Buiten. A project management plan is created to help start the process towards the solution. The plan consists of the construction of a multifunctional community center that will accommodate recreational sports and education activities. The successful implementation of the project management plan will enhance social skills; enhance life skills; create more sport activities; means of income to maintain the building and means to decrease the crime rate

This plan will be created in conjunction with the sponsor and relevant stakeholders.

1.3 Purpose

The purpose of this document is to portray the knowledge and skiils learned throughout the study of Project management. Therefore a project management plan is created that proposed the building of a multifunctional community center.

The purpose of a multifunctional community center is to add to the development of the community that is of a long - term character to realize social engagement to enhance the social skills of the children between 4 and 16 years. Recreation activities increase the quality of communities and the quality of life.

This community is generally known as a high risk community for crime, school drop-outs and teenage pregnancy with no means of empowerment to educate themselves and tools how to better their lives.

The region Pont Buiten is a former Goverment housing project for low income families. In recent years several organizations have initiated and completed projects in this community with objectives such as:

- Breakfast project to provide breakfast to the less fortunate children at the primerary schools.
- Extra curiculum activities for children between 4 and 12 during school vaction periods.
- Recreational fun activities in the neighborhood.
- The set up of a play ground and a soccor field.

Except for the play ground all other projects were for a short term with no long term benificial outcome.

The location of the multifunctional community center will compliment the already established play ground and soccor field that is 200 meters away. It is to facilitate:

- Recreational Sports
- Meeting/ event/ training space needs
- Training/ Education classes
- Office space for community workers to provide social services.

Expected benefits for the community, surounding neighboring communities and children:

- enhance social skills
- enhance life skills
- more sport activities
- means for income to maintain the building
- means to decrease crime rate

1.4 General objective

To create a project management plan within the best practices of the Project Management Institute to build a multifunctional community center located in the region Pont Buiten.

1.5 Specific objectives

- To create an Integration Management Plan to synchronize all the processes involved in the project management activities;
- To create a Project Scope Management Plan only for the work of building the multifunctional community center;
- To create a Project Time Management Plan to establish the policies, procedures, and documentation for executing and controlling the project schedule;
- To create a Project Cost Management Plan to plan, manage and control the project funds;
- To create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project;
- To create a Project Human Resource Management Plan to manage the recruitment and management of project resources;
- To create a Project Communications Management Plan to manage how the project will be driving its communication;
- To create a Project Risk Management Plan to manage risks and responses;
- To create a Project Procurement Management Plan to acquire products and services required for the project;
- To create Project Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders.

2. THEORETICAL FRAMEWORK

In this section, the framework of the RCG is described. Furthermore, how this framework connects in relation with the Project Management International (PMI) organizations guidelines. This section also describes how the framework relates to the final graduation project to create a project management plan for the region Pont Buiten.

2.1 Company/Enterprise framework

In this chapter the background of the company, mission and vision statement, organizational structure and the products offered are described. Furthermore, a description of the project management concepts that are used in this project is given.

2.1.1 Company/Enterprise background

The RCG, founded on November 13, 1990 by the Rotary club Paramaribo Central that provides support and guidance, is in Paramaribo. Their meetings are every 1st and 3rd Saturday of the month. RI has divided its network world wide into Districts. Thirteen (13) countries within the Caribbean region are part of District 7030. These countries consist from Guyana in the east to French Guyana in the west to all the way to St. Kitts and Nevis in the north.

The requirements to join a Rotaract club are:

- A good character
- Leadership potential

(Rotaract Club Genesis, 2016).

In its effort under the RI focus areas good health of mothers and children, support of education activities, and support to the growth of local economies, the Rotaract Genesis strengthens itself to support the improvement of housing and living conditions of the residence of resort Pont Buiten. Further it wants to realize social engagement and enhance the social skills of the residence of this resort between

four (4) and sixteen (16) years. The building of a multifunctional community center for the resort Pont Buiten realizes this effort. The project fund is available through the means of crowd funding with the inclusion of the RI Partners and its network. In cooperation with the RCG, a project management plan is created to be presented to its partners for funding.

2.1.1.1 Mission and vision statements

Vision Statement

"Young professional role models as cornerstone of a thriving community".
(Rotaract Club Genesis, 2016)

The youth in Pont Buiten needs role models that can lead by example. The vision statement of the RCG serves this need and does this through the creation of a project management plan for the region Pont Buiten. Through this plan, the organization will gain more publicity in the society.

Mission statement

"Serving the community in a high quality and result driven way through excellence and collaborative project planning, community action and by experiencing fun and fellowship worldwide, while providing opportunities to young men and women to enhance their own knowledge and skills" (Rotaract Club Genesis, 2016).

By creating a project management plan, that includes the community action and the opportunity for the youth to develop their self, the RCG portrays the project management skills to increase the quality of life of individuals in their community. With this plan, the RCG increases the quality of life of the community through the facilitation of recreational sports and educational activities. This also will increase the social skills and help towards decreasing the crime rate, lessen the amount of school dropouts and teenage pregnancies. The RCG again can test and enhance their project management skills.

2.1.1.2 Organizational structure

The Rotaract club is part of the RI Network, which is a worldwide cooperation of Rotary clubs that are the root of their efforts to serve the community. (Rotary International, 2016). RI divided its clubs into districts worldwide through the geographical areas that these clubs are part of. So far, there are 530 districts. Each district has a District Governor as chair who is responsible to ensure that the RI guidelines and goals are adhered. He governs over all the Rotary and Rotaract Clubs in his District. The Rotary Club Presidents and District Rotaract Representative report to the Governor and RI. The Rotaract Clubs Report to their respective Rotary Club and to the District Rotaract Representative. The organization within the Rotaract Club is as followed:

President

“The president’s primary role is to ensure that the club’s professional and leadership development activities are successful and that its service projects benefit the community.”

Vice president

“The vice president’s primary role is to support the president. Some clubs may choose to have the incoming president serve as vice president.”

Secretary

“The secretary’s primary responsibility is to help the club function efficiently. The secretary should be well organized and have excellent communication skills.”

Treasurer

“The treasurer works with the secretary to maintain accurate financial records. The treasurer should be a responsible, detail-oriented person.”

Immediate past president

“Your club’s immediate past president can provide useful feedback and perspective in the planning of club activities. He or she can assist with special projects and provide support for board and club members.”

The President, Vice-President, Treasurer, Secretary and Immediate Past President form the club board.

The board and the directors of the different services form the Board of Directors.

The services within the club are:

- Club Service
- Professional Service
- Community Service
- Finance Service
- Public Relations Service
- International Service

A club Director leads each Service. The Board of Directors is the core team to ensure that the RI areas of focus are achieved and for project success. Each member has a profound role in the project’s success of the Multifunctional Community Center for the region Pont Buiten.

Below is the organizational structure of each Rotaract Club worldwide.

(Rotary International, 2012)

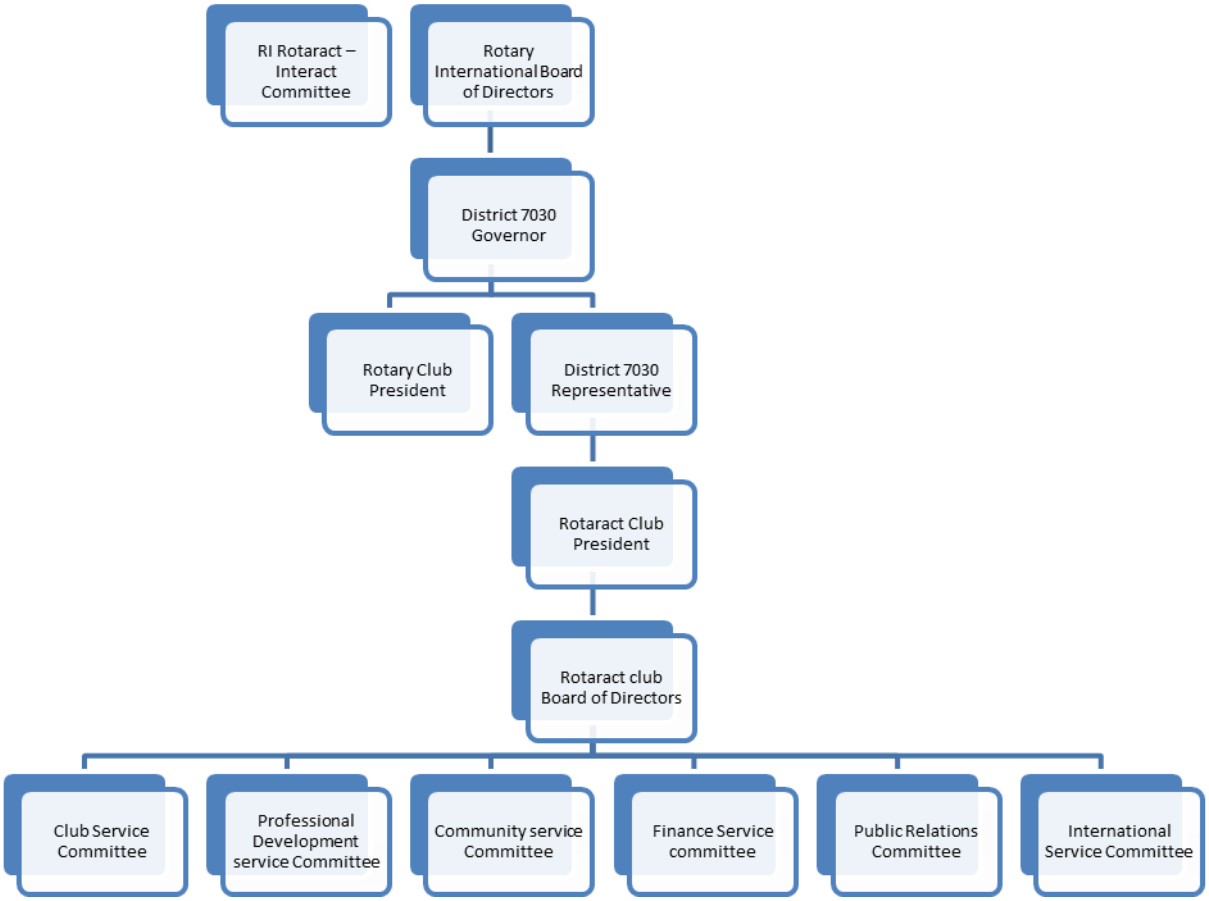

Figure 3 Organizational structure

(Source: Rotary International, 2012)

2.1.1.3 Products offered

RI consists of several manuals and guidelines on how their members can promote and execute the RI focus areas. These are:

- The Rotary handbook
- The Rotaract Handbook
- Rotary Youth Leadership Awards (RYLA) - is an intensive training program in the form of seminars, camps, or workshops held over 3-10 days for young adults, ages 14-30. All the trainings skills are taught to the participants in areas such as communication, how to identify a project, assertiveness, leadership and networking skills. The skills needed for the focus areas of RI are taught which are relevant to the FGP, as interpersonal skills are important for project success.
- Communities in Action: A Guide to Effective Projects- effective project - management is essential to project success.

- Rotary's Areas of Focus Guide – one of the Rotary areas of focus is Economic and community development, which is established with the multifunctional community center.
- Community Assessment Tools – the Six Community Assessment Tools are Community meetings, Focus group, Survey, Asset inventory, Interview, and Community mapping. The considered stakeholders for the Economic and community development focus area are:
- Local government authorities
- Entrepreneurs
- Farmers
- Unemployed youth and adults
- Business owners
- Banks
- Cooperatives (agricultural, savings/loan, etc.) Microfinance
- institutions
- Vocational training institutions
- Community colleges
- Secondary schools
- Universities
- Adult education organizations
- Rotaract Statement of Policy- is the policy that guides the Rotaract its existence as an organization.
- Standard Rotaract Club Constitution and Bylaws– is the organizational guideline by which the Rotaract will operate.

2.2 Project Management concepts

The Rotaract under the umbrella of RI is a Projectized Organization whereby the project manager (club Director) has a high authority about the control, direction and finances of the project.

2.2.1 Project

According to Project Management Institute (PMI, 2013) “a project is a temporary endeavor undertaken to create a unique product, service, or result.” This indicates that each project has “a definite beginning and end.” A project ends either when the objectives are met, objectives cannot be met or when the need no longer exists (p. 3). RI does not have a specific definition of a project However in their Rotary international guidelines (Rotary International, 2013) a project is selected based on the time, resources, objectives, sustainability and duration (p. 6-7). This indicates that the Project Management Institute definition of a project can be applied.

Project Management Institute (PMI, 2013) also indicates, “projects can also have social, economic, and environmental impacts that far outlive the projects themselves. In addition, projects are undertaken at all organizational levels. A project can involve a single individual or multiple individuals, a single organizational unit, or multiple organizational units from multiple organizations” (p. 3).

“A project can create:

- A product that can be either a component of another item, an enhancement of an item, or an end item;
- A service or a capability to perform a service (e.g., a business function that supports production or distribution);
- An improvement in the existing product or service lines (e.g., A Six Sigma project undertaken to reduce defects); or
- A result, such as an outcome or document (e.g., a research project that develops knowledge that can be used to determine whether a trend exists, or a new process will benefit society)” (p. 3)

2.2.2 Project management

“Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the 47 logically grouped project management processes, which are categorized into five Process Groups.

These five Process Groups are:

- Initiating,
- Planning,
- Executing,
- Monitoring and Controlling, and
- Closing.” (PMI., 2013, p. 5)

The project management processes of RI consist of the process groups:

- Planning
- Acquiring resources
- Implementing
- Evaluating & promoting (Rotary International, 2013).

In comparison with the PMI project management processes, as a member of the Rotaract in practice, Initiation, planning and acquiring resources are one process group. Executing, Monitoring and control (implementation) the second process group while closing the project (Evaluating & promoting) is the third process group.

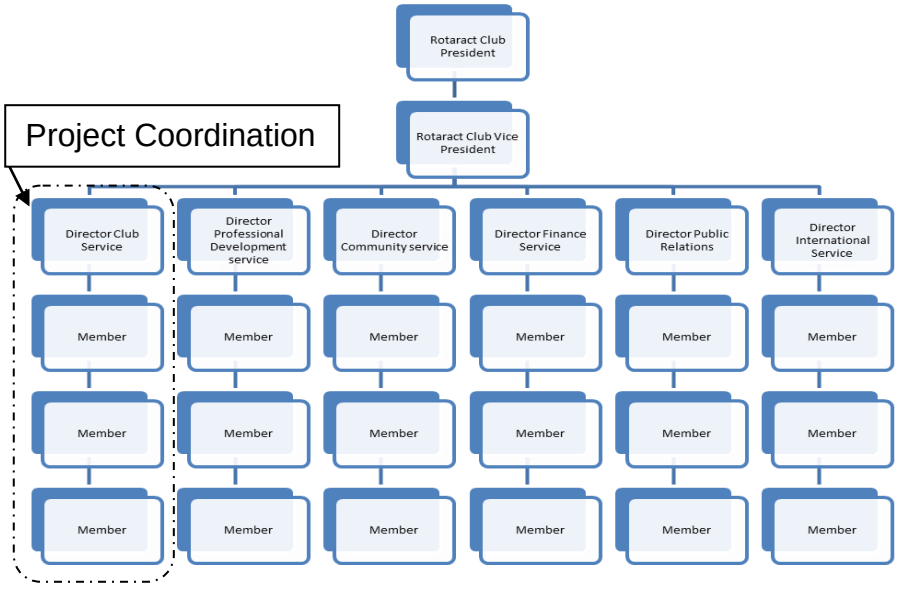

Figure 4 Functional Organization

(Source: Rotaract Club Genesis, 2016, p. 3)

2.2.3 Project life cycle

According to the PMI (2013) “A project life cycle is the series of phases that a project passes through from its initiation to its closure” (PMI, 2013, p. 38). Most times phases are executed sequential and are time bounded. It is possible to document a life cycle within a methodology, which is shaped by the aspects of the organization involved. Project Management Institute maps all project according to a “generic life cycle structure”:

- “Starting the project,
- Organizing and preparing,
- Carrying out the project work, and
- Closing the project” (PMI, 2013, p. 38).

RI has guidelines on how to complete each stage in the life cycle of projects. These are:

Planning & organizing: With your community, you design the Project, set the goals and monitor the progress.

Acquiring resources: identify volunteers, partners and resources. You can use the project lifecycle resources group for this.

Implementing your project: once you are ready you can start the project while keeping all stakeholders informed.

Evaluating & promoting: evaluate and celebrate the success of your project. Also keep track of the lessons learned. (Rotary International, 2016)

Following the above, the RI has Multiple-Phase Project approach. Each project has 4 phases of which each consist of the 5 processes within a phase. Below is an example of a phase.

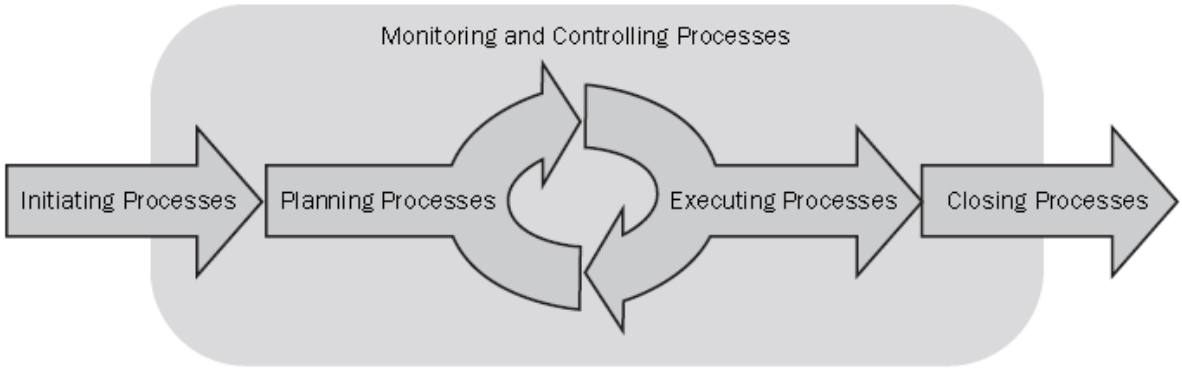

Figure 5 Single Phase project
(Source: PMI, 2013, page 42)

2.3 Project management processes

According to Project Management Institute (PMI, 2013) “Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (p. 47). Below is figure 6 indicating how the Project management process flow is within the Rotary.

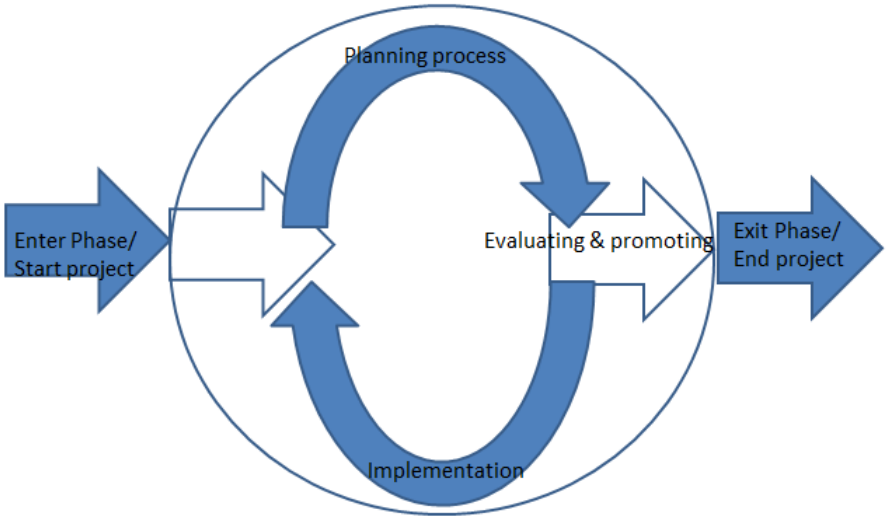

Figure 6 Rotary Project Management Process Groups

(Source: Rotaract Club Genesis, 2016, p. 3)

2.4 Project management knowledge areas

Project Management Institute (PMI, 2013) identified 47 process groups spread over ten (10) Knowledge Areas that represent a set of concepts, terms, and activities that can be used in most projects (p. 60). These are:

Project Integration Management – "the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups" (PMI, 2013, p. 63).

Project Scope Management – "the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully (PMI, 2013, p. 105).

Project Time Management – "the processes required to manage the timely completion of the project" (PMI, 2013, P. 141).

Project Cost Management – "the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget" (PMI, 2013, p. 193).

Project Quality Management – “the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken” (PMI, 2013, p. 227).

Project Human Resource Management – “the processes that organize, manage, and lead the project team” (PMI, 2013, p. 255).

Project Communications Management – “the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and the ultimate disposition of project information (PMI, 2013, p. 287).

Project Risk Management – “the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project. The objectives of project risk management are to increase the likelihood and impact of positive events and decrease the likelihood and impact of negative events in the project (PMI, 2013, p.309).

Project Procurement Management – “the processes necessary to purchase or acquire products, services, or results needed from outside the project team” (PMI, 2013, p. 355).

Project Stakeholders Management – “the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution” (PMI, 2013, p. 391).

3. METHODOLOGICAL FRAMEWORK

3.1 Information sources

In this proposal, the following sources of information are used:

3.1.1 Primary sources

Refers to those original information carriers that have not retransmitted or recorded in any media or document relevant information. This primary information source, the population already has it. To extract this information the sources used could be the survey, interview, experimental or observation method (Eyssautier, 2002).

Below are the primary resources used in this document:

- District Strategic Development Plan.
- Intranet of the Rotary International institution.
- Interviews with resort advisors, and personal of the resorts administrative department
- Fieldwork

3.1.2 Secondary sources

Refers to those data and information carriers that have been previously broadcasted or recorded in any document and uses whatever means possible. This information is available to any researcher who needs it (Eyssautier, 2002).

Below are the secondary resources used to create this document:

The summary of the sources of information that used in this proposal is shown in chart 1.

Chart 1 Information sources

Objectives	Information sources	
	Primary	Secondary
To create an Integration Management Plan to synchronize all the processes involved in the project management activities	(DLGP-Project bureau, 2014). (Rotary International, 2016) Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (PMI, 2014). (GPM Global, 2013). (Alen Bryman, 2015). Thesis related to the issue of creating project management plans for construction, provided by the UCI.
To create a Project Scope Management Plan only for the work of building the multifunctional community center	(DLGP-Project bureau, 2014). (Rotary International, 2016) Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (Cynthia Stackpole Snyder, 2013) Thesis related to the issue of creating project management plans for construction, provided by the UCI.
To create a Project Time Management Plan to establish the policies, procedures, and documentation	Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (Cynthia Stackpole Snyder, 2013)

Objectives	Information sources	
	Primary	Secondary
for executing and controlling the project schedule		
To create a Project Cost Management Plan to plan, manage and control the project funds	Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (Cynthia Stackpole Snyder, 2013)
To create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project	Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (Cynthia Stackpole Snyder, 2013) Thesis related to the issue of creating project management plans for construction, provided by the UCI.
To create a Project Human Resource Management Plan to manage the recruitment and management of project	(DLGP-Project bureau, 2014). (Rotary International, 2016) Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	Project Management Institute. ((PMI, 2013) (Cynthia Stackpole Snyder, 2013) Thesis related to the issue of creating project

Objectives	Information sources	
	Primary	Secondary
resources		management plans for construction, provided by the UCI.
To create a Project Communications Management Plan to manage how the project will be driving its communication	(Rotary International, 2016) Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (Cynthia Stackpole Snyder, 2013) Thesis related to the issue of creating project management plans for construction, provided by the UCI.
To create a Project Risk Management Plan to manage risks and responses	(Rotary International, 2016) Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (Cynthia Stackpole Snyder, 2013) Thesis related to the issue of creating project management plans for construction, provided by the UCI.
To create a Project Procurement Management Plan to acquire	(DLGP-Project bureau, 2014). (Rotary International, 2016) Interviews with resort advisors, and personal of the resorts administrative department	(PMI, 2013) (Cynthia Stackpole Snyder, 2013) Thesis related to the issue of

Objectives	Information sources	
	Primary	Secondary
products and services required for the project	Fieldwork	creating project management plans for construction, provided by the UCI.
To create Project Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders	(DLGP-Project bureau, 2014). (Rotary International, 2016) Interviews with resort advisors, and personal of the resorts administrative department Fieldwork	(PMI, 2013) (Cynthia Stackpole Snyder, 2013) Thesis related to the issue of creating project management plans for construction, provided by the UCI.

(Source: Own elaboration)

3.2 Research methods

According to Kothari (Kothari, 2004), research refers to the “scientific and systematic search for pertinent information on a specific topic” (p. 1). It is the search of knowledge and therefore classifies as an academic activity.

Kothari (Kothari, 2004) indicates that research includes the definition and redefinition of problems, formulation of hypothesis or proposed solutions; and to measure the conclusions to indicate whether they are compatible with the formulated hypothesis. In short, one searches for knowledge through the application of objective and systematic methods to find a solution to a problem (p. 1).

3.2.1 Analytical method

This proposal requires individual analysis of the different objectives. Therefore, the research method "analysis - synthesis" is applied. Tom Ritchey (1996) defines analysis as “the procedure by which we break down an intellectual or substantial whole into parts or components” and synthesis as “the procedure to combine separate elements or components in order to form a coherent whole”. The Analysis and synthesis methods complement each other (p. 1).

The analysis and synthesis methods allow the researcher to know the reality in two steps:
The analysis begins with the identification of each of the parties that characterize a reality, to establish cause and effect between the elements of the investigated object relations.

The synthesis considers the interrelationships of the elements that identify the object between themselves and their relationships, with reference to the problem under investigation.

3.2.2 Applied method

The applied research method is conducted for this project plan. Kothari indicated that applied research’s objective is to find a solution to a pressing or faced problem in the society or organization (Kothari, 2004, p. 3). With this method, the strategic plan will be aligned with the mission and vision of the Rotaract Club Genesis. Below you can find the vision and mission statement of the Club.

Vision Statement

“Young professional role models as cornerstone of a thriving community”. (Rotaract Club Genesis, 2016)

Mission statement

“Serving the community in a high quality and result driven way through excellence and collaborative project planning, community action and by experiencing fun and fellowship worldwide, while providing opportunities for young men and women to enhance their own knowledge and skills”. (Rotaract Club Genesis, 2016)

The youth in Pont Buiten needs role models that can lead by example. The vision statement of the RCG serves this need and does this through the creation of a project management plan for the region Pont Buiten. Through this plan, the organization will gain more publicity in the society.

By creating a project management plan, that includes the community action and the opportunity for the youth to develop their self, the RCG portrays the project management skills to increase the quality of life of individuals in their community. With this plan, the RCG increases the quality of life of the community through the facilitation of recreational sports and educational activities. This also will increase the social skills and help towards decreasing the crime rate, lessen the amount of school dropouts and teenage pregnancies and enhance the living conditions of the residence and realize social engagement to enhance the social skills of the residence of resort Pont Buiten. The RCG again can test and enhance their project management skills.
This plan should add to the development of the region Pontbuiten and increase the quality of life of the community.

In chart 2 an overview of the research methods used for the different objective is given.

Chart 2 Research methods

Objectives	Research methods	
	analysis -synthesis research method 1	Applied research method
To create an Integration Management Plan to synchronize all the	This method is used by applying information gathering and expert	This method is used by applying: Brainstorming, conflict resolution, problem

Objectives	Research methods	
	analysis -synthesis research method 1	Applied research method
processes involved in the project management activities	judgement	solving, and management meeting
To create a Project Scope Management Plan only for the work of building the multifunctional community center	Identify and Analyze the work that is to be performed through interviews and surveys	This method is used by applying: interviews, surveys, graphs, tables, information processing.
To create a Project Time Management Plan to establish the policies, procedures, and documentation for executing and controlling the project schedule	Identify and Analyze the time needed to implement the project plan through information gathering	This method is used by applying: interviews, surveys
To create a Project Cost Management Plan to plan, manage and control the project funds	Identify the project costs through quotation request	Identify actual cost through stakeholders in construction area
To create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project	Identify and Analyze the quality requirements with ISO standards	Review ISO standards and apply this to the project
To create a Project Human Resource	Analyze the Human Resource requirements	Use the project WBS and resource schedule to

Objectives	Research methods	
	analysis -synthesis research method 1	Applied research method
Management Plan to manage the recruitment and management of project resources	and identify human resources	identify human resources
To create a Project Communications Management Plan to manage how the project will be driving its communication	Identify the channels and use of communication through information gathering	Use samples forms of communication and the stakeholder's identification list to create communication plan
To create a Project Risk Management Plan to manage risks and responses	Information gathering	This method is used by applying: interviews, and information gathering
To create a Project Procurement Management Plan to acquire products and services required for the project	Identify requirements through company standards and ISO standards	Information gathering and application
To create Project Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders	Information gathering	Information gathering

(Source: Kothari, 2004, p 1 -6)

3.3 Tools

According to Ranjit Kumar (2011) Research tools are all those related to research and possess the knowledge and skills needed to provide the information required for the development of this proposal conditions (p. 41). The recommended tools by the Project Management Institute are applied in this document. A summary of the tools on each objective are displayed in chart 3.

Chart 3 Tools

Objectives	Tools
To create an Integration Management Plan to synchronize all the processes involved in the project management activities	software tools, expert judgement, meetings, analytical techniques, schedule techniques, decision making techniques, organizational chart and position description, networking, data gathering
To create a Project Scope Management Plan only for the work of building the multifunctional community center	Expert judgement, meetings, interviews, questionnaire, survey, observation, document analyses, WBS
To create a Project Time Management Plan to establish the policies, procedures, and documentation for executing and controlling the project schedule	Expert judgement, analytical techniques, meetings, WBS, MS project software, schedule techniques, decision making techniques
To create a Project Cost Management Plan to plan, manage and control the project funds	Expert judgement, analytical techniques, meetings, Ms. project software
To create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project	cost of quality, meetings, quality management

Objectives	Tools
To create a Project Human Resource Management Plan to manage the recruitment and management of project resources	Organizational chart and position description, networking, expert judgement, meetings
To create a Project Communications Management Plan to manage how the project will be driving its communication	Communication requirements analysis, communication technology, meetings, communication models
To create a Project Risk Management Plan to manage risks and responses	Data gathering, quantitative risk analyses, expert judgement
To create a Project Procurement Management Plan to acquire products and services required for the project	Expert judgement, market research, meetings
To create Project Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders	Expert judgement, meetings, stakeholders' analyses

(source: Own elaboration 2018)

3.4 Assumptions and constraint

3.4.1 Assumptions:

According to PMI (PMI, 2013), an assumption is "a factor in the planning process that is considered to be true, real, or certain, without proof or demonstration".

3.4.2 Constraints:

According to PMI (PMI, 2013), a constraint is a "limiting factor that affects the execution of a project or process" (p. 124). Due to specific project characteristics

and circumstances, constraints can have effect on the projects scope, schedule, budget, quality, resources, and risk to produce the specified product, service, or result (p. 35). It is strongly recommended that the project team is focused on these constrains

The assumptions and constraints are decribed in details in the project scope statement.

