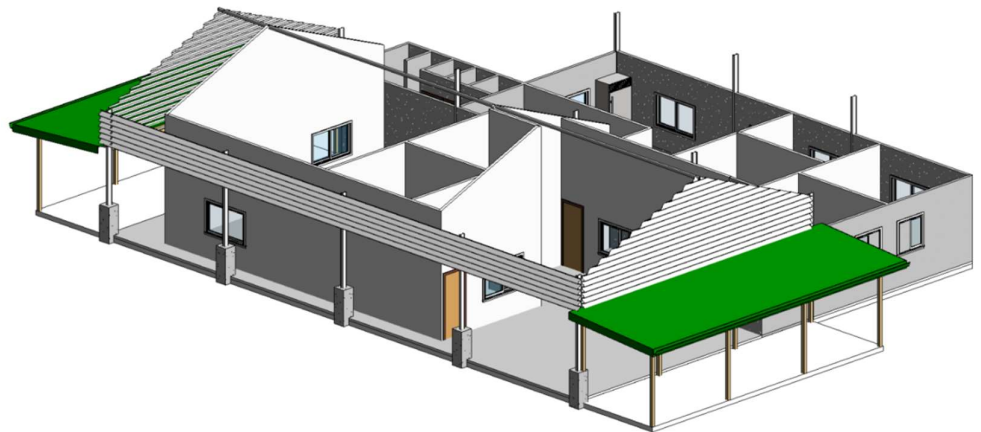


## Part 2. Scope of Works

# MTEC SNESI KONDRE

Client/Owner: EMSAGS



Project # : EMSAGS-0824-C

Document # : SOW-EMSAGS-0824-C

**Project Manager**

-----  
Ashvin Pancham BSc.

---

## **PART 2**

# **SCOPE OF WORKS**

---

---

## PREFACE

---

This document, the "Scope of Works" is the second part in the set of the tender documents. This part lays down the general specifications and describes the works to be carried out for this particular project. The follow up for this part is the technical specifications.

To make the documents easy to read and understandable it's been chosen to write in the imperative mood where the subject (the Contractor) is implied, and the verb expresses the command. See example below of the traditional indicative mood and the imperative mood.

Traditional indicative mood:

1. **The CONTRACTOR shall DELIVER and INSTALL the block pavement according to drawing #...**
2. **The Contractor is liable for any damage to the squash court during installation and construction phase of the project.**

Imperative mood:

1. **DELIVER and INSTALL block pavement according to drawing #...**
2. **Any damage to the squash court during installation and construction phase of the project shall be repaired or replaced at own expense.**

## COLOFON

Document title : SCOPE OF WORK MTEC SNESI KONDRE

Project : MTEC SNESI KONDRE

Project number : EMSAGS-0824-C

Document number : SOW-EMSAGS-0824-C

Client/owner : EMSAGS

Contractor :



**CODECO**  
CONSTRUCTION DESIGNERS & CONSULTANTS N.V.

Kwattaweg 717  
 Paramaribo  
 Tel.: (+597) 895-1776  
 Tel.: (+597) 855-4345

Content : Sandhesa Rathipal

Drafter : SRA

Structural Engineer : Ir. Amrit W. Dassasingh

Authorization : Ashvin A. Pancham BSc.

Issue date : 26 November 2024

Issue date Revision : 11 December 2024

Additional Documents: : -----

Document Distribution list			
No.	Function title	Name	Date
1			
2			
3			

## Table of Contents

<b>INTRODUCTION .....</b>	<b>7</b>
<b>SPECIAL CONTRACT CONDITIONS.....</b>	<b>8</b>
<b>1. GENERAL .....</b>	<b>9</b>
1.1 APPLICABLE CODES AND STANDARDS .....	9
1.2 PRICE ADJUSTMENTS .....	9
1.3 REPLACEMENT PRODUCTS .....	9
1.4 PAYMENTS .....	9
1.5 INSURANCE .....	10
1.6 CO-CONTRACTORS.....	10
1.7 CONTRACT PRICE .....	10
1.8 EMPLOYER’S REPRESENTATIVE.....	10
1.9 ENGINEER’S DECISIONS .....	10
1.10 SUBCONTRACTING .....	11
1.11 PERSONNEL AND EQUIPMENT.....	11
1.12 FINES.....	11
1.13 ADDITIONAL WORKS.....	12
<b>2. TIME MANAGEMENT &amp; PROGRESS.....</b>	<b>13</b>
2.1 PLAN OF ACTION/TIMELINE.....	13
2.2 EXTENSION OF THE PLANNED DELIVERY DATE.....	13
2.3 ACCELERATION .....	13
2.4 MANAGEMENT/CONSTRUCTION MEETINGS.....	14
2.5 EARLY WARNINGS.....	14
2.6 VARIATIONS.....	14
<b>3. DESCRIPTION OF WORKS .....</b>	<b>15</b>
3.1 MOBILIZATION AND DEMOBILIZATION .....	16
3.1.1 MOBILIZATION .....	16
3.1.2 DEMOBILIZATION.....	16
3.1.3 MEASUREMENT AND PAYMENT .....	16
3.2 DEMOLITION AND EARTHWORKS.....	17
3.2.1 DEMOLITION WORKS BUILDING .....	17
3.2.2 DEMOLITION OF EXISTING PLATFORM .....	18
3.2.3 BACKFILL WITH CLEAN SAND .....	18
3.2.4 MEASUREMENT AND PAYMENT .....	19
3.3 CONCRETE WORKS.....	19
3.3.1 BLINDING SLAB C12/15 .....	19
3.3.2 REINFORCED CONCRETE ELEVATED FLOOR INSIDE AREAS (C20/25) .....	19
3.3.3 REINFORCED CONCRETE FOUNDATION, FOOTING AND SLAB PLATFORM (C20/25).....	20
3.3.4 REINFORCED CONCRETE FLOOR GARAGE (C20/25) .....	21
3.3.5 REINFORCED CONCRETE FLOOR NEW TOILET AREA AND DOORFRAME OPENINGS (C20/25).....	22
3.3.6 REINFORCED CONCRETE BEAM (C20/25).....	22
3.3.7 REINFORCED CONCRETE PIER GARAGE (C20/25).....	23
3.3.8 MEASUREMENT AND PAYMENT .....	24
3.4 STUCCO WORKS.....	24

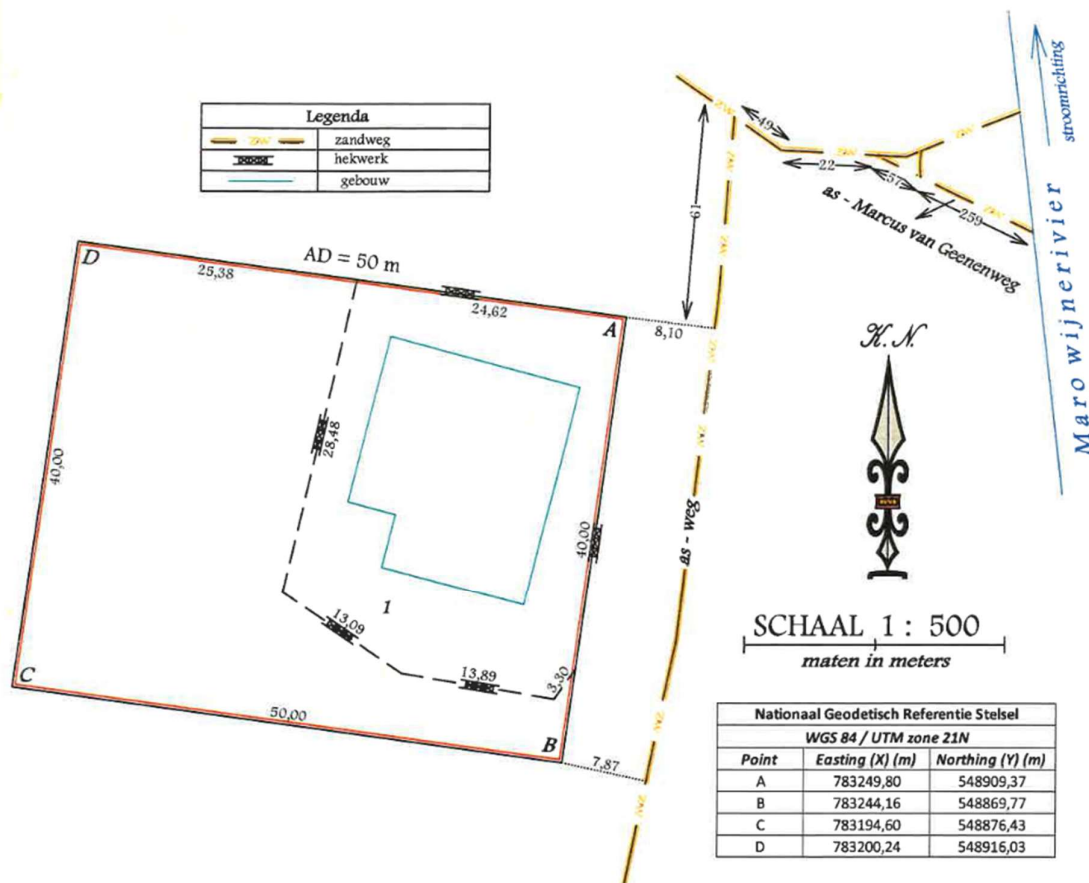
3.4.1	STUCCO WORK BUILDING .....	24
3.4.2	STUCCO WORKS EXISTING SEPTICTANK .....	24
3.4.3	NITROPROOF TREATMENT BEAMS .....	25
3.4.4	MEASUREMENT AND PAYMENT .....	25
3.5	STEEL STRUCTURES .....	25
3.5.1	Z PURLINS .....	25
3.5.2	MEASUREMENT AND PAYMENT .....	25
3.6	ROOF .....	25
3.6.1	CLEANING AND PAINTING ROOF SHEETS .....	25
3.6.2	TRAPEZIUM ROOF PANELS 28 BG GARAGE AREA .....	26
3.6.3	BUBBLE FOIL ISOLATION .....	26
3.6.4	ROOF GUTTER 28 BG PREPAINTED GALVANISED STEEL 0.5MM .....	27
3.6.5	RIDGE VENT .....	27
3.6.6	FASCIA AND BARGEBOARD .....	28
3.6.7	WOODEN ROOF CONSTRUCTION GARAGE INCLUDING WOODEN COLUMNS 4"x4" .....	28
3.6.8	MEASUREMENT AND PAYMENT .....	29
3.7	WALLS .....	29
3.7.1	MASONRY 4" WALLS .....	29
3.7.2	INSTALLATION OF SUPERBOARD CEMENT BOARD PANELS OFFICE .....	30
3.7.3	INSTALLATION OF GYPSUM BOARD PANELS DUBBEL SIDED WALLS .....	30
3.7.4	MEASUREMENT AND PAYMENT .....	31
3.8	FLOOR FINISHING .....	31
3.8.1	FLOOR TILES EXISTING TOILET .....	31
3.8.2	SCREED FLOOR FINISH WITH PAINT INSIDE AREAS .....	32
3.8.3	FLOOR TILES NEW TOILET .....	32
3.8.4	WALL TILES EXISTING TOILET .....	33
3.8.5	WALL TILES NEW TOILET .....	33
3.8.6	SCREED FLOOR FINISH WITH PAINT GARAGE WITH A SLOPE .....	33
3.8.7	SEALANT PASTE WITH KIMBAND (FOBY AFDICHTPASTA) .....	33
3.8.8	MEASUREMENT AND PAYMENT .....	33
3.9	DOORS AND WINDOWS .....	34
3.9.1	INSTALLATION OF DOORS D1 WITH WOODEN FRAME .....	34
3.9.2	INSTALLATION OF DOORS D1 WITH STEEL FRAME .....	34
3.9.3	INSTALLATION OF DOOR D2 WITH WOODEN FRAME .....	35
3.9.4	INSTALLATION OF IRON SAFETY GRILL FOR DOORS .....	35
3.9.5	INSTALLATION OF SHUTTER WINDOWS WITH RVS SAFETY GRILL .....	36
3.9.6	MEASUREMENT AND PAYMENT .....	36
3.10	CEILING SYSTEMS .....	36
3.10.1	INSTALLATION OF GYPSUM PANEL CEILING EXISTING BUILDING INCL. METAL FRAMEWORK .....	36
3.10.2	INSTALLATION OF GYPSUM PANEL CEILING NEW BUILDING INCL. METAL FRAMEWORK .....	37
3.10.3	MEASUREMENT AND PAYMENT .....	38
3.11	SANITARY ITEMS .....	38
3.11.1	FLOOR MOUNTED TOILET .....	39
3.11.2	WASH BASIN .....	39
3.11.3	URINAL .....	39
3.11.4	FAUCET .....	39
3.11.5	TOILET PAPER HOLDER .....	40
3.11.6	DUSTBIN .....	40
3.11.7	SHOWER .....	40

3.11.8 KITCHEN FAUCET .....	41
3.11.9 MIRRORS .....	41
3.12 PAINT WORKS .....	41
3.12.1 PAINT WORKS EXISTING BUILDING AND NEW BUILDING .....	41
3.12.2 MEASUREMENT AND PAYMENT .....	41
3.13 INTERIOR .....	42
3.13.1 CONCRETE KITCHEN .....	42
3.13.2 INSTALLATION OF KITCHEN DOORS .....	42
3.13.3 TILES KITCHEN .....	43
3.13.4 MEASUREMENT AND PAYMENT .....	44
3.14 TERRAIN WORKS .....	44
3.14.1 SEWAGE AND DRAINAGE SYSTEMS.....	44
3.14.2 DOWNSPOUTS .....	44
3.14.3 PREFAB DRAINAGE PITS INCLUDING CONCRETE COVER.....	45
3.14.4 PREFAB SEPTICTANK CIRKEL.....	45
3.14.5 GRAVEL PLACEMENT AROUND THE BUILDING .....	45
3.14.6 MEASUREMENT AND PAYMENT .....	45
3.15 WATER STORAGE AND DISTRIBUTION .....	45
3.15.1 REPLUMB EXISTING WATER STORAGE TANKS .....	45
3.15.2 INSTALLATION OF NEW WATER DISTRIBUTION SYSTEM WITH PUMP.....	46
3.15.3 MEASUREMENT AND PAYMENT .....	46
3.16 FENCE .....	46
3.16.1 BEAKART FENCE .....	46
3.16.2 4M SLIDING GATE .....	46
3.16.3 SQUARE POSTS.....	46
3.16.4 BARBED WIRE.....	47
3.16.5 MEASUREMENT AND PAYMENT .....	47
3.17 ADDITIONAL WORKS .....	48
3.17.1 MEASUREMENT AND PAYMENT .....	48
<b>4. ELECTRICAL INSTALLATIONS .....</b>	<b>49</b>
4.1 CODES AND STANDAARDEN .....	49
4.2 JOB DESCRIPTION .....	49
4.2.1 Mobilization and demobilization .....	49
4.2.2 EXECUTION OF WORK.....	49
4.2.3 MEASUREMENT AND PAYMENT .....	50
4.3 ELECTRICAL INSTALLATIONS .....	51
4.3.1 ELECTRICAL INSTALLATIONS INCLUDING AIRCONDITIONING .....	51
DECLARATION FORM.....	0
COMMUNICATION FORM .....	1
TECHNICAL INSTRUCTION .....	2
SPECIFICATION SUBMITTAL.....	3
REQUEST FOR APPROVAL .....	4
BILL OF QUANTITY .....	5

## INTRODUCTION

The MTEC Snesi Kondre mining school is located at Snesikondre alongside the west bank of the Marowijne river in the district Sipaliwini. The area covering 2000 m<sup>2</sup> on which the School of Mining is located can be reached by the Langatabiki road and is located approximately 30 km southeast of Merian operations of Newmont Goldcorp. The intention is to use the "School of Mining" building in Snesi Kondre, under the management of the "Stichting School of Mining and Mineral Processing" (Stichting SMMP), for the MTEC. The project seeks to improve the environmental management of mining in Suriname, particularly small-scale gold mining. A result of the uptake of environmentally responsible artisanal and small-scale gold mining practices, is to establish Mining Training and Extension Centers (MTECs). Codeco N.V. has been awarded the contract to encapsulate this objective in a mining school design in specifications and drawings.

This document is the second part of the tender documents and includes the scope of works for the structural part.





## SPECIAL CONTRACT CONDITIONS

### Special Contract Conditions

Penalty for late delivery	: USD 300,- per day
Maximum amount of the late delivery penalty	: 5% of contract sum
Non-conformance fine	: USD 50,-
Penalty for non-compliance with the terms of the contract	: USD 50,-
Penalty for not meeting the milestones	: USD 200,- per day
Penalty for non-submission of biweekly extended timeline	: USD 100,-
Penalty for not submitting daily reports/updates	: USD 20,- per day
Penalty for not being present of the Project Engineer/ Project Manager per two consecutive site visits during critical phase of the project	: USD 100,- each time

## 1. GENERAL

The conditions of contract for construction are as per:

UWS 1996: Uitvoeringsvoorwaarden voor Werken in Suriname 1996

Construct the works according to the design and specifications provided by CODECO N.V.

### 1.1 APPLICABLE CODES AND STANDARDS

The following technical codes and standards apply:

- EN 1990: (Eurocode 0) Basis of structural design
- EN 1991: (Eurocode 1) Actions on structures
- EN 1992: (Eurocode 2) Design of concrete structures
- EN 1993: (Eurocode 3) Design of steel structures
- EN 1997: (Eurocode 7) Geotechnical design

### 1.2 PRICE ADJUSTMENTS

Price adjustments during construction is at any case not possible.

### 1.3 REPLACEMENT PRODUCTS

1. No replacement will be considered prior to the award of the contract. Replacements will only be considered after the contract has been awarded and as stipulated in the contract documents, according to the decision of the Project Manager.

### 1.4 PAYMENTS

1. Payments to the successful bidder (Contractor) will be made for the quantity of works and materials delivered and approved up to the date of submission. No advances will be paid.
2. Submit invoices according to N4 and N5 format for approval of the Project Manager. Only after approval, the invoice with a cover letter will be sent by the Project Manager to the client for payment.
3. Upon termination of the contract, the Contractor shall be paid on the basis of the work carried out and approved. The Contractor is not entitled to compensation for the work still to be carried out.
4. If there is a percentage for the advance payment, this percentage will be deducted from each invoice.
5. The value of the work performed includes:
  - In the case of a custom contract, the value of the quantities of work in the Bill of Quantities that have been completed; or
  - In the case of a lump sum contract, the value of the work performed includes the value of the completed work in the Work Schedule.

## 1.5 INSURANCE

1. Take out a Construction All Risk (CAR) insurance at own expense, on behalf and in favor of the owner. This insurance must cover:
  - Damage of the works as prescribed in the General contract condition datasheet.
  - Injury to persons and damage to property as prescribed in the General contract condition datasheet.
  - Injury to Contractors personnel.
2. Deliver Policies and certificates of insurance to the Engineer for approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
3. If the policies and certificates required are not provided before start, the Employer may affect the insurance which should have been provided and recover the premiums the Employer has paid, by withholding the amount from the next payment.

## 1.6 CO-CONTRACTORS

1. During construction, there must be collaboration, and the work location must be shared with other Contractors, government agencies, utility companies and the Client.

## 1.7 CONTRACT PRICE

1. In the case of a deductible contract, the BOQ includes prices per item for the work to be carried out by the Contractor. The Bill of Quantities is used to calculate the contract price. The Contractor shall be paid for the amount of work carried out at the rate corresponding to the units in the BOQ which is included for each item.
2. In the case of a lump sum contract, the BOQ contains prices per capita item for the work to be carried out by the Contractor. The BOQ is used to monitor the performance of work and control on the basis of which the payments will be made.

## 1.8 EMPLOYER'S REPRESENTATIVE

1. CODECO N.V. is the employer's representative during the tender and construction process.
2. CODECO can be contacted for any question regarding this project.

## 1.9 ENGINEER'S DECISIONS

1. Except where otherwise specifically stated, the employer's representative (Engineer) is authorized to decide contractual matters between the Employer and the Contractor in the role representing the Employer.
2. The Engineer is authorized to delegate any of his duties and responsibilities to other people, after proper notification, and may revoke any delegation after notification to the Contractor.

## 1.10 SUBCONTRACTING

1. Subcontract is only allowed after the approval of the Engineer but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.
2. If the Engineer comes to the conclusion that the personnel does not have enough knowledge and skill for the correct performance of a component associated with this work, the Engineer is authorized to propose a subcontractor for proper implementation.

## 1.11 PERSONNEL AND EQUIPMENT

1. If the Engineer asks to remove a person who is a member of the Contractor's staff or work force, stating the reasons, one must ensure that the person leaves the Site immediately and has no further connection with the work in the Contract.
2. Do assign a fulltime project engineer and foreman for the works to be carried out. In the case of substitution, the Engineer needs to be informed.
3. There are no amateurs allowed on the job site to perform any kind of work. Assign a professional with adequate know how to perform the specific tasks.
4. If by any means the Engineer became aware of the lack of know-how of personnel, he is authorized to stop the works performed by specific personnel and ask for proper substitution to continue the works.

## 1.12 FINES

1. The penalty for late delivery of the project is included in the **Special Contract Conditions**. The maximum amount of the penalty for late delivery is stated in the **Special Contract Conditions**.
2. Address Non-Conformance within the agreed time (between Contractor and Project Manager) after notification. Failure to address the Non-conformance issue within the prescribed period will result in a penalty according to the **Special Contract Conditions**, until the non-conformance has been corrected and approved by the Project Manager.
3. Failure to comply with the terms of the contract and to follow instructions given according to the terms of the contract will result in the imposition of a penalty according to the **Special Contract Conditions**.
4. Failure to meet the milestones as indicated in the specifications will also result in a penalty as set out in the **Special Contract Conditions**.
5. For not submitting the biweekly extended timeline as indicated in the specifications will also result in a penalty as set out in the **Special Contract Conditions**.
6. For non-submission of the daily report/updates within 3 days, nor after the request for updates have been made, will also result in a penalty as set out in the **Special Contract Conditions**.
7. For the Project Engineer/Project Manager, if not present during two consecutive site visits in a row during critical phase of the project shall result in a penalty as set out in the **Special Contract Conditions**.
8. Fines will be deducted from the next claim.

9. Whether or not the reason for the delay is correct and whether or not the penalty applies will be decided by the Project Manager.

### **1.13 ADDITIONAL WORKS**

1. In case of any additional works to be carried out the same prices will be used for items listed in the BoQ.
2. For works different from the BoQ items, submit a price breakdown using the unit prices listed in the form for additional works.
3. When the amount for additional works isn't used, the complete amount remains for the client without any compensation to be made.

## 2. TIME MANAGEMENT & PROGRESS

### 2.1 PLAN OF ACTION/TIMELINE

1. At the kick-off meeting, an updated and detailed Plan of Action with the general methods, arrangements, sequence and timeline for all work in the Work is submitted to the Project Manager for approval. In the case of a lump sum contract, the activities in the Program must correspond to the activities in the activity overview.
2. An updated version of the PoA should reflect the actual progress of each activity and the impact of the progress made on the timeline of the remaining work, including any changes in the order of the activities.
3. The Project Manager's approval of the Program does not change the Contractor's obligations. The Contractor may revise the Program and resubmit it to the Project Manager at any time. A revised Program should reflect the effect of Variations and Fees.
4. Every two weeks, the Contractor submits an extensive timeline in which the work is described in detail for each part. This submission will have to be made by the Contractor no later than Friday before the start of the new bi-weekly period for which the timeline is required. If this is not done, a penalty will be imposed according to the **Special Contract Conditions**.
5. On the last Friday of each month, an updated general timeline is submitted by the Contractor. If this is not done, a penalty will be imposed according to the **Special Contract Conditions**.