Chart 4 Assumptions and constraints

Objectives	Assumptions	Constraints
To create an Integration Management Plan to synchronize all the processes involved in the project management activities	All the subsidiary plans must be aligned with the project management plan	The strategic plan of the project owners needs to be updated; The subject matter experts in Suriname are unavailable during the planned period for project planning.
To create a Project Scope Management Plan only for the work of building the multifunctional community center	The land and the preliminary studies are available to develop the project; Define the scope of the work to be performed that identifies the projects scope baseline and meets the requirements of the project owners.	Only the work needed to complete this project should be included in the plan; The development of the project is subjected to the final approval of the project owners.
To create a Project Time Management Plan to establish the policies,	The project is included in the projects owners District Multi-year plan	The project needs to be completed in the scheduled time 2019-

Objectives	Assumptions	Constraints
procedures, and documentation for executing and controlling the project schedule	2016-2020	2020
To create a Project Cost Management Plan to plan, manage and control the project funds	There are approved plans to make the budget available	The approval of the budget is subjected by the project owners and could vary depending on the requirements; The project must be completed within the allocated budget
To create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project	The Project Quality Management Plan is as per the quality standards requested by the stakeholders	The quality management plan must follow the guidelines of the PMBok; The product delivered must be according to the construction industry standards
To create a Project Human Resource Management Plan to manage the recruitment and management of project resources	The field staff of the construction company is trained for the construction work of this project plan	All the human resources needed for the project must be sourced; Not having enough staff in the area for the execution of this project
To create a Project Communications Management Plan to manage how the project will be driving its communication	The project team has the required tools and technology for communication	Communication must be done through the identified communication tools and channels; on-site meetings are limited due to the location of the project

Objectives	Assumptions	Constraints
To create a Project Risk Management Plan to manage risks and responses	Interest of the Project Manager for Risk Management; Identify the risks that will affect the project and determine to document them in the watch list or risk response plan; there is a history of risks of other projects and their contingency plans.	Limited access for risk planning meetings; There are no risk assessment tools
To create a Project Procurement Management Plan to acquire products and services required for the project	The Project Manager handles the single source Procurement	Procurement will be done per the company's policies; The procurement documents are ready at the start of the project; Products can't be sourced locally
To create Project Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders	The main stakeholders are pre-identified before the planning of the project.	

(Source: Own elaboration)

3.5 Deliverables

According to Project Management Institute (PMI, 2013), a deliverable is a “product service or result” which is the outcome of a project. (p.3). deliverables can also be presented at the end of each phase in the project. Some projects have one phase, others as many as they can be divided into. In chart 5 a summary of the deliverables for each objective is presented.

Chart 5 Deliverables

Objectives	Deliverables
To create an Integration Management Plan to synchronize all the processes involved in the project management activities	Project Management Plan
To create a Project Scope Management Plan only for the work of building the multifunctional community center	Scope management plan
To create a Project Time Management Plan to establish the policies, procedures, and documentation for executing and controlling the project schedule	Schedule management plan
To create a Project Cost Management Plan to plan, manage and control the project funds	Cost management plan
To create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project	Quality management plan;
To create a Project Human Resource Management Plan to manage the recruitment and management of	Human resource management plan

Objectives	Deliverables
project resources	
To create a Project Communications Management Plan to manage how the project will be driving its communication	Communication management plan
To create a Project Risk Management Plan to manage risks and responses	Risk management plan
To create a Project Procurement Management Plan to acquire products and services required for the project	Procurement Management plan
To create Project Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders	Stakeholder management plan

(Source: Own elaboration)

4. PROJECT MANAGEMENT PLAN

4.1 Integration Management Plan

Integration Management refers to the processes required to ensure that the various elements of a project are coordinated appropriately. It consists the development of the project charter, development of a project management plan, implementation of the project management plan by directing and managing the project work, monitoring and control of project work, perform integrated change control and process to close the project or phase.

4.1.1 Develop Project Charter

For the development of the project charter the following documents are used:

- Project statement of work
- Business case
- Agreements

4.1.1.1 Project Statement of work

4.1.1.1.1 Business need:

The social and living conditions of the residence in resort Pont Buiten worsen day by day. Due to the low education level and poverty, the crime rate increases, the number of teenage pregnancies increases, a great deal of youths is loitering and no funds to work on their own development. It is important that systematic planning is done to improve the development and living conditions of this resort. The Rotaract Club Genesis strives to be the role model and core stone in their community by providing opportunities for young men and women to enhance their own knowledge and skills. Offering this project plan to GoS is a good opportunity to Add to the development of the region Pontbuiten and to increase the quality of life of the community.

4.1.1.2 Business Case

The business case is based on the social needs of the community Pont Buiten.
It is time for a sustainable plan to enhance the living conditions of the residence and realize social engagement to enhance the social skills of the residence of resort Pont Buiten. This plan should add to the development of the region Pontbuiten and increase the quality of life of the community.

4.1.1.2.1 Cost benefit Analyses:

The cost benefit analyses is done from a social perspective with the focus on:

- The impact of the project on the level of savings and investments in the society;
- The contribution of the project towards the fulfillment of self-sufficiency, employment, sports, education.
- 100 persons will be accommodated per year with a life expectancy of the Center for 40 years.
- Operations costs are not included in this analysis as the personal are already included in the operational budget of the Ministry of Education, Science and Culture

On the next page is the cost benefit analyses based on the above-mentioned inputs. All calculations are based on the accommodation of 100 persons per year over 40 years:

Chart 6 Cost Benefit Analyses

Costs		**description**	**sum**
construction cost			6,800,000.00
maintenance costs		15% per year over 40 years	40,800,000.00
Total Costs			47,600,000.00
Benefits			
	education	100 persons per year SRD 100.00 per month	4,800,000.00
	sports membership	100 person/SRD 50.00 p/month	2,400,000.00
	employment	100 persons/ SRD 1,500.00 per month	72,000,000.00
	savings on investment	100 person/ savings SRD 150.00	600,000.00
total benefits			**79,800,000.00**
cost benefit ratio			**1.68**

(Source: Own elaboration)

The following is the chart to give a better view for decision making purposes.

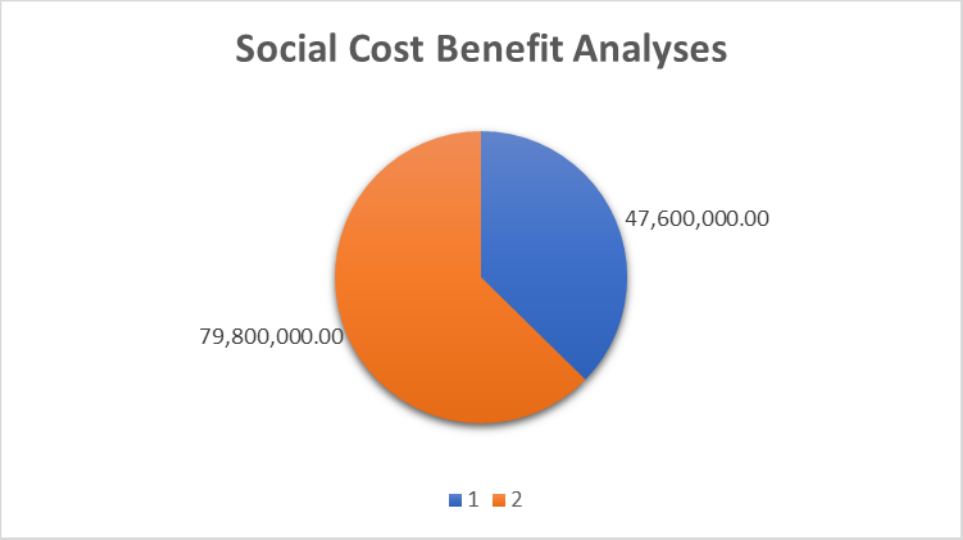

Figure 7: Social Cost benefit Analyses

(Source: Own elaboration (2018))

4.1.1.3 Agreement

To indicate the intentions of both the Rotaract Club Genesis and the Ministry of Education Science and Culture a memorandum of understanding (MOU) will be used.

4.1.1.3.1 Project charter

For the beginning of the project, the project charter is elaborated.

Chart 7: Project Charter

PROJECT CHARTER	
Date	Project Name: Multifunctional Community Center Pont Buiten
Issue date: 1 April, 2017	Construct a multifunctional community center for the region Pont Buiten, in Paramaribo, Suriname
Knowledge Areas / Processes	Application Area (Sector / Activity)
Knowledge areas: Project Integration Management, Project Scope Management, Project Time Management, Project Cost Management, Project Quality Management, Project Human Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management and Project Stakeholders Management. Process groups: Initiating, Planning, Monitoring & Controlling, closing.	Application area: Project Management Framework Construction Project Management Sector: construction Interior design Landscape design

Start date	Finish date
October 1, 2019	October 31, 2020

Project Objectives (general and specific)

General objective:

To create a project management plan within the best practices of the Project Management Institute to build a multifunctional community center located in the region Pont Buiten.

Specific objectives:

- To create an Integration Management Plan to synchronize all the processes involved in the project management activities;
- To create a Project Scope Management Plan only for the work of building the multifunctional community center;
- To create a Project Time Management Plan to establish the policies, procedures, and documentation for executing and controlling the project schedule;
- To create a Project Cost Management Plan to plan, manage and control the project funds;
- To create a Project Quality Management Plan to manage the policies and procedures for the sustainability of the project;
- To create a Project Human Resource Management Plan to manage the recruitment and management of project resources;
- To create a Project Communications Management Plan to manage how the project will be driving its communication;
- To create a Project Risk Management Plan to manage risks and responses;
- To create a Project Procurement Management Plan to acquire products and services required for the project;
- To create Project Stakeholders Management Plan to manage the identification, engagement, and control of the project stakeholders.

Project purpose or justification (merit and expected results)

What originates the project:

The region Pont Buiten is in the District Paramaribo, Suriname. This region is a former Government housing project for low income families. In recent years several

organizations have initiated and completed project in this community with objectives such as:

- Breakfast project- to provide breakfast to the less fortunate children at the primary schools
- Extracurricular activities for children between 4 and 12 during school vacation periods
- Recreational fun activities for the in the neighborhood
- Set up a playground and a soccer field.

Except for the playground all other project was for a short period of time with no long-term beneficial outcome. The purpose of a multifunctional community center is to add to the development of the community that is of a long-term character. Recreation activities increase the quality of communities and the quality of life.

Why is the project to be done?

This community is generally known as a high-risk community for crime, school dropouts and teenage pregnancy with no means of empowerment to educate themselves and tools how to better their lives.

The location of the multifunctional community center will complement the already established playground and soccer field that is 200 meters away. It is to facilitate:

- Recreational Sports
- meeting/ event/ training space needs
- training/ Education classes

Expected benefits for the community, surrounding neighboring communities and children:

- enhance social skills
- enhance life skills
- more sport activities
- means for income to maintain the building
- means to decrease crime rate

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

Project Management Plan of Building a multifunctional community center

Assumptions

- Everything can be coordinated with good planning and without delay.
- High-tech and well-functioning machinery and tools are available.
- Qualified and trained human resources are available for each of the project phases.
- The electrical and water services necessary for the execution of the project are available.

Constraints

Budget constraints: exchange rate fluctuation and increased costs of ground products

Time constraints: limited resources, stakeholders, exchange rate fluctuation

Resource constraints: qualified project team must be sourced externally.

Preliminary risks

If the exchange rate increases it will affect and impact the total costs of the project

Budget

General cost estimate of main items/deliverables for project budget:

SRD 6,800,000.00 (Euro 819,277.10 (Exchange rate Euro 1, - = SRD 8.3,-))

Milestones and dates

Milestone	Start date	End date
Approved Building design	April 24, 2019	May 19, 2019
foundation	October 12, 2019	October 31, 2019
building Structure	November 1, 2019	June 13, 2020
Interior	November 1, 2019	October 31, 2020
Exterior	June 14, 2020	July 31, 2020
Landscaping	June 14, 2020	October 17, 2020
Closing and handing over	October 18, 2020	October 31, 2020

Relevant historical information

Brief basic company information.

Documentation of previous works or similar efforts related to the project.

Stakeholders	
Direct stakeholders: Sponsor: Rotaract Club Genesis Ministry of Education and Science and Culture Ministry of Sport and Youth Affairs DGS professor Academic assistant Community Pont Buiten Indirect stakeholders: Neighbor communities, Parents	
Project Manager: Samantha Maaijen	Signature: Samantha Maaijen
Authorized by:	Signature:

(Source: Own elaboration)

4.1.2 Product scope and requirements description

The Multifunctional Community Center will be designed by a construction engineer. The construction of this building will address the business need of the Rotaract Club Genesis who strives to be the role model and core stone in their community by providing opportunities for young men and women to enhance their own knowledge and skills. The construction of this Center adds to the development of the region Pontbuiten and increases the quality of life of the community. This project is to deliver a product which is a Multifunctional Community Center building that needs to have the requirements details:

- Two levels of each 20M2 by 40M2
- Basketball/ indoor soccer/ indoor volleyball area
- Central Information area
- 1 Computer room

- 1 First aid room
- 1 Study room
- 1 Private room
- 1 Bibliotheca
- 2 meeting/training rooms
- 1 music room
- 2 Administration rooms
- Room divider walls
- 4 Toilet groups
- 2 Bathroom areas
- 2 Changing rooms
- Storage space
- kitchen
- Enough daylight into the building
- Security grill
- Outdoor seating
- Garden
- Air conditioning system
- Modern furniture

These requirements are further detailed in the traceability matrix (appendix 4) together with their acceptance criteria. On the next page is an idea of the product design.

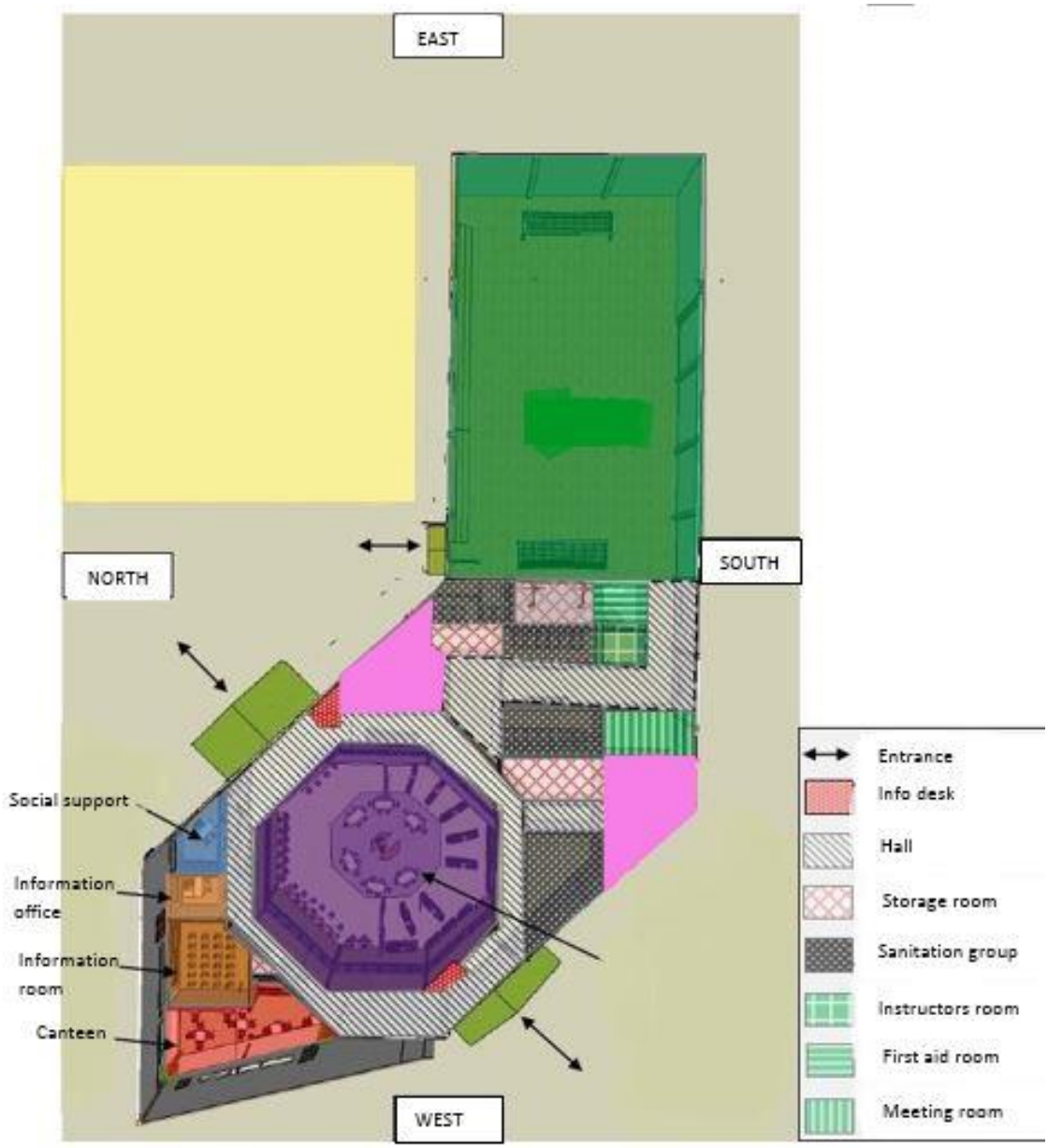

Figure 8 Multifunctional Community Center ground floor

(Source: Redjosentono, 2012)

Figure 9 Multifunctional Community Center first floor

(Source: Redjosentono, 2012)

Figure 10 Multifunctional Community Center special design
(Source: Redjosentono, 2012)

4.1.3 Organizational Process Assets

For this project, the organizational standards will be considered to include part of the organizational members in the project management team. The assigned project manager will be heading this team. The project manager will report to the board of Rotaract club Genesis and to the project owner the Ministry of Education and science. The Rotaract handbook and historical data of other similar project will be used as a guidance and input to develop the project management plan.

4.1.4 Develop Project Management Plan

In this process, the project management plan will be developed by the project team and will describe how work will be executed to accomplish the project objectives, monitored and controlled. The plan is set out in subsidiary plan and baselines. These are mentioned below.

The project baselines include:
Scope baseline which include the component of the project scope statement, Work breakdown Structure (WBS) and WBS Dictionary (section 4.2.5.),
Schedule baseline which is the approved version of a schedule model (section 4.3.5), and
Cost baseline which is the approved version of the time-phased project budget, excluding any management reserves (section 4.4.2.).

The subsidiary plans include:

Scope management plan (section 4.2.),
Schedule management plan (section 4.3.),
Cost management plan (section 4.4.),
Quality management plan (section 4.5.),
Human resource management plan (section 4.6.),
Communications management plan (section 4.7.),
Risk management plan (section 4.8.),
Procurement management plan (section 4.9.), and
Stakeholder management plan (section 4.10.).

4.1.5 Direct and Manage Project Work

The project manager is responsible for leading the project team and therefore also for ensuring that the work described in the subsidiary plan is executed and managed effectively and efficiently. The approved changes (see section 4.1.7) for the work of the other subsidiary plans for corrective actions, preventive actions and defect repairs are implemented by the team. The project manager is to ensure that he is well informed about the status of the project and therefore keeps weekly meetings with a well-defined agenda with the project team and/or stakeholders for information exchange; brainstorming, option evaluation, or design; or decision making.

4.1.6 Monitor and Control Project Work

The work that is to be done for this project will be monitored and controlled through status reports and milestone management by tracking, reviewing and reporting the progress to meet project performance. These reports are to be communicated to the stakeholders as indicated in the stakeholder management plan (section 4.10) and documented in the Project Management Information System of the Rotaract Club Genesis.

The Monitor and Control in this project is concerned with:
Comparing actual project performance against the project management plan through earned value management which integrates the scope baseline with the cost baseline, along with the schedule baseline, to form the performance baseline, which helps the project management team assess and measure project performance and progress.

Assessing performance to determine whether any corrective or preventive actions are indicated, and then recommending those actions as necessary;

Identifying new risks and analyzing, tracking, and monitoring existing project risks to make sure the risks are identified, their status is reported, and that appropriate risk response plans are being executed.

Maintaining an accurate, timely information base concerning the project's product(s) and their associated documentation through project completion;
Providing information to support status reporting, progress measurement, and forecasting.

Providing forecasts to update current cost and current schedule information;
Monitoring implementation of approved changes (see section 4.1.7) as they occur.

Furthermore, Earned Value Management (EVM), in a particular schedule and costs forecasts calculations, will be used to determine to determine if the project is still within defined tolerance ranges and identify any necessary change requests.

Chart 8 Schedule forecasts

Name	How Used
Schedule Variance (SV)	The difference between the work completed to a point in time, usually the data date, and the work planned to be completed to the same point in time.
Schedule Performance Index (SPI)	An SPI of 1.0 means that the project is exactly on schedule, that the work done so far is the same as the work planned to be done so far. Other values show the percentage of how much costs are over or under the budgeted amount for work planned.
Estimate To Complete (ETC)	Assuming work is proceeding on plan, the cost of completing the remaining authorized work can be calculated using: Re-estimate the remaining work from the bottom up.

Source (PMBok, 2013, p. 218 - 223)

Chart 9 Cost forecasts

Name	How Used
Costs Variance (CV)	The difference between the value of work completed to a point in time, usually the data date, and the actual costs to the same point in time.
Costs Performance Index (CPI)	A CPI of 1.0 means the project is exactly on budget, that the work done so far is the same as the cost so far. Other values show the percentage of how much costs are over or under the budgeted amount for work accomplished.
Estimate to complete (ETC)	Assuming work is proceeding on plan, the cost of completing the remaining authorized work can be calculated using: Re-estimate the remaining work from the bottom up.
Budget At Completion (BAC)	The value of total planned work, the project cost baseline.

Source (PMBok, 2013, p. 218 - 223)

4.1.7 Perform Integrated Change Control

This process is the ultimate responsibility of the project manager. All change requests, the approval of changes and management of changes to deliverables, project documents and the project management plan are handled here from project inception to completion. It is ultimate important that the effect of the changes is considered for the overall project.

4.1.7.1 Change Control board

To review and approve the change requests a Change Control Board (CCB) will be installed. Members of the change control board will follow the process of perform integrated change control by reviewing all change requests; approving changes

and managing changes to deliverables, organizational procedures, project documents, and the project management plan; and communicating their disposition by evaluate each change request and decide whether it becomes approved, approved with modifications, rejected or deferred. Once a decision is reached, the change request is signed and emailed to the project manager for planning revisions and implementation. In figure 11 the flow of a change request is presented.

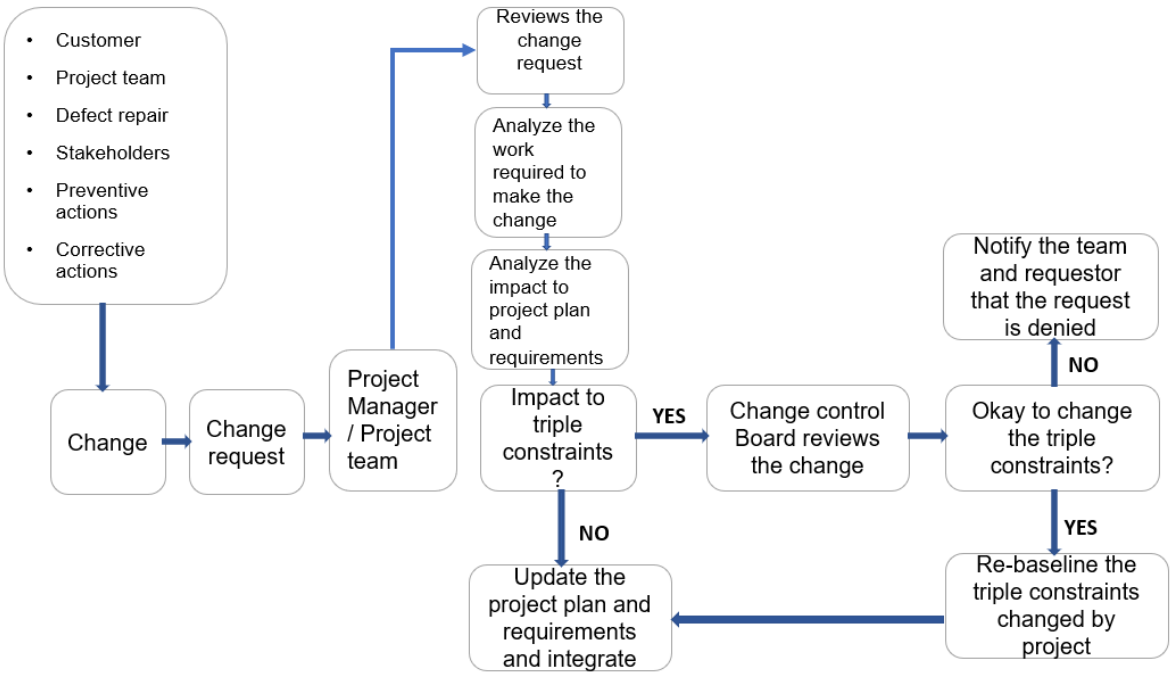

Figure 11 Change Approval Workflow

Source: Own elaboration

Members of the change control board will be assigned upon project initiation in the following order:

Chart 10 Change Control Board Members

Name	Role	Email
TBD	Project Manager	
TBD	Project Sponsor	
TBD	Project owner	
TBD	Project engineer	
TBD	Project specialist	

(Source: own elaboration)

4.1.7.2 Process for gaining approval

A change request is submitted by the project manager to the change control board that follows the process of the perform integrated change control (see section 4.1.7.1). When a change request is approved, the project manager will track the approval on the change request log. The project manager will also ensure implementation of the change, as it was submitted and approved. Where implementation affects changes to the project management plan, the project manager will revise the plan and distribute notice of the revisions in accordance with the procedures set forth in the communication management plan.

4.1.7.3 Approved with modifications

When a change request is approved with modifications, the project manager will track the modified approval on the change request log. The project manager will also ensure implementation of the change, as it is modified.

Where implementation affects changes to the project management plan, the project manager will revise the plan and distribute notice of the revisions in accordance with the procedures set forth in the communication management plan. The new project management plan goes to the Direct and Manage Project work activity.

4.1.7.4 Rejected

When a change request is rejected, the project manager will track the rejection on the change request log and provide written notice of the rejection to the party who initiated the change. No further action will be taken.

4.1.7.5 Deferred

When a change request is deferred, the project manager will track the deferred request on the change request log. The project manager will also notify the party who initiated the change request.
No other action will be taken unless the change control board later approves, approves with modifications or rejects the change request.

4.1.7.6 Written requests

All requests for change must be submitted in writing, on the Standard Change Request Form (section 4.2.8).

4.1.7.7 Who may submit Change Requests

The following people may initiate changes to the project scope:

1. Project sponsor
2. The project Owner
3. Project Manager
4. Project team members
5. Other project stakeholders

4.1.7.8 Deliver to

All written requests for changes must be submitted to the project manager who will log and track each request on the Change Request Log displayed in chart 17.

4.1.7.9 Sizing

The project manager and selected project team members will analyze the change requests for impact to schedule, cost and quality. Once the sizing is complete, the project manager will electronically submit each change request to all members of the change control board. If the change is approved a new baseline for the project is defined or traced in the direct and management project work activity. The changes to the project can be a corrective action, preventive action or defect repair.

4.1.8 Change acceptance process

Changes to the project are carefully managed and require re-planning and formal acceptance. The approved change(s) is formally accepted by the Project Sponsor and Project Owner. Once accepted the changes are made to the project whereas the project manager informs the involved stakeholders as stipulated in the Communication plan and hands over the revised project plan to the Direct and Manage Project activity.

4.1.9 Close Project or Phase

This process is performed at the end of each phase and at the end of the project. It is meant to close all activities across the project to formally complete the phase or lessons learned throughout the project which are documented and stored in the Project Management Information System. It concerns the formal ending of the project work and the release of organizational resources. This process is also performed if the project is terminated. This includes all planned activities necessary for administrative closure of the project or phase, including step by-step methodologies that address:

Actions and activities necessary to satisfy completion or exit criteria for the phase or project; Actions and activities necessary to transfer the project’s products, services, or results to the next phase or to production and/or operations;

Activities needed to collect project or phase records, audit project success or failure, gather lessons learned and archive project information for future use by the organization.

4.2 Scope Management Plan

The purpose of this scope management plan is to set forth the plans and procedures for defining, developing, monitoring, controlling, changing, implementing and verifying the project scope. It's the intent of scope management to ensure the completion of all the work required, and only the work required, to complete the project successfully.

The project manager will assume overall responsibility for project scope management. The people listed below will assume the following scope management responsibilities:

Chart 11 Project Management Team

Names / Roles	Responsibilities
Project Manager	Samantha Maaijen
Project Sponsor	Rotaract Club Genesis
Project Owner	Ministry of Education, Science and Culture
Project Engineer	TBD
Project Team Members	TBD

(Source: Own elaboration)

4.2.1 Collect requirements

The development of requirements begins with an analysis of the information contained in the project charter (Section 4.1.1.3.1), the stakeholder register (appendix 5) and the stakeholder management plan (Section 4.10). At first the business requirements need will be collected from the sponsor and those that are described in the business need section 4.1.1.1.1 while the product, functional and stakeholder requirements are gathered from all stakeholders through interviews, questionnaires and surveys by the project manager and project team. The output of this process is the requirement documentation described in section 4.2.3. These requirements are tracked, reviewed and aligned to the deliverables of the project

(see section 4.2.4). They are periodically reviewed by the sponsoring organization to ensure that the project is on track to deliver the business benefits. It is the responsibility of the project manager that the project effectively and efficiently meets the requirement of the stakeholders by reviewing them at each deliverable and on a monthly basis according to plan and the reality of the project. The scope of this project is defined in the Scope Definition section, below. Development of the project scope began with an examination of the following sources:

- Project Charter
- Applicable codes, regulations, statutes and laws of the Rotaract
- Stakeholders
- regulations, statutes and laws of the Government of Suriname

4.2.2 Scope definition

The term “project scope” refers to the sum of all products, services and results that will be provided as the project. The project scope baseline is comprised of the statement of work in section 4.2.5, the work breakdown structure in section 4.2.6 below.

In the scope management plan, it is stated how it is developed. It’s the intent of scope management plan to ensure the completion of all the work required, and only the work required, to complete the project successfully. Tables, templates and sample forms related to the scope are included. The scope management plan can be found below.

4.2.3 Requirement documentation.

For the documentation of requirements, the following table was drawn up, which establishes a relationship between stakeholders, requirements and their acceptance criteria. This table is of utmost importance to the project working group because it is reviewed if the project needs of the stakeholders are being met.

To collect these requirements, it is necessary to interview the interested parties to obtain the necessary information and to define the characteristics and expected functions of the deliverables.