### 2.2 EXTENSION OF THE PLANNED DELIVERY DATE

1. Extension of the planned completion date may be given if an Overrun occurs or a Variation is issued which makes it impossible for the Contractor to meet the scheduled completion date without the Contractor taking steps to expedite the remaining work, which would incur additional costs for the Contractor.
2. The Project Manager shall decide whether and by how much the planned due date shall be extended within ten (10) days of submitting the request to the Project Manager for a decision on the effect of an Instance of Excess or a Variation and submission of complete supporting information. Failure to give early warning of a delay or failure to cooperate in addressing a delay, the delay due to this failure will not be taken into account in the assessment of the new scheduled delivery date.

### 2.3 ACCELERATION

1. If the Client wishes the construction to be completed before the Planned Completion Date, the Project Manager will obtain price proposals to achieve the necessary acceleration. If the Client accepts these proposals, the Planned Delivery Date will be adjusted accordingly and confirmed by both the Client and the Contractor.
2. An accepted price proposal for an expedition will be included in the Contract Price and treated as a Variation.
3. The Project Manager may order the commencement or continuation of any activity within the Work to be suspended.

## 2.4 MANAGEMENT/CONSTRUCTION MEETINGS

1. Both the Project Manager and the Contractor may request the other to participate in a management/construction meeting. The purpose of a construction meeting is to review the plans for the remaining work and to deal with matters raised according to the early warning procedure.
2. The Project Manager will record the activities of management/construction meetings and make copies of the document available to the meeting participants and the Client. The responsibilities of the parties for measures to be taken will be determined by the Project Manager either during the management/construction meeting or after the management/construction meeting and communicated in writing to all who attended the meeting.
3. The management/construction meetings are held every 2 weeks and if one of the parties deems it necessary, the meeting can be scheduled weekly.

## 2.5 EARLY WARNINGS

1. Notify the Project Manager as soon as possible of any particular future events or circumstances that may adversely affect the quality of the Work, increase the Contract Price or delay the performance of the Work. The Project Manager may request an estimate of the expected effect of the future event or circumstance on the Contract Price and the Delivery Date. The estimate should be submitted as soon as reasonably practicable.
2. The Contractor shall cooperate with the Project Manager in preparing and considering proposals as to how the consequence of such event or circumstance can be avoided or mitigated by all those involved in the work, and in carrying out any resulting instructions from the Project Manager.

## 2.6 VARIATIONS

1. If the Project Manager decides that the urgency of modifying the work makes it impossible to prepare and consider a quote without delaying the work, no quote will be made, and the Change will be treated as an action leading to a Reimbursement.

### 3. DESCRIPTION OF WORKS

This chapter contains the full work description. The works described in the specifications and the materials to be supplied therefore, with the exception of nothing, are part of the contract. If certain works and materials are not described or mentioned in the specifications, and not on the drawings, but apparently belong to the complete delivery, these must be applied and delivered without additional payments. If specifications and drawings conflict with each other, the Engineer decides what will prevail.

In the next paragraphs one can find a detailed description of the works to be done. The main items are listed below.

1. Mobilization and demobilization.
2. Demolition and earthworks.
3. Concrete works.
4. Masonry works.
5. Steel structures.
6. Roof.
7. Façade cladding.
8. Floor and wall finishing.
9. Doors and windows.
10. Ceiling systems.
11. Sanitary items.
12. Paint works.
13. Interior.
14. Terrain works.
15. Water storage and distribution.
16. Fence.
17. Additional works.



### 3.1 MOBILIZATION AND DEMOBILIZATION

#### 3.1.1 MOBILIZATION

1. Procurement, assembly, repair and make to running condition of all the Contractor-owned constructional plant and equipment by the Contractor at any other site as convenient to him.
2. Transportation of Contractor-owned constructional plant, equipment and materials from the storage site as mentioned above to the place of construction.
3. Assembling and installation of all items of constructional plant, equipment, etc. required for the execution of the Work.
4. Receiving all construction plant, equipment, and materials to be furnished by the Employer, if any, and collect and transport those to the Work site. All materials shall be properly stored, inventoried and protected until used in the Work and all plant and equipment shall be tested and made ready for use.
5. Construction of a suitable Site office building or shed for storage of materials and equipment, workshop, other operational buildings and First-Aid Center attended by competent Medical Assistants.
6. Maintenance of all temporary roads, fences and sanitary facilities, keep all areas used by the Contractor clean, neat, well-kept and in good repair and provide proper drainage to protect the area from surface run-off and flooding.
7. Provide all the required electric power, water supply and other utility connections to temporary installations at the Site as may be necessary for the execution of the Work.
8. Obtain all insurance policies, performance bond and payment guarantee as required under this Contract.
9. Payment of all fees, permits, licenses, etc. as may be required covering the execution of the Contract.

#### 3.1.2 DEMOBILIZATION

1. All activities and costs for transportation of personnel, equipment, and supplies not utilized in the project from the site.
2. Disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site.
3. Repair of access roads, and equipment parking areas leaving the project site in the same or better condition than at the start of the project.
4. General cleanup and housekeeping are needed to restore a neat and orderly project site.
5. The building must be cleaned, purified, and polished off before delivery.
6. After cleaning and polishing the surfaces, the owner needs to criticize and approve the works. The owner must inspect the demolishing work.

#### 3.1.3 MEASUREMENT AND PAYMENT

Description	Measurement	Unit
-------------	-------------	------

<b>Mobilization</b>	Payment will be made after the Contractor has mobilized all the necessary equipment, materials, and other preparations on site for a proper start of the works.	Lumpsum
<b>Demobilization</b>	Payment will be made after all described work has been carried out properly according to the management/client.	Lumpsum

### 3.2 DEMOLITION AND EARTHWORKS

In order to minimize the risk of disruption to the Client's operations and to provide adequate safety for the Client's personnel, the Contractor must use woven non-transparent mesh fencing and traffic cones to fully demarcate the construction site.

#### 3.2.1 DEMOLITION WORKS BUILDING

##### 3.2.1.1 DEMOLITION OF PLYWOOD STRUCTURES

1. Remove plywood wall panels without damage in accordance with technical drawings.
2. Store plywood wall panels in a room approved by the Engineer.
3. Remove wooden columns in accordance with technical drawings.
4. Dispose of all demolished material to a location approved by the Engineer.

##### 3.2.1.2 DEMOLITION OF DOORS AND WINDOWS

1. Remove all doors without damage.
2. Store all doors without damage in an area designated by the Engineer.
3. Take measures to remove the glass windows.
4. Remove the glass windows including the frames without damage and store in an area approved by the Engineer.
5. If damage is caused by the Contractor, the rectification work will be at the expense of the Contractor.
6. Store all doors and glass windows without damage in an area designated by the Engineer.
7. After approval from the Engineer, transport all damaged doors and glass windows to a location designated by the Engineer.

##### 3.2.1.3 REMOVAL OF SANITAIR ITEMS

1. Take measures to demolish the existing sanitary items such as the toilets, sinks, faucets, etc.
2. Remove all existing sanitary items according to technical drawings without any damage.
3. If damage is caused to the existing walls, the repair work will be at the expense of the Contractor.

##### 3.2.1.4 DEMOLITION OF EXISTING PVC PANEL CEILING

ceiling panels from the grid system.

d damaging the panels, unless they are to be disposed.

are they are kept intact for future reinstallation, if applicable.

on ceiling grid members (main runners, cross tees, hangers, etc.) in a systematic and safe manner.

VC panels, grid system, and debris) for proper disposal or recycling according to local regulations.

toxic materials are identified and handled according to safety protocols.

safety measures, including:

- Use of personal protective equipment (PPE) such as helmets, gloves, safety goggles, and dust masks.

to prevent unauthorized access.

in if dust levels are expected to be high.

local building codes and safety standards.

removed from the site.

surfaces and floors, leaving the site tidy and free of hazards.

repair or replacement of damaged structural elements, electrical systems, or HVAC components.

or air ducts will be included unless specified otherwise in the contract.

### **3.2.2 DEMOLITION OF EXISTING PLATFORM**

1. Take measures to demolish the existing platform.
2. Demolish the whole platform according to technical drawings.
3. If damage is caused to the existing building, the repair work will be at the expense of the contractor.
4. Dispose of all demolished material to a location approved by the Engineer.

### **3.2.3 BACKFILL WITH CLEAN SAND**

#### **3.2.3.1 EXCAVATION, DISPOSAL AND BACKFILL AROUND BUILDING**

1. Before the start of excavation work, place pickets that indicate the excavation depth and size of the construction pit to be excavated and can be measured.
2. Place the pickets in such a way that height measurements can be carried out at all times.
3. Dig test trenches by hand before excavation work begins.
4. Remove the top layer of soil with vegetation and/or other material that could adversely affect the foundation of the structure.
5. Excavate to the depth as indicated in the technical drawings.
6. Make provisions to prevent erosion.
  - a. Edge with an embankment.
  - b. Digging in stairs stages.
  - c. Use sheet piling made of steel or sheet piling.
7. Use the excavated material to fill up the area for the new to be build garage after approval from the management.

8. Keeps the construction pit dry at all times.
9. After the foundation has been casted and the prefab septictank has been placed, the backfilling process will begin.
10. Supply and process clean available backfill sand on the septictank foundation and a 2m wide strip around the building according to technical drawings.
11. Place pickets to measure desired heights.
12. Remove all organic material and other debris from the site to be filled.
13. Compacts the backfill sand in layers of up to 20cm with a vibratory plate compactor and/or pestle, with a minimum impact force of 22kN.
14. Compacted sand layer to a field proctor value of 98%, to be determined by a nuclear or electrical density gauge. If otherwise, please confirm for approval from the Engineer.
15. All volume quantities are based on compacted volumes.

### 3.2.4 MEASUREMENT AND PAYMENT

Description	Measurement	Unit
<b>Demolition works</b>	Payment shall be done after evaluation of the unit of the completion of all demolition works.	As per BOQ item
<b>Excavation, disposal and backfilling</b>	Payment is made on the basis of excavated volume. Absorption of excavated volume takes place in the field. Payment is made after filling, Compact and on the basis of compacted volumes.	Per M <sup>3</sup>

## 3.3 CONCRETE WORKS

### 3.3.1 BLINDING SLAB C12/15

1. After excavation, level off the ground and fill with clean river sand where needed to reach the required depth.
2. Compact with vibratory plate compactor to compact sand fill.
3. Install formwork according to dimensions of foundation as indicated in the technical drawings.
4. Laydown construction foil prior to pouring blinding slab concrete.
5. Construction of blinding slab (C12/15), thickness of 50 mm.
6. Compact blinding slab concrete with vibratory needle.
7. Manufacture and testing of 3 test cubes per concrete pour.
8. Curing of concrete.
9. Cover non-hardened concrete with construction foil in case of rain.

### 3.3.2 REINFORCED CONCRETE ELEVATED FLOOR INSIDE AREAS (C20/25)

#### 3.3.2.1 REMOVAL OF PAINT FROM FLOORS

1. Use a chemical stripper, apply according to the manufacturer's instructions. Allow it to sit for the recommended time.
2. Use a scraper or putty knife to gently remove the softened paint, working in small sections.
3. After paint removal, clean the area with a suitable solvent or water, depending on the method used.
4. Rinse thoroughly and allow the surface to dry completely.
5. Collect and dispose of all paint chips and waste materials in accordance with local regulations.
6. If damage is caused to the existing floor, the repair work will be at the expense of the Contractor.
7. In case of changes please contact the Engineer for approval.

#### 3.3.2.2 REINFORCED CONCRETE ELEVATED FLOOR INSIDE AREAS (C20/25)

1. Manufacture formwork for elevated floors according to dimensions were needed.
2. Carry out reinforcement for elevated floor of Ø6-300 according to the technical drawings.
3. Place the reinforcement with indicated cover of 35mm.
4. Concrete quality floor: C20/25.
5. Manufacture and testing of 1 sample cube per landfill.
6. Pour the elevated floors according to the specified thickness of 50mm in the technical drawings.
7. Compact concrete during pouring with vibratory needle.
8. Curing of concrete.
9. Cover non-hardened concrete with construction foil in case of rain.

#### 3.3.3 REINFORCED CONCRETE FOUNDATION, FOOTING AND SLAB PLATFORM (C20/25)

##### 3.3.3.1 REINFORCED CONCRETE FOUNDATION (C20/25)

1. Manufacture formwork for the foundation according to dimensions.
2. Carry out reinforcement for foundation according to the technical drawings.
3. Place the reinforcement in the formwork with indicated cover.
4. Insert rebars for footings as shown in the technical drawings.
5. Pour the foundation.
6. Compact concrete during pouring with a vibratory needle.
7. Manufacture and testing of 3 test cubes per landfill.
8. Curing of concrete.
9. Cover non-hardened concrete with construction foil in case of rain.

##### 3.3.3.2 REINFORCED CONCRETE FOOTINGS (C20/25)

1. Manufacture formwork for the footings according to dimensions.
2. Carry out reinforcement for footings according to the technical drawings.
3. Place the reinforcement in the formwork with indicated cover.
4. Pour the footings.
5. Compact concrete during pouring with a vibrator.
6. Manufacture and testing of 3 test cubes per landfill.
7. Curing of concrete.
8. Cover non-hardened concrete with construction foil in case of rain.

#### 3.3.3.3 BACKFILL WITH CLEAN SAND

1. Supply and process clean available backfill sand on the platform foundation according to technical drawings.
2. Place pickets to measure desired heights.
3. Remove all organic material and other debris from the site to be filled.
4. Compacts the backfill sand in layers of up to 20cm with a vibratory plate compactor and/or pestle, with a minimum impact force of 22kN.
5. Compacted sand layer to a field proctor value of 98%, to be determined by a nuclear or electrical density gauge. If otherwise, please confirm for approval from the Engineer.
6. All volume quantities are based on compacted volumes.

#### 3.3.3.4 REINFORCED CONCRETE SLAB (C20/25)

1. Manufacture formwork for the slab according to dimensions.
2. Carry out reinforcement for slab according to the technical drawings.
3. Place the reinforcement in the formwork with indicated cover.
4. Pour the slab.
5. Compact concrete during pouring with a vibrator.
6. Manufacture and testing of 1 test cube per landfill.
7. Curing of concrete.
8. Cover non-hardened concrete with construction foil in case of rain.

#### 3.3.4 REINFORCED CONCRETE FLOOR GARAGE (C20/25)

1. Manufacture formwork for the garage floor according to dimensions.
2. Carry out reinforcement for garage floor Ø10-150.
3. Place the reinforcement in the formwork with indicated cover of 35mm.
4. Concrete quality floor: C20/25.

5. Manufacture and testing of 1 sample cube per landfill.
6. Pour the garage floor according to the specified thickness of 150mm in the technical drawings.
7. Compact concrete during pouring with vibratory needle.
8. Curing of concrete.
9. Cover non-hardened concrete with construction foil in case of rain.

### **3.3.5 REINFORCED CONCRETE FLOOR NEW TOILET AREA AND DOORFRAME OPENINGS (C20/25)**

1. Take measures to demolish the existing floors.
2. Demolish all floors according to technical drawings.
3. If damage is caused to the existing floor, the repair work will be at the expense of the contractor.
4. Dispose of all demolished floors.
5. Manufacture formwork for the toilet area floor according to dimensions where needed.
6. Carry out reinforcement for the floor Ø10-150.
7. Place the reinforcement in the formwork with indicated cover of 35mm.
8. Concrete quality floor: C20/25.
9. Manufacture and testing of 1 sample cube per landfill.
10. Pour the toilet area floor according to the specified thickness of 150mm in the technical drawings.
11. Pour the doorframe openings 300x300x400mm<sup>3</sup> after installation and alignment of steel door frames according to the technical drawings.
12. Compact concrete during pouring with vibratory needle.
13. Curing of concrete.
14. Cover non-hardened concrete with construction foil in case of rain.

### **3.3.6 REINFORCED CONCRETE BEAM (C20/25)**

1. Manufacture formwork for the floor beam of 96x200mm according to dimensions.
2. Carry out reinforcement for beam according to the technical drawings.
3. Place the anchors and the reinforcement in the formwork with indicated cover.
4. Use chemical anchoring method for the anchoring of the beam onto the existing floor.
5. Pour the beams.
6. Compact concrete during pouring with a vibrator.
7. Manufacture and testing of 2 test cubes per landfill.
8. Curing of concrete.
9. Cover non-hardened concrete with construction foil in case of rain.

### 3.3.7 REINFORCED CONCRETE PIER GARAGE (C20/25)

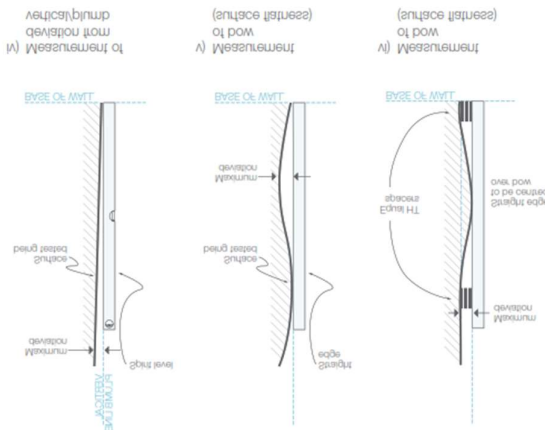


DIAGRAM E MEASUREMENT OF VERTICAL AND INCLINED SURFACES

Columns are defective if they deviate more than 3 mm from the vertical over a height of 1.8 m. See diagram E. A recovery schedule should be sent if the deviation is between 3 and 5 mm. If it turns out that the deviation is more than 5mm, the Engineer will decide what the next steps will be according to the situation.

1. Use abrasive methods (e.g., wire brushing, grinding, sandblasting, or power tools with rust removal attachments) to remove loose rust, corrosion, and scale.
2. Ensure even cleaning, avoiding excessive material removal that could weaken the structural steel.
3. In case of chemical cleaning:
  - If applicable, apply rust removers or acidic solutions to loosen rust and corrosion, ensuring the chemical process does not damage the steel.
  - Neutralize any chemicals used after the cleaning process, following manufacturer instructions.
4. After rust removal, use a wire brush or abrasive pad to clean off residual particles and smooth out the surface.
5. Ensure the cleaned steel surface is free from any remaining rust, dirt, or contaminants.
6. Inspect the cleaned surface for any remaining rust or damage. Perform touch-up cleaning if necessary.
7. Apply a corrosion-resistant primer or protective coating to prevent future rusting.
8. Ensure the coating is applied evenly and according to manufacturer recommendations.
9. Provide and ensure the use of personal protective equipment (PPE) such as gloves, goggles, hearing protection (if required), and respiratory protection (for dust or fumes).
10. Ensure that any rust particles, spent abrasives, or chemical containers are properly disposed of.

**After cleaning of the IPE-160 columns the piers need to be casted around the IPE-160 columns.**

11. Manufacture formwork for the piers according to dimensions.



12. Use "betonplex" for a smooth finish of the piers.
13. Reinforcement for piers according to the technical drawings.
14. Place the reinforcement in the formwork with indicated cover.
15. Places the anchors according to technical drawings.
16. Pour the piers.
17. Compact concrete during pouring with vibratory needle.
18. Manufacture and testing of 3 test cubes per landfill.
19. Curing of concrete.
20. Cover non-hardened concrete with construction foil in case of rain.

### 3.3.8 MEASUREMENT AND PAYMENT

Description	Measurement	Unit
Blinding slab C12/15	Payment shall be made per M <sup>3</sup> of processed concrete.	Per M <sup>3</sup>
Reinforced concrete (C20/25)	Payment shall be made per M <sup>3</sup> of processed concrete.	Per M <sup>3</sup>

## 3.4 STUCCO WORKS

### 3.4.1 STUCCO WORK BUILDING

1. All masonry work will take place after the new floor and the beam has been casted.
2. For masonry works see paragraph 3.7.1.
3. Treating all 4" masonry surfaces below ground level and the floor beams of 96x200mm with a Nitroproof or Tremproof 250g according to the supplier's specifications.
4. All 4" masonry surfaces above ground level plaster with a mortar mix of cement and sand.
5. Bring all the necessary adjustment profiles for the expansion of the plaster.
6. If, after inspection, the stucco layer sounds hollow or is not within tolerance, the repair work is at the expense of the Contractor.
7. Outside corners with metal plaster profiles.

### 3.4.2 STUCCO WORKS EXISTING SEPTICTANK

1. All existing surfaces above ground level must be plastered with a mortar mix of cement and sand.
2. Ratio of sand and cement 1:1.
3. Bring all the necessary adjustment profiles for the expansion of the plaster.
4. In case of changes please confirm with the Engineer for approval.

### 3.4.3 NITROPROOF TREATMENT BEAMS

1. Treat all beams of 96x200mm above existing floor with Nitroproof according to the supplier's specifications.
2. Apply 2 coats of nitro proof.

### 3.4.4 MEASUREMENT AND PAYMENT

Description	Work	Unit
Stucco work	Payment shall be made after plastering of all masonry surfaces.	Per M <sup>2</sup>
Nitroproof treatment floor beams	Payment shall be made after treatment of all floor beam surfaces.	Per M <sup>2</sup>

## 3.5 STEEL STRUCTURES

### 3.5.1 Z PURLINS

1. Install Z purlins Z 160-1.4mm according to technical drawings at the left, right and at the front of the building from top to a height of 2.80m above finished floor.
2. Site measurements can differ from the technical drawings.
3. Use Z-purlins from Cemdee, Hurricane steel, Kuldipsingh or similar.
4. In case of other manufacturer, please send a sample for approval.

### 3.5.2 MEASUREMENT AND PAYMENT

Description	Work	Unit
Z purlins	Payment will be made after installation of all Z purlins according to drawings	Per M <sup>1</sup>

## 3.6 ROOF

### 3.6.1 CLEANING AND PAINTING ROOF SHEETS

1. Conduct a thorough visual inspection of the roof surface to assess the overall condition of the sheets, identifying areas of rust, dirt, debris, and any existing damage.
2. Remove all loose dirt, dust, leaves, moss, and other debris from the roof sheets.
3. Use appropriate pressure washing equipment (if required) to remove grime, algae, and other build-ups without damaging the roof sheets.
4. For areas of stubborn stains or rust, use non-abrasive cleaning agents or brushes to gently scrub the surfaces.
5. Ensure the roof sheets are completely dry before proceeding with further work.

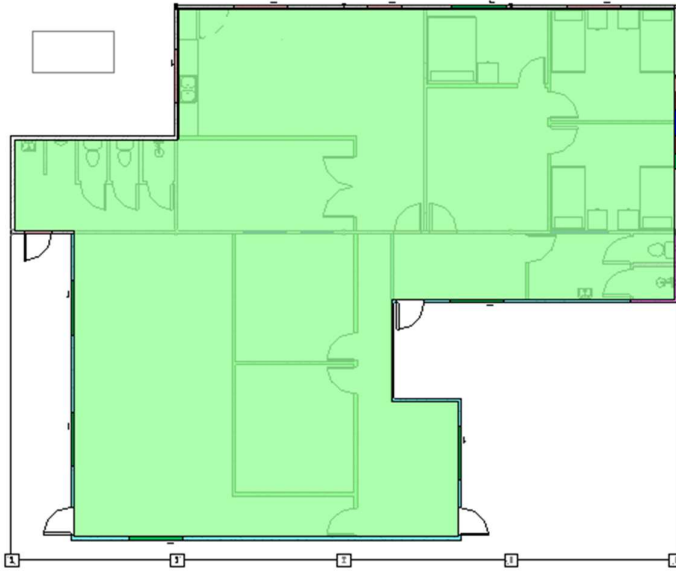
6. Identify and remove any rust, corrosion, or other forms of degradation using wire brushes, sandblasting (if necessary), or a chemical rust remover.
7. Ensure that all rusted areas are treated with a rust inhibitor before proceeding with the coating.
8. Inspect for any holes, cracks, or damaged roof sheets and make necessary repairs using appropriate sealants or patching materials.
9. Fill gaps or joints between roof sheets with a suitable sealing compound to ensure a watertight surface.
10. Use a high-quality, UV-resistant rubber coating paint designed specifically for roofing applications. The coating should be waterproof, flexible, and capable of withstanding extreme weather conditions.
11. Use Dulux roofguard from Coral for the roof sheet coating.
12. Apply the rubber coating using a spray system, roller, or brush as appropriate for even coverage across the roof sheets.
13. Ensure that the coating is applied in 3 layers, as specified by the manufacturer, to achieve the desired thickness and protection.
14. Allow each layer to cure properly before applying the next.
15. Focus on providing adequate coverage on seams, joints, and fasteners, which are more prone to leakage.
16. After the coating is applied and cured, conduct a thorough inspection of the entire roof to check for uniformity, coverage, and any areas requiring touch-ups.
17. Ensure no excess paint has dripped or formed puddles on the roof sheets.
18. Ensure that all work is performed in compliance with local health, safety, and environmental regulations.
19. Provide necessary personal protective equipment (PPE) for workers, including gloves, goggles, safety harnesses (if required), and appropriate clothing.
20. Use environmentally safe cleaning agents and coatings to minimize environmental impact.
21. Follow proper disposal procedures for waste materials, including used cleaning agents, old coatings, and any debris.