Chart 12. Requirements Documentation

Project Multifunctional Community **Date**
Title: Center **Prepared:** 03/05/2018

Version control					
version	Made by:	Revised by:	Approved by:	Date:	Reason:

WBS ID	WBS activity	Requirement description	Stakeholder	Acceptance Criteria	Responsible	Due date
2	2.1	Obtain funding to build the center	Rotaract Club Genesis	Accept delivery of the center on time and within budget	Project Manager	10/2/2019
2	2.1	Obtain acceptance for ownership	Ministry of Education, Science and Culture	Accept delivery of the center and management	Sponsor	10/2/2019
2	2.2	Obtain permission to use the lot	Ministry of Social affairs and Housing	Permit to use located lot	Sponsor	10/2/2019
2	2.5	Obtain building permit	Ministry of Public Works	Approved building permit.	Sponsor and Project Manager	10/6/2019
4	4.1	Build the center	Construction company	Complete the building of the center	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	two levels of each 20M2 by 40M2	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019

WBS ID	WBS activity	Requirement description	Stakeholder	Acceptance Criteria	Responsible	Due date
4.1.2	2.4 4.1.2.1	Basketball/ indoor soccer/ indoor volleyball area	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	Central Information area	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	1 Computer room	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	1 Study room	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	1 Private room	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	1 Bibliotheca	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	2 meeting/training rooms	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	1 music room	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	2 Administration rooms	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	Room divider walls	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019

WBS ID	WBS activity	Requirement description	Stakeholder	Acceptance Criteria	Responsible	Due date
4.1.2	2.4 4.1.2.1	4 Toilet groups	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	2 Bathroom areas	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2019
4.1.2	2.4 4.1.2.1	2 Changing rooms	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2020
4.1.2	2.4 4.1.2.1	Storage space	Construction company	Complete the structure of the building per approved design	Construction Company	10/17/2020
4.1.2	2.4 4.1.2.1	Kitchen	Construction company	The kitchen is completed	Construction Company	10/17/2020
4.1.2	2.4 4.1.2.1	Enough daylight into the building	Construction company	Big windows are installed	Construction Company	10/17/2020
4.1.4	2.4 4.1.4.3	Security grill	Construction company	Security grills are installed	Construction Company	10/17/2020
4.1.5	2.4 4.1.5.2	7 Outdoor seating	Construction company	Complete the walkway and garden	Construction Company	10/17/2020
4.1.5	4.1.5 4.1.5.3	Garden	Construction company	Garden is completed	Construction Company	10/17/2020
4.1.3	4.1.3.1 4.1.3.1.2	Air conditioning system	Construction company	Air-condition system is installed	Construction Company	10/17/2020
4.1.3	4.1.3.1.4	Modern furniture	Construction company	Furniture are purchased and placed in the building	Construction Company	10/17/2020

(Source: Own elaboration)

4.2.4 Traceability matrix

The traceability matrix (see Appendix 4) lists product requirements with deliverables, which gives added value by linking it to project objectives.
This matrix helps to monitor the requirements throughout the life of the project, which allows them to be effectively delivered to stakeholders.

4.2.5 Statement of Work

For the scope statement of the project the following template was used.

Chart 13 Statement of work

Definition of project scope	
Date of preparation	Project Code
July 5, 2018	1
Business Need / Project Objectives	
Add to the development of the region Pontbuiten and to increase the quality of life of the community.	
Project description and how it meets the business need	
To build a multifunctional community center in the region Pont Buiten that add to the development of the community that is of a long term character. Recreration activities increase the quality of communities and the quality of life. The Multifunctional Center is to facilitate: Recreational Sports meeting/ event/ training space needs training/ Education classes	
Project Benefits	
Enhance social skills	
Enhance life skills	
More sport activities	
Means for income to maintain the building	
Means to decrease crime rate	

Project Requirements
This project is to deliver a product which is a building that needs to have the following requirements: two levels of each 20M2 by 40M2 Basketball/ indoor soccer/ indoor volleyball area Central Information area 1 Computer room 1 First aid room 1 Study room 1 Private room 1 Bibliotheca 2 meeting/training rooms 1 music room 2 Administration rooms Room divider walls 4 Toilet groups 2 Bathroom areas 2 Changing rooms Storage space kitchen Enough daylight into the building Security grill Outdoor seating Garden Air conditioning system Modern furniture

Project Deliverables
1. CSR and PM plan
2. Foundation
3. Building structure
4. interior set up
5. exterior set up
6. Landscaping
Project Does Not Include
1. Building maintenance
2. security system set up
Success / Acceptance Criteria
1. approved building design
2. building is managed according to the PMI standards
3. building is constructed according to the local construction requirements and the ISO quality standards
Estimated Project Schedule

Milestones	Estimated Date of Completion
1. Project Start (foundation)	2 weeks
2. Building structure	20 weeks
3. interior	10 weeks
4. exterior	5 weeks
5 Landscaping	7 weeks
6. Project Completion	2 weeks
Total Estimated Length of Project	44 weeks

Human Resource Requirements		
Personnel Type / Role	Quantity	Estimated Length of Time
1. Project Manager	1	44 weeks
2. Construction Specialist	1	44 weeks
3. procurement specialist	1	44 weeks

4. communication specialist	1	44 weeks
5. finance specialist	1	44 weeks
6. human resource specialist	1	44 weeks
7 team members	10	40 weeks

Estimated Cost of Project		
Expense Type	Description	Estimated Cost
Permit	Construction permit	SRD 8,300.00
Labor	Labor for Human resources	SRD 2,540,000.00
Foundation	Material and labor for construction contractor	SRD 904,000.00
Building Structure	Material and labor for construction contractor	SRD 1,427,500.00
Interior	Lamp fixtures and furniture	SRD 890,000.00
exterior	Efficiency and safety	SRD 155,000.00
landscaping	Walk way, garden	SRD 195,000.00
Other	Repair and defects (contingency)	SRD 680,000.00
	Total Estimated Cost of Project	SRD 6,800,000.00

Project Constraints
1. Budget constraints: exchange rate fluctuation and increased costs of ground products. The budget is subjected to approval of the project owners.
2. Time constraints: a project phase takes longer than planned because of the work schedule that is from Monday through Friday from 6:00AM to 5:00PM. There is no work on weekends and holidays
3. resource constrains: limitation on staffing because of other ongoing projects

Project Assumptions
1. Everything can be coordinated with good planning and without delay.
2. High-tech and well-functioning machinery and tools are available.
3. The funds are available
4. Qualified and trained human resources are available for each of the project phases.
The electrical and water services necessary for the execution of the project are available.

(Source: Own elaboration)

4.2.6 Work Breakdown Structure (WBS)

Through the detailed Work Breakdown Structure (WBS), the work of project planning is subdivided into more detailed activities that allows better supervision and control. The WBS dictionary supports the WBS. The project WBS is shown on the next page.

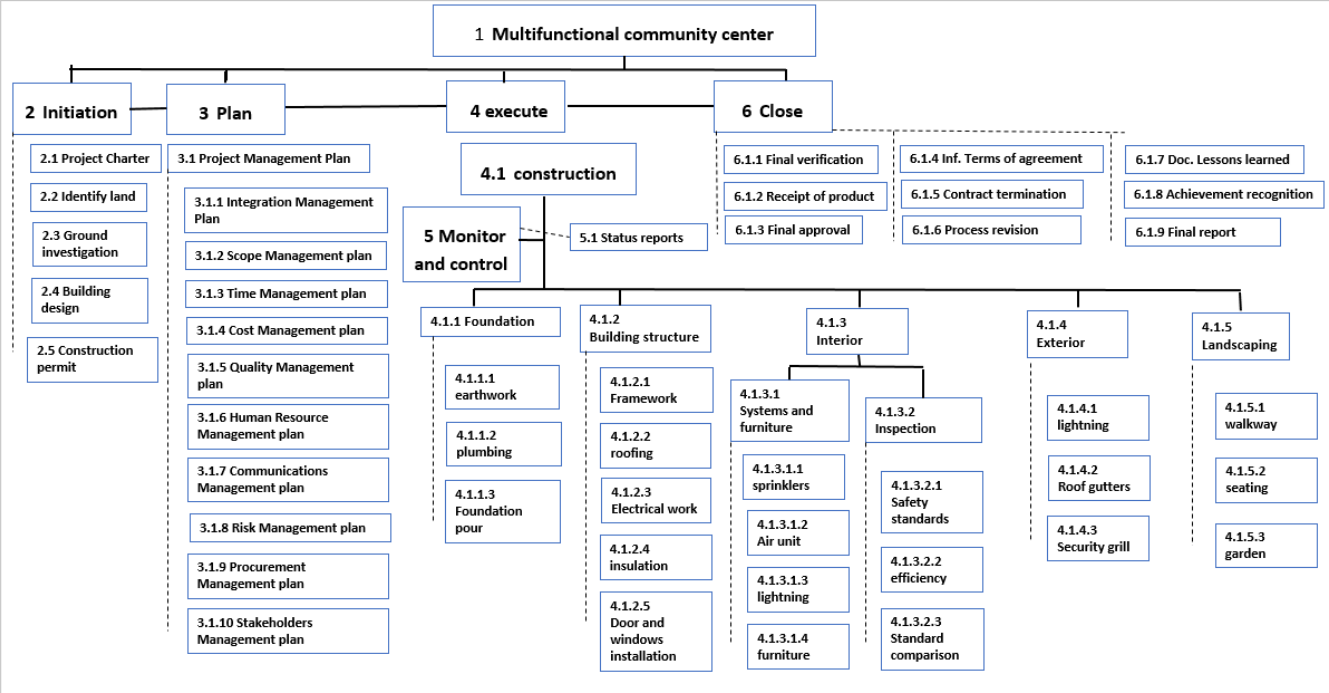

Figure 12: WBS of the Multifunctional Community Center construction project in Pont Buiten (Source: Own elaboration (2018))

4.2.6.1 Scope baseline maintenance

The scope baseline will be maintained by performing the quality control section 4.5.3, scope validation section 4.2.9 and scope control process section 4.2.11. Scope validation refers to the process of verifying and formalizing acceptance of the completed project deliverables.

These deliverables are:

Chart 14 Project Deliverables

Project Deliverables
1. CSR and PM plan
2. foundation
3. Building structure
4. interior set up
5. exterior set up
6. Landscaping

(Source: Own elaboration)

4.2.7 Scope validation

Scope validation is the process where the completed project deliverables are formally accepted. With the examination of the sources below and inspection through group decision making techniques such as unanimity and majority it is determined by the project team whether work and the deliverables meet the requirements and the product acceptance criteria.

The resources which will be used for examination are:

.1 Project management plan

.2 Requirements documentation

.3 Requirements traceability matrix

.4 Verified deliverables

.5 Work performance data

The deliverable for scope validation is first inspected by the project team. The scope validation is performed at the end of each phase. The scope validation is tracked through a validation form which you find on the next page.

Chart 15. Scope validation form

Scope validation		
Project number	Date	N
In charge		
Description of the deliverable		
Accepted ☐	Not accepted ☐	
Justification		
Signature of the manager	Signature of the Project Manager	

(Source: Own elaboration)

After determination of scope completion according to the requirements, the deliverables are submitted to the project owner and sponsor for acceptance.

4.2.8 Scope change

In this process, the scope of the project or the product could be changed, for this, it is necessary to generate a change request, which indicates if they are corrective, preventive or defect repair. A scope change can only be established through the Integrate change control process that entails a change request for which there is an established form. All accepted changes are recorded in the change request log.

The change request will be submitted to the project manager who will determine if this change can be further investigated before approving or rejecting it. For changes that the project manager seems valid, these are submitted to the Change Control Board.

A template of the change request form and change log can be found on the next page.

Chart 16. Standard change request template

Change Request	
Project:	**Date:**
Change Requestor:	**Change No:**
Change Category (Check all that apply): ☐ Schedule ☐ Cost ☐ Scope ☐ Requirements/Deliverables ☐ Testing/Quality ☐ Resources	
Does this Change Affect (Check all that apply): ☐ Corrective Action ☐ Preventative Action ☐ Defect Repair ☐ Updates ☐ Other	
Describe the Change Being Requested:	
Describe the Reason for the Change:	
Describe all Alternatives Considered:	
Describe any Technical Changes Required to Implement this Change:	
Describe Risks to be Considered for this Change:	
Estimate Resources and Costs Needed to Implement this Change:	
Describe the Implications to Quality:	
Disposition: ☐ Approve ☐ Reject ☐ Defer	
Justification of Approval, Rejection, or Deferral:	

Change Board Approval:		
Name	**Signature**	**Date**

(Source: Own elaboration)

Chart 17 Change Log Template

Change Log Template:

Change Log							
Project:						Date:	
Change No.	Change Type	Description of Change	Requestor	Date Submitted	Date Approved	Status	Comments
Each change request is assigned a reference number.	This may be a design, scope, schedule or other type of change.	The change request should be described in detail.	Who initiated the change request?	When was the request submitted?	When was the request approved?	Is the change request open, closed or pending? Has it been approved, denied or deferred?	This section may describe why the change request was rejected, deferred or provide any other useful information.

(Source: Own elaboration)

Approval of the changes requires the signature of the project manager, project sponsor and project Owner (in cases greater than SRD 20,000).

4.2.9 SCOPE CONTROL

With the scope control process, the project manager and team can monitor the status of the project and product scope. They are also able to manage changes to the scope baseline. This process is done in parallel with the quality control process.

To monitor the status of the project variance, analyses will be performed by the project team on a frequent base to determine if there is a deviation between the baseline and the actual performance of the project and what the cause is of this deviation. The documentation that will be used to determine the status of the project are:

- Project management plan
- Requirements documentation
- Requirements traceability matrix
- Work performance data
- And the control related policies and guidelines of the sponsoring organization.

The outcome of this process is presented to the project manager whom in his term communicates this to the project sponsor and project owner.

4.3 Project Time Management Plan

The time management of the project refers to the processes required to ensure the execution of the project in the set time. Each process can involve the effort of one or more individuals, depending on the needs of the project.
For this, it is necessary to generate a work schedule for the project and thus achieve the objective. The timeline is an iterative process that determines the durations and dates of activities, resource requirements, and creates the basis for project tracking.

4.3.1 Schedule management

In this process, the techniques and tools of expert judgment and meetings that serve to develop, monitor and control the schedule are used. For this, the Microsoft Office Project programming tool is used, which has the necessary programming model. To make the duration estimates, recourse to the expert judgment of the work team, as well as the history of other similar projects executed by the company are used.

The team (project manager, engineer and architect) are responsible for following up on each of the processes and updating it when necessary.

4.3.2 Define activities

This process consists of identifying and documenting the actions required to generate the project deliverables. Activities are born from the 28 packages
located at the lower level of the WBS. These activities should be small enough to facilitate programming, implementation and control tasks.

4.3.3 List and sequence of activities

All key activities are included to estimate the duration of the project. Once the list of activities is generated, we proceed to identify and document the dependency relationships between them, which facilitates the development of a realistic and feasible schedule.

4.3.4 Estimation of duration of activities

To estimate the duration of activities it is necessary to obtain information on the scope of work of each activity, the types of resources needed, the amounts of resources and the timetable. For this it is necessary to use documentation of similar previous projects and the expert judgment of the professionals in charge.

For this estimate it is assumed that:

- Working hours are 10 hours a day.
- Weekends are not worked.
- Holidays do not work.

Once this estimate is made, the total duration of the project is established in 13 months.

Chart 18 List of activities and duration

row	Task Name	Duration	Start Date	End Date	Predecessors
1	**1. Multi-functional Community Center**	**283d**	**10/2/2019**	**10/31/2020**	
2	2. project initiation: Start date	1d	10/2/2019	10/2/2019	
3	2.1 Initiation Project Charter	1d	10/2/2019	10/2/2019	
4	2.2. Identify land	1d	10/2/2019	10/2/2019	
5	2.3 Ground investigation	2d	10/3/2019	10/4/2019	5
6	2.4 Design	3d	10/2/2019	10/4/2019	5
7	2.5 Permit	6d	10/4/2019	10/11/2019	6, 7
8	**Milestone 1: received construction permit**	**0d**	**10/11/2019**		
9	3.1 Project management plan	17d	10/2/2019	10/18/2019	
10	3.1.1 Project integration management plan	1d	10/2/2019	10/2/2019	
11	3.1.2 Project scope management plan	5d	10/3/2019	10/7/2019	10
12	3.1.3 Project time management plan	2d	10/8/2019	10/9/2019	11
13	3.1.4 Project costs management plan	2d	10/10/2019	10/11/2019	12
14	3.1.5 Project quality management plan	1d	10/12/2019	10/12/2019	13
15	3.1.6 Project human Resources plan	1d	10/13/2019	10/13/2019	14
16	3.1.7 Project communication management plan	1d	10/14/2019	10/14/2019	15
17	3.1.8 Project risk management plan	2d	10/15/2019	10/16/2019	16
18	3.1.9 Project procurement management plan	1d	10/17/2019	10/17/2019	17
19	3.1.10 Project stakeholder management plan	1d	10/18/2019	10/18/2019	18
20	**Milestone 2: completed Project management plan**	**0d**	**10/18/2019**		
21	4.1.1. Foundation	14d	10/19/2019	11/4/2019	
22	4.1.1.1. earthwork (and foundation preparation)	4d	10/19/2019	10/24/2019	8
23	4.1.1.2. Plumbing (drainage & water proof)	6d	10/25/2019	11/1/2019	21
24	4.1.1.3. foundation poor	4d	11/2/2019	11/4/2019	22
25	**Milestone 3: Foundation completed**	**0d**	**11/4/2019**		
26	4.1.2 building Structure	161d	11/6/2019	6/13/2020	
27	4.1.2.1 Framework	108d	11/6/2019	3/30/2020	23
28	4.1.2.2 roofing	20d	4/2/2020	4/27/2020	25
29	4.1.2.3 Electrical work	22d	4/30/2020	5/29/2020	25, 26

row	Task Name	Duration	Start Date	End Date	Predecessors
30	4.1.2.4 insulation	21d	5/16/2020	6/13/2020	25, 26
31	4.1.2.5 Door and windows installation	25d	4/30/2020	6/1/2020	27
32	**Milestone 4: building Structure completed**	**0d**	**6/13/2020**		
33	4.1.3 Interior	261d	11/1/2019	10/31/2020	
34	4.1.3.1 Systems and furniture				
35	4.1.3.1.1 sprinklers	10d	6/14/2020	6/27/2020	26
36	4.1.3.1.2 Air unit	67d	6/28/2020	9/28/2020	32
37	4.1.3.1.3 lightning (indoor)	21d	7/3/2020	7/31/2020	27, 32
38	4.1.3.1.4 furniture	23d	10/1/2020	10/31/2020	29
39	4.1.3.2 Inspection				
40	4.1.3.2.1 Safety standards	195d	11/1/2019	7/31/2020	22
41	4.1.3.2.2 efficiency	195d	1/1/2020	9/28/2020	23
42	4.1.3.2.3. Standard comparison	65d	7/2/2020	9/28/2020	29
43	**Milestone 5: Interior designed**	**0d**	**10/31/2020**		
44	4.1.4. Exterior	34d	6/14/2020	7/31/2020	
45	4.1.4.1 lightning	21d	7/3/2020	7/31/2020	27,32
46	4.1.4.2 Roof gutters	11d	6/14/2020	6/28/2020	28
47	4.1.4.3 Security grill	20d	6/4/2020	6/29/2020	29
48	**Milestone 6: Exterior designed**	**0d**	**7/31/2020**		
49	4.1.5. Landscaping	90d	6/14/2020	10/17/2020	
50	1.7.1.1. walkway	44d	6/14/2020	8/14/2020	42
51	1.7.1.2. seating	13d	8/15/2020	8/31/2020	45
52	1.7.1.3. garden	33d	9/3/2020	10/17/2020	46
53	**Milestone 7: Landscaping designed**	**0d**	**10/17/2020**		
54	**Milestone 8**: Multi-functional Community Center Completed	0d	10/31/2020		

(Source: Own elaboration)

4.3.5 Schedule

After performing all the previous activities, the following schedule is generated, which is used for the execution of the project:

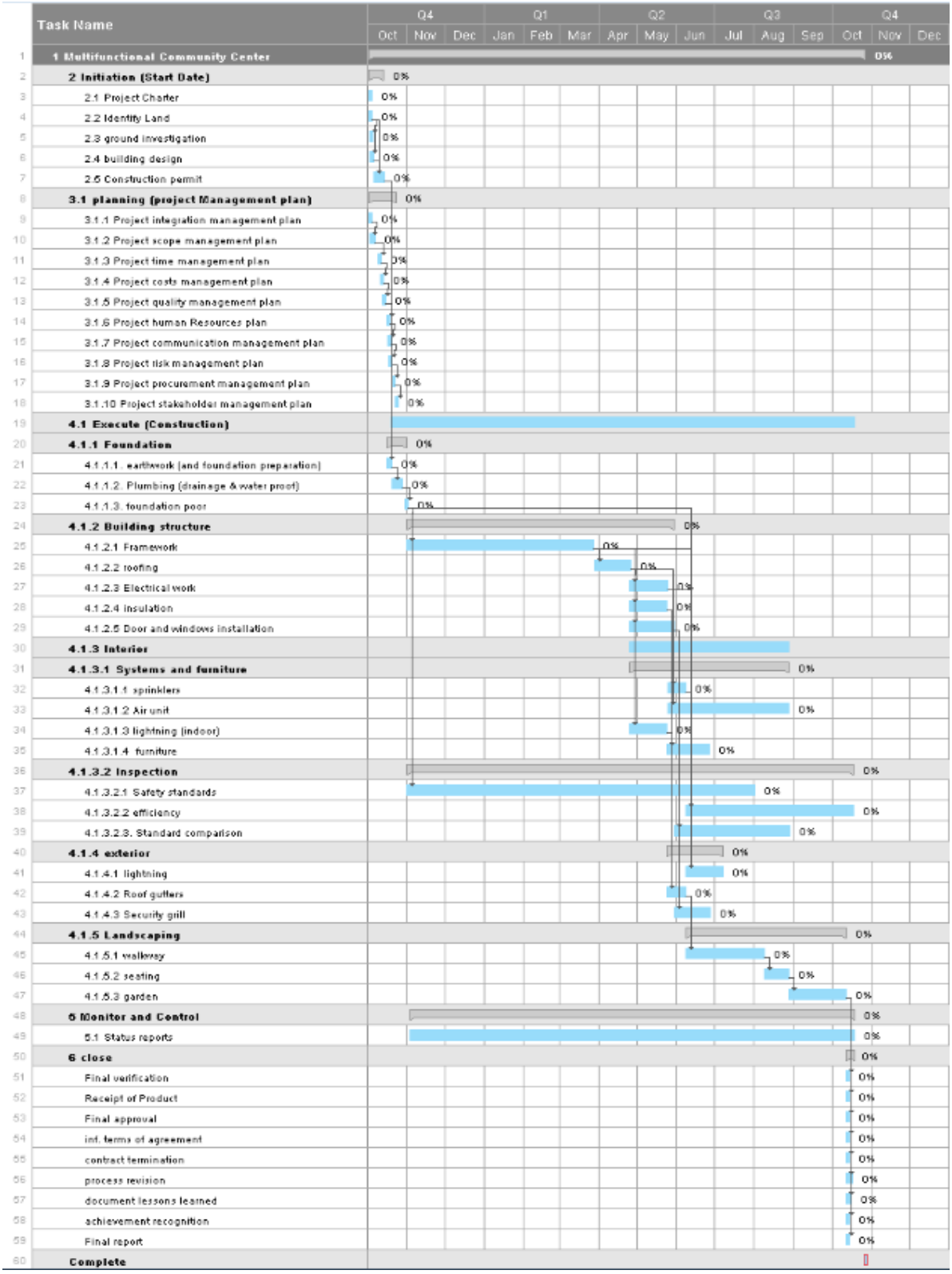

Figure 13: Gantt Chart of the Multifunctional Community Center construction project in Pont Buiten (Source: Own elaboration)

This timeline helps to know which activities are being carried out simultaneously or which ones need to be carried out before. This is important for scheduling weekly jobs and allocating resources for meeting dates.

4.3.6 Critical path

With the determination of each of the necessary activities, to realize the different work packages, and the consequent logical succession of execution of the activities, the critical path of execution of the work is obtained by the critical path method. This method is used to estimate the minimum project duration and determine the amount of scheduling flexibility within the schedule. The critical path activities are identified with zero float between activities. The critical path is shown in appendix 9. In this critical path, it is observed that all activities are included and there is a lot of schedule flexibility. However, it is important to keep strict control of each of the activities and try to complete them in time to achieve the projected duration of the project.

To reduce the critical path, techniques such as crashing (assigning more resources or increasing working hours for a defined time) or Fast tracking (running parallel activities when in sequence) can be used to generate a chain reaction in the other activities of the critical path and shorten the completion of the project.

The Schedule Compression technique crashing is not always feasible since it can cause an increase in the risk and / or cost of the project. And the Fast tracking can generate a rework in the constructive works increasing the risk of the project.

4.3.7 Schedule Control

For scheduling control, weekly coordination meetings were held with the construction master and contractors, where the progress of the previous week was reviewed and the work week was planned to verify that there was no over-allocation of resources. In addition, the performance review tool was used using the critical path method. The variation had a direct impact on the completion dates of the project.

The project manager is responsible for conducting weekly coordination meetings and updating the schedule after each meeting. If a change order is required in the update, it is managed using the change order template described in section 4.2.8.

4.4 Project Cost Management Plan

4.4.1 Planning costs

For this process, the following techniques and tools are applied:
Judgment of experts: use of historical information of similar projects.
Meetings.

The cost management plan establishes the following:
Units of measurement: for resources, the unit Surinamese dollars (SRD) is established.
Level of precision: the degree of rounding, up or down, that is applied to the estimates of the cost of activities will be whole numbers without decimals.
Level of accuracy: to issue realistic estimates on the cost of activities, expert judgment and parametric estimation is used.

4.4.1.1 Costs baseline

For the costs baseline all the costs related to all the activities of the WBS including the contingency reserves are considered (see chart 19). it is the approved version of the time-phased project budget, excluding any management reserves, which can only be changed through formal change control procedures and is used as a basis for comparison to actual results. It is developed as a summation of the approved budgets for the different schedule activities.

4.4.1.2 Reserve Analyses

The Cost estimates see section 4.4.2 include contingency reserves that are allocated for the cost uncertainties such as the identified risks, which are accepted

and for which contingent or mitigating responses are developed. The Contingency reserves are part of the budget intended to address the “known-unknowns” that can affect a project. The contingency reserve is part of the costs baseline. An amount of 10% of the total costs will be reserved for contingency.

For risk that are not identified or are unforeseen, management reserves are reserved. This is an amount of the project budget withheld for management control purposes and are reserved for unforeseen work that is within scope of the project. Management reserves are intended to address the unknown “unknowns” risks that can affect a project. The management reserve is not included in the cost baseline but is part of the overall project budget and funding requirements. An amount for management reserve of approximately 10% is considered.

4.4.2 Estimating costs of activities

To estimate the costs of the project, company indicators were used based on previously executed projects that had a similarity with the project under study. These indicators correspond to a database of costs of 5 years of other projects executed in similar conditions.

For those areas where there are no clear indicators, the expert judgment of the professionals with the most experience in the construction of housing of this type with the company is applied.

When information cannot be obtained due to the absence of sources, it is necessary to request three contributions per activity. The average is used.
Estimates of activity costs will be stated in Surinamese dollars (SRD).
Participants in this process will be the project manager, engineer and operations manager.

In figure 14 the budget component for the Multifunctional Community Center construction project in Pont Buiten is given. The supporting information for these components are displayed in chart 19.