### **3.6.2 TRAPEZIUM ROOF PANELS 28 BG GARAGE AREA**

1. Trapezoidal coated 28 BG model Ridge 45mm.
2. Color of roof sheets to be decided.
3. Use stainless steel or galvanized roof screws in the valley. Screw type for approval.
4. Damage to the roof during construction must be repaired.

### **3.6.3 BUBBLE FOIL ISOLATION**

1. Install bubble foil insulation 30x1.2 m, include all necessary fastenings materials in the price.
2. Bubble foil to be installed above all ceilings inside the existing and new building as specified in the picture below in green.
3. Use bubble foil from Cemdee, Hurricane steel or equivalent.



### 3.6.4 ROOF GUTTER 28 BG PREPAINTED GALVANISED STEEL 0.5MM

1. Remove the ridge vent, rain gutters, fascia and bargeboard.
2. Dispose of the ridge vent, roof gutters, fascia, bargeboard in an area designated by the Engineer and take measures to prevent damage.
3. Install rain gutter 28bg in full lengths including carrying handles and drainage facilities.
4. Include PVC drains to drains in the price.
5. Apply bead plate 28BG in color and full lengths with the necessary screws.
6. Make provisions for connecting the rear gutter to the water storage tanks in the rear of the building.

### 3.6.5 RIDGE VENT

1. Measure the length of the ridge where the vent will be installed.
2. Use long span ridge vent.
3. Color to be determined during execution.
4. Mark the centerline along the ridge to ensure the vent is centered.
5. Remove the existing roof sheets from the ridge area where the vent will be installed.
6. Using a utility knife or saw, carefully cut along the ridge to create an opening, typically 1 to 2 inches wide, depending on the vent specifications.
7. Position the ridge vent over the opening, ensuring it is centered on the ridge line.
8. Secure the vent in place with roofing nails, following the manufacturer's guidelines for spacing.
9. Apply sealant along the edges of the vent to prevent water infiltration.
10. Ensure that the vent is properly sealed to the roof material for long-lasting protection.

### 3.6.6 FASCIA AND BARGEBOARD

1. Align the fascia board with the edge of the roof, ensuring it sits flush against the rafter ends.
2. Use a level to ensure it's straight, then secure it with nails or screws, placing them approximately every 12 to 16 inches.
3. Fit the bargeboard at the gable end of the roof, ensuring it covers the ends of the rafters adequately.
4. Like the fascia, secure the bargeboard with nails or screws. Use a level to maintain a straight line.
5. Apply waterproof sealant to the joints to prevent water ingress.
6. Use pre-painted 0.5 mm Aluzinc metal sheets for the fascia and bargeboards to protect against weathering and enhance aesthetics.
7. Check for any loose boards or gaps and make necessary adjustments.
8. Clean the area and ensure all tools are safely stored.

### 3.6.7 WOODEN ROOF CONSTRUCTION GARAGE INCLUDING WOODEN COLUMNS 4"X4"

1. Take measures to demolish the existing wooden structure.
2. Demolish both wooden structures according to technical drawings.
3. If damage is caused to the existing building, the repair work will be at the expense of the contractor.
4. Dispose of all demolished structures.
5. Both the wooden structures should be constructed like the existing one.
6. Wood to be used for the construction should be Kopi or Basralocus.
7. Cut the wooden columns to the required height.
8. Position the columns at the marked locations, ensuring they are plumb and aligned.
9. Anchor the columns to the foundation or base according to drawing with 2 60/6 strips and 2 M12-8.8 bolts ensuring stability.
10. Leave a 25mm gap between concrete floor and wooden column to prevent humidity.
11. Place horizontal beams on top of the columns, securing them with nails or screws.
12. Use a level to ensure the beams are straight and even.
13. Cut the rafters to the required length and angle according to technical drawings and site situation.
14. Attach the rafters to the top of the beams, spacing them evenly.
15. Use nails or screws to secure each rafter in place, ensuring they are level.
16. Use Trapezoidal coated 28 BG model Ridge 45mm roof sheets and follow the manufacturer's installation guidelines mentioned in paragraph 3.6.2.
17. Ensure proper overlap and sealing to prevent leaks.
18. Clean up the work area and remove any debris.

19. All fasteners for various connections including purlins to be included in the price.
20. Preserve the wood structure.

### 3.6.8 MEASUREMENT AND PAYMENT

Description	Work	Unit
<b>Cleaning and painting roof sheets</b>	Payment will be made after all 4" blocks have been placed according to drawings	Lumpsum
<b>Trapezium roof panels 28 bg garage area</b>	Payment shall be made after installation of roof sheets	Per M <sup>2</sup>
<b>Bubble foil isolation</b>	Payment shall be made after installation of bubble foil insulation	Per M <sup>2</sup>
<b>Roof gutter 28 bg prepainted galvanised steel 0.5mm</b>	Payment shall be made after installation of roof gutter	Per M <sup>1</sup>
<b>Ridge vent</b>	Payment shall be made after installation of ridge vent	Per M <sup>1</sup>
<b>Fascia and bargeboard</b>	Payment shall be made after installation of fascia and bargeboard	Per M <sup>1</sup>
<b>Wooden roof construction garage including wooden columns</b>	Payment shall be made after installation of wooden construction according to site situation.	Lumpsum

## 3.7 WALLS

### 3.7.1 MASONRY 4" WALLS

1. Place the pickets and striking lines in such a way that the masonry blocks are raised vertically and in a straight line.
2. Masonry works walls carry out in 4" massive blocks according to the heights indicated in the technical drawings. (Vabi, Kuldipsingh, BEM).
3. Clean and moisten masonry blocks before the masonry work takes place.
4. Place a 50 cm ø10 chemical anchor on every 3 rows of blocks for anchoring with the existing walls and/or columns.
5. Manufacture formwork for lintel beams and ring beams (dim. 200x100mm) according to dimensions.
6. Carry out reinforcement for lintel beams and ring beams according to the technical drawings.
7. Place the reinforcement in the formwork with indicated cover.
8. Concrete quality columns: C20/25

9. Pour lintel beams and ring beams.
10. Compact concrete during the pouring by means of a vibrator.
11. Curing of concrete
12. Cover concrete with construction foil in case of rain.

*The following aspects apply when cutting out openings in existing walls:*

- Make markings for the wall to be demolished for opening in accordance with technical drawings.
- Cut the opening without damage to the existing wall.
- Remove masonry wall.
- Dispose of all demolished material.
- If the cut-out openings are larger than indicated in the technical drawings, the repair work will be at the expense of the contractor.

*The following aspects apply when filling in openings in existing walls:*

- Make markings for the wall to be filled for opening in accordance with technical drawings.
- Close the opening without damaging the existing wall according to technical drawings.
- Place a 50 cm  $\varnothing$ 10 chemical anchor on every 3 rows of blocks for anchoring with the existing walls and/or columns.
- Clean the area.
- If the alignment of the filled openings isn't correct with the existing wall or if the existing walls are damaged, the repair work will be at the expense of the contractor.

### **3.7.2 INSTALLATION OF SUPERBOARD CEMENT BOARD PANELS OFFICE**

1. Supply and install the 12 mm superboard cement board sheets against the metal stud and track profiles. Panel Ray or equivalent.
2. All facades need to be executed from new floor level up to the roof.
3. Take all necessary measurements for the wall to be aligned properly and to be closed completely at the top.
4. For the track and stud profiles, profile size; 96\*33\*0.5mm with a vertical c.t.c. distance of 40cm.
5. Use metal trims for the lapping of the sheets. Design to be determined during execution.
6. Metal trims to be approved by the Engineer.
7. Visible fastenings such as screws and/or rivets are not permitted, any aluminum welds to the supplied construction are not permitted.
8. If there are any changes, they must first be approved by the Engineer.

### **3.7.3 INSTALLATION OF GYPSUM BOARD PANELS DUBBEL SIDED WALLS**

1. Ensure the site is prepared and clean before starting the installation.
2. Install the framing system securely and level.

3. Supply and install the 12 mm gypsum board sheets against the metal stud and track profiles on both sides of the walls. Panel Ray or equivalent.
4. Tape and mud all joints and screw holes.
5. Sand and finish the surface to a smooth finish.
6. Remove all debris and leftover materials from the site.
7. Ensure the work area is left clean and tidy.
8. For the track and stud profiles, profile size; 96\*33\*0.5mm with a vertical c.t.c. distance of 40cm.
9. Visible fastenings such as screws and/or rivets are not permitted, any aluminum welds to the supplied construction are not permitted.
10. If there are any changes, they must first be approved by the Engineer.

#### 3.7.4 MEASUREMENT AND PAYMENT

Description	Work	Unit
<b>Masonry 4" walls new toilet</b>	Payment will be made after all 4" blocks have been placed according to drawings	Per M <sup>2</sup>
<b>Installation of superboard cement board panels office</b>	Payment shall be made after installation of cement board sheets according to drawings	Per M <sup>2</sup>
<b>Installation of gypsum board panel walls</b>	Payment will be made after properly installation of gypsum walls	Per M <sup>2</sup>

### 3.8 FLOOR FINISHING

#### 3.8.1 FLOOR TILES EXISTING TOILET

1. Use a putty knife or chisel and a hammer to tap and lift the tile away from the floor.
2. If necessary, apply steady pressure.
3. Remove all floor tiles and dispose at a location approved by the Engineer.
4. In case of changes please communicate with the Engineer.
5. Apply sand cement finishing layer first.
6. Costs per m<sup>2</sup> for the purchase of tiles: \$25,-
7. Tile samples must be send for approval.
8. Place matte non-slip porcelain tiles for the floor of the existing toilet area.
9. Tile color and pattern to be determined.
10. Clean concrete floor before applying glue.
11. Use Surimassa, or equivalent.



12. Place tiles for the existing toilet area as shown in the technical drawings.
13. Make sure that the finished tile height matched the screed level of the floors.
14. The level of the tiles and screed needs to be aligned properly.
15. Use 3mm spacers for the joints and fill them with Foby flex joint or equivalent. (color to be determined)
16. Clean tiles.
17. If the tiles are not installed flush with the surface, the tile edges are damaged, or the joint widths deviate from 3mm, the contractor must repair this at his own expense.
18. Finished grouting will not be accepted if it is not uniform in color and smooth, without gaps or holes.



Foto 7: Rejected joint.

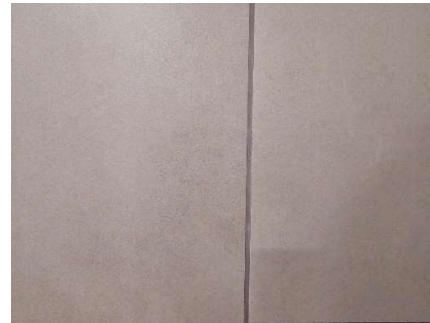


Foto 8: Approved joint.