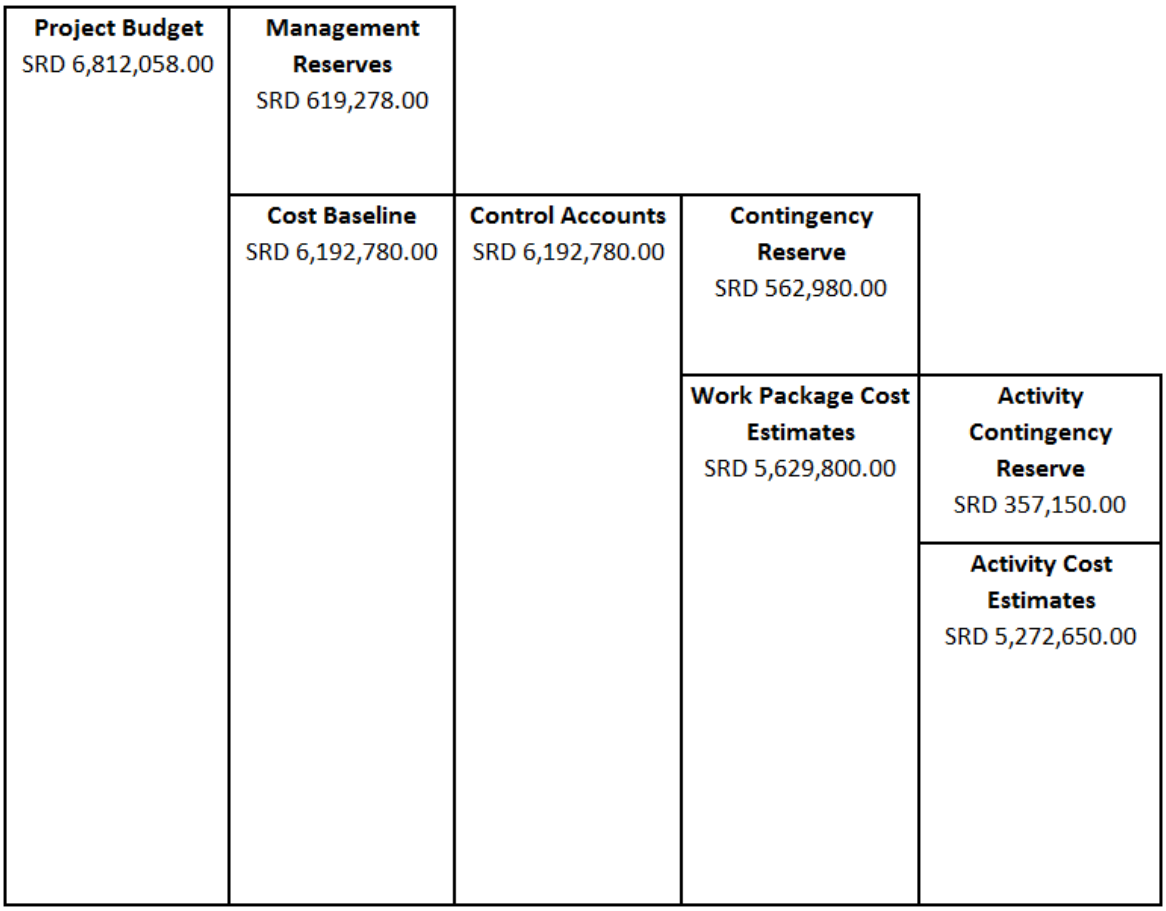

Figure 14: Project Budget Components of the Multifunctional Community Center construction project in Pont Buiten (Source: Own elaboration)

Chart 19 Estimated cost of activities

Activity	# days	Amount
1 Multifunctional Community Center	283d	SRD 6,812,058.00
2 Initiation (Start Date)	10d	SRD 8,300.00
2.1 Project Charter	1d	SRD 0.00
2.2 Identify Land	1d	SRD 800.00
2.3 ground investigation	2d	SRD 1,500.00
2.4 building design	3d	SRD 5,000.00
2.5 Construction permit	6d	SRD 1,000.00
3.1 planning (project Management plan)	16d	SRD 0.00

Activity	# days	Amount
3.1.1 Project integration management plan	1d	SRD 0.00
3.1.2 Project scope management plan	4d	SRD 0.00
3.1.3 Project time management plan	2d	SRD 0.00
3.1.4 Project costs management plan	2d	SRD 0.00
3.1.5 Project quality management plan	1d	SRD 0.00
3.1.6 Project human Resources plan	1d	SRD 0.00
3.1.7 Project communication management plan	1d	SRD 0.00
3.1.8 Project risk management plan	2d	SRD 0.00
3.1.9 Project procurement management plan	1d	SRD 0.00
3.1.10 Project stakeholder management plan	1d	SRD 0.00
4.1.1 Foundation	12d	SRD 813,600.00
4.1.1.1. earthwork (and foundation preparation)	4d	SRD 300,000.00
4.1.1.2. Plumbing (drainage & water proof)	6d	SRD 405,600.00
4.1.1.3. foundation poor	2d	SRD 108,000.00
4.1.2 Building structure	150d	SRD 1,427,500.00
4.1.2.1 Framework	105d	SRD 384,000.00
4.1.2.2 roofing	20d	SRD 277,000.00
4.1.2.3 Electrical work	22d	SRD 341,000.00
4.1.2.4 insulation	21d	SRD 170,500.00
4.1.2.5 Door and windows installation	25d	SRD 255,000.00
4.1.3 Interior	89d	SRD 890,000.00
4.1.3.1 Systems and furniture	89d	SRD 0.00
4.1.3.1.1 sprinklers	10d	SRD 50,000.00
4.1.3.1.2 Air unit	67d	SRD 250,000.00
4.1.3.1.3 lightning (indoor)	21d	SRD 50,000.00
4.1.3.1.4 furniture	23d	SRD 500,000.00
4.1.3.2 Inspection	251d	
4.1.3.2.1 Safety standards	195d	SRD 20,000.00
4.1.3.2.2 efficiency	94d	SRD 15,000.00
4.1.3.2.3. Standard comparison	65d	SRD 5,000.00
4.1.4 exterior	32d	SRD 155,000.00
4.1.4.1 lightning	21d	SRD 30,000.00
4.1.4.2 Roof gutters	11d	SRD 25,000.00
4.1.4.3 Security grill	20d	SRD 100,000.00
4.1.5 Landscaping	90d	SRD 195,000.00
4.1.5.1 walkway	44d	SRD 95,000.00
4.1.5.2 seating	13d	SRD 20,000.00
4.1.5.3 garden	33d	SRD 80,000.00
5 Monitor and Control	249d	SRD 0.00
5.1 Status reports	249d	SRD 0.00
6 Close Project	3d	SRD 0.00

Activity	# days	Amount
Final verification	1d	SRD 0.00
Receipt of Product	1d	SRD 0.00
Final approval	1d	SRD 0.00
inf. terms of agreement	1d	SRD 0.00
contract termination	1d	SRD 0.00
process revision	3d	SRD 0.00
document lessons learned	2d	SRD 0.00
achievement recognition	1d	SRD 0.00
Final report	1d	SRD 0.00
Activity Total		SRD 3,489,400.00
Activity Contingency Reserve		SRD 90,400.00
Project Staff labor		SRD 2,050,000.00
total cost		SRD 5,629,800.00
10% contingency		SRD 562,980.00
Project budget (cost baseline)		SRD 6,192,780.00
Management Reserve 10%		SRD 619,278.00
total project budget		SRD 6,812,058.00

(Source: Own elaboration)

On the next page there is a quotation to build the multifunctional community center from a construction company located in Suriname. This is to have an idea of what the construction costs are to build the center.

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QUOTATION multifunctional cummunity center 800M2

Discription	numbe	price per item	total	
Earthwork and foundation				
raw commodities shells per cubic	25	SRD 325.00	SRD 8,125.00	
construction slats 1x3 per meter	600	SRD 5.00	SRD 3,000.00	
concrete iron Ø10	220	SRD 55.00	SRD 12,100.00	
concrete iron Ø 12	200	SRD 85.00	SRD 17,000.00	
concrete iron Ø 15	80	SRD 100.00	SRD 8,000.00	
tie wire per kilo	30	SRD 25.00	SRD 750.00	
building foil per roll	8	SRD 225.00	SRD 1,800.00	
building blocks	4500	SRD 9.00	SRD 40,500.00	
raw commodities sand per cubic	40	SRD 100.00	SRD 4,000.00	
raw commodities barn sand per cubic	8	SRD 125.00	SRD 1,000.00	
terpetine per liter	20	SRD 27.00	SRD 540.00	
raw commodities stuffing sand per cubic	500	SRD 125.00	SRD 62,500.00	
man hours per 10 individuals	450	SRD 300.00	SRD 135,000.00	
transport	1	SRD 5,685.00	SRD 5,685.00	SRD 300,000.00
Plumbing (drainage & water proof)				
steel	400	SRD 245.00	SRD 98,000.00	
PVC Tubes	50	SRD 600.00	SRD 30,000.00	
Septictank drainage	30	SRD 608.00	SRD 18,240.00	
Septictank covers	10	SRD 3,500.00	SRD 35,000.00	
wells	10	SRD 656.00	SRD 6,560.00	
man hours per 10 individuals	720	SRD 300.00	SRD 216,000.00	
transport	1	SRD 1,800.00	SRD 1,800.00	SRD 405,600.00
Foundation poor				
concrete B20 per cubic incl man hours	60	SRD 1,770.00	SRD 106,200.00	
transport	1	SRD 1,800.00	SRD 1,800.00	SRD 108,000.00
Framework				
steel frame UNP 120, 6 m	76	SRD 171.05	SRD 13,000.00	
concrete blocks	12000	SRD 4.00	SRD 48,000.00	
cement	1000	SRD 70.00	SRD 70,000.00	
man hours per 5 individuals	1000	SRD 253.00	SRD 253,000.00	SRD 384,000.00
roofing				
steel frame UNP 120, 6 m	500	SRD 171.05	SRD 85,526.30	
schrews per kilo	20	SRD 65.00	SRD 1,300.00	
nails per kilo	20	SRD 65.00	SRD 1,300.00	
zinc plates	250	SRD 125.00	SRD 31,250.00	
noc plates per meter	200	SRD 75.00	SRD 15,000.00	
PVC schroten per m2	800	SRD 150.00	SRD 120,000.00	
woods 2 bij 3 cm per meter	1810	SRD 12.50	SRD 22,625.00	SRD 277,001.30

KULDIPSINGH build it, fix it - think Kuldipsingh

QUOTATION multifunctional cummunity center 800M2

Discription	numbe	price per item	total	
Electrical work				
wire per meters	3000	SRD 50.00	SRD 150,000.00	
clips and screws per kilo	20	SRD 65.00	SRD 1,300.00	
fuse box	5	SRD 6,500.00	SRD 32,500.00	
electrical tape	20	SRD 85.00	SRD 1,700.00	
tools rental	1	SRD 5,500.00	SRD 5,500.00	
man hours per 5 individuals incl transport	1	SRD 150,000.00	SRD 150,000.00	SRD 341,000.00
insulation				
insulation material	1	SRD 100,500.00	SRD 100,500.00	
man hours per 5 individuals incl transport	1	SRD 70,000.00	SRD 70,000.00	SRD 170,500.00
Door and windows installation				
doors 1m by 2m	40	SRD 2,500.00	SRD 100,000.00	
doors 1.5m by 3m	8	SRD 5,500.00	SRD 44,000.00	
windows 2m by 2.5m	50	SRD 1,500.00	SRD 75,000.00	
windows 1m by 1m	32	SRD 500.00	SRD 16,000.00	
man hours per 5 individuals incl transport	1	SRD 20,000.00	SRD 20,000.00	SRD 255,000.00
Interior				
sprinklers			SRD 0.00	
central Air units	1	SRD 200,000.00	SRD 200,000.00	
lightning big fixtures	25	SRD 500.00	SRD 12,500.00	
lightning small fixtures	100	SRD 210.00	SRD 21,000.00	
furniture seating in sport hall	600	SRD 150.00	SRD 90,000.00	
furniture - chairs other rooms	152	SRD 375.00	SRD 57,000.00	
furniture desks	40	SRD 1,000.00	SRD 40,000.00	
furiniture computers	20	SRD 3,780.00	SRD 75,600.00	
furniture music equipement	1	SRD 30,000.00	SRD 30,000.00	
furniture book cases	20	SRD 1,201.00	SRD 24,020.00	
furniture file cabinets	20	SRD 2,600.00	SRD 52,000.00	
CSI Safety standards compliance	1	SRD 20,000.00	SRD 20,000.00	
efficiency	1	SRD 15,000.00	SRD 15,000.00	
Standard comparison	1	SRD 5,000.00	SRD 5,000.00	
man hours per 5 individuals incl transport	960	SRD 253.00	SRD 242,880.00	
transportation	1	SRD 5,000.00	SRD 5,000.00	SRD 890,000.00
exterior				
lightning big fixtures	20	SRD 500.00	SRD 10,000.00	
lightning small fixtures	38	SRD 210.00	SRD 7,980.00	
spot lights	12	SRD 2,000.00	SRD 24,000.00	
Roof gutters per meter	250	SRD 212.00	SRD 53,000.00	
Security grill incl man hours and transport	1	SRD 60,000.00	SRD 60,000.00	SRD 154,980.00
Landscaping				
walkway	1	SRD 95,000.00	SRD 95,000.00	
seating garden concrete seating	20	SRD 1,000.00	SRD 20,000.00	
garden plants	300	SRD 25.00	SRD 7,500.00	
garden small trees	100	SRD 50.00	SRD 5,000.00	
garden décor incl transport and man hours	1	SRD 48,000.00	SRD 48,000.00	
garden grass incl transport and man hours	1	SRD 20,000.00	SRD 20,000.00	SRD 195,500.00
GRAND TOTAL				**SRD 3,481,581.30**

Figure 15: Quotation for the Multifunctional Community Center construction project in Pont Buiten

Source: Kuldipsingh group of companies (2018)

4.4.2.1 Projected cash flow

The cash flow that is projected is a financial statement showing the behavior of the cash requirements over the duration of the project. With this tool, it is possible to predict the expenses to be carried out monthly so that the company always maintains the necessary resources at the indicated time to finish the project.

Chart 20 Cost of the estimated activities in months

Month	Costs
October	SRD 1,298,000
November	SRD 280,000
December	SRD 280,000
January	SRD 280,000
February	SRD 280,000
March	SRD 280,000
April	SRD 700,000
May	SRD 786,000
June	SRD 750,000
July	SRD 850,000
August	SRD 500,000
September	SRD 280,000
October	SRD 236,000

(Source: Own elaboration)

4.4.2.2 S curve

If the cumulative budgeted costs of each of the periods that are within the project execution period are summed, we obtain the S curve shown in the following figure:

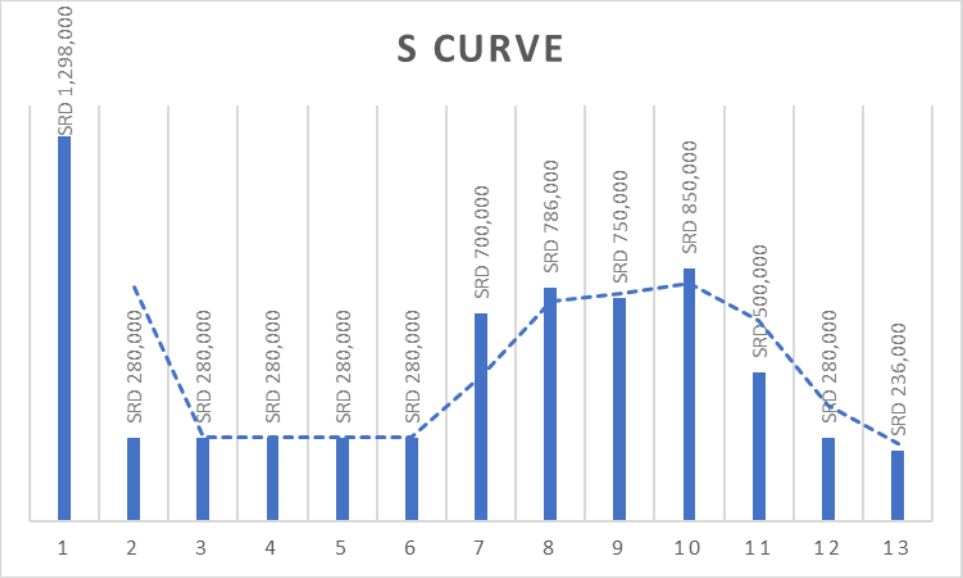


Figure 16: S Curve

(Source: Own elaboration)

The S curve is the representation of the project cost baseline with which it is expected to perform. The part of this curve is plotted with the solid line and represents the monthly accumulated costs. The part of this curve is drawn with the bars representing the monthly costs.

4.4.3 Costs control

For cost control, monthly meetings are held with the Accounting Department where they review what is missing from each item of the budget, through a detailed report with the budget and expenses to date, sent by the Accounting Department. Also, the management of earned value, which is a methodology used to measure the performance of projects, is used. To do this, it is necessary to create a baseline that integrates the scope, schedule and resources with which to measure the performance of the project.

If a change order is required, it is carried out using the change order template described in section 4.2.8.

4.5 Project Quality Management Plan

The Project Management team (engineer, project manager and architect) establishes the following quality policies for the development of this project:

- Conduct local construction processes according to best practices recommended by the Ministry of Public works in compliance with the relevant current regulations and with the specifications techniques such as check sheets, in agreed time.
- Comparative studies, comparison of planned or actual project practices with one or two projects to identify lessons learned, standards and processes applicable to this project.
- As much as possible the project's sponsor and owner definition of quality materials will be used and, in all activities, processes, and systems will use the recommended products and materials for each application.
- For all effect plans and technical specifications govern the work constructive approach and they should express the best possible architectural design of the draft.
- The Plan-Do-Check-act (PDCA) cycle is the basis for quality improvement.
- Ensure the processes are followed and the standards are met through the quality metrics.
- Prevention over inspection

The following are the relevant external standards issued in respect of construction of buildings, which must be fulfilled 100%:

- Environment Effect investigation.
- Building Regulations.
- Code of hydraulic and sanitary facilities.

The Project Manager must ensure that such provisions are met, and which at the same time serve as control mechanisms. This following the relevant internal standards:

- Technical and quality assurance (appendix 7).
- Checklist (see Section 4.5.2).

- Monitoring and controlling of the execution schedule (see item 4.3.7)
- Monitoring and controlling of costs (see points 4.4.5).

4.5.1 Quality Factors

For this project, the following quality factors are used:

Chart 21 Quality Factors

Factors	Definition of factors
Performance of the project	That the performance index of the project cost is within the established range.
Milestone Compliance	That the performance index of the project schedule is within the established range.
Quality of work	That the quality assurance plan be applied throughout the project. See appendix 8.
Developer Satisfaction	That the customer is satisfied with the deliverables that are being finalized.

(Source: Own elaboration)

4.5.1.1 Quality Metrics

In construction projects quality is the conformity between something belonging to reality, with the established respect to that something in a document called technical specifications, which can only be verified through the measurement. The correct definition of the product scope of this project is considered key to ensuring the quality of the product and the project, scope that is defined through the construction plans and the technical specifications. For a better definition of this scope of the product and therefore of the quality, a list is established with the technical requirements that are considered optimal (see Appendix 7).

This does not mean that the responsible professional cannot add specifications to improve existing ones to comply with the standards, regulations and guidelines that regulate construction in Suriname, which maintains the spirit of the project and the financial balance.

The responsible professional must include in the technical specifications the characteristics (material, color and texture) and dimensions (length, weight, resistance and elasticity) of the different elements and tolerance margins allowed in their dimensions. The project manager will be responsible for requesting the professional responsible for including all items on the list of technical requirements in the construction drawings and technical specifications. The project manager will also be responsible for verifying that the studies of soil, geological, and water discharges by the professional responsible for the preparation of construction plans.

For the quality factors of project performance and milestone compliance, the Earned Value Management method is applied. For quality of work, the quality assurance plan is used described in appendix 7 and for the satisfaction of the developer a qualified survey is used (see appendix 8).

Chart 22. Quality Metrics

Requirements information				Quality metrics					
WBS #	Requirement description	Source stakeholder	WBS Activity	Metrics	Standard/ expected result	frequency	report	Responsible	Due date
2	Obtain funding to build the center	Rotaract Club Genesis	2.1	Stakeholder satisfaction	G = 85%	At the end of each phase	Monthly progress report	Project Manager	N/A
2	Obtain acceptance for ownership	Ministry of Education, Science and Culture	2.1	Stakeholder satisfaction	G = 85%	At the beginning of the project	Monthly progress report	Project Manager	N/A
2	Obtain permission to use the lot	Ministry of Social affairs and Housing	2.2	Stakeholder satisfaction	G = 85%	At the beginning of the project	Monthly progress report	Sponsor	N/A

Requirements information				Quality metrics					
WBS #	Requirement description	Source stakeholder	WBS Activity	Metrics	Standard/ expected result	frequency	report	Responsible	Due date
2	Obtain building permit	Ministry of Public Works	2.5	Stakeholder satisfaction	G = 85%	At the beginning of the project	N/A	Sponsor	10/13/2018
4	Performance of the project	Project manager	4.1	Stakeholder satisfaction	G = 85%	Monthly meetings	Monthly progress report	Project Manager	Every last Friday of the month
4	Milestone Compliance	Project manager	4.1	Stakeholder satisfaction	G = 85%	Monthly meetings	Monthly progress report	Project Manager	Every last Friday of the month
4	Quality of work	Project manager	4.1	Stakeholder satisfaction	G = 85%	Monthly meetings	Monthly progress report	Project Manager	Every last Friday of the month
	Sponsor Satisfaction	Project manager	4.1	Stakeholder satisfaction	G = 85%	Monthly meetings	Monthly progress report	Project Manager	Every last Friday of the month
4	Build the center	Construction company	4.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Project Manager	Every week On Mondays
4.1.2	two levels of each 20M2 by 40M2	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	Basketball/ indoor soccer/ indoor volleyball area	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	Central Information area	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays

Requirements information				Quality metrics					
WBS #	Requirement description	Source stakeholder	WBS Activity	Metrics	Standard/ expected result	frequency	report	Responsible	Due date
4.1.2	1 Computer room	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	1 First aid room	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	1 Study room	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	1 Private room	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	1 Bibliotheca	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	2 meeting/ training rooms	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	1 music room	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	2 Administratio n rooms	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	Room divider walls	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	4 Toilet groups	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	2 Bathroom areas	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
1.	2 Changing	Construction	1. 4.	SPI = EV /	SPI>1	Weekly	Weekly	Engineer	Every week

Requirements information				Quality metrics					
WBS #	Requirement description	Source stakeholder	WBS Activity	Metrics	Standard/ expected result	frequency	report	Responsible	Due date
	rooms	company		PV CPI = EV / AC	CPI>1	frequency	progress report		On Mondays
4.1.2	Storage space	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	Kitchen	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.2	Enough daylight into the building	Construction company	2.4 4.1.2.1	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.4	Security grill	Construction company	2.4 4.1.4.3	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.5	7 Outdoor seating	Construction company	2.4 4.1.5.2	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.5	Garden	Construction company	4.1.5 4.1.5.3	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.3	Air conditioning system	Construction company	4.1.3.1 4.1.3.1.2	SPI = EV / PV CPI = EV / AC	SPI>1 CPI>1	Weekly frequency	Weekly progress report	Engineer	Every week On Mondays
4.1.3	Modern furniture	Construction company	4.1.3.1.4	Co	Co=85%	At the time of purchase	Update At the time of purchase	Project Manager	Update At the time of purchase

(Source: Own elaboration)

4.5.1.2 Quality baseline

The baseline of quality is presented below.

Chart 23 Quality Baseline

Factor	**Quality Objective**	**Metric**	**Frequency / moment of measurement**	**Frequency / reporting time**
Performance of the project	CPI>1	Cost performance index CPI = EV / AC	Weekly frequency, Friday morning.	Weekly frequency, Monday morning.
Milestone Compliance	SPI>1	Schedule Performance Index SPI = EV / PV	Weekly frequency, Monday morning.	Weekly frequency, Monday afternoon.
Quality of work	CO = 85%	Cost of quality	According to quality assurance plan.	According to quality assurance plan.
Developer Satisfaction	G = 95%	Sponsor satisfaction level by continues involvement as per the communication plan	Frequency each meeting with developer at the time of meeting.	Frequency every meeting with developer, the next day.

(Source: Own elaboration)

4.5.2 Quality assurance

The proper inspection and audit of the work, by following the list of quality verification during the construction process, is vital for documenting and assuring the quality of the work.

The results of the inspection of each of the items on the list of quality verification, are reported in the work log and in the weekly reports of the state of the work. Any deviation in quality must be communicated to the Project manager.

Quality audits will also be performed as an independent process by an external objective consultant to determine if project activities comply with organizational and project policies, processes, and procedures. The objectives of a quality audit include:

- Identify lessons learned to be implemented such as construction, procurement, quality and security requirements;
- Identify all nonconformity, gaps, and shortcomings;
- Proactively advice in a positive manner to improve implementation of processes to help the team raise productivity;
- each audit will contribute in the lessons learned data information of the organization.

The Milestone calendar (section 4.2.5) should include control focused on the verification of quality. Inspection of the items on the quality checklist does not exclude the Inspection of other aspects that are required to verify the process constructive and healthy exercise of the profession by the architects and Engineers involved in the project. Subsequently periodic reviews and walkthroughs will be performed to stay on top of the project activities.

As part of its responsibility and to ensure the quality of the project, the professional responsible for the work will ensure that other professionals involved in the construction, carry out inspections of their areas of responsibility in a timely and objective manner.

In addition, consideration of the technical support and guarantees is considered vital. Of the manufacturers of the materials and equipment to be used in the project. The documentation of the technical recommendations by the suppliers, the documentation and archiving of written warranties, technical manuals, results of field tests, and the like. The Quality Professional who is part of the externally hired

project team members is designated as the responsible for filing this documentation and the Project Manager as the responsible for ensuring that the Quality Professional carries out this assignment.

4.5.3 Quality control

The quality control process is performed in parallel with the scope control process with the distinction that the quality control process is focused on the quality of the product. Through this process the project team monitors and records the quality activities to assess the performance of the project and recommends changes if necessary. This process is also necessary to ensure that the product deliverable meets the stakeholders' requirements for final acceptance. The quality control process is done during the execution phase and closing phase of the project through prevention and inspection activities.

These activities include:

- Quality checklist: a list and or the picture of items to be inspected
- Benchmarking: getting ideas for improving the project from other projects
- Flowchart
- Inspection during construction (material verification and water intrusion prevention)
- Statistical sampling: sampling of materials to determine defects

Chart 24 Quality control activities

Requirements information				Quality control				
WBS #	Requirement description	Source stakeholder	WBS Activity	quality control Activities	Responsible	WBS deliverable	Validation	Due date
2	Obtain funding to build the center	Rotaract Club Genesis	2.1	Quality checklist, benchmarking	Project Manager	Accept delivery of the center	Funding received	10/2/2019

Requirements information				Quality control				
WBS #	Requirement description	Source stakeholder	WBS Activity	quality control Activities	Responsible	WBS deliverable	Validation	Due date
2	Obtain acceptance for ownership	Ministry of Education, Science and Culture	2.1	Quality checklist, benchmarking	Sponsor	Multifunctional Community Center	Owner accepted	10/2/2019
2	Obtain permission to use the lot	Ministry of Social affairs and Housing	2.2	Quality checklist, benchmarking	Sponsor	Permit to use located lot	Permit received	10/2/2019
2	Obtain building permit	Ministry of Public Works	2.5	Quality checklist, benchmarking	Sponsor and Project Manager	Approved building permit.	Building permit received	10/6/2019
4	Build the center	Construction company	4.1	Quality checklist, benchmarking, Flowchart, Material Verification, Water Intrusion Prevention, Inspections During Construction	Project Manager	Delivery of the Multifunctional Community Center	The center is built	10/17/2020
4.1.2	two levels of each 20M2 by 40M2	Construction company	2.4 4.1.2.1	Quality checklist, statistical Sampling, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	Basketball/ indoor soccer/ indoor volleyball area	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020

Requirements information				Quality control				
WBS #	Requirement description	Source stakeholder	WBS Activity	quality control Activities	Responsible	WBS deliverable	Validation	Due date
4.1.2	Central Information area	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	1 Computer room	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	1 First aid room	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	1 Study room	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	1 Private room	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	1 Bibliotheca	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	2 meeting/ training rooms	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020

Requirements information				Quality control				
WBS #	Requirement description	Source stakeholder	WBS Activity	quality control Activities	Responsible	WBS deliverable	Validation	Due date
4.1.2	1 music room	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	2 Administra-tion rooms	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	Room divider walls	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	4 Toilet groups	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	2 Bathroom areas	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	2 Changing rooms	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020

Requirements information				Quality control				
WBS #	Requirement description	Source stakeholder	WBS Activity	quality control Activities	Responsible	WBS deliverable	Validation	Due date
4.1.2	Storage space	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	Kitchen	Construction company	2.4 4.1.2.1	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.2	Enough daylight into the building	Construction company	2.4 4.1.2.1	Quality checklist, inspection	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.4	Security grill	Construction company	2.4 4.1.4.3	Quality checklist, inspection, Material Verification	Engineer	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/2020
4.1.5	7 Outdoor seating	Construction company	2.4 4.1.5.2	Quality checklist, inspection	Engineer	Outdoor seating placed	The seating is delivered as per design	10/17/2020
4.1.5	Garden	Construction company	4.1.5 4.1.5.3	Quality checklist, inspection	Engineer	Garden is design and completed	The garden is furnished as per design	10/17/2020
4.1.3	Air conditioning system	Construction company	4.1.3.1 4.1.3.1.2	Quality checklist, testing and inspection, cause and effects diagrams	Engineer	Air conditioning system installed	The center is built as per design	10/17/2020

Requirements information				Quality control				
WBS #	Requirement description	Source stakeholder	WBS Activity	quality control Activities	Responsible	WBS deliverable	Validation	Due date
4.1.3	Modern furniture	Construction company	4.1.3.1.4	Quality checklist, inspection	Project Manager	Modern furniture placed in the building	The center is furnished as per design	10/17/2020

(Source: Own elaboration)

For the quality control of the construction, the project quality assurance plan template is used (Annex 7). This template details the parameters with which the acceptance criterion, the tolerance and the frequency with which each inspection is carried out, are inspected. In case any of these criteria are not accepted, it must be corrected immediately.

In the case of project performance, milestones compliance and developer satisfaction, it is reviewed at each meeting, according to the quality baseline chart 19. The project manager is responsible.

If it is necessary to request a change in the quality control process, it is carried out using the Standard Change Request Form (section 4.2.8).

4.6 Project Human Resource Management Plan

4.6.1 Plan resources

The following techniques and tools are used for the resource planning process:

- Organizational charts and description of jobs to ensure that each work package has a responsible person and all members of the work team keep their roles and responsibilities clear.
- Creation of work relationship, formal and informal interaction with other people within the organization, professional and project environment.

4.6.1.1 Profile of the project team

For the members of the project team professional profiles are required, which are described in chart 25.

Chart 25 Project team

Role	# of positions
Rotaract President	1
Project Manager	1
Financial Specialist	1
Human Resource Specialist	1
Procurement Specialist	1
Communication Specialist	1
Engineer	1

(Source: Own elaboration)

The following are the roles of the project team members:

Rotaract Club Genesis President:

Role: provides the funds for the project.

Function: Ensure timely response or approval of requested changes to the project. Channel and indicate project owner and project team vision, to authorize the realization of the different phases of the project and approve the results of the development of the phases and release the funds.

Project Auditor:

Role: it is the supervisor of the project that guarantees that it is developed with transparency and ethics.

Function: review the processes are developed and verify that the project be carried out as planned, to the organization, and the laws of the republic.

Project Manager:

Role: is the link between the project management team and the team executor, is responsible for the development of the project in the different areas of the organization for achieving the objectives.

Function: coordinates and directs the different areas of work of the draft. To manage and direct project team.

Financial Specialist:

Role: is responsible for managing the funds so that the project is developed.

Function: plans and carries out the activities corresponding to raise the investment required to develop the project, documenting and recording financial processes.

Human Resource Specialist:

Role: is responsible for performing management, tasks management, control and monitoring for the development of Products of the project.

Function: to carry out the administrative management of the project before the government offices, manage and follow up on project contracts through change management requests, claims management and review of progress in scope, time

and cost. It is also the duty of the Director Administrative expenses incurred by the project and the contracts, document and record the administrative and supervise the tasks of technical direction.

Procurement Specialist:

Role: to purchase or acquire products, services, or results needed from outside the project team.

Function: to document project procurement decisions, specify the approach, and identify potential sellers. Obtain seller responses, select sellers, and award contracts. manage procurement relationships, monitor contract performance, and complete each project procurement.

Communication Specialist:

Role: Set out the communication plan and inform the project manager about all communication activities throughout the project.

Function: creates, collects, distributes, stores, retrieves and the disposal of project information. Monitoring and controlling communications throughout the entire project life cycle to ensure the information needs of the project stakeholders are met.

Engineer:

Role: is responsible for the technical aspects of the product object of the contract.

Function: monitors the quality of processes and infrastructure in construction, gives the corresponding technical recommendations for the good execution of the construction processes, to document progress in the execution of the works and warns of deviations in the scope, time, cost and quality of the works.

Chart 26 shows the roles and functions matrix of the project team

4.6.1.2 Matrix of roles and responsibilities

The roles and responsibilities matrix shows the relationships between the work packages and the people who make up the project team.