### 3.8.2 SCREED FLOOR FINISH WITH PAINT INSIDE AREAS

1. Clean the new floors h=50mm that has been casted on top of the existing floor before applying the sand cement mixture.
2. Place the sand cement mix on the existing floors.
3. Make sure that the new height is properly plotted in accordance with the technical drawings in order to obtain an overall equal floor area.
4. Make sure that the finished tile height matched the screed level of the floors.
5. The level of the tiles and screed needs to be aligned properly
6. If the height is not carried out in accordance with technical drawings, the contractor must repair it free of charge.
7. Paint the floors with the required paint according to the manufacturer's instructions.
8. Paint sample to be send for approval.
9. Paint color to be determined during execution.

### 3.8.3 FLOOR TILES NEW TOILET

1. Costs per m<sup>2</sup> for the purchase of tiles: \$25,-
2. Other in accordance with paragraph 3.8.1, point 1 till 13.

### 3.8.4 WALL TILES EXISTING TOILET

1. Use a putty knife or chisel and a hammer to gently tap and lift the tile away from the wall.
2. If necessary, apply steady pressure.
3. Remove all wall tiles and dispose at a location approved by the Engineer.
4. In case of changes please communicate with the Engineer.
5. Costs per m<sup>2</sup> for the purchase of tiles: \$30,-
6. Place ceramic tiles for the walls of the existing toilet area.
7. Other in accordance with paragraph 3.8.1, point 1 till 13.
8. Use metal corner frames during execution of the wall tiles.
9. Corner trims to be approved by the Engineer.

### 3.8.5 WALL TILES NEW TOILET

1. Costs per m<sup>2</sup> for the purchase of tiles: \$30,-
2. Place ceramic tiles for the walls of the existing toilet area.
3. Other in accordance with paragraph 3.8.1, point 1 till 13.
4. Use metal corner frames during execution of the wall tiles.
5. Corner trims to be approved by the Engineer.

### 3.8.6 SCREED FLOOR FINISH WITH PAINT GARAGE WITH A SLOPE

1. Make sure the paint layer of the existing floor has been removed completely.
2. Other in accordance with paragraph 3.8.2, point 1 till 9.
3. Make sure that the new height is properly plotted in accordance with the technical drawings in order to obtain a slope towards the west side of the building.

### 3.8.7 SEALANT PASTE WITH KIMBAND (FOBY AFDICHTPASTA)

1. Clean up the concrete floor before placing adhesive.
2. Apply water sealant paste with "kimband" (foby) in bathroom corners as per drawing
3. Place tiles in the bathroom area according to specifications from the drawings.

### 3.8.8 MEASUREMENT AND PAYMENT

Description	Work	Unit
<b>Tile works</b>	Payment will be made after tiles have been placed and joints are filled correctly	Per M <sup>2</sup>
<b>Screed floor finish with paint</b>	Payment shall be made after floors have been painted correctly	Per M <sup>2</sup>

<b>Sealant paste with kimband</b>	Payment shall be made after approval of the performed work	Per approved BOQ item.
-----------------------------------	--	------------------------

### 3.9 DOORS AND WINDOWS

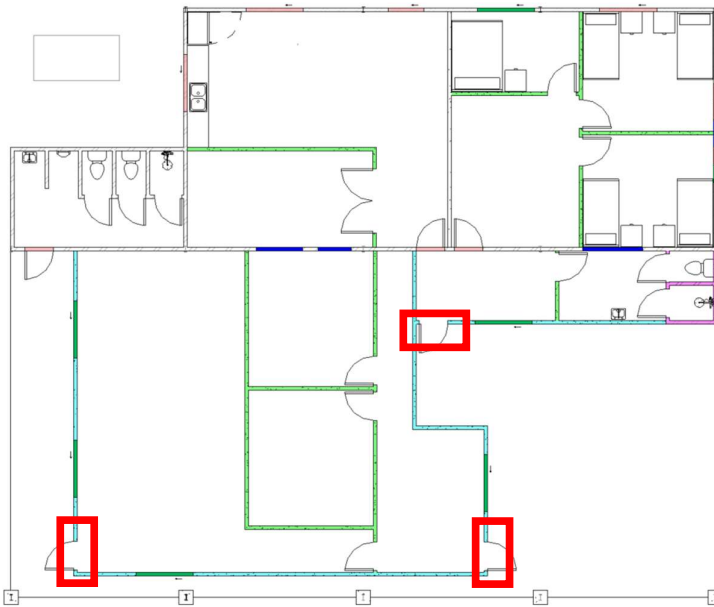
#### 3.9.1 INSTALLATION OF DOORS D1 WITH WOODEN FRAME

1. Wooden frame fabricated from Basralocus and fittings in accordance with supplied technical drawings.
2. Supplier will be approved by the Engineer.
3. Manufacture frames from oven-dry wood, moisture content 12% or lower, preserve before application.
4. Install wooden door frames prior installation of doors.
5. Measure the width and height of the door frame to ensure the new door will fit.
6. Use a leveler to check for vertical alignment and horizontal alignment.
7. Use doors from Surinamese wood: Ingipipa doors.
8. Attach the hinges to the door first.
9. Position the door in the frame and mark the locations of the hinges (AXA or equivalent) on the door frame.
10. Remove the door and attach the hinge plates to the door frame.
11. Paint the door completely, especially the underside.
12. Rehang the door and check its alignment.
13. Make sure it opens and closes smoothly without binding or sticking.
14. Adjust the shims behind the hinge plates if necessary to make sure the door is leveled and plumb.
15. Once the door is properly aligned, secure the hinges with screws.
16. Ensure all screws are tight and that the door is firmly in place.
17. Install the door handle and lockset (Nemef or equivalent) according to the manufacturer's instructions.
18. Use molding in the corners of the door frames.
19. Use wood filler or caulk to fill up the gaps.
20. Once it's dry, sand it smoothly.
21. Paint the doors according to the technical specifications.
22. If there are any changes, they must first be approved by the Engineer.

#### 3.9.2 INSTALLATION OF DOORS D1 WITH STEEL FRAME

1. Steel frame fabricated from UNP-120 and fittings in accordance with supplied technical drawings.

2. Use UNP-120 from VABI, KULDIPSINGH.
3. Manufacture frames from UNP-120 with miter finishing, preserve before application.
4. Install steel door frames in the pit with a depth of 400mm and cast the floor making sure the frame is plump and aligned properly prior installation of doors according to picture below in red.
5. Other in accordance with paragraph 3.9.1, point 5 till 21.
6. Use metal trims in the corners of the door frames for a smooth finishing between wall and door frame.



### 3.9.3 INSTALLATION OF DOOR D2 WITH WOODEN FRAME

1. Other in accordance with paragraph 3.9.1, point 1 till 21.

### 3.9.4 INSTALLATION OF IRON SAFETY GRILL FOR DOORS

1. Fabricate iron safety grill for the doors according to dimensions 850x2125mm indicated in the technical drawings.
2. Use galvanized steel.
3. For the frame use galvanized steel SHS 30/30/3 and for the door use SHS25/25/2.5.
4. Fabricate 1 iron safety grill for inspection and after approval the others can be fabricated to prevent mistakes.
5. Preserve door grills with Sigmacover 280 primer and Sigmadur 550.
6. Finishing paint color to be decided during execution.
7. Use ABUS padlocks for the doors.
8. ABUS padlocks to be approved by the Engineer.



### 3.9.5 INSTALLATION OF SHUTTER WINDOWS WITH RVS SAFETY GRILL

1. Install the safety shutter windows to size from the technical drawings according to the supplier's instructions.
2. Supplier: Alupro, kuldipsing or CSC.
3. Onsite dimensions may differ from the technical drawings.
4. If damage is done to the windows, the repair costs are for the Contractor.

### 3.9.6 MEASUREMENT AND PAYMENT

Description	Work	Unit
<b>Installation of doors</b>	Payment will be made after installation of doors with correct frames	Per PC
<b>Installation of iron safety grill for doors</b>	Payment shall be made after installation of iron safety grill for doors	Per PC
<b>Installation of shutter windows with rvs safety grill</b>	Payment shall be made after installation of shutter windows with rvs safety grill	Per PC

## 3.10 CEILING SYSTEMS

### 3.10.1 INSTALLATION OF GYPSUM PANEL CEILING EXISTING BUILDING INCL. METAL FRAMEWORK

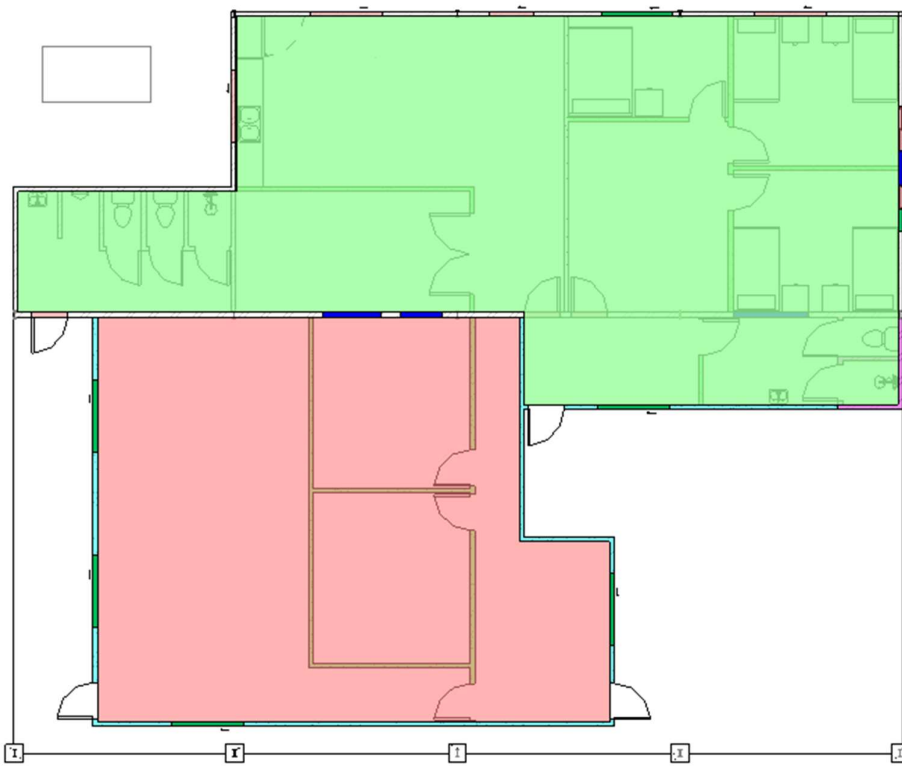
1. Ensure the ceiling is clean, dry, and free of any imperfections.
2. Remove any old ceilings or obstructions.
3. Use metal framework, attach this to the ceiling with spacing of 40-60 cm apart.

4. For the existing building the ceiling height should be 3.00m as specified in the picture below in green.
5. Cut the gypsum panels to size using a saw or utility knife.
6. Color of gypsum panel ceiling to be decided during execution.
7. Ensure the edges are straight.
8. Start in one corner of the room.
9. Place the first panel against the ceiling, ensuring it is level.
10. Include fastening construction in pricing.
11. Include fasteners and other aids in pricing.
12. No wire nails and/or screws should be visible on the surface.
13. First install 1m<sup>2</sup> ceiling for approval of the Engineer.
14. Secure the panel with screws or nails, starting from the center and working towards the edges for a firm hold.
15. Repeat the process for the remaining panels. Ensure they fit together well and that the seams are even.
16. After all panels are installed, check that everything is secure.
17. Fill any gaps or joints with filler compound or adhesive for a neat finish.
18. Sand the areas filled for a clean and neat finishing.
19. Use molding in the corners in the areas.
20. Moldings to be approved by the Engineer.