For this matrix, the following conventions will be used:

A: Approve

C: Coordinates

R: Review

E: Execute

I: informed

P: Participate

®: Revise

Chart 26 Role and responsibilities matrix

Multifunctional Community Center		**A: Approve C: Coordinates R: Review E: Execute I: informed P: Participate ®: Revise**									
#	**Matrix of roles and responsibility**	**Project management team**							**Others**		
		Rotaract President	**Auditor**	**Project Manager**	**Financial Specialist**	**Human Resource Specialist**	**Procurement Specialist**	**Communication Specialist**	**Engineer**	**Contractors or/and Professionals**	**Change control Board**
1	1. Multi-functional Community Center	A	R	C	P	E	E	E	E	E	®
2	Start date								E		
3	**2 Initiation (Start Date)**	A	I	C		I	E	E	E		
4	2.1 Project Charter	A	I	C	P	I	E	E	E		
5	2.2 Identify Land			C		I	E		E		
6	2.3 ground investigation		R	C		I	E		E		
7	2.4 building design		R	C		I	E		E		®
8	2.5 Construction permit			C		I	E		E		
9	**4.1.1 Foundation**	A	I	C	P	E	E	E	E	E	®
10	4.1.1.1. earthwork (and foundation preparation)			C			E		E	E	®

Multifunctional Community Center		A: Approve C: Coordinates R: Review E: Execute I: informed P: Participate ®: Revise									
#	Matrix of roles and responsibility	Project management team							Others		
		Rotaract President	Auditor	Project Manager	Financial Specialist	Human Resource Specialist	Procurement Specialist	Communication Specialist	Engineer	Contractors or/and Professionals	Change control Board
11	4.1.1.2. Plumbing (drainage & water proof)			C			E		E	E	®
12	4.1.1.3. foundation poor			C			E		E	E	
13	**4.1.2 Building structure**	A	I	C	P	E	E	E	E	E	®
14	4.1.2.1 Framework			C			E		E	E	®
15	4.1.2.2 roofing			C			E		E	E	®
16	4.1.2.3 Electrical work			C			E		E	E	®
17	4.1.2.4 insulation			C			E		E	E	®
18	4.1.2.5 Door and windows installation			C			E		E	E	®
19	**4.1.3 Interior**	A	I	C	P	E	E	E	E	E	®
20	**4.1.3.1 Systems and furniture**			C			E		E	E	®
21	4.1.3.1.1 sprinklers			C			E		E	E	®
22	4.1.3.1.2 Air unit			C			E		E	E	®
23	4.1.3.1.3 lightning (indoor)			C			E		E	E	®
24	4.1.3.1.4 furniture			C			E		E	E	®
25	**4.1.3.2 Inspection**		R	C			E		E	E	
26	4.1.3.2.1 Safety standards		R	C			E		E	E	
27	4.1.3.2.2 efficiency		R	C			E		E	E	
28	4.1.3.2.3. Standard comparison		R	C			E		E	E	
29	**4.1.4 exterior**	A	I	C	P	E	E	E	E	E	®
30	4.1.4.1 lightning			C			E		E	E	®
31	4.1.4.2 Roof gutters			C			E		E	E	®
32	4.1.4.3 Security grill			C			E		E	E	®
33	**4.1.5 Landscaping**	A	I	C	P	E	E	E	E	E	®
34	4.1.5.1 walkway			C			E		E	E	®
35	4.1.5.2 seating			C			E		E	E	®
36	4.1.5.3 garden			C			E		E	E	®
37	Complete	A	R	C	P	E		E	E	E	

(Source: Own elaboration)

4.6.1.3 Organization chart of the project

The organizational structure of the project is functional in nature and made up of the sponsor, the management team and the executing team of the Project, the latter in turn is divided into internal executors of the organization and Outside the organization, as shown in Figure 17. External execution team is made up of companies hired for this purpose. Government offices which are included due to authorizations and inspections required to execute the project.

The organizational chart of the project uses part of the organizational structure of The Rotaract Club Genesis, a situation that allows sharing some of the administrative resources existing in the organization. The organization of the project establishes direct communication lines Clearly identified, which facilitates communication between the different Participating departments.

In addition, this organizational scheme seeks to decentralize the decisions Related to the project, based on the technical knowledge of each of the participating departments and delegating to the Responsibility for specific areas of the project.

The following is the organizational chart of the project:

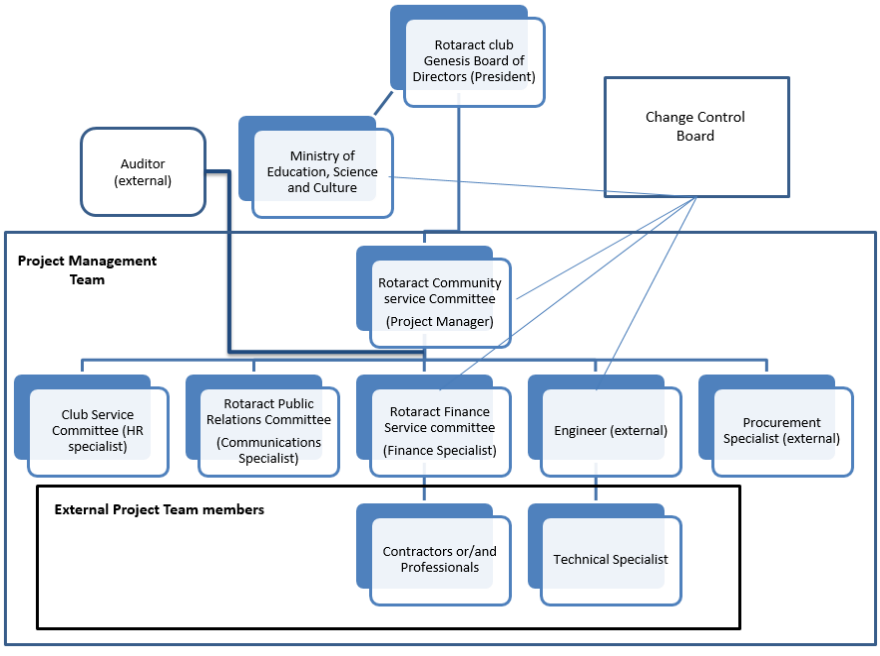


Figure 17. Organizational chart of the Multifunctional Community Center project team (Source: Own elaboration).

4.6.2 Recruitment process for administrative staff and field

For the contraction of administrative and professional staff and field for the project an employment application is used (see figure 18). Once the document is delivered, scheduled interviews and resumes are conducted. Once approved, the personnel action form (see figure 19) is completed, which is signed by the employee with the current criminal record.

The company's Human Resources Department hires the necessary and suitable personnel for the project. To do this, the workloads are balancing the schedule to avoid over-allocation of tasks or underutilization of project resources. The field staff will be hired solely for this project.

Among the administrative staff are the procurement manager and the payer, who is a plant employee in the Department of Supply and Accounting, respectively.

Job Application Form	
Personal information	
Title (e.g. Mr./Ms/Dr.)	
First name	
Last name	
Current address	
Telephone number	
Email address	
Position applied for	
Date of application	
How did you learn of this vacancy (put 'Speculative application' if you are not responding to a particular vacancy)?	
Date available for work (or period of notice if you are presently in work)	
Nationality	
Languages	
Languages (list languages followed in each case by an indication of your level of proficiency, (see link) eg: "A1" / "A2": Basic user "B1" / "B2": Independent user "C1" / "C2": Proficient user "MT": mother tongue	

Work and academic history	
For each work position held (add rows as required)	
Period of employment (from month, year to month, year)	
Employer	
Position held	
Summary of content of work	
For each degree course studied (add rows as required)	
Period of study (from month, year to month year)	
Name of university	
Level and subject of degree (eg BSc Economics)	
Grade obtained	
Main courses studied (or subject of thesis if a PhD)	
If relevant, list also any academic awards or publications	
Experience of project management	
Provide a short list of example projects that you have worked with. *For each project:*	
Period of project (from month, year to month, year)	
Client	
Project title	
Brief description	
Budget	
Referees	
List the contact details of two referees. If you have been at university in the	Name: Address:

past five years, at least one should be an academic referee from your most recent university. If you are, or have recently been, in employment, one referee should be your latest/last employer. We will not contact Referees unless you are successful at interview.	Phone no:	
	Email:	
	OK to contact?	
	Name: Address: Phone No:	
	Email:	
	OK to contact?	

Figure 18 Job application form

(Source: Own elaboration)

PERSONNEL ACTION NOTICE

PREP DATE:

EMPLOYEE: EMPLOYEE NO. EFF DATE:

☐ NEW HIRE ☐ TERMINATION ☐ TRANSFER ☐ SALARY ADJUST ☐ BONUS

☐ TITLE CHANGE* ☐ LABOR CATEGORY CHANGE* ☐ OTHER* *Provide explanation in "Comments/ Explanations: block below

EMPLOYEE/NEW HIRE DATA

Division: Program:

Labor Category: Functional Title:

Salary: Semimonthly SRD Annualized SRD Hourly SRD:

☐ Exempt ☐ Non-exempt Hire Source:

☐ Full-time ☐ Part-time ☐ Part-time/On-call Part-time Hours/Week:

Work Location: Supervisor:

TRANSFER DATA

From (Div./Loc.):	Approving Supervisor:
To (Div./Loc.):	Approving Supervisor:

SALARY, BONUS, TITLE CHANGES

TYPE OF ADJUSTMENT	PRESENT	PROPOSED
Semimonthly Salary (Full-time Exempt)		
Annualized Salary (Full-time Exempt)		
Hourly Salary (Non-Exempt & PT)		
Bonus		
Functional Title		
Category		

TERMINATION DATA (See Attached Page)

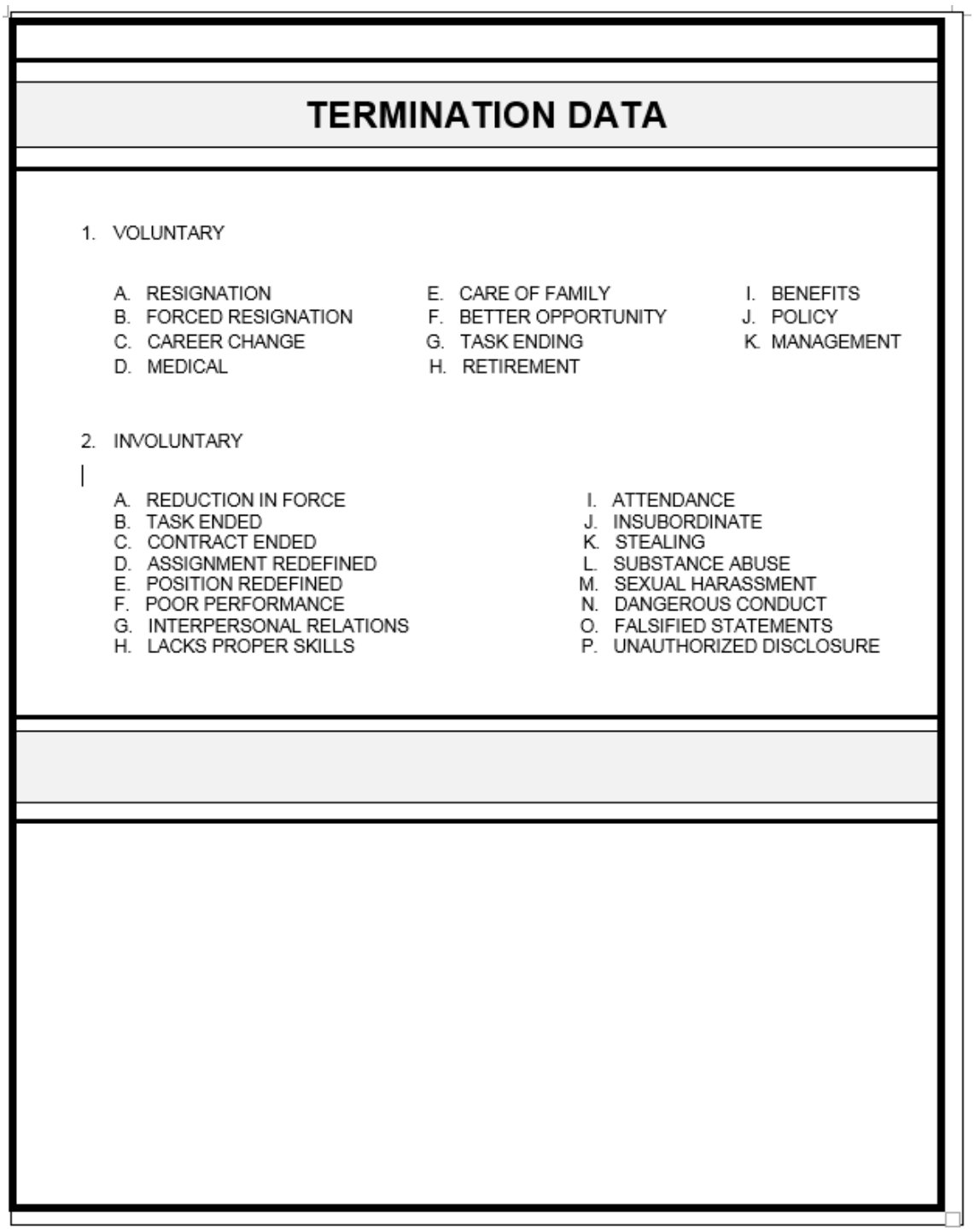
Type of Termination: Reason for Termination:

Eligible for Rehire: Yes ☐ No ☐ Last Day Worked: Pay Through:

COMMENTS/EXPLANATIONS

APPROVAL

	DATE		DATE
Supervisor:		Project Manager:	
HR Specialist:		Project owner:	
		Project sponsor:	



TERMINATION DATA

1. VOLUNTARY

A. RESIGNATION	E. CARE OF FAMILY	I. BENEFITS
B. FORCED RESIGNATION	F. BETTER OPPORTUNITY	J. POLICY
C. CAREER CHANGE	G. TASK ENDING	K. MANAGEMENT
D. MEDICAL	H. RETIREMENT	

2. INVOLUNTARY

A. REDUCTION IN FORCE	I. ATTENDANCE
B. TASK ENDED	J. INSUBORDINATE
C. CONTRACT ENDED	K. STEALING
D. ASSIGNMENT REDEFINED	L. SUBSTANCE ABUSE
E. POSITION REDEFINED	M. SEXUAL HARASSMENT
F. POOR PERFORMANCE	N. DANGEROUS CONDUCT
G. INTERPERSONAL RELATIONS	O. FALSIFIED STATEMENTS
H. LACKS PROPER SKILLS	P. UNAUTHORIZED DISCLOSURE

Figure 19 Personal action form

(Source: Own elaboration)

4.6.3 Develop and manage the project team

For the development of the work team, trainings are offered with suppliers to refresh the techniques of the construction systems used in construction, as well as the proper use of materials to improve inspections. Some trainings are:

Chart 27 Training Schedule

Training name	description	Training modality	Training hours	participants	Period	Facilitator
Health and Safety training	To help improve the knowledge and skills, reduce risks, make workplaces healthier and safer for everyone and improve long-term business performance.	Online	16 hrs.	Project team	Oct 28 - Nov 1 2019	High speed training
Team building	To help develop the team working skills; Develop crucial skills that allow the team to reach their full potential.	Classroom	15 hrs.	Project team	Oct 7-8 2019	Bendt Consultancy
Communication training	Build collaborative relationships that emphasize trust and respect. Communicate effectively using simple and concise language. Enhance listening to anticipate and avoid misunderstandings. Foster cross-cultural understanding	Classroom	32 hrs.	Project team	Oct 9 - 12 2019	Centrum voor communica - tie en Public Relations

Training name	description	Training modality	Training hours	participants	Period	Facilitator
Risk management	Manage risk to deliver initiatives that meet stakeholder needs; Apply scalable templates for your initiative with Risk Management Plans, Risk Registers, and Risk Assessment Matrixes; Leverage a proven qualitative risk-analysis process to guide your risk management decisions	Online	32 hrs.	Project team	Oct 21 - 25 2019	Learning tree International
Ms Project	learn how to manage the schedule, calendar, human resources, graphic reports, budget and time constraints, agile	Online	20 hrs.	Project team	Oct 14 - 16 2019	Lynda.com
Advanced Excel	hands-on instruction of advanced Excel 2013 functions. You'll learn to use PowerPivot to build databases and data models. We will show you how to perform different types of scenario and simulation analysis and you'll have an opportunity to practice these skills by leveraging some of Excel's built in tools including, solver, data tables, scenario manager and goal seek. In	Online	16 hrs.	Financial Manager	Oct 3-4 2019	Coursera

Training name	description	Training modality	Training hours	participants	Period	Facilitator
	the second half of the course, will cover how to visualize data, tell a story and explore data by reviewing core principles of data visualization and dashboarding. You will use Excel to build complex graphs and Power View reports and then start to combine them into dynamic dashboards.					

(Source: Own elaboration)

For the management of the project team, quarterly meetings to improve performance and motivation are held with each member of the team separately, where performance is returned, according to the roles and responsibilities matrix and improvement aspects are assessed if necessary. The performance review will be based on the six components below:

- Communication
- Collaboration and teamwork
- Problem-solving
- Quality and accuracy of work
- Attendance and dependability
- Ability to accomplish goals and meet deadlines.

These components are graded with a scoring matrix of Excellent, Good, Fair and Poor. An Example is given in figure 20.

QUARTERLY PERFORMANCE EVALUATION FORM

Employee:_____ Date of last evaluation: _____

Job Title: _____ Evaluation: _____

EVALUATION FACTORS		Excellent	Good	Fair	Poor
Dedication	Reports to work on time				
	Uses time constructively				
Performance	Good working knowledge of job assignment				
	Organizes and performs work in a timely, professional manner				
Collaboration	Willingly accepts work assignment				
	Willingly accepts changes in assignments not directly related to the job				
Initiative	Performs assigned duties with little or no supervision				
	Performs assigned duties with little or no supervision, even under stress				
	Strives to meet deadlines				
Communication	Communicates clearly and intelligently in person and during telephone contracts				
Teamwork	Works well with fellow employees without friction				
Character	Accepts constructive criticism without unfavorable responses				
Responsiveness	Handles stressful situations with tact				
Personality	Demonstrates a pleasant, calm personality when dealing with customers and fellow employees				
Appearance	Dress appropriate for work				
Work Habits	Maintains neat and orderly workstation				
	Maintains neat and orderly paperwork				

Comments and Recommendations: _____

_____

This performance evaluation has been reviewed with me, and I understand that I may attach my comments, if desired.

Employee Signature: _____ Date: _____

Evaluation performed by: _____ Date: _____

Figure 20 Quarterly Performance Evaluation Form

(Source: Own elaboration)

4.7 Project Communications Management Plan

4.7.1 Plan Communication

The Communications Management plan seeks to establish the required information for the monitoring and control of the implementation stage, to coordinate the communication between the different departments involved, to maintain and inform the sponsor and owner of the progress of the works and document this Information for your file.

The matrix of Communication presented in Chart 28 establishes which are the documents that will be used to fulfill this purpose, and indicate two ways of communicating information, printing on paper and digital transmission via email. To perform the progress report of project status report will be used designed for it. All information that must be known by the Auditor of the project will be transmitted in printed form, the remaining information may be transmitted in digital or printed form at the convenience of the participants.

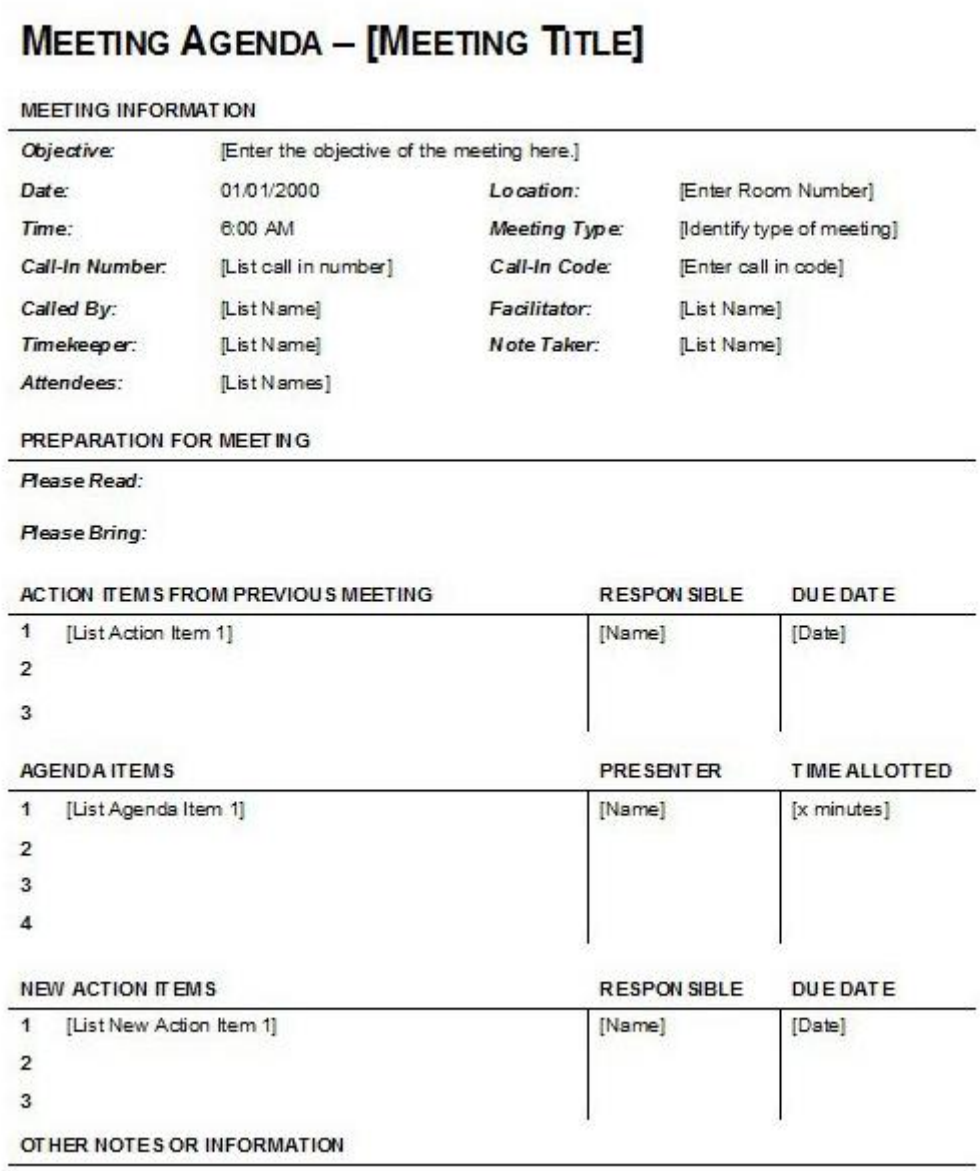
It is the responsibility of the Project Manager to monitor the project communications on time and properly. Responsibility of the Communication Specialist to document for physical or digital file, all information generated in the development of the project.

Because the project is in Pont Buiten, it is of utmost importance to ensure an effective flow of information. To do this, reports are presented through e-mails, fortnightly meetings in the project and monthly meetings in central offices with the sponsor.

For these meetings agendas are generated (see figure 21) with the topics to be discussed at the meeting (monthly summary on the status of the project, which should include requests for change, project performance criteria, deviations against the S curve, Table of payments, proposal of advance of activities for next reports, in addition each report must be supported with photographs). These

minutes are sent one week in advance to all participants for review and include any other necessary items. Once the meeting is over, a draft is generated (see figure 22), which contains all the points seen and their managers.

For informal communications, the telephone and the internal chat of the company are used with the purpose of clarifying doubts or fast revision of pending minutes.



MEETING AGENDA – [MEETING TITLE]

MEETING INFORMATION

Objective:	[Enter the objective of the meeting here.]		
Date:	01/01/2000	*Location:*	[Enter Room Number]
Time:	6:00 AM	*Meeting Type:*	[Identify type of meeting]
Call-In Number:	[List call in number]	*Call-In Code:*	[Enter call in code]
Called By:	[List Name]	*Facilitator:*	[List Name]
Timekeeper:	[List Name]	*Note Taker:*	[List Name]
Attendees:	[List Names]		

PREPARATION FOR MEETING

Please Read:

Please Bring:

ACTION ITEMS FROM PREVIOUS MEETING	RESPONSIBLE	DUE DATE
1 [List Action Item 1]	[Name]	[Date]
2		
3		

AGENDA ITEMS	PRESENTER	TIME ALLOTTED
1 [List Agenda Item 1]	[Name]	[x minutes]
2		
3		
4		

NEW ACTION ITEMS	RESPONSIBLE	DUE DATE
1 [List New Action Item 1]	[Name]	[Date]
2		
3		

OTHER NOTES OR INFORMATION

Figure 21 Meeting agenda template

(Source: Own elaboration)

Meeting Minutes Template

Meeting Date:

Meeting Time: Day:

Meeting Location:

Meeting Called By: **Designation:**

Meeting Purpose:

Note Taker: title:

Timekeeper: [Name here]

AGENDA TOPICS

[Write topic here] **[Presenter]**

[Add another topic if any] **[Presenter]**

Important Discussion Points

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....

Conclusion [Closing]

Action Items **[Presenter]**

[Topic here] **[Name]**

[Topic here] **[Name]**

Any Notes

Figure 21 Meeting minutes template

(Source: Own elaboration)

4.7.2 Communications Matrix

To improve communication in the project, the following communications matrix is used, which proposes the formal way of communication, the necessary information elements that are requested of each stakeholder, the periodical, the means and to which person should be delivered.

Chart 28 Communication Matrix

Type of communication	Addressed to	Frequency	Responsible	Purpose	Medium
Progress of work	Sponsor / owner	Monthly	Project manager	To report the progress of the work	Electronic communication (email)
Team performance report	Project manager	Monthly	Engineer	Information about the performance of the team	Electronic communication (email)
Weekly- report	Project manager	Weekly	Engineer	Know the progress of each process	Electronic communication (email)
Semi-monthly reports	Project manager	Semi monthly	Engineer	Detail process advancement in the project.	Electronic communication and meetings
Monthly reports	Sponsor /owner	Monthly	Project manager	Delivery of deliverables and fulfillment	Electronic communication and meetings
Meeting minutes	Sponsor/ owner	After each scheduled meeting	Project manager	Detail agreements and responsible with delivery dates.	Electronic communication (email)

(Source: Own elaboration)

4.7.2.1 Distribution of information

The information is distributed according to each stakeholder through the precise communication channels and with the correct message. Then, for each of the sectors and the people the following forms of distribution are offered:

Chart 29 distribution of information

Communication	Medium of communication
Reports (progress of works, changes in schedule, budget, resources, etc.)	Email / verbal
Meetings (invitation)	Email
Meetings (minutes)	Email
meeting	Skype /video conference / face-to-face
Results reports	Hardcopy (paper) / email
Answers to stakeholder queries	Hardcopy (paper) / email
Emergency changes and authorizations	Telephone calls / email

(Source: Own elaboration)

It is the responsibility of the project manager to ensure effective and timely distribution of the information and changes generated.

4.8 Project Risk Management Plan

Risk Management is carried out through meetings of the management team and Risk identification, risk register and qualitative risks, in which templates will be used as an accessible methodology and easy to understand for the project management team. In addition, the team designates a team member responsible for following up on the Risk Management Plan, who is responsible to manage the actions that are agreed in the Risk Prevention Plan to avoid, mitigate or transfer the potential risks of this project.

The revision and updating of the Risk Management Plan will be carried out during the Meeting for submission of period report of the Project Management Team, for which the Project Manager will first prepare a report on the status of identified risks, the status of risk triggers, and potential threats that may affect the project, a report that will be evaluated during the meeting and documented in the project status report template. It will be the responsibility of the management team to approve the actions related to the risk and approve the budget required to pay for these actions.

4.8.1 Risk registration

The risk register is performed through the Risk Registration Table
Presented in chart 30. The risk register is a table in which the results of risk analysis and risk response planning are recorded.

Chart 30 Risk registration

Risk Registration Construction Multifunctional Community Center			
Code	**Risk**	**Cause**	**Impact**
External risk			
ER-1	Non-approval of environmental impact study	Project does not meet environmental standards. Project contradicts local regulatory plan.	Time constrains Project cannot start without approval

Code	Risk	Cause	Impact
External risk			
ER-2	Delay in the granting of permits	Changes in institutional policies	Time constrains Project cannot start without the permit
ER-3	weather conditions (rain, wind)	weather conditions: rain, wind	delays in the completion of project phases
ER-4	Nature conditions (earthquake, tornado, etc.)	Nature conditions: earthquakes, tornadoes, thunderstorm	Complete stop of the project Reworks with additional funds needed.
ER-5	Non-approval of finances	Sponsor does not fulfill the requested guarantees.	Not enough funds to complete the project
ER-6	Increase of the inflation index	Changes in the exchange rate of the Euro above annual average. Variations in tax policies.	Project budget overrun Not enough funds to complete the project
ER-7	construction costs Increase	Increase in the price of oil Increase in the international price of steel, copper and aluminum.	Project budget overrun Not enough funds to complete the project
ER-8	Shortage of materials and equipment	Increased demand in the area Manufacturing problems in factories	Time constraints Low grade materials
ER-9	Shortage of labor	Matching construction time with others projects of great magnitude in the area.	Training costs Time constraints
ER-10	Nonconformity of the residents	Generation of noise and dust in construction Extroverted behavior of workers annoying the neighbors	delay in the project work

Organizational risk			
Code	**Risk**	**Cause**	**Impact**
OR-1	Change of personnel in the Project	Results do not meet the expectations of the organization Changes in the administrative policies of the organization	Training costs Reworks High turnover of personal
OR-2	Lack of financial support from the sponsor	Project does not meet the expectations of the sponsor Sponsor does not have information about the project or its state.	Miscommunication Delay in processes Cancelation of the project
Risk Management			
Code	**Risk**	**Cause**	**Impact**
RM-1	Inadequate control of the execution of the project	construction specialist does not have enough experience Responsible professional does not do his job properly	Rework Training costs Conflict management
RM-2	Unreliable cost estimation	Changes in scope or quality of the project.	Increased budget
RM-3	inadequate contract	Contract conditions do not comply with legislation existing. Incorrect or ambiguous wording of the contract. The scope, cost, time, Quality of contracted works are not specific. The conditions of the contract are not clearly specified.	Legal issues Miscommunications Legal costs Delay in work completion

Risk Management			
Code	**Risk**	**Cause**	**Impact**
RM-4	Companies show no interest in tender	The conditions of the offer are unattractive for companies in the sector There are no adequate suppliers for the project.	Delay in project work
RM-5	Delays in construction work	Weather conditions Problems in the execution of works (unforeseen) Activities require more time to be executed Delays in financing	Delay in project work Late finish of the project Increased budget
RM-6	Abandonment of the project by the contractors	Differences with the contractors generate conflicts that are not resolved timely	Conflict management Delay in project work
RM-7	Inadequate execution of the contract administration	Delays in the submission of reports, records and documents included in the administration of the contract. Lack of information in submitted reports.	Delay in project work
Quality risk			
Code	**Risk**	**Cause**	**Impact**
QR-1	Materials or equipment do not meet the Specifications	Lack of information on the characteristics of the materials or equipment in the technical specifications. Contractor does not comply with the technical specifications.	Low quality work

Quality risk			
Code	**Risk**	**Cause**	**Impact**
QR-2	Uncertainty in technical specifications	Inadequate planning of the technical specifications	Misunderstanding on final product specifications. Product not delivered as per stakeholders' expectations
QR-3	Design solutions not specified in plans	Design solutions not specified in drawings.	Misunderstanding on final product specifications. Product not delivered as per stakeholders' expectations
QR-4	Construction works do not meet specifications Techniques	Inadequate oversight of project implementation Contractor does not comply with best practices for Perform Integration processes.	Misunderstanding on final product specifications. Product not delivered as per stakeholders' expectations

(Source: Own elaboration)

The risk register list helps to identify which situations can influence each of the risks so that their effects can be manifested in the project. In other words, the risk goes from being a passive element to be a participatory element within the project. During this risk identification process, triggers are identified. These triggers are identified early enough during this risk identification process to be closely observed. These situations, referred to as causes, are recorded in the Cause Trigger Matrix presented in Chart No. 31 to help identify the cause trigger.