### **3.10.2 INSTALLATION OF GYPSUM PANEL CEILING NEW BUILDING INCL. METAL FRAMEWORK**

1. Ensure the ceiling is clean, dry, and free of any imperfections.
2. Remove any old ceilings or obstructions.
3. Use metal framework, attach this to the ceiling with spacing of 40-60 cm apart.
4. For the new building the ceiling height should be 3.50m as specified in the picture below in red.
5. Cut the gypsum panels to size using a saw or utility knife.
6. Color of gypsum panel ceiling to be decided during execution.
7. Ensure the edges are straight.
8. Start in one corner of the room.
9. Place the first panel against the ceiling, ensuring it is level.
10. Include fastening construction in pricing.
11. Include fasteners and other aids in pricing.
12. No wire nails and/or screws should be visible on the surface.
13. First install 1m<sup>2</sup> ceiling for approval of the Engineer.

14. Secure the panel with screws or nails, starting from the center and working towards the edges for a firm hold.
15. Repeat the process for the remaining panels. Ensure they fit together well and that the seams are even.
16. After all panels are installed, check that everything is secure.
17. Fill any gaps or joints with filler compound or adhesive for a neat finish.
18. Sand the areas filled for a clean and neat finishing.
19. Use molding in the corners in the areas.
20. Moldings to be approved by the Engineer.



### 3.10.3 MEASUREMENT AND PAYMENT

Description	Work	Unit
Installation of gypsum panel ceiling incl. metal framework	Payment will be made after installation of gypsum ceiling	Per M <sup>2</sup>

### 3.11 SANITARY ITEMS

1. Deliver and install ready-to-use (connected to the water supply and drainage system) after approval from the Engineer all fixed sanitary units according to technical drawings.

### 3.11.1 FLOOR MOUNTED TOILET

#### FLOOR MOUNTED

- Fabrikant: Duravit
- Product code: #012809 (duravit website)
- Type: Flush water quantity: 4,5/3 l, Washdown model, Flushing rim: Closed, Outlet drain: horizontal, vertical, Position outlet: Back, Incl. cistern: No, Flush principle: extractor/siphon jet, For bowl mounted cistern, Length adjustable, Incl. mounting material, Unified Water Label (UWL) Class: 1
- Material: Ceramic
- Color: white
- Size: 370\*660mm
- Outlet: Rear Connection diameter (mm):102.



### 3.11.2 WASH BASIN

- Manufacturer: DURAVIT
- Modelnr.: 030055
- Type: Starck 3 Wall-mounted washbasin
- Measurement (Bx D): 536x429 mm
- Rectangular, Including crane deck
- Landing: Yes, Bottom glazed



### 3.11.3 URINAL

#### WALLCLOSET

- Manufacturer: Duravit
- Productcode: # 25028017 (duravit website)
- Type: Urinal D-CODE RIMLESS
- Material: Ceramics
- Color: white
- Measurement: 305\*290mm



Outlet: Rear Connection diameter (mm):102.

### 3.11.4 FAUCET

- Manufacturer: HANSGRÖHE



- Type: Focus Pillar tap 70 with lever handle for cold water or pre-adjusted water without waste set
- Surface Treatment: Chrome Plated
- Projection: 101mm
- Spout height: 53mm
- Maximum flow rate at 3 bar: 5l/min
- For cold water connection.



### 3.11.5 TOILET PAPER HOLDER

- Manufacturer: GROHE
- Type: Essential toilet paper holder w/o cover
- Productcode: # 40689001



### 3.11.6 DUSTBIN

- Manufacturer: Fumagalli
- Type: Waste basket with pedal opening
- Material: Stainless steel AISI 340 with rubber opening pedal
- Dynamic: Per pedal
- Measurement (H x L x D): 290x210x267mm
- Capacity: 5 litres
- Weight: 2kg



### 3.11.7 SHOWER

- Manufacturer: Hansgrohe
- Consists of overhead shower, hand shower, shower arm, one-handle bath mixer, built-in part, hose connection, shower holder, shower hose
- Shower head size: 240 mm
- Spray type overhead shower: Rain
- Spray type hand shower: Rain, IntenseRain
- Minimum operating pressure: 1 bar
- Maximum Operating Pressure: 6 bar
- Nuts shower hose: shower hose with conical nut at both ends
- Swivel joint prevents the hose from tangling
- Rain flow rate (at 3 bar): 16.7 l/min



### 3.11.8 KITCHEN FAUCET

- Manufacturer: GROHE
- Type: GROHE CENCETTO WALL MOUNT SINK MIXER
- Material: DZR Brass
- Spray angle: 10°
- Measurements (H x W x Diam.): 287mmx150mmx70mm
- Projection: 280mm
- Handle height: 81mm
- Spout to deck height: 162mm



### 3.11.9 MIRRORS

- Modelnr.: 615627
- Type: Mirror rectangular 60cmx40cm
- Dimensions: 60cmx40cm
- Mounting: Mirror clamps
- Modelnr.: 615624



## 3.12 PAINT WORKS

### 3.12.1 PAINT WORKS EXISTING BUILDING AND NEW BUILDING

1. All masonry, concrete work and plaster walls to be fully painted.
2. Make sure all surfaces are clean before painting begins.
3. All new surfaces must first be provided with 1 layer of primer.
4. Interior masonry walls and concrete work completely finish with stone putty and sanding to obtain a smooth surface.
5. Use paint from Coral or equivalent, submit replacement for approval from the Engineer.
6. Wall paint color to be decided during execution.
7. First, 1m<sup>2</sup> of masonry wall completely provided with stone filler, 1 layer of primer and two layers of painting for approval of the Engineer.
8. All inside walls to be painted with white or off-white color paint. RAL to be decided during execution.
9. All outside walls to be painted with grey color paint. RAL to be decided during execution.
10. All roof sheets to be painted with blue color paint. RAL to be decided during execution.

### 3.12.2 MEASUREMENT AND PAYMENT

Description	Work	Unit
-------------	------	------

<b>Paint works existing building and new building</b>	Payment will be made after approval of painted surfaces	Per M <sup>2</sup>
---	---	--------------------

### 3.13 INTERIOR

#### 3.13.1 CONCRETE KITCHEN

##### 3.13.1.1 MASONRY 4" STONE WALLS

1. Place the pickets and striking lines in such a way that the masonry bricks are raised vertically and in a straight line.
2. Masonry works to be performed in 4" solid stones according to the heights indicated in the technical drawings. (Vabi, Kuldipsingh, BEM).
3. Clean and moisten masonry bricks before the masonry work takes place.
4. Cover concrete with construction foil in case of rain.

##### 3.13.1.2 REINFORCED CONCRETE COUNTERTOP

1. Manufacture the formwork for the countertop according to dimensions of L x D = 2.800mx0.60m.
2. Dimensions can differ from the technical drawings. If so, communicate with the Engineer for approval.
3. Carry out reinforcement for the countertop according to the technical drawings with Ø10-150.
4. Place the reinforcement in the formwork with indicated cover of 35mm.
5. Concrete quality plate: C20/25
6. Pour the countertop off the kitchen.
7. Compact countertop concrete with vibratory needle or poking by hand.
8. Cover concrete with construction foil in case of rain.

#### 3.13.2 INSTALLATION OF KITCHEN DOORS

1. Manufacture doors from medium density fiberboard(MDF).
2. Install MDF doors with supplied technical drawings.
3. Measure the width and height of the door opening to ensure the new door will fit.
4. Use a leveler to check for vertical alignment and horizontal alignment.
5. Attach the hinges to the door first.
6. Position the door in the opening and mark the locations of the hinges (AXA or equivalent) on the walls.
7. Make sure that the gap between the door and the floor should be according to technical drawings. If not so, please communicate with the Engineer for approval.
8. Remove the door and attach the hinge plates to the walls.

9. Rehang the door and check its alignment.
10. Make sure it opens and closes smoothly without binding or sticking.
11. Adjust the shims behind the hinge plates if necessary to make sure the door is leveled and plumb.
12. Once the door is properly aligned, secure the hinges with screws.
13. Ensure all screws are tight and that the door is firmly in place.
14. Install the door handle and lockset (Nemef or equivalent) according to the manufacturer's instructions.
15. Use wood filler or caulk to fill up the gaps.
16. If there are any changes, they must first be approved by the Engineer.

### 3.13.3 TILES KITCHEN

1. Apply sand cement finishing layer first.
2. Costs per m<sup>2</sup> for the purchase of tiles: \$45,-
3. Tile samples must be send for approval.
4. Place double-hard baked porcelain tiles.
5. Tile color and pattern to be determined.
6. Clean concrete countertop and stucco walls before applying glue.
7. Use Surimassa, or equivalent.
8. Place tiles as shown in the technical drawings.
9. The level of the tiles needs to be aligned properly.
10. Use 3mm spacers for the joints and fill them with Foby flex joint or equivalent. (color to be determined)
11. Clean tiles.
12. If the tiles are not installed flush with the surface, the tile edges are damaged, or the joint widths deviate from 3mm, the contractor must repair this at his own expense.
13. Finished grouting will not be accepted if it is not uniform in color and smooth, without gaps or holes.



Foto 7: Rejected joint.

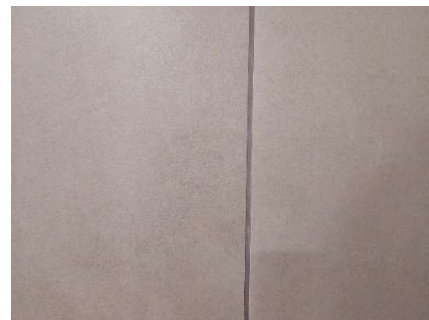


Foto 8: Approved joint.

### 3.13.4 MEASUREMENT AND PAYMENT

Description	Work	Unit
Interior	Payment will be made after approval of installation according to drawing	As per approved BOQ item

## 3.14 TERRAIN WORKS

### 3.14.1 SEWAGE AND DRAINAGE SYSTEMS

1. Remove any surface grates, covers, or access panels.
2. If there are surface drains or catch basins, detach them from their connections and remove the pipes.
3. Excavate around the manholes with the help of a shovel or backhoe.
4. Remove the manhole complete with covers.
5. If any damage occurs during removal of the drainage system to the existing building the rectifications are at cost of the Contractor.
6. Dispose of all materials of the existing drainage system after approval from the Engineer.
7. PVC pipes 3" and 4" are installed in accordance with the technical drawings both inside and outside the building.
8. Drainpipes for washbasins and kitchen should be placed in the wall.
9. Use 2x 45° attachments instead of 1x 90° attachment.
10. First, get all connections approved.
11. Bonding all PVC joints after approval.
12. If the PVC joints are not carried out in accordance with the drawing or without the approval of the Engineer, the repair work will be at the expense of the Contractor.
13. Laying PVC pipes on site in accordance with technical specifications.

### 3.14.2 DOWNSPOUTS

1. The downspouts shall be of 4" PVC pipes and shall match the existing gutter system.
2. All necessary fittings, elbows, brackets, and fasteners should be of compatible material and designed to securely attach the downspouts to the building.
3. Install downspouts ensuring that the bottom end discharges water away from the foundation.
4. Attach downspouts securely to the building using appropriate brackets or hangers.
5. Ensure all connections are watertight and use sealants or gaskets where needed to prevent leaks after approval from the Engineer.
6. Install elbow joints at appropriate locations to direct water flow away from the foundation and to the intended drainage area.

7. Ensure the bottom of the downspouts directs water to the drainage system ensuring water does not pool near the foundation or cause erosion.
8. For downspouts leading to the water tanks ensure proper connection to the piping system with the correct slope and flow direction.
9. Remove any debris, tools, or equipment from the site after installation.
10. Ensure all work areas are cleaned up and restored to their original condition.
11. Dispose of any waste materials in accordance with local regulations.

### 3.14.3 PREFAB DRAINAGE PITS INCLUDING CONCRETE COVER

1. Install the prefabricated drainage pits with a dimension of 600x600mm<sup>2</sup> according to technical drawings. (Vabi, Kuldipsingh, BEM)
2. Lay the pits on a blinding floor of C12/15 with a thickness of 50mm.
3. Use drains with concrete covers.

### 3.14.4 PREFAB SEPTICTANK CIRKEL

1. Install the prefabricated septictank with a diameter of 1000 mm according to technical drawings. (Vabi, Kuldipsingh, BEM)
2. Lay the septictank on a blinding floor of C12/15 with a thickness of 50mm.
3. Use septictank with concrete covers.