Chart 31 Cause trigger Matrix

Cause trigger Matrix of the construction of the Multifunctional Community Center	
Cause	**Cause trigger**
Non-approval of environmental impact study	Project does not meet environmental standards. Project contradicts local regulatory plan.
Delay in the granting of permits	Changes in institutional policies
weather conditions (rain, wind)	weather conditions: rain, wind
Nature conditions (earthquake, tornado, etc.)	Nature conditions: earthquakes, tornadoes, thunderstorm
Non-approval of finances	Sponsor does not fulfill the requested guarantees.
Increase of the inflation index	Changes in the exchange rate of the Euro above annual average. Variations in tax policies.
construction costs Increase	Increase in the price of oil Increase in the international price of steel, copper and aluminum.
Shortage of materials and equipment	Increased demand in the area Manufacturing problems in factories
Shortage of labor	Matching construction time with others projects of great magnitude in the area.
Nonconformity of the residents	Generation of noise and dust in construction Extroverted behavior of workers annoying the neighbors
Change of personnel in the Project	Results do not meet the expectations of the organization Changes in the administrative policies of the organization
Lack of financial support from the sponsor	Project does not meet the expectations of the sponsor Sponsor does not have information about the project or its state.
Inadequate control of the execution of the project	construction specialist does not have enough experience Responsible professional does not do his job properly

Cause trigger Matrix of the construction of the Multifunctional Community Center	
Cause	**Cause trigger**
Unreliable cost estimation	Changes in scope or quality of the project.
inadequate contract	Contract conditions do not comply with legislation existing. Incorrect or ambiguous wording of the contract. The scope, cost, time, Quality of contracted works are not specific. The conditions of the contract are not clearly specified.
Companies show no interest in tender	The conditions of the offer are unattractive for companies in the sector There are no adequate suppliers for the project.
Delays in construction work	Weather conditions Problems in the execution of works (unforeseen) Activities require more time to be executed Delays in financing
Abandonment of the project by the contractors	Differences with the contractors generate conflicts that are not resolved timely
Inadequate execution of the contract administration	Delays in the submission of reports, records and documents included in the administration of the contract. Lack of information in submitted reports.
Materials or equipment do not meet the Specifications	Lack of information on the characteristics of the materials or equipment in the technical specifications. Contractor does not comply with the technical specifications.
Uncertainty in technical specifications	Inadequate planning of the technical specifications
Design solutions not specified in plans	Design solutions not specified in drawings.
Construction works do not meet specifications Techniques	Inadequate oversight of project implementation Contractor does not comply with best practices for Perform Integration processes.

(Source: Own elaboration)

Chart 32 identifies for each risk WBS activities affected by the risk being transformed into an active element during the project life.

Chart 32 Record of risk affected activities

Record of risk affected activities		
Code	Risk	Activities at risk
ER-1	Non-approval of environmental impact study	2.5 Construction permit
ER-2	Delay in the granting of permits	2.5 Construction permit
ER-3	weather conditions (rain, wind)	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping
ER-4	Nature conditions (earthquake, tornado, etc.)	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping
ER-5	Non-approval of finances	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping
ER-6	Increase of the inflation index	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
ER-7	construction costs Increase	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping

Record of risk affected activities		
Code	Risk	Activities at risk
ER-8	Shortage of materials and equipment	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
ER-9	Shortage of labor	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
ER-10	Nonconformity of the residents	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
OR-1	Change of personnel in the Project	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
OR-2	Lack of financial support from the sponsor	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
RM-1	Inadequate control of the execution of the project	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
RM-2	Unreliable cost estimation	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping

Record of risk affected activities		
Code	Risk	Activities at risk
RM-3	inadequate contract	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
RM-4	Companies show no interest in tender	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
RM-5	Delays in construction work	4.1.2 Building structure
RM-6	Abandonment of the project by the contractors	4.1.2 Building structure
RM-7	Inadequate execution of the contract administration	4.1.2 Building structure
QR-1	Materials or equipment do not meet the Specifications	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
QR-2	Uncertainty in technical specifications	4.1.2 Building structure
QR-3	Design solutions not specified in plans	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping
QR-4	Construction works do not meet specifications Techniques	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping

(Source: Own elaboration)

4.8.2 Qualitative risk analysis

Once the risks have been identified and recorded, it is probability of impact. Two dimensions are essential in such work: the impact which produces the risk on the project, and the probability of the risk occurring.

In both cases it should be established which criteria are used to classify the risk and assign a range of values to each of them.

Chart 33 Defined Conditions for Impact Scales of Risk on Major Project Objectives (example for negative impact only)

Relative or Numerical Scale					
Project Objective	**Negligible**	**Minor**	**Moderate**	**Serious**	**Critical**
Cost	Insignificant cost increase	< 10% cost increase	10 – 20% cost increase	20 – 40% cost increase	> 40% cost increase
Time	Insignificant time increase	< 5% time increase	5 – 10% time increase	10 – 20% time increase	> 20% time increase
Scope	Scope decrease barely noticeable	Minor areas of scope affected	Major areas of scope affected	Scope reduction unacceptable to sponsor	Project end item is effectively useless
Quality	Quality degradation barely noticeable	Only very demanding applications are affected	Quality reduction requires sponsor approval	Quality reduction unacceptable to sponsor	Project end item is effectively useless

(Source: Own elaboration)

In the case of impact, five criteria have been established and assigned ranges from 1% to 100% as shown in Chart No. 34.

Chart 34 Impact Scale

Impact Scale	
Criteria	**value**
Critical	100%
Serious	85%
Moderate	60%
Minor	40%
Negligible	15%

(Source: Own elaboration)

In the case of probability of occurrence, six criteria are established, it is assigned value ranges from 1% to 100%, as shown in Chart 35.

Chart 35 Probability Scale

Probability Scale	
Criteria	**Probability**
Certainty	100%
It is frequent	85%
It is possible	60%
It is likely	40%
Not likely	15%
Impossibility	0%

(Source: Own elaboration)

A probability and Impact Matrix is a grid for mapping the probability of each risk occurrence and its impact on project objectives if that risk occurs. Risks are prioritized according to their potential implications for having an effect on the project's objectives. A typical approach to prioritizing risks is to use a look-up table or a probability and impact matrix. The specific combinations of probability and impact that lead to a risk being rated as "high," "moderate," or "low" importance are set by the Project Owner and Project Sponsor.

Chart 36 Probability X Impact Matrix

Impact	Negligible	Minor	Moderate	Serious	Critical
Probability	15%	40%	60%	85%	100%
100%	15%	40%	60%	85%	100%
85%	13%	34%	51%	72%	85%
60%	9%	24%	36%	51%	60%
40%	6%	16%	24%	34%	40%
15%	2%	6%	9%	13%	15%

(Source: Own elaboration)

To categorize the impact of the risks on the project, the possible impact of the risk on the project with the possibilities of this happens. In this case it is done by multiplying the indexes of impact by probability.

The result obtained can be expressed numerically or a matrix of categorization of impact to assign a classification, in this case:
Very low, low, medium, high and very high, as shown in Chart no. 37.

Chart 37 Impact categorization

Impact categorization					
Probability	**Negligible 15%**	**Minor 40%**	**Moderate 60%**	**Serious 85%**	**Critical 100%**
0% - 15%	Very Low	Low	Low	Medium	Medium
16% - 40%	Low	Low	Medium	Medium	High
41% - 60%	Low	Medium	Medium	Medium	High
61% - 85%	Medium	Medium	Medium	High	High
86% – 100%	Medium	High	High	High	Very High

(Source: Own elaboration)

Chart 38 Risk Impact description

Color	Impact	Description
	Negligible	Not reportable to Project Management Team
	Minor	Reportable incident to Project Management Team, no follow up
	Moderate	Report to Project Management Team with immediate correction to be implemented
	Serious	Report to Project Management Team requiring major corrective actions
	Critical	Project Management Team takes more serious action

(Source: Own elaboration)

In Chart no. 39, this classification is attached to the risk register and documented through the Risk Impact Analysis Matrix.

Chart 39 Risk Impact Analysis Matrix

Risk Impact Analysis Matrix							
Type	**#**	**Description**	**Risk activities**	**Impact**	**Probability**	**Probability X Impact**	**Category**
ER	1	Non-approval of environmental impact study	2.5 Construction permit	100%	15%	15.00%	Very Low
ER	2	Delay in the granting of permits	2.5 Construction permit	15%	60%	9.00%	Low
ER	3	weather conditions (rain, wind)	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor	40%	60%	24%	Medium

Risk Impact Analysis Matrix							
Type	**#**	**Description**	**Risk activities**	**Impact**	**Probability**	**Probability X Impact**	**Category**
			4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping				
ER	4	Nature conditions (earthquake, tornado, etc.)	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping	15%	10%	2%	Very Low
ER	5	Non-approval of finances	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping	100%	40%	40.0%	High
ER	6	Increase of the inflation index	4.1.1.3. foundation poor	60%	60%	36%	Medium

Risk Impact Analysis Matrix							
Type	**#**	**Description**	**Risk activities**	**Impact**	**Probability**	**Probability X Impact**	**Category**
			4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping				
ER	7	construction costs Increase	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	60%	85%	51.00%	High
ER	8	Shortage of materials and equipment	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	15%	15%	2%	Very Low
ER	9	Shortage of labor	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior	40%	60%	24%	Medium

Risk Impact Analysis Matrix							
Type	**#**	**Description**	**Risk activities**	**Impact**	**Probability**	**Probability X Impact**	**Category**
			4.1.4 exterior 4.1.5 Landscaping				
ER	10	Nonconformity of the residents	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	15%	45%	7%	Low
OR	1	Change of personnel in the Project	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	60%	10%	6%	Low
OR	2	Lack of financial support from the sponsor	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior	85%	15%	13%	Low

Risk Impact Analysis Matrix							
Type	**#**	**Description**	**Risk activities**	**Impact**	**Probability**	**Probability X Impact**	**Category**
			4.1.5 Landscaping				
RM	1	Inadequate control of the execution of the project	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	85%	40%	34%	Medium
RM	2	Unreliable cost estimation	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	85%	40%	34%	Medium
RM	3	inadequate contract	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior	60%	40%	24%	Medium

Risk Impact Analysis Matrix							
Type	**#**	**Description**	**Risk activities**	**Impact**	**Probability**	**Probability X Impact**	**Category**
			4.1.5 Landscaping				
RM	4	Companies show no interest in tender	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	15%	10%	2%	Very Low
RM	5	Delays in construction work	4.1.2 Building structure	60%	85%	51%	High
RM	6	Abandonment of the project by the contractors	4.1.2 Building structure	85%	15%	13%	Low
RM	7	Inadequate execution of the contract administration	4.1.2 Building structure	85%	15%	13%	Low
QR	1	Materials or equipment do not meet the Specifications	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior	60%	40%	24.00%	Medium

Risk Impact Analysis Matrix							
Type	**#**	**Description**	**Risk activities**	**Impact**	**Probability**	**Probability X Impact**	**Category**
			4.1.4 exterior 4.1.5 Landscaping				
QR	2	Uncertainty in technical specifications	4.1.2 Building structure	60%	15%	9.00%	Low
QR	3	Design solutions not specified in plans	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	60%	15%	9.00%	Low
QR	4	Construction works do not meet specifications Techniques	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	60%	40%	24%	Medium

(Source: Own elaboration)

4.8.3 Risk Response Plan

Once the risk register and its classification have been completed, will be the actions to follow each of the risks. Where risks adversely affect the project, one of the following strategies: avoid, mitigate, transfer and / or accept will be applied. The actions to follow may follow one of these strategies or give a combination of two of them to improve the response to risk.

There are two ways to address risks, through preventive actions that to avoid or reduce the likelihood of the risk. The life cycle of the project, and with corrective actions that are carried out risks is active within the project. In this case, the first actions are aimed at preventing the risk, for this elaborates the Risk Prevention Action Plan, documented through the employment of templates. Appendix 10 presents the Risk Prevention Action Plan.

The format of the seedlings is designed so that the top can easily identify the risk, its categorization, probability, its impact and the dates of registration and control.

In the central part the information related to the description of the risk is highlighted and the impact, while at the lower end of the template, the strategy, and the actions to be taken to prevent or reduce the chances of that the risk is manifest in the project.

Chart 40 Risk responses

Type	#	Description	Risk activities	Category	Strategy	Response	responsible
ER	1	Non-approval of environmental impact study	2.5 Construction permit	Very Low	Mitigate	Be informed about the requirements for approval	Project Manager
ER	2	Delay in the granting of permits	2.5 Construction permit	Low	accept	Submit permit well in advance	Project Manager

Type	#	Description	Risk activities	Category	Strategy	Response	responsible
ER	3	weather conditions (rain, wind)	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping	Medium	accept	Start the construction in dry season to have an advantage in setting up the building structure	Engineer
ER	4	Nature conditions (earthquake, tornado, etc.)	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping	Very Low	accept	Do a construction insurance	Engineer
ER	5	Non-approval of finances	4.1.1.1. earthwork (and foundation preparation) 4.1.1.3. foundation poor 4.1.2 Building structure 4.1.4 exterior 4.1.5 Landscaping	High	avoid	Be informed and about the sponsors requirement, keep sponsor informed and closely monitor for optimal satisfaction	Project Manager
ER	6	Increase of the inflation index	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior	Medium	accept	Request use of contingency funds	Project Manager

Type	#	Description	Risk activities	Category	Strategy	Response	responsible
			4.1.5 Landscaping				
ER	7	construction costs Increase	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	High	avoid	Contingency funds and management funds	Project Manager
ER	8	Shortage of materials and equipment	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Very Low	transfer	Procure contract for supplier to ensure materials	Procure - ment Specialist
ER	9	Shortage of labor	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Medium	transfer	Procure contract with construction company	Human Resource Specialist
ER	10	Nonconformity of the residents	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Low	avoid	Close monitor residents and keep informed and involved	Project Manager
OR	1	Change of personnel in the Project	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior	Low	accept	Procure contract with construction company	Human Resource Specialist

Type	#	Description	Risk activities	Category	Strategy	Response	responsible
			4.1.5 Landscaping				
OR	2	Lack of financial support from the sponsor	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Low	accept	Meeting with the sponsor on the way forward	Project Manager
R M	1	Inadequate control of the execution of the project	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Medium	avoid	Weekly, monthly meeting and report on progress	Project Manager
R M	2	Unreliable cost estimation	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Medium	avoid	Get most recent quotation during the planning phase	Project Manager
R M	3	inadequate contract	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Medium	avoid	Have the contracts reviewed by an objective lawyer hired externally	Procure ment Specialist
R M	4	Companies show no interest in tender	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior	Very Low	mitigate	Do a bidder's conference	Project Manager

Type	#	Description	Risk activities	Category	Strategy	Response	responsible
			4.1.5 Landscaping				
R M	5	Delays in construction work	4.1.2 Building structure	High	mitigate	Weekly, monthly meeting and report on progress	Project Manager
R M	6	Abandonment of the project by the contractors	4.1.2 Building structure	Low	transfer	Procure contract with construction company	Human Resource Specialist
R M	7	Inadequate execution of the contract administration	4.1.2 Building structure	Low	avoid	Bi-monthly reports on active contracts	Project Manager
QR	1	Materials or equipment do not meet the Specifications	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Medium	accept	Review the contract conditions of the vendor to meet the requirements	Procure-ment Specialist
QR	2	Uncertainty in technical specifications	4.1.2 Building structure	Low	accept	Check the requirements list	Engineer
QR	3	Design solutions not specified in plans	4.1.1.3. foundation poor 4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping	Low	mitigate	Specify design solution in the requirements plan	Project Manager
QR	4	Construction works do not	4.1.1.3. foundation poor	Medium	mitigate	Review construction	Project Manager

Type	#	Description	Risk activities	Category	Strategy	Response	responsible
		meet specifications Techniques	4.1.2 Building structure 4.1.3 interior 4.1.4 exterior 4.1.5 Landscaping			company contract and details for conformity	

(Source: Own elaboration)

4.8.3.1 Contractual agreements related to risk.

To comply with and strengthen the risk-related strategies described in Appendix 10 (Risk Prevention Action Plan), the Sponsor and owner agreed to take the following risk-related guidelines, which should be integrated into the tendering and construction contracts:

- The selection of the contractor will be done through a tender process.
- The contracting scheme will be like that used in the Construction industry.
- The cancellation of the work will be notified in advance, according to the activities Carried out. No advance cash disbursements will be made before start of activities.
- The contractor will provide the materials, equipment, tools and work to carry out the contracted activities.
- The selected contractor will be required to compliance with the local regulations which will be reinstated that the building will be built for a minimum time and check the proper operation of mechanical, electrical, accessory systems.
- The project manager will not have any type of relationship with the participants in the construction of the work.
- The contractor shall be the employer of the employees required to perform the construction of the work.

- The contractor may subcontract part of the work but must execute an amount of activities sufficient to ensure that he is responsible for the direct execution.
- The contractor and its subcontractors must have occupational risk policies for their workers to exonerate the sponsor and owner from responsibilities in case of an accident.
- The contractor must have an all-risk policy to cover any damage caused by the construction of the work.
- The construction contract will be formalized and registered before a notary public.

In addition, all related strategies must be respected and followed up to integrate with what is described in Appendix 10 (Risk Prevention Action Plan)

To follow up on this agreement, the project manager, will include any updated information related to identified risks in its Project Status reports.

4.9 Project Procurement Management Plan

4.9.1 Plan Procurement management

For this process, the technique of make or buy is used, which helps determine if the work can be done with the work team or is necessary to acquire it from external sources, either because the work team is not trained or are committed to another task.

Also, it is necessary to make use of procurement experts to develop or modify the criteria that are applied in the evaluation of proposals.

This process identifies the types of contracts to be used:
- Contracts for professional services are used for the activities and design of plans.
- For the activity of earthworks, air conditioners, walls, and light squares, paste and painting, windows and furniture are fixed price contracts, either with natural or legal persons.

For all cases, they must have a purchase order before starting work or paying advances, otherwise it will not proceed.

4.9.1.1 Contract types

For the procurement of works in hiring the construction company the Fixed Price with Economic Price Adjustment Contracts (FP-EPA) will be used. It is a fixed-price contract, but due to the extended period under which these works will be performed a special provision is taken into consideration allowing for pre- defined final adjustments to the contract price due to changed conditions, such as inflation changes, or cost increases (or decreases) for specific commodities. The FP-EPA contract is intended to protect both buyer and Sponsor from external conditions beyond our control.

For the hiring of contractors or workers the fixed price contracts will be used. These contracts will include financial incentives if the project objectives have been met above satisfaction such as delivery before due date, costs reductions or satisfactory performance. The contractor will be legally obligated to complete the works mentioned in the contract. Failing to do so, depending on the circumstances can lead to financial damage.

4.9.1.2 Procurement of goods

The goods that will be procured can be found in appendix 10.

4.9.1.3 Vendor selection process

For the contracting of contractors, at least three quotations are requested by the Procurement Manager to evaluate the best option. The vendors will receive a request consisting the specific product attributes, the expected requirements and the time frame for delivery. Prior to each project phase the Procurement Manager requests a list of the Chamber of Commerce for vendors that can provide the goods that are needed for that project phase. A team consisting of the Sponsors, the Project Manager, the Engineer, the Financial Specialist and the Procurement Specialist will evaluate the quotations through the grade method by giving a score or grade between 1 and 5, 1 being highly unsatisfied and 5 being excellent, based on a list of requirements written by the Procurement Manager. The requirements are:

- Years of business
- Financial Stability
- Geographic reach
- Material quality
- Pricing
- Delivery dependability
- References

For this process, the following grading table is implemented:

Chart 41 grading table

Criteria	Name vendor 1	Name vendor 2	Name vendor 3
Years of business			
Financial Stability			
Geographic reach			
Material quality			
Pricing			
Delivery dependability			
References			

(Source: Own elaboration)

4.9.2 Conduct procurement

4.9.2.1 Invitation to bidders

The Procurement Manager is appointed to manage the invitation to the bidders. The Procurement Manager will invite between 5 and 7 Construction Companies for bidding, recommended by the Chamber of Commerce that match the profile described. The bidding will be done with a standard Request for Proposal (RFP) process as indicated in the figure below.

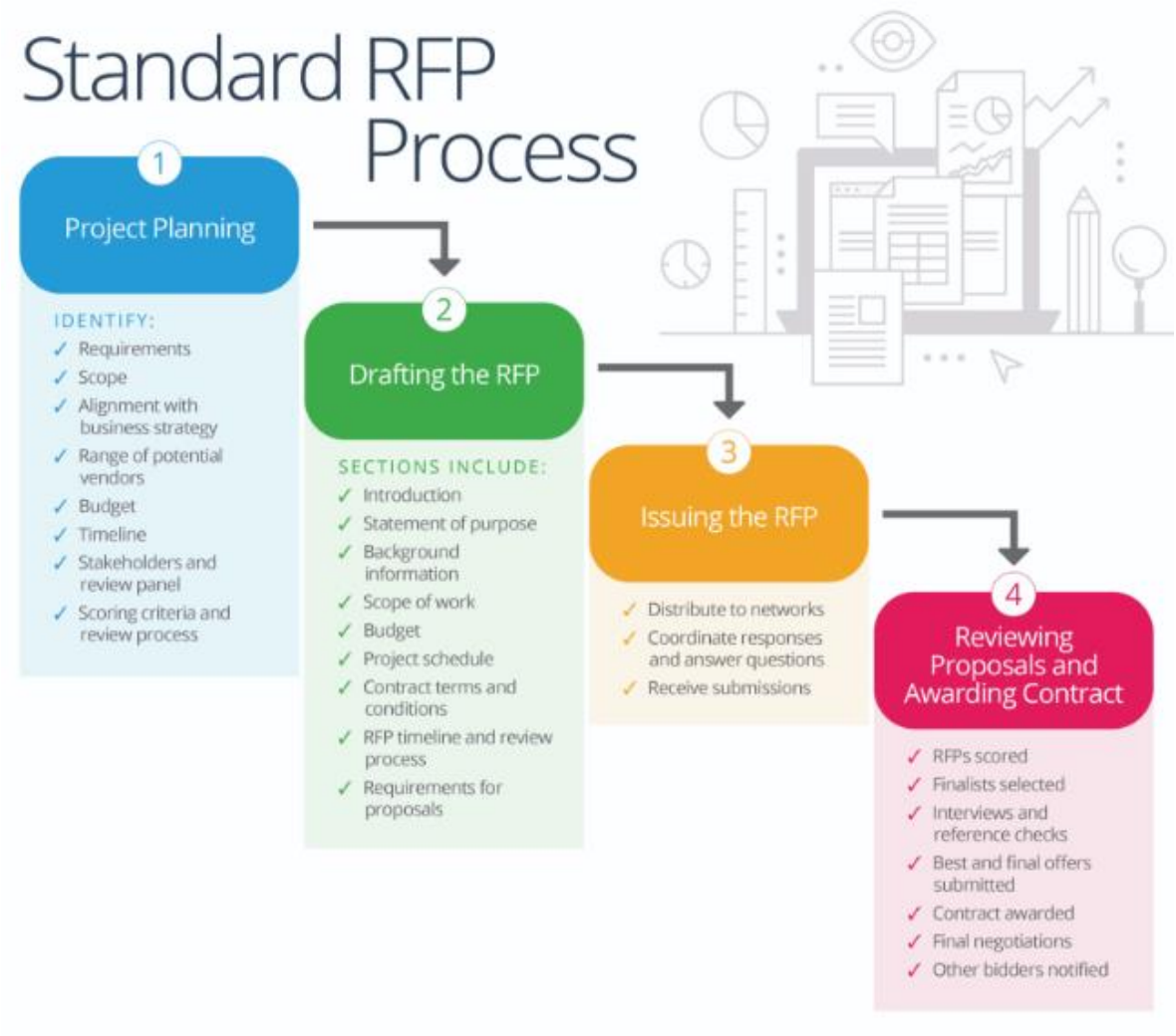


Figure 22 Standard RFP Process

(Source: Smartsheet, 2018)

Once the construction permit is granted, and the financial entity ratifies the provision of the budget, the Project Manager shall draw up an RFP invitation to each of the Companies.

4.9.2.2 Selection and hiring process.

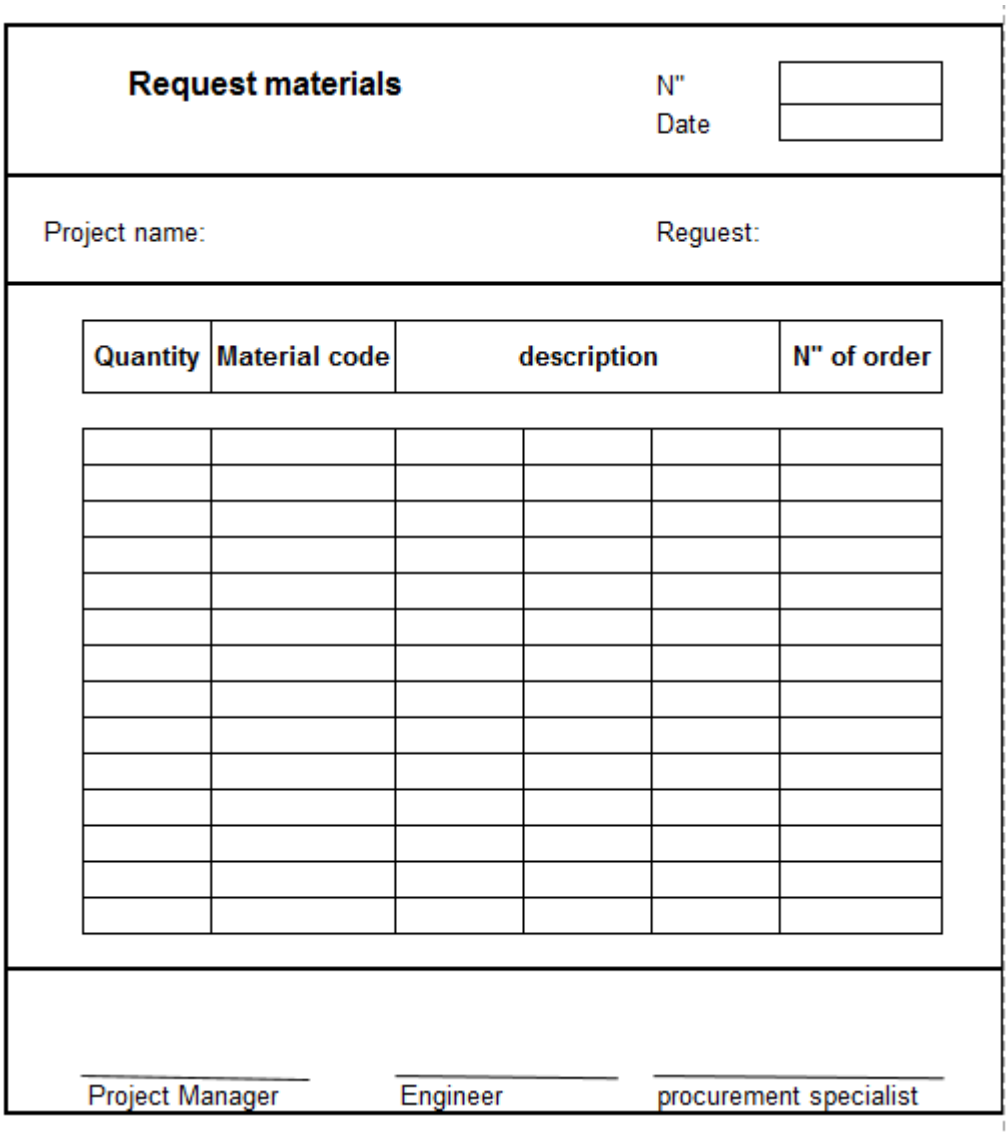
Once the offers have been received and the deadline for receipt has expired, a commission composed by the Sponsor, the Project Manager, the Engineer, the Financial Specialist and the Procurement Specialist, who will evaluate the offers, the selection of the company will be as follows:

- Each one of the offers will be given the rating as established in the tender poster.
- A list will be drawn according to the score obtained, the offer being the highest rating the first on the list and the lowest score offer the last one on the list.
- The information of the offer will be verified that is in the first place of the list and if there is any irregularity, the offer will be continuously followed on the list.
- The terms of the offer will be discussed below and the advantages and disadvantages, and voting shall be carried out if the offer or is rejected.
- Each member of the commission shall exercise a public vote, so that the offer is accepted which must have at least 3 votes in favor, being indispensable requirement that one of the votes granted to the offer is that of the Sponsor. If the offer is rejected, it will be placed in the list of offers and monitored.
- Once the offer has been selected, it will proceed to process the contracting of the respective company through a commission made up of the Sponsor, the Project Manager and the Procurement Specialist.

4.9.2.3 Materials

For procurement of materials, they must be quoted through the material request document (figure 23). The Procurement Manager will request between 5 and 7 Companies recommended by the Chamber of Commerce that match the profile described to send their quotations for the specified materials. The Procurement Manager will do this request 2 months before the beginning of each project phase.

Once the materials are quoted, a selection is made based on the quality, price and delivery dependability through the grading table in chart 41 The supplier selected will receive a purchase order signed by the Project Manager for material purchasing and delivery.



Request materials

N"
Date

Project name:

Reguest:

Quantity	Material code	description			N" of order

Project Manager

Engineer

procurement specialist

Figure 23 request materials template

Source: Own elaboration

4.9.2.4 Purchase order

Purchase orders are the formal document for suppliers and contractors to send materials and collect. Purchase orders must be signed by the Project Manager. When the amounts exceed six thousand dollars, they must also bear the signature of the General Manager.

All the invoices presented for payment are attached to the purchase orders.

4.9.2.5 Suppliers or contractors

For the procurement of a supplier or contractor the comparative table is used (see point 4.9.2) and once selected, according to the criteria, a purchase order will be generated for the contract amount.

4.9.2.6 Preparation of the Contract Statement

To prepare the Contract Statement, the Procurement Specialist is appointed, who Shall draw up the report in accordance with the conditions laid down in a Bidding poster. To guarantee the legal authorization of the responsibility of the Procurement Specialist that the contract complies with the laws and Regulations that are binding.

4.9.3 Control procurement

For this process, the following tools and techniques are used:

Change control system of the contract. The contractor may request by written means an extension to the term of execution of the contract because of delay, either outside or himself. It is up to the project manager to decide whether to approve the application.

Procurement performance reviews through on-site meetings to review progress, as budgeted.

Systems of payments by means of table of payments by advances. They must be signed by the engineer and project manager. In all cases, 5% will be retained in each advance.

4.9.4 Close procurement

For the closing of the contracts, a written notification indicating the conclusion of the contract by the contractor is necessary. Three months after the notification is

accepted, the corresponding retentions are delivered, and the contract is terminated. For this, the following template is used:

Contract termination

Date:

To:

Dear Sir/ Madam,

By this means, we inform you that the contract number _____is terminated for the works of _____receiving to satisfaction those works and documents of guarantees.

Having to comply with the three months' notice from this date for the return of the retentions stipulated in the above-mentioned contract.

Sincerely,

Project manager

Figure 24 Contract termination template

(Source: Own elaboration)

4.10 Project stakeholder's management Plan

4.10.1 Stakeholder identification

For the project, the following stakeholders are identified applying the tools and techniques of stakeholder analysis, expert judgment and meetings.

"Project stakeholders are individuals, groups, or organizations who may affect, be affected by, or perceive themselves to be affected by a decision, activity, or outcome of a project. They are comprised of persons and organizations such as customers, sponsors, the performing organization, and the public who are actively involved in the project, or whose interests may be positively or negatively affected by the execution or completion of the project. They may also exert influence over the project and its deliverables. Stakeholders may be at different levels within the organization and may possess different authority levels or may be external to the performing organization for the project" (PMI, 2013, p. 394).

The main stakeholders are prior identified by the sponsors and documented in the Project Charter. After the Project Charter is signed the Project Manager forms his team and identifies all potential stakeholders. Before each project phase the Project Manager and his team Identify the stakeholders for that phase. It is an iterative process so at any point in the project a stakeholder can be identified and added to the stakeholders list. The project stakeholders at the beginning of the project are:

- Construction company
- Workers
- Project team
- Subcontractors
- Suppliers
- Rotaract Club Genesis (Sponsor)
- Ministry of Education, Science and Culture
- Ministry of Public Works
- Ministry of Sports and Youth
- Ministry of Social affairs and Housing

- Resort government Pontbuiten
- Resort Manager
- Residence of Pont Buiten (See appendix 5)

4.10.1.1 Stakeholders Classification

After identification, the stakeholders are categorized according to their priority to the project and their expectations of the project. This can be found in the chart below.

Chart 42 Stakeholders expectations

Stakeholder	Priority	Expectation
Construction company	High	Funds are available and procured contract is clear and precise
Workers	Low	Salaries are paid on time and funds are available to build
Project Team	Low	Smooth progress of the project phases
Subcontractors	Low	Goods are purchased through them
suppliers	High	Goods are purchased through them
Rotaract Club Genesis (Sponsor)	High	Center build as per the approved design
Ministry of Education, Science and Culture	High	Center build as per the approved design
Ministry of Public Works	Low	Center build as per the approved design
Ministry of Sports and Youth	High	Center build as per the approved design
Ministry of Social affairs and Housing	High	Center build as per the approved design

Stakeholder	Priority	Expectation
Resort government Pontbuiten	Low	Helps decrease crime and Accommodation of extra curriculum activities
Resort Manager	Low	Accommodation of extra curriculum activities
Residence of Pont Buiten	Low	Center build without noise disturbance and left-over waist

(Source: Own elaboration)

Stakeholders are classified according to their power, interest, influence, impact and participation through the following tables:

Chart 43 Stakeholders Classification

ID	Organization	Power (1-5)	Interest (1-5)	Influence (1-5)	Impact (1-5)
A	Construction company	4	5	5	5
B	Workers	3	3	3	3
C	Project Team	3	3	3	3
D	Subcontractors	3	3	2	3
E	suppliers	3	2	3	4
F	Rotaract Club Genesis (Sponsor)	5	5	5	5
G	Ministry of Education, Science and Culture	5	5	5	5
H	Ministry of Public Works	5	3	5	3
I	Ministry of Sports and Youth	3	3	2	2
J	Ministry of Social affairs and Housing	3	3	2	2
K	Resort government Pont Buiten	5	5	3	3
L	Resort Manager	3	3	3	3
M	Residence of Pont Buiten	2	4	2	3

(Source: Own elaboration)

The engagement level of all stakeholders is compared to the planned engagement levels required for successful project completion. Stakeholder engagement throughout the life cycle of the project is critical to project success. The engagement level of the stakeholders can be classified as follows:

• **Unaware**. Unaware of project and potential impacts.

• **Resistant**. Aware of project and potential impacts and resistant to change.

• **Neutral**. Aware of project yet neither supportive nor resistant.

• **Supportive**. Aware of project and potential impacts and supportive to change.

• **Leading**. Aware of project and potential impacts and actively engaged in ensuring the project is a success.

The current engagement can be documented using Stakeholders Engagement Assessment Matrix, as shown in Chart 44, where C indicates the current engagement, and D indicates the desired engagement. The project team needs to identify the desired engagement level for the current phase of the project, based on available information.

Chart 44 Engagement Assessment Matrix

INTEREST GROUPS	NEUTRAL	SUPPORTIVE	LEADING	RESISTANT	UNAWARE
Construction company	C				
Workers	C	D			
Project Team		C D			
Subcontractors	C	D			
suppliers	C	D			
Rotaract Club Genesis (Sponsor)			C D		
Ministry of Education, Science and Culture			C D		
Ministry of Public Works	C	D			

INTEREST GROUPS	NEUTRAL	SUPPORTIVE	LEADING	RESISTANT	UNAWARE
Ministry of Sports and Youth		D C			
Ministry of Social affairs and Housing		D C			
Resort government Pontbuiten			C D		
Resort Manager		D	C		
Residence of Pont Buiten		D C			

(Source: Own elaboration)

Chart 45 Classification of stakeholders according to Power / Interest matrix

ID	Stakeholder	Power	Interest	Quadrant
A	Construction company	Low	High	Manage closely
B	Workers	Low	Low	Monitor
C	Project Team	Low	Low	Monitor
D	Subcontractors	Low	Low	Monitor
E	suppliers	Low	High	Manage closely
F	Rotaract Club Genesis (Sponsor)	High	High	Keep satisfied
G	Ministry of Education, Science and Culture	High	High	Keep satisfied
H	Ministry of Public Works	High	Low	Keep satisfied
I	Ministry of Sports and Youth	Low	High	Keep satisfied
J	Ministry of Social affairs and Housing	Low	High	Keep satisfied
K	Resort government Pontbuiten	High	Low	Keep satisfied
L	Resort Manager	Low	Low	Monitor
M	Residence of Pont Buiten	Low	Low	Monitor

(Source: Own elaboration)

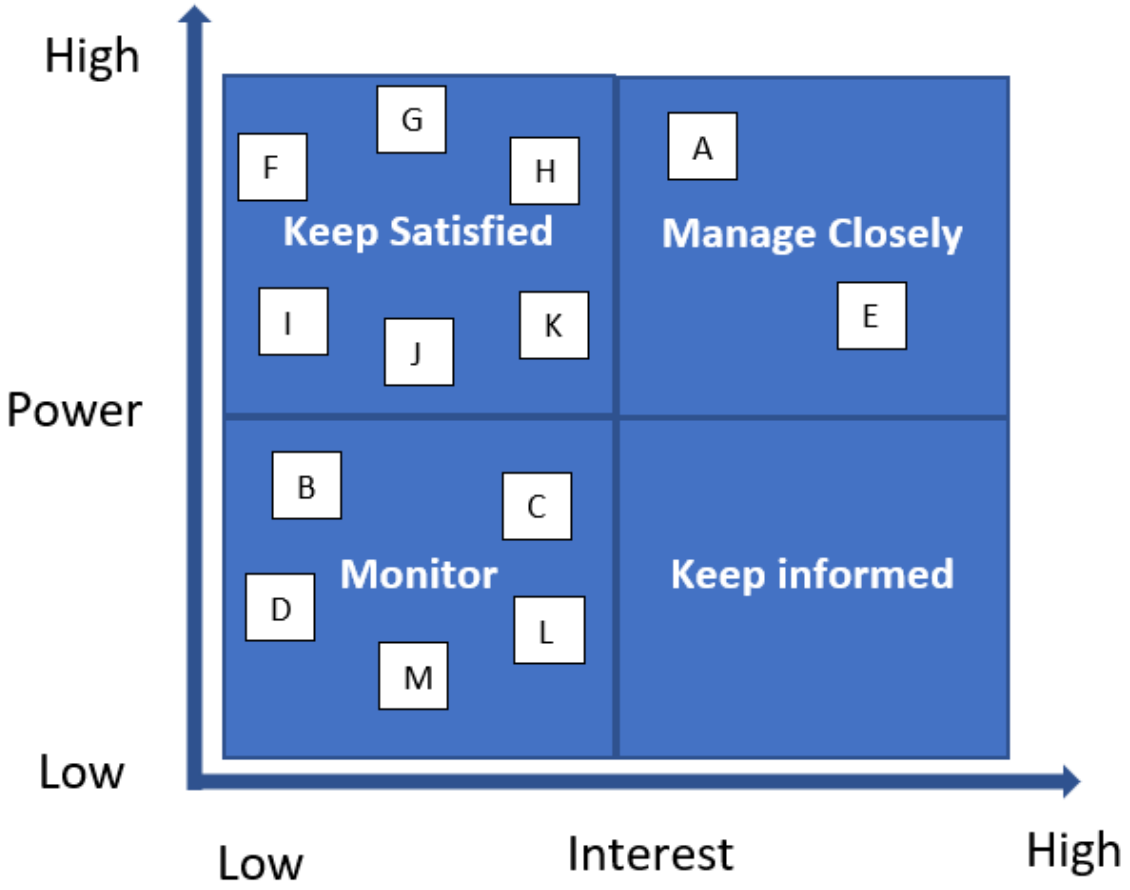


Figure 25 Classification of stakeholders according to Power / Interest

(Source: Own elaboration)

Chart 46 Classification of stakeholders by influence / impact matrix

ID	Stakeholder	Influence	Impact	Quadrant
A	Construction company	High	High	Manage closely
B	Workers	Medium	medium	Manage closely
C	Project Team	Medium	Medium	Monitor
D	Subcontractors	Low	Medium	Monitor
E	Suppliers	Low	Medium	Monitor
F	Rotaract Club Genesis (Sponsor)	High	High	Keep Satisfied
G	Ministry of Education, Science and Culture	High	High	Keep Satisfied
H	Ministry of Public Works	Low	Low	Monitor

ID	Stakeholder	Influence	Impact	Quadrant
I	Ministry of Sports and Youth	Low	Low	Monitor
J	Ministry of Social affairs and Housing	Low	Low	Monitor
K	Resort government Pontbuiten	High	High	Keep satisfied
L	Resort Manager	Low	High	Manage closely
M	Residence of Pont Buiten	Low	High	Manage closely

(Source: Own elaboration)

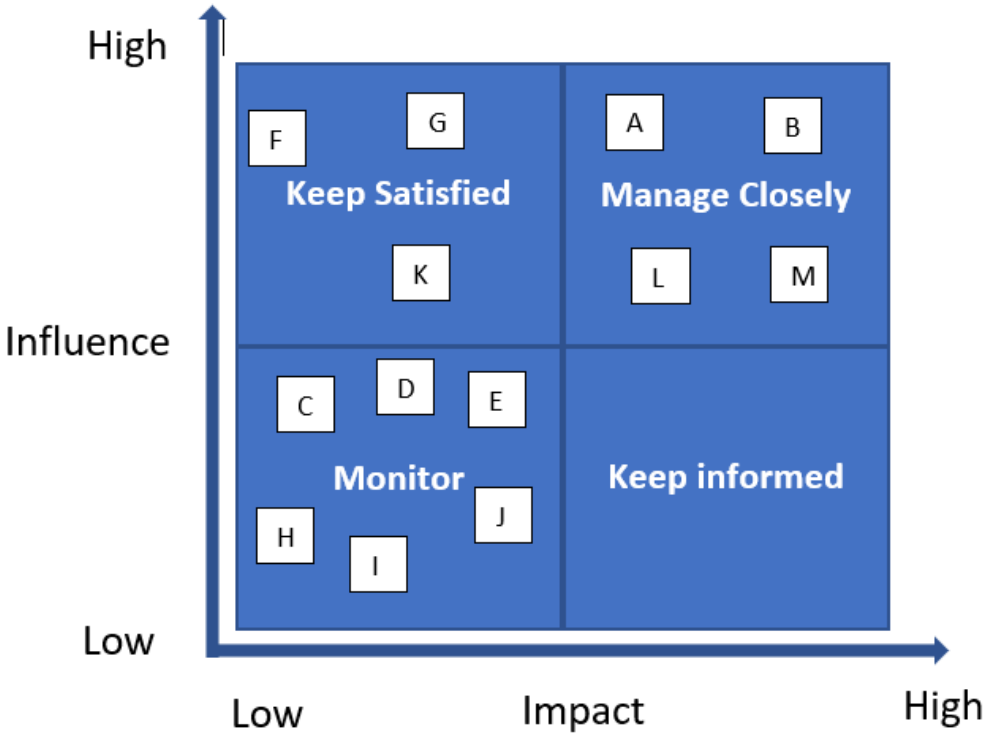


Figure 26 Classification of stakeholders according to Influence/ Impact

(Source: Own elaboration)

Chart 47 Classification of stakeholders according to matrix power / influence

ID	Stakeholder	Power	Influence	Quadrant
A	Construction company	High	High	Manage closely
B	Workers	Medium	Medium	Keep satisfied
C	Project Team	Medium	Medium	Keep satisfied
D	Subcontractors	Low	Low	Monitor
E	Suppliers	Low	Low	Monitor
F	Rotaract Club Genesis (Sponsor)	High	High	Keep satisfied
G	Ministry of Education, Science and Culture	High	High	Keep satisfied
H	Ministry of Public Works	High	High	Keep satisfied
I	Ministry of Sports and Youth	Low	Medium	Manage closely
J	Ministry of Social affairs and Housing	Low	Medium	Manage closely
K	Resort government Pontbuiten	High	High	Keep satisfied
L	Resort Manager	Low	Medium	Manage closely
M	Residence of Pont Buiten	Low	Medium	Monitor

(Source: Own elaboration)

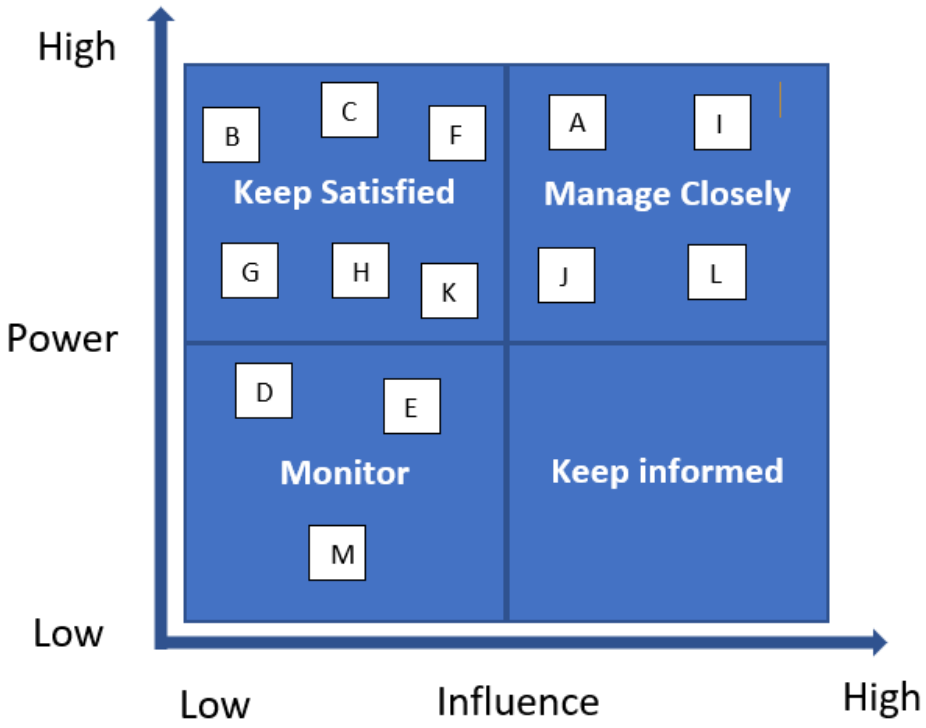


Figure 27 Classification of stakeholders according to Power/ Influence

(Source: Own elaboration)

4.10.2 Stakeholder management

Within the identified stakeholders, the keys stakeholders are identified to which strategies are designed to manage them. These stakeholders are:

Rotaract Club Genesis (Sponsor)
Ministry of Education, Science and Culture (owner)
Ministry of Public Works
Resort government Pontbuiten
Construction Company

4.10.2.1 Sponsor, Owner and Construction Company

A monthly report is prepared that includes all the information corresponding to the project in summary form (expenses per month, projection of final cost and summary of work done in the month). It is presented at a monthly meeting in which the Sponsor and Owner will ask questions and ask for more information about the project. Urgent topics are sent by email.

After each meeting, it is assessed whether it is necessary to include any additional documents or to hold meetings more frequently, according to the requirements of the Sponsor and the Owner.

4.10.2.2 Stakeholder Strategy

Chart 48 Stakeholder strategy

Stakeholders	Strategy 1	Strategy 2
Construction company	Manage carefully	Bi-monthly meetings are held where work progress will be reviewed and materials and suppliers will be coordinated to avoid affecting the operation of the construction.

Stakeholders	Strategy 1	Strategy 2
Rotaract Club Genesis (Sponsor)	Keep satisfied	Monthly meetings will be held where the progress of the work will be reviewed, the cost so far and the project's lack of spending
Ministry of Education, Science and Culture (owner)	Keep satisfied	Monthly meetings will be held where the progress of the work will be reviewed, the cost so far and the project's lack of spending
Ministry of Public Works	Manage carefully	A meeting will be held at the end of each phase to ensure that the building requirements are met.
Resort government Pontbuiten	Manage carefully	Monthly meetings will be held where the progress of the work will be reviewed, the cost so far and the project's lack of spending.

(source: Own elaboration)

The stakeholder management process can generate incidents and for this uses an incident record. The process can also generate change requests. (see Standard change request template described in section 4.2.8).

Incident Record						
project name:						
#	discription	stakeholder	date	responsible	solution	result
1						
2						
3						
4						
5						
6						
7						
8						

Figure 28 Incident registration

(Source: Own elaboration)

4.10.3 Manage stakeholder engagement

To control the participation of stakeholders, the techniques and tools of information management, expert judgment and meetings are used.

If a change request is required in the control, it will be generated using the standard change request template described in section 4.2.8.

5. CONCLUSIONS

After carrying out the scope management plan, it was possible to define clearly the work to be done and a detailed description of the project for which the project scope statement was developed, which is fundamental for success. It was also possible to generate the necessary templates for the validation and control of the scope. This will allow to verify the fulfillment of the deliverables to achieve the formal acceptance of the client and to be able to measure the performance of both the scope of the project and the product.

By means of the time management, the necessary activities and sequences were defined with which the schedule was created. With this tool, the necessary resources for the activities were estimated and the amount of period of work to elaborate the deliverables of the project was established.

The preparation of the budget allowed for a clear budgeted cost of the project and the projected monthly cash flow, which enabled a clear control throughout the project to avoid cost overruns.

After completing the Quality Management plan, the procedures and templates necessary to guarantee the quality of the project and the construction of the house were generated.

A Human Resource Management Plan was developed to organize, manage and lead the project team. The human resources Project management plan makes it easier to determine the need for human resources for the project and the allocation of respective roles and responsibilities.

The Communications Management Plan favors that the project information is generated adequately and timely. It also determines the information needs of stakeholders in the project to avoid problems in the future.

The project risk management plan allows the project manager and team to plan properly and take actions (corrective or preventive) if the risk may occur.

With the procurement management plan, it is possible to plan successfully the delivery of materials to procure the shortage of these. This will avoid generating delays in construction times. In addition, it will allow smooth entrance of the contractors to the project.

Stakeholder analysis allows the project stakeholders to be created and classified and provide a clearer picture of the impact they can have if they are not managed in an appropriate way.

6. RECOMMENDATIONS

- PMBok methodology is a best practices guide, so it is recommended to the Project team to update and modify it continuously according to the needs or conditions of the projects to which it will be applied. The PMBok best practices guide is based on basic concepts in order to fit into any project.

- The formats (templates) created for this project are only a unified guide of the concepts, so it is recommended to the Project Manager and project team that they are reviewed and, if necessary, adjusted to fit the conditions of the project; however, this is the minimum information they must contain.

- It is recommended to the construction company, to implement the proposed management plan as per the methodology of PMI for all future projects to generate an orderly process to obtain better results for the company and thus the guarantee of efficiency and effectiveness of the project.

- It is recommended that construction companies wishing to undertake projects of this nature to have a well-planned training and development program, as well as activities focused on professional and personal growth; have structured actions of quality of life, occupational health, social welfare activities, social work, psychological support, personal development, as well as social and corporate responsibility; have a policy of recognition and rewards adjusted to market practices, as well as compatible with the reality of the company and the needs of workers. This will allow the growth and maturity of the project execution overall.

- It is essential that the Project Manager implements the use of the Traceability Requirements Matrix that will help to ensure the connection of the business objectives with the project objectives, as well as providing a means of monitoring the end-of-life cycle of the project, helping to ensure that the requirements approved in the documentation will be delivered at the end of the project.

- It is recommended to the construction company to estimate the reserves necessary to deal with possible contingencies and risks in the construction work and apply the guidelines of the risk management plan.

- It is recommended that the construction company sets up a transparent and effective business communication program so that all employees feel safe and informed of all the "steps" and actions that the organization is taking or will take. This to stimulate participatory management as a practice at all levels.

- When carrying out the risk analysis of this project, it is beneficial when the guidelines are practiced. In the execution of the project, it is recommended that the Project Manager and project team has a strict control of the risks associated with each activity and verify the status of commitments or initial actions that developed the conditions of the triggers identified.

- It is recommended to the Sponsor and the owner of the project to clearly follow that what is stipulated in the procurement management plan to avoid cost and legal issues that may arise if not implemented properly.

- It is recommended to the Project Manager to establish the record of the Lessons Learned that serve as an input for subsequent projects. The clearest reason is that the correct documentation of the lessons learned will allow the company to learn from the mistakes made and not to have them repeated for future projects.

- Finally, it is recommended that the owners of this project make the documents of this project available to the public for the development of future related projects.

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8. APPENDICES

APPENDIX 1: FGP SEMINAR CHARTER

PROJECT CHARTER .	
Date	Project Name: Multifunctional Community Center
Issue date: August 27, 2016	build a multifunctional community center for the region Pont Buiten, in Paramaribo, Suriname
Knowledge Areas / Processes	Application Area (Sector / Activity)
Knowledge areas: Project Integration Management, Project Scope Management, Project Time Management, Project Cost Management, Project Quality Management, Project Human Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management and Project Stakeholders Management. Process groups: Initiating, Planning, Monitoring & Controlling, closing.	Application area: Project Management Framework Construction Project Management Sector: construction Interior design
Start date	Finish date
May 11, 2017	July 1, 2017
Project Objectives (general and specific)	
General objective: A Project Management plan for the building of a multifunctional community center in the region Pont Buiten that serves the social and educational need of the community. This center will serve as a centralized location for training programs, indoor sports activities, community events, home/computer center, office facility and private functions. Specific objectives: To create an Integration Management Plan to define, prepare, and coordinate all subsidiary plans and integrating them into a comprehensive project management plan. To create a Project Scope Management plan to indicate only the work that will be considered for this project, To create a Project Time Management plan to ensure how of the project will be completed on time. To create a Project Cost Management plan to indicate the costs associated with this project. To create a Project Quality Management plan to that indicates how quality and sustainability of the project will be managed. To create a Project Human Resource Management plan that indicates how the resources are identified, acquired and managed.	

To create a Project Communications Management plan that describes how the communication will be conducted and management during the project.

To create a Project Risk Management plan for the risks associated with the project

To create a Project Procurement Management plan that describes how the procurement of goods and services will be conducted and

To create Project Stakeholders Management plan that describes how the stakeholders are identified, engaged, managed and controlled depending on their level of interest and influence.

Project purpose or justification (merit and expected results)

What originates the project:

The region Pont Buiten is located in the District Paramaribo, Suriname. This region is a former Government housing project for low income families. In recent years several organizations have initiated and completed project in this community with objectives such as:

Breakfast project- to provide breakfast to the less fortunate children at the primary schools

Extracurricular activities for children between 4 and 12 during school vacation periods

Recreational fun activities for the in the neighborhood

Set up a playground and a soccer field.

Except for the playground all other project was for a short period of time with no long term beneficial outcome. The purpose of a multifunctional community center is to add to the development of the community that is of a long-term character. Recreation activities increase the quality of communities and the quality of life.

Why is the project to be done?

This community is generally known as a high-risk community for crime, school dropouts and teenage pregnancy with no means of empowerment to educate themselves and tools how to better their lives.

The location of the multifunctional community center will complement the already established playground and soccer field that is 200 meters away. It is to facilitate:

Recreational Sports

meeting/ event/ training space needs

training/ Education classes

Expected benefits for the community, surrounding neighboring communities and children:

enhance social skills

enhance life skills

more sport activities

means for income to maintain the building

means to decrease crime rate

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

Project Management Plan of Building a multifunctional community center

Assumptions

The current economic situation of the country Suriname is deteriorating day by day. The exchange rate is unstable and has an increasing trend. As this country has an import economy resources such as equipment needed can be limited as the trend of the exchange rate can cause companies to stop business which can be a time constraint as these resources and products will be imported from stakeholders outside the country. Further in crises situation the quality of products need to be assured and This can become a limiting factor.

Constraints

Budget constraints: exchange rate fluctuation and increased costs of ground products

Time constraints: limited resources, stakeholders

Resource constraints: qualified project team

Preliminary risks

If the exchange rate increases it will affect and impact the total costs of the project

Budget

General cost estimate of main items/deliverables for project budget:

SRD 2,800,000.00 (Euro 337,349.40 (Exchange rate Euro 1, - = SRD 8.3,-))

Milestones and dates

Milestone	Start date	End date
Approved Building design	April 24, 2018	May 19, 2018
Approved		

Relevant historical information

Brief basic company information.

Documentation of previous works or similar efforts related to the project.

Stakeholders

Direct stakeholders:

Sponsor: Rotaract Club Genesis

Ministry of Education and Science and Culture

Ministry of Sport and Youth Affairs

DGS professor

Academic assistant

Community Pont Buiten

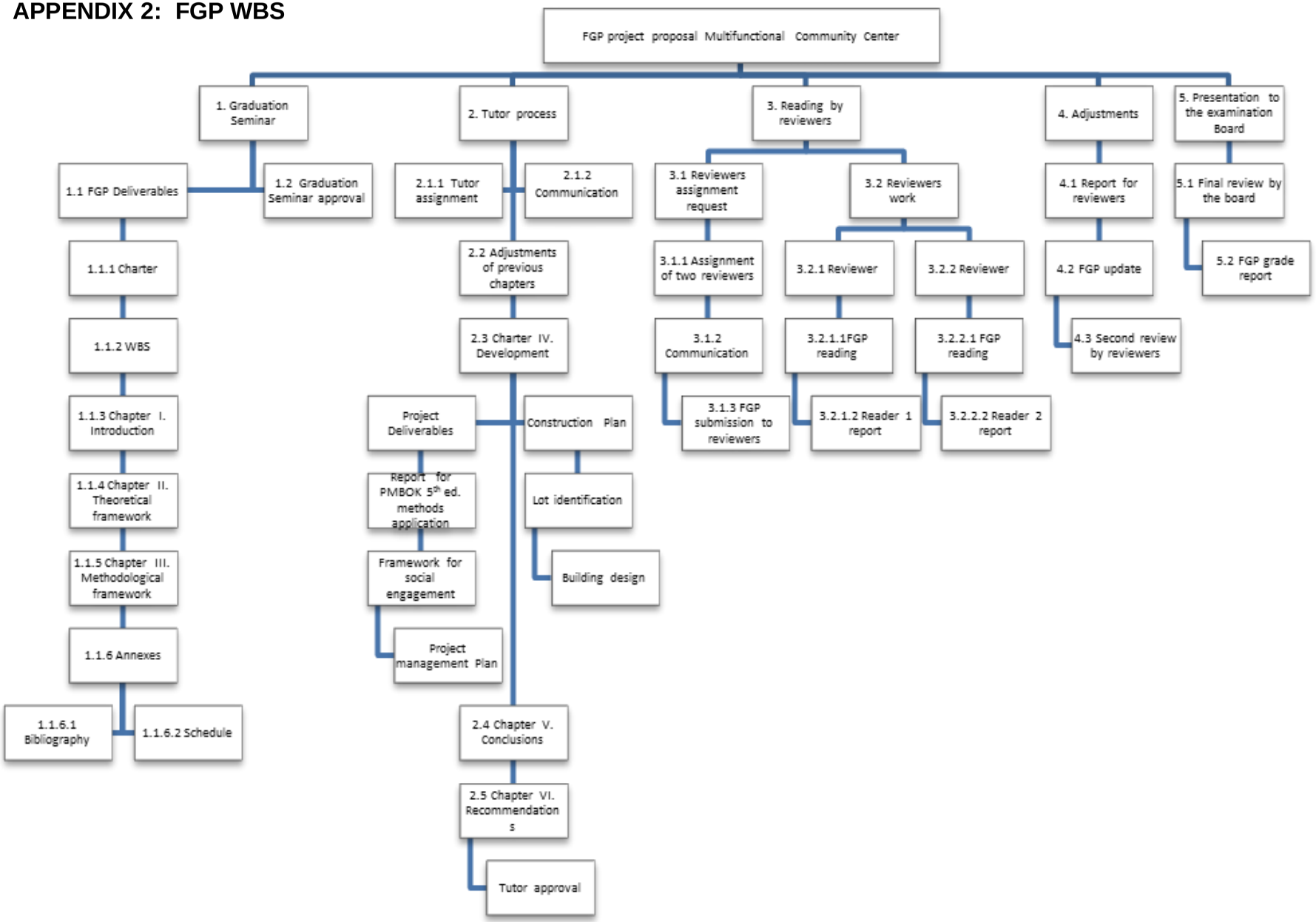
Indirect stakeholders:

Neighbor communities

Parents

Project Manager: Samantha Richards-Maaijen	Signature: Samantha Maaijen
Authorized by:	Signature:

APPENDIX 2: FGP WBS



APPENDIX 3: FGP SCHEDULE

	Task Name	Duration	Start	Finish	Predecessors
1	Final Graduation Project	130 days?	Mon 8/22/16	Fri 2/17/17	
2	FGP Start	0 days	Mon 8/22/16	Mon 8/22/16	
3	1 Graduation Seminar	27 days?	Mon 8/22/16	Tue 9/27/16	2
4	1.1 FGP Deliverables	20 days	Mon 8/22/16	Fri 9/16/16	
5	1.1.1 Charter	5 days	Mon 8/22/16	Fri 8/26/16	
6	1.1.2 WBS	5 days	Mon 8/22/16	Fri 8/26/16	
7	1.1.3 Chapter I. Introduction	5 days	Mon 8/29/16	Fri 9/2/16	5 6
8	1.1.4 Chapter II. Theoretical framework	5 days	Mon 9/5/16	Fri 9/9/16	7 12
9	1.1.5 Chapter III. Methodological framework	5 days	Mon 9/12/16	Fri 9/16/16	8
10	1.1.6 Annexes	15 days	Mon 8/29/16	Fri 9/16/16	
11	1.1.6.1 Bibliography	5 days	Mon 9/12/16	Fri 9/16/16	8
12	1.1.6.2 Schedule	5 days	Mon 8/29/16	Fri 9/2/16	6 5
13	1.2 Graduation Seminar approval	5 days	Mon 9/19/16	Fri 9/23/16	9 11
14	Lot identification	3 days?	Fri 9/23/16	Tue 9/27/16	
15	2 Tutoring process	65 days	Mon 04/24/17	Fri 07/21/17	
16	2.1 Tutor	3 days	Mon 04/24/17	Thu 04/27/17	
17	2.1.1 Tutor assigment	1 day	Mon 04/24/17	Tue 04/25/17	13
18	2.1.2 Communication	2 days	Thu 04/27/17	Fri 09/28/17	17
19	2.2 Adjustments of previous chapters (If needed)	5 days	Mon 05/01/17	Fri 05/05/17	17 18
20	2.3 Charter IV. Development FGP Deliverables	47 days	Mon 05/08/17	Tue 07/11/17	19
21	2.3.1 building design	10 days	Mon 05/08/17	Fri 05/19/17	
22	2.3.2 scope statement	4 days	Thu 5/9/2017	Fri 05/12/17	
23	2.3.3 Project scope management plan	5 days	Mon 07/03/17	Tue 07/04/17	22
24	2.3.4 Project time management plan	2 days	Wed 07/05/17	Fri 07/07/17	23
25	2.3.5 Project costs management plan	2 days	Sat 07/08/17	Sun 07/09/17	
26	2.3.6 Project quality management plan	1 days	Mon 07/10/17	Mon 07/10/17	25
27	2.3.7 Project human Resources plan	1 days	Tue 07/11/17	Tue 07/11/17	26
28	2.3.8 Project communication management plan	1 days	Wed 07/12/17	Wed 07/12/17	27
29	2.3.9 Project risk management plan	2 days	Thu 07/13/17	Fri 07/14/17	28
30	2.3.10 Project procurement management plan	1 days	Sat 07/15/17	Sat 07/15/17	29
31	2.3.11 Project stakeholder management plan	1 days	Sun 07/16/17	Sun 07/16/17	30
32	2.3.12 Project integration management plan	1 days	Mon 07/17/17	Mon 07/17/17	31
33	2.4 Chapter V. Conclusions	1 days	Tue 07/18/17	Tue 07/18/17	20
34	2.5 Chapter VI. Recommendations	1 days	Tue 07/18/17	Wed 07/19/17	33
35	Tutor approval	0 days	Woe 08/15/18	Woe 08/15/18	34
36	3 Reading by reviewers	15 days	Woe 08/15/18	Thu 08/30/18	
37	3.1 Reviewers assigment request	5 days	Thu 08/30/18	Mon 09/03/18	
38	3.1.1 Assigment of two reviewers	2 days	Mon 09/03/18	Woe 09/05/18	35
39	3.1.2 Communication	2 days	Woe 09/05/18	Fri 09/07/18	38
40	3.1.3 FGP submission to reviewers	1 day	Fri 09/07/18	Sat 09/08/18	39
41	3.2 Reviewers work	10 days	Sat 09/08/18	Tue 09/18/18	
42	3.2.1 Reviewer	10 days	Tue 09/18/18	Fri 09/28/18	
43	3.2.1.1 FGP reading	9 days	Fri 09/28/18	Sat 10/06/18	40
44	3.2.1.2 Reader 1 report	1 day	Sat 10/06/18	Sun 10/07/18	43
45	3.2.2 Reviewer	10 days	Sun 10/07/18	Tue 10/16/18	
46	3.2.2.1 FGP reading	9 days	Tue 10/16/18	Thu 10/25/18	40
47	3.2.2.2 Reader 2 report	1 day	Thu 10/25/18	Fri 10/26/18	46
48	4 Adjustments	20 days	Fri 10/26/18	Woe 11/14/18	
49	4.1 Report for reviewers	9 days	Thu 11/15/18	Fri 11/23/18	47
50	4.2 FGP update	1 day	Fri 11/23/18	Sat 11/24/18	49
51	4.3 Second review by reviewers	10 days	Sun 11/25/18	Tue 12/04/18	49 50
52	5 Presentation to Board of Examiners	5 days	Woe 12/05/18	Mon 12/10/18	
53	5.1 Final review by board	2 days	Tue 12/11/18	Woe 12/12/18	51
54	5.2 FGP grade report	3 days	Thu 12/13/18	Sat 12/15/18	53
55	FGP End	0 days	Sun 12/16/18	Sun 12/16/18	54

APPENDIX 4: TRACEABILITY MATRIX

Project Title: Multifunctional Community Center

Date Prepared:

Version control					
version	Made by:	Revised by:	Approved by:	Date:	Reason:
1				07/5/2018	

Requirements information				Traceability				
WBS #	Requirement description	Source stakeholder	WBS Activity	Verification (complies with quality control)	responsible	WBS deliverable	Validation	Due date
2	Obtain funding to build the center	Rotaract Club Genesis	2.1	Accept delivery of the center on time and within budget	Project Manager	Accept delivery of the center	Funding received	10/2/2018
2	Obtain acceptance for ownership	Ministry of Education, Science and Culture	2.1	delivery of the Multifunctional Community Center accepted	Sponsor	Multifunctional Community Center	Owner accepted	10/2/2018
2	Obtain permission to use the lot	Ministry of Social affairs and Housing	2.2	Request to use located lot approved	Sponsor	Permit to use located lot	Permit received	10/2/2018
2	Obtain building permit	Ministry of Public Works	2.5	request building permit.	Sponsor and Project Manager	Ap-proved building permit.	Building permit received	10/06/18
4	Build the center	Construction company	4.1	the Multifunctional Community Center is built	Construction Company	Delivery of the Multi-func-tional Com-munity Center	The center is built	10/17/19
4.1.2	two levels of each 20M2 by 40M2	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multi-func-	The center is built as per design	10/17/19

						tional Community Center		
4.1.2	Basketball/ indoor soccer/ indoor volleyball area	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	Central Information area	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	1 Computer room	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	1 First aid room	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	1 Study room	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19

4.1.2	1 Private room	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	1 Bibliotheca	Construction company	2.4	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	2 meeting/ training rooms	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	1 music room	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	2 Administration rooms	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	Room divider walls	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Commu	The center is built as per design	10/17/19

						nity Center		
4.1.2	4 Toilet groups	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	2 Bathroom areas	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	2 Changing rooms	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	Storage space	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	Kitchen	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifunctional Community Center	The center is built as per design	10/17/19
4.1.2	Enough daylight into the building	Construction company	2.4 4.1.2.1	Build as per design	Construction Company	Delivery of the Multifun	The center is built as per design	10/17/19

						ctional Commu nity Center		
4.1.4	Security grill	Construction company	2.4 4.1.4.3	Build as per design	Construction Company	Delivery of the Multifun ctional Commu nity Center	The center is built as per design	10/17/19
4.1.5	7 Outdoor seating	Construction company	2.4 4.1.5.2	Outdoor seating as per design	Construction Company	Outdoor seating placed	The seating is delivered as per design	10/17/19
4.1.5	Garden	Construction company	4.1.5 4.1.5.3	Garden as per design	Construction Company	Garden is design and complet ed	The garden is furnished as per design	10/17/19
4.1.3	Air conditioning system	Construction company	4.1.3.1 4.1.3.1. 2	AC system as per requirement	Construction Company	Air conditio ning system installed	The center is built as per design	10/17/19
4.1.3	Modern furniture	Construction company	4.1.3.1. 4	Furniture as per requirement	Construction Company	Modern furniture placed in the building	The center is furnished as per design	10/17/19

APPENDIX 5 STAKEHOLDER REGISTER

Project Title: Multifunctional Community Center

Date Prepared: 05/31/2018

Name	Position	Role	Contact Information	Requirements	Expectations	Influence	Classification
Rotaract Club Genesis		Sponsor	PO Box: 12472 Rotaract.clubgenesis @gmail.com	two level multifunctional building	deliver product on time and within budget	High	A
Ministry of Education, Science and Culture		Owner	Dr. S. Kafiluddistraat #117 - 123 Phone: 498850, 498005, 497954, 491332		Library Dance area Computer room Training room	High	A
Ministry of Public Works		Building permit and regulatio ns		Construction requirements	Design as per constructio n require-ments	High	A
Ministry of Sports and Youth		Associate	Frederik Derbystraat # 53 Phone: 474507 / 474508			Low	C

Name	Position	Role	Contact Information	Requirements	Expectations	Influence	Classification
Ministry of Social affairs and Housing		Associate	Waterkant 30-32 472336			High	A
Resort govern-ment Pontbui-ten		Community influence group	Indira Ghandhiweg 137			High	A
Buurt Manager		Community influ-ence person	Anaweg 12			Moderate	B

APPENDIX 6: FORMAL ACCEPTANCE FORM

FORMAL ACCEPTANCE FORM

Project Title: _____

Date Prepared: _____

ID	Requirement	Acceptance Criteria	Validation Method	Status	Comments	Signoff

APPENDIX 7 PROJECT QUALITY ASSURANCE PLAN

Project quality assurance plan Date:

Project: Multifunctional Community Center

Approved by:

Activity	Parameter for inspection	Acceptance criteria	Tolorance	Mehtod /Instrument	revision frequency	responsible
stroke	Lot Dimensions	According to plans		measuring tape	Once for building Stroke	
	building outline	Axes of the building	For steel location / position: ± 10 mm at any height.	measuring tape	40% numerical and literary axes	
frame	Distribution of rods	According to plans	For steel location / position: ± 10 mm on anything. For tolerances of length, dubbing, drawing, etc.	measuring tape	50% of the elements	
	cleaning of the rods	Clean and scale-free rods, advanced oxidation, grease, mud or concrete slurry.	At the discretion of the person	Sensory		
concrete	Compressive strength at 28	210kg/ cm floors)	Maximum 10% of the total of the	Cylinder failure	Minimum to each zone of the house	
waste or rough fragments of stone	paste blok	Line Lead	"+/- 5mm and 3 m	measuring tape	50% of the elements	
	Thickness of joints	1 cm	Minimum 0.6 cm and max 1.6cm	measuring tape		
	Cell fill level	5 cm below the last block	Max 8cm and min 3cm			
	size / sizing	100% of walls	25% of the area of a wall	measuring tape		
	Resistance to compression of blocks	Blocks type A: Average compression of 3 samples 133kg / cm2. Value one test 120 kg / cm2	Minimum value with the following tolerance: Maximum 10% of the total of the tests can have a maximum of 10% less resistance	failure of the boks	Every 1000 blocks	
Plasterwork	Check brackets at wall corners		+/- 5mm and 3m	measuring tape	30% of the elements	
	Line and lead end element	Lined and plastered wall	+/- 3mm and 3m			
	Finish	Adherence	not more than 0.25m2	measuring tape / Sensory		
	doors and windows	Width, height, lead and square.	+/- 3mm and 1m	equipment	50% of the elements	

Activity	Parameter for inspection	Acceptance criteria	Tolorance	Mehtod /Instrument	revision frequency	responsible
metal structure elements	Welding Certification	Approval of the certification of the welders by the inspection.	0	documentation	beginning of the activity	
	Paint thicknesses	1 layer of premier with minimum thickness, 2 layers of minium with a minimum thickness of 50 microns in 2 different colors. Total thickness with enamel 100 microns	0	Color	3 Sampling points per element.	
	Visual welding compliance	Visual inspection. Check welding without slag, uniform and without gaps	At the discretion of the person	Sensory	Random	
Porcelain tile floor	Installation	Stroke	± 3mm	Tape Measure	Once at the beginning of the activity	
		Design and material approved	0%	Sensorial	Once at the beginning of the activity	
	Finish	Adhesion	95%	Contact	50%	
		Pieces Striped	0%	Sensory	50%	
		Tops	1mm max	Vernier caliper	50%	
		forge color Uniformity	0	Sensory	50%	
		Vertical and horizontal alignment	+/- 2mm in 3 m	Tape Measure	50%	
		Forge separation	+/- 2mm	Tape Measure	50%	
		Broken Pieces	0	Sensory	50%	
Bathroom tiling	Installation	Stroke	± 3mm	Tape Measure	Once at the beginning of the activity	
		Design and material approved	0%	Sensorial	Once at the beginning of the activity	
	Finish	Adhesion	minimum 95%	Sensorial	100%	
		Pieces Striped	0%	Sensorial	100%	
		Tops	1mm max	Vernier caliper	100%	
		forge color Uniformity	0	Sensorial	100%	
		Vertical and horizontal alignment	+/- 2mm in 3 m	Tape Measure	100%	
		Forge separation	+/- 1mm	Vernier caliper	100%	
		Water runoff to drain	0	Sensorial	100%	
		Broken Pieces	0	Sensorial	100%	
Gips	Installation	Structure hight	+/- 10 cm	Tape Measure	100%	
	Finish	Marked tapes	0%	Sensorial	100%	
		marked screws	0%	Sensorial	100%	
		Wall space and sky	90 °	equipment	100%	
		level	3mm en 3m	level	100%	
painting	Finish	Texture	0	Sensorial	100%	
		trimmings	0	Sensorial	100%	
		Uniformity	0	Sensorial	100%	
		Cleaning of skirting boards and	0	Sensorial	100%	

Activity	Parameter for inspection	Acceptance criteria	Tolorance	Mehtod /Instrument	revision frequency	responsible
Skirting board	Installation	Design and material approved			after installation	
	Finish	Distance between skirting and	1mm	Vernier caliper	100%	
		Distance between tread and finished floor	1mm	Vernier caliper	100%	
		Joint misalignment	1mm	Vernier caliper	100%	
		Uniformity of color, no scratches and no sharp nails	0	Sensorial	100%	
		Aligning the gasket	1mm	Vernier caliper	100%	
Doors	Hinges	Distance between them according to plans	± 10 mm	Tape Measure	100%	
	Pins	Inserted 100%	0%	Sensorial	100%	
	Framework	tight attachement	Minimum 3 screws per piece	Sensorial	100%	
		Quadrature of frame	4 mm max	Tape Measure	100%	
		Parallel	+ 2mm; -1mm	Tape Measure	100%	
		Horizontality	0.30%	Tape Measure	100%	
		Verticality	0.30%	Tape Measure	100%	
	Frame Placement	Ship-centered	± 2 mm	Tape Measure	100%	
		Lead	± 2 mm	Tape Measure	100%	
	Packing	Whole and well placed	0%	Sensorial	100%	
	Door installation	Centered on frame	± 3 mm	Tape Measure	100%	
	keys	Fixing in stand	0%	Sensorial	100%	
		Functioning	0%	Sensorial	100%	
		Safe Pin Operation	0%	Sensorial	100%	
		Received Complete	0%	Sensorial	100%	
	Door Finish	scratches	0%	Sensorial	100%	
		Hits	0%	Sensorial	100%	
		Repairs	0%	Sensorial	100%	
Kitchen furniture	furniture	Alignment of furniture with respect to finished elements (wall)	3mm max	Tape Measure	100%	
		Alignment between elements on exposed face	1,5 mm	Tape Measure	100%	
	Support on	Alignment of supporting surfaces to support some floor element	0,5cm and 3m	Tape Measure	100%	
	doors	Vertical Alignment	1 mm	Tape Measure	100%	
		Horizontal Alignment	1 mm	Tape Measure	100%	
	Handles	Horizontal alignment with respect to location between handles	± 1 mm	Tape Measure	100%	
		Horizontal alignment of elements with respect to continuous furniture	± 1 mm	Tape Measure	100%	
	interior Furniture	Cleaning	0	Sensorial	100%	
	Tapatornillos	Full	0	Sensorial	100%	
	Adhesive protrusion on doors	Complete	0	Sensorial	100%	
	Plugs	Complete	0	Sensorial	100%	

Activity	Parameter for inspection	Acceptance criteria	Tolorance	Mehtod /Instrument	revision frequency	responsible
bathroom furniture	furniture	Alignment of furniture with respect to finished elements (wall)	3mm max	Tape Measure	100%	
		Alignment between elements on exposed face	1,5 mm	Tape Measure	100%	
	Support on	Alignment of supporting surfaces to support some floor element	0,5cm and 3m	Tape Measure	100%	
	doors	Vertical Alignment	1 mm	Tape Measure	100%	
		Horizontal Alignment	1 mm	Tape Measure	100%	
	Handles	Horizontal alignment with respect to location between handles	± 1 mm	Tape Measure	100%	
		Horizontal alignment of elements with respect to continuous furniture	± 1 mm	Tape Measure	100%	
	interior Furniture	Cleaning	0	Sensorial	100%	
	Tapatornillos	Full	0	Sensorial	100%	
	Adhesive protrusion on doors	Complete	0	Sensorial	100%	
	Plugs	Complete	0	Sensorial	100%	
closets	Doors	Alignment of doors as per plan	± 2 mm/m	Tape Measure	100%	
		Horizontal alignment at lower and upper ends of the doors	2mm	Tape Measure	100%	
	Handles	Difference of location with respect to the height of handlebars of doors of the same closet	1mm	Tape Measure	100%	
	Shelves	Linearity of shelf separation with support	3mm	Tape Measure	100%	
	Screw Covers	Complete	0	Sensorial	100%	
	Adhesive protrusion on doors	Complete	0	Sensorial	100%	
	Plugs	Complete	0	Sensorial	100%	
	General closet and tubes	Cleaning	0	Sensorial	100%	
		scratch	0	Sensorial	100%	
Windows	dimensions according to plans	On each side of the window	3mm and 5mm max	Tape Measure	100%	
	Straight and clean cut		0	visual	100%	
	Separation between glass and frame	On each side of the glass	3mm and 5mm max	Tape Measure	100%	
	Seal of profiles against the wall	Both sides of the window	0	Sensorial	100%	
	External seal of profile joints	According to installation manual	0	Sensorial	100%	
	Gaskets and seals for waterproofing and fixing the window	Both sides of the window	0	Sensorial	100%	
	Exposed surfaces free of scratches, scratches and other visual defects	According to sample approved	0	Sensorial	100%	

Activity	Parameter for inspection	Acceptance criteria	Tolorance	Mehtod /Instrument	revision frequency	responsible
Railings	Height of the railing with handrails in the stands	0.90m	± 1 mm	Tape Measure	100%	
	Finish	Lead	3mm and 3m	Tape Measure	100%	
		cable	3mm and 3m	Tape Measure	100%	
		Hits	0	Sensorial	100%	
		Texture	0	Sensorial	100%	
		Unions between tubes without bumps	0	Sensorial	100%	
		Base with respect to the floor	0	Sensorial	100%	
power points	Polarization	Connected	0	Circuit Tester	100%	
	finish	level	± 1 mm	Hand level	100%	
		Lead	± 1 mm	Tape Measure	100%	
		Complete set (cover)	0	Sensorial	100%	
		Cleaned	0	Sensorial	100%	
Coating and sealing	Wall finish	cable	± 3 mm and 3m	Tape Measure	100%	
		Lead	± 3 mm and 3m	Tape Measure	100%	
		Surface planning	± 1 mm and 3m	Tape Measure	100%	
		Smooth texture	0	Sensorial	100%	
Mouthpieces	cable	Superior and frontal	1mm max	Tape Measure	100%	
	top width	7 cm	1mm max	Tape Measure	100%	
	Front Width	2,5cm	1mm max	Tape Measure	100%	
	finish	Uniform appearance	0	Sensorial	100%	
		cleaning	0	Sensorial	100%	
	sealed	100%	0	Sensorial	100%	
Electrical System	energization	Location of lines	0	Ceiling test	100%	
		Power	0	Circuit Tester	100%	
	Panel	Attachment	0	Sensorial	100%	
		rotation	0	Sensorial	100%	
	Hot water	Functionality	0	Sensorial	Just one time	

signed by:
Project manager

engineer Sponsor

Notes:
1. records results may change according to the needs of the project,
2. Products that do not meet the acceptance criteria must be identified as 'Product Non Conformance

APPENDIX 8 QUALIFIED SURVEY

stakeholder satisfaction survey

Objective: Measuring stakeholder Satisfaction

Lot: **Project:** **Date:**

Name of the client: **carried out by:**

How do you rate the care and advice received by our following collaborators?

	very po (1)	poor (2)	neutral (3)	good (4)	excellent (5)	Office use / Item Average
Project Manager	o	o	o	o	o	
Auditor	o	o	o	o	o	
Engineer	o	o	o	o	o	
project team	o	o	o	o	o	

According to their initial expectation of certain areas of the project, the result was:

	very po (1)	poor (2)	neutral (3)	good (4)	excellent (5)	Item Average
Works in common areas	o	o	o	o	o	
Green areas and gardening	o	o	o	o	o	
construction finishing in general	o	o	o	o	o	
Basic services	o	o	o	o	o	

How do you rate the investment made with us?

	very po (1)	poor (2)	neutral (3)	good (4)	excellent (5)	Item Average
Price	o	o	o	o	o	
delivery time	o	o	o	o	o	
capital gain	o	o	o	o	o	

If you had a construction project again, would you recommand us to others?

Never (1)	Hardly (2)	Maybe (3)	It is prob. (4)	Definitely yes (5)	Item Average
o	o	o	o	o	

Because? _____

_____

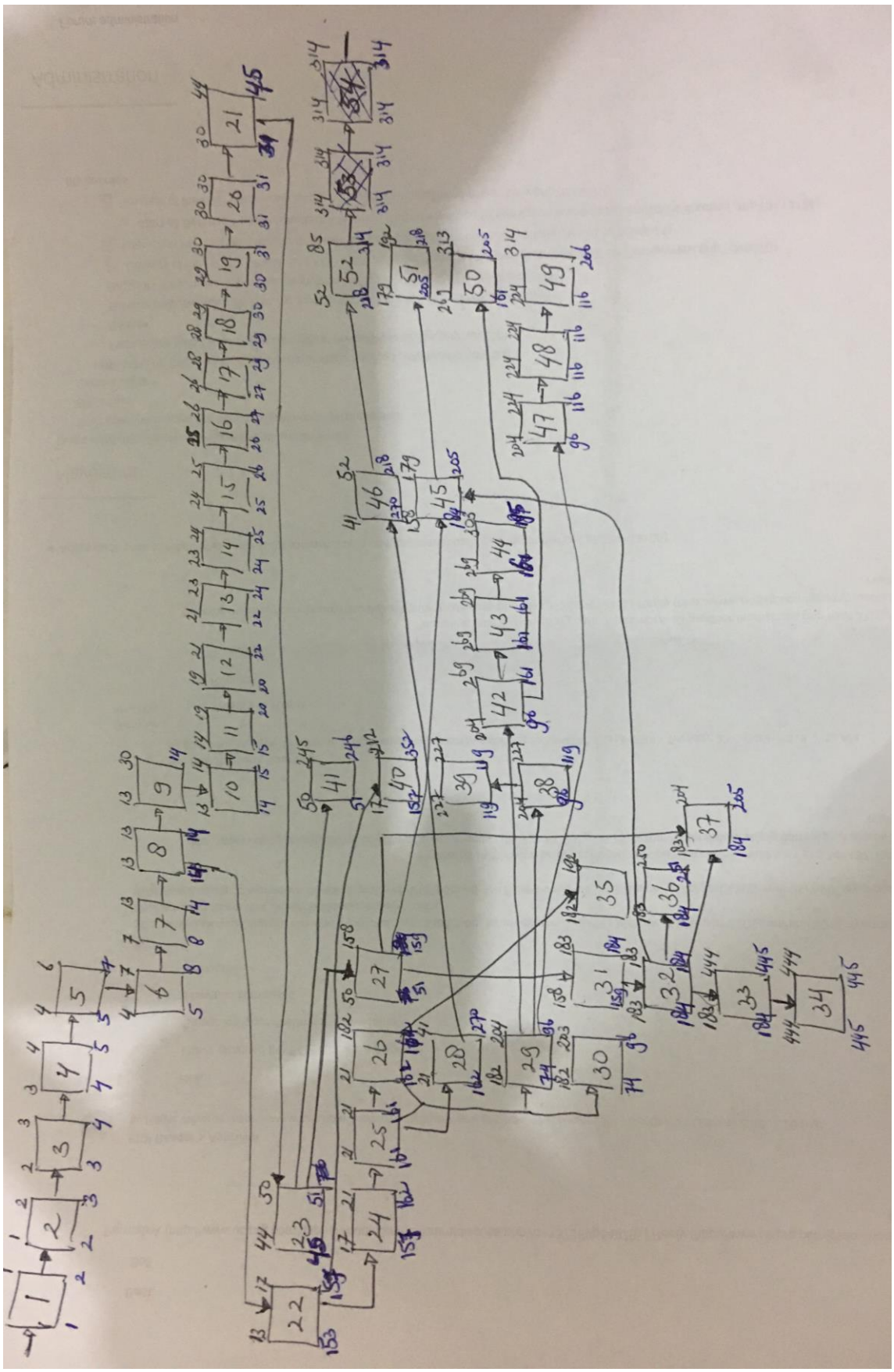
suggestions? _____

_____

Official use **Note based on 100**

Evaluator's comment:

APPENDIX 9 CRITICAL PATH



APPENDIX 10 PROCUREMENT PLAN FOR GOODS, WORKS AND INDIVIDUAL CONSULTANTS

Project Name Multifunctional Community Center
PROCUREMENT PLAN PERIOD: 2 October 2019 - 31 October 2020

WORKS											Bid Opening		Submission of Bid Evaluation & Draft Contract		No Objection to the Evaluation & draft contract		Contract Signing (Date of contract signiture)		End of Contract (Final date)		Bidder	Proposal Price (Currency)	Comments
WBS # (if applies)	Description/Contract Name:	Procurement Method (Select one of the options) :	Lots Quantity:	Baseline Document (Select one of the options) :	Contract Type (Select one of the options) :	Estimated Amount, in u$s :	Associated WBS activity:	Review Method (Select one of the options) :	Bid / Contract Number	Process Status (Select one of the options) :	Estimated	Real	Estimated	Real	Estimated	Real	Estimated	Real	Estimated	Real			
4.1	Garden	National Competitive Bidding	-	Procurement for Smaller Works	Lump-Sum	SRD 100,000.00	4.1.5.3	Ex-Ante	TBD	Planned	26-Apr-20		17-May-20		7-Jun-20		21-Jun-20		31-Oct-20				
4.1	walkway and outside seating	National Competitive Bidding	-	Procurement for Smaller Works	Lump Sum	SRD 200,000.00	4.1.5.1/ 4.1.5.2	Ex-Ante	TBD	Planned	26-Apr-20		17-May-20		7-Jun-20		21-Jun-20		31-Oct-20				
4.1	building construction	National Competitive Bidding	-	Procurement for Works	Lump Sum	SRD 2,350,000.00	4.1	Ex-Ante	TBD	Planned	1-Mar-20		29-Mar-20		19-Apr-20		1-Jun-20		31-Oct-20				

GOODS											Bid Opening		Submission of Bid Evaluation & Draft Contract		No Objection to the Evaluation		Contract Signing (Date of contract signiture)		End of Contract (Final date)		Bidder	Proposal Price (Currency)	Comments
WBS # (if applies)	Description/Contract Name:	Procurement Method (Select one of the options) :	Lots Quantity:	Baseline Document (Select one of the options) :	Contract Type (Select one of the options) :	Estimated Amount, in SRD :	Associated WBS activity:	Expost Review (Select one of the options) :	Bid / Contract Number	Process Status (Select one of the options) :	Estimated	Real	Estimated	Real	Estimated	Real	Estimated	Real	Estimated	Real			
4.1.3.1	Air conditioning system	International Competitive Bidding	1	Procurement Of Goods	Lump sum	SRD 375,000.00	4.1.3.1.2	Ex-Ante	TBD	Planned	1-Jun-20		22-Jun-20		6-Jul-20		13-Jul-20		31-Oct-20				
4.1.3.1	Mordern furniture	International Competitive Bidding	1	Procurement of Goods	Lump Sum	SRD 100,000.00	4.1.3.1.4	Ex-Ante	TBD	Planned	1-Jun-20		29-Jun-20		20-Jul-20		3-Aug-20		31-Oct-20				

INDIVIDUAL CONSULTANTS																						
WBS # (if applies)	Description/Contract Name:	Procurement Method *(Select one of the options)*:	Process Number:	Estimated Amount, in SRD:	Estimated Number of Consultants:	Associated WBS activity:	Expost Review *(Select one of the options)*:	Process Status *(Select one of the options)*:	Bid / Contract Number	Dates (If it does not apply,						Consultant's Name	Period		Title	Comments	Amount (Currency ###)
										No Objection to the		Hiring Deadline		End of Activity			From	Until			
										Estimated	Real	Estimated	Real	Estimated	Real						
3.1	EngineerProject Manager for the construction of the Multifunctional Community Center	single source	-		1	3.1.6	Ex-Ante	Planned	TBD	TBD		1-Oct-19		31-Oct-20		TBD				Est. dates depending on strategy of execution	
3.1	Procurement Specialist for the construction of the Multifunctional Community Center	single source			1	3.1.6	Ex-Ante	Planned	TBD			1-Oct-19		31-Oct-20		TBD					
3.1	External auditor for the construction of the Multifunctional Community Center	single source			1	3.1.6	Ex-Ante	Planned	TBD			1-Nov-19		31-Oct-20		TBD					
3.1	technical Specilaist for the construction of the Multifunctional Community Center	single source			1	3.1.6	Ex-Ante	Planned	TBD			1-Oct-19		31-Oct-20		TBD					
3.1	Professionals for the construction of the Multifunctional Community Center	single source			1	3.1.6	Ex-Ante	Planned	TBD			1-Oct-19		31-Oct-20		TBD					
3.1			-		1	3.1.6			TBD												