### 3.14.5 GRAVEL PLACEMENT AROUND THE BUILDING

1. Place construction foil prior placement of gravel.
2. Place a 10 cm thick and 1m wide gravel strip around the building according to technical drawings.
3. Gravel gradation to be decided later.
4. Compact the gravel after placement.
5. If there are any changes, they must first be approved by the Engineer.

### 3.14.6 MEASUREMENT AND PAYMENT

Description	Work	Unit
Terrain works	Payment will be made after approval of installation according to drawing	As per approved BOQ item

## 3.15 WATER STORAGE AND DISTRIBUTION

### 3.15.1 REPLUMB EXISTING WATER STORAGE TANKS

1. Move the existing four 1000-gallon water storage tanks to the center of the platform after the new platform has been constructed.

### 3.15.2 INSTALLATION OF NEW WATER DISTRIBUTION SYSTEM WITH PUMP

1. Install new water distribution system to all tap points as indicated in the technical drawings.
2. Reuse existing system where possibly is allowed and it complies.
3. Water installation must be conducted by an accredited SWM installer.
4. All necessary documents for the SWM installer to be submitted for approval from the Engineer.
5. Install 1 HP water pump with an 80-liter Fiberglass pressure tank.
6. Manufacturer of 1 HP water pump: Myers.
7. Manufacturer of 80-liter Fiberglass pressure tank: Wellmate.
8. In case of changes, samples need to be submitted for approval from the Engineer.
9. Install 4" PVC pipes that connect the building's roof to the water storage tanks according to technical drawings.
10. If otherwise, the situation will then be examined onsite, and a solution needs to be submitted by the Contractor for approval.

### 3.15.3 MEASUREMENT AND PAYMENT

Description	Work	Unit
<b>Water storage and distribution</b>	Payment will be made after approval of installation according to drawing	As per approved BOQ item

## 3.16 FENCE

### 3.16.1 BEAKART FENCE

1. Pour footings of 200X200mm<sup>2</sup> for installation of the fence posts.
2. Install fencing at the front of the property. Use a Bekaert or Beta-fence fence with a height of 2 m.
3. Pouring beam 300x250mm C20/25 with the necessary facilities for sliding gate.

### 3.16.2 4M SLIDING GATE

1. Manufacture and install a gate with a height of 2m with a frame made of galvanized steel and the cladding of Bekaert or Beta-fence fence.
2. Include all necessary tools in the price for installation.
3. If otherwise, the situation will then be examined onsite, and a solution needs to be submitted by the Contractor for approval.

### 3.16.3 SQUARE POSTS

1. The square posts will be installed on 3 sides of the property, the left side, rights side and the rear side of the building.
2. Use stakes and string to outline the fence line and mark where each post will be installed.
3. Remove any debris, plants, or obstacles in the marked area.
4. Use a post hole digger to create holes that are at least one-third the height of the columns deep, and about 4-6 inches wide.
5. Ensure the holes are spaced according to your fence design with a c.t.c. of 2000mm apart.
6. Place the wooden post with a height of 2m above ground into the center of the hole, ensuring it is plumb (vertically straight).
7. Use temporary braces to hold the column in place while you fill the hole.
8. For the corner columns use 2 additional posts as anchoring in both connecting directions of the fence.
9. Use concrete, mix it according to the manufacturer's instructions and pour it around the post, ensuring it fills the hole completely.
10. Allow it to cure for at least 24-48 hours before continuing with the fence works.
11. Once the columns are securely set, attach the barbed wire to the columns using nails. Make sure they are level and evenly spaced.
12. Clean up the work area, removing any debris or excess materials.

### 3.16.4 BARBED WIRE

1. Use galvanized barbed wire in accordance with the supplier's instructions. Type of the barbed wire to be decided during execution.
2. Install barbed wire with a c.t.c. distance of 300mm.
3. Check each post for stability and ensure that the barbed wires are securely attached.
4. Secure the barbed wire to the posts using appropriate fasteners, such as wire ties or staples, ensuring it is firmly fixed in place without damaging the wire.
5. Install post caps, if specified and needed, to protect the tops of the posts from weathering.
6. Verify that all posts are installed vertically and are properly spaced.
7. Ensure the barbed wire is correctly tensioned without excessive slack or stretching.
8. Ensure that the installation does not have sharp or hazardous protrusions that could cause injury.
9. Clear the work area of any leftover materials, tools, or waste.
10. All materials to be approved by the Engineer before use.
11. Conduct a final walk-through with the Engineer to ensure the fence meets all specifications and requirements.

### 3.16.5 MEASUREMENT AND PAYMENT

Description	Work	Unit
Fence	Payment will be made after approval of installation according to drawing	As per quantity



		used and approved BOQ item
--	--	----------------------------

### 3.17 ADDITIONAL WORKS

The amount for the additional works needs to be taken into account for calculation of the full contract price for this project. The items and amounts are listed in the BoQ.

#### 3.17.1 MEASUREMENT AND PAYMENT

Before starting works which is covered in the provisional sum the following steps shall be taken.

- Submit a price breakdown and Request of Approval (RfA) to the Engineer for the works to be done as instructed by the Engineer.
- Obtain approval from the Engineer and the client for the submitted RfA before commencement of the works to ensure full payment.
- Payment shall be made according to the approved price breakdown and RfA.

## 4. ELECTRICAL INSTALLATIONS

The contract terms for construction are as follows:

UWS 1996: Conditions of Implementation for Working in Suriname 1996

Carry out works according to the design and specifications of CODECO N.V.

### 4.1 CODES AND STANDAARDEN

The following technical codes and standards apply:

- EBS installation guidelines and standards.
- NEC/NEN 1010: Electrical installations for low voltage

### 4.2 JOB DESCRIPTION

In this chapter you will find the full working description. The works described in the contract documents and the materials to be supplied for them are part of the contract, with the exception of nothing. If certain works and materials are not described or mentioned in the specifications and not on the drawings, but apparently belong to the complete delivery, they must be applied and delivered at no additional cost. If specifications and drawings conflict, the Engineer decides what prevails.

In the following paragraphs, you will find a detailed description of the work to be carried out. The most important items are listed below.

1. Mobilization and demobilization
2. Electrical installation
3. Solar system with storage

#### 4.2.1 MOBILIZATION AND DEMOBILIZATION

The mobilization work consists of carrying out the following listed actions, together with all other requirements of the Contract relating to the initiation of the execution of the Work by the Contractor at its own expense.

Demobilization includes all activities and costs for the transportation of personnel, equipment, and supplies that are not required or not included in the contract from the location; including the dismantling, removal and cleaning of the site of offices, buildings and other facilities specially fitted to the site for this contract.

#### 4.2.2 EXECUTION OF WORK

**Mobilization:**

1. Purchase, assembly, repair and commissioning of all construction machinery and equipment owned by the contractor at another location that suits him.
2. Transport of construction installations, equipment and materials owned by the contractor from the warehouse as mentioned above to the construction site.

3. Assembly and installation of all building installations, equipment, etc. required for the execution of the Work.
4. Receiving all construction machinery, equipment and materials to be supplied by the employer, and collecting and transporting them to the workplace. All materials must be properly stored, inventoried and protected until they are used in the Work and all installations and equipment must be tested and made ready for use.
5. Construction of a suitable office space or shed for the storage of materials and equipment, workshop, other operational buildings and first aid place, supervised by qualified medical assistants.
6. Provide all necessary electrical power, water supply, and other utility connections to temporary installations at the Site that may be required for the performance of the Work.
7. Obtain all insurance policies, performance bonds, and payment bonds as required under this Contract.
8. Payment of all fees, permits, licenses, etc., that may be necessary for the performance of the Contract.

**Demobilization:**

1. All activities and costs for transporting personnel, equipment and supplies not used in the project from the site
2. Dismantling, removal, and cleanup of offices, buildings, and other facilities assembled at the site.
3. Thorough cleaning of the stage to deliver a neat and orderly hall.
4. After cleaning and polishing the surfaces, the Project Manager must inspect and approve the works.

**4.2.3 MEASUREMENT AND PAYMENT**

Description	Work	Unit
Mobilization	Payment will be made after the contractor has mobilized all necessary equipment, materials and other preparations on site for a proper commencement of the works.	Per Post

<b>Demobilization</b>	<p>Payment is made after all described work has been properly carried out by the supervisor/customer.</p> <p>Payment will be made in instalments in accordance with the instalment schedule to be drawn up by the sound engineer and approved by the client. Payment condition to be paid within 30 days after invoice date.</p> <p>INITIALS FOR RECEIPT</p> <p>Invoices shall be specified and coded as follows:              Description of the work:              - description of the work              - numbering of invoices              - percentage of the progress of the work              - remainder of the percentages still to be spent</p>	Per Post
-----------------------	---	----------

## 4.3 ELECTRICAL INSTALLATIONS

### 4.3.1 ELECTRICAL INSTALLATIONS INCLUDING AIRCONDITIONING

Option 1 is being recommended of the electrical installations as it is affordable but limited for 6 hours during daytime in use where option 2 is expensive to purchase but has no restrictions in use. The final decision will be taken by the client before the electrical installations are carried out.

#### 4.3.1.1 GENERAL

1. Performing electrical installation work:
  - a. Main building
2. PV panels must be constructed on the existing roof of the building.
3. PV inverters with lithium battery storage.

#### 4.3.1.2 EXECUTION OF WORKS ON ELECTRICAL INSTALLATIONS

1. Milling PVC pipes. After installation, close the pipe with cement mortar.
2. Place cables in cable trays, use screws to secure the cable trays.
3. Replace all existing distribution panels.
4. All non-professional extension cords must be removed.
5. Keep space for at least 6 additional breakers in distribution panels.
6. The electrical installation may only start after the engineer has approved the electrical drawing/diagram. Code/label the wires at the beginning and end accordingly to simplify installation expansion in the near future.
7. Clean the entire installation thoroughly upon delivery.

8. Take care of transport and storage until delivery
9. Installations must be delivered complete with associated accessories, suspension and mounting materials, etc. In short, everything is needed for a ready-to-use delivery.


#### 4.3.1.3 LIGHT

1. Supplying and installing lighting fixtures as stated on the technical drawings.
2. Use energy-saving high-efficiency LED light fixtures as much as possible.
3. For a complete overview of lighting fixtures, please refer to the technical drawings. Please send the specification of lighting fixtures to the engineer for approval before purchase. Manufacturer: Phillips or equivalent.
4. The supplier of the lighting fixtures must provide a 1-year warranty on the fixtures.
5. Area lighting (at least 1500 lumens and between 4500K and 7000K) must be from Philips or equivalent. Please send the specification of lighting fixtures to the engineer for approval before purchase. Warranty period: 2 years.


#### 4.3.1.4 SWITCH AND SOCKETS

1. For the number of switches and sockets, please refer to the technical drawings.
2. Included are American model sockets, suitable for American model plugs, for connection points and switches.
3. Switches and sockets should be assembled from base unit, cover plates and inserts.
4. Manufacturer: Efel, Gira


**DECLARATION FORM**

Declaration Form (DF)							Page 1 of 1
 <b>CODECO</b> <small>CONSTRUCTION DESIGNERS &amp; CONSULTANTS N.V.</small>				Project : [.....]		DF # :	
				Project # : [.....]		Rev. # : .....	
				Client : [.....]		Date :	
				Contractor : [.....]			
Total Contract Price : \$ - Advance Payment : \$ - Invoice Period : Invoice in accordance with the Scope Of Works							
Item #	Description	Qty	Unit	Unit price	Remaining Qty	To be paid	
						\$ -	
						\$ -	
						\$ -	
						\$ -	
						\$ -	
						\$ -	
						\$ -	
						\$ -	
						Sub total	\$ -
						Deduction 5%	\$ -
						Advanced Payment	\$ -
						Total	\$ -
Paid till this period			To be paid		Total paid incl. this period		
			\$ -		\$ -		
<b>Signed by Contractor</b>							
Function	Name	Date	Signature				
Director							
<b>Status Declaration Form (DF)</b> (to be filled by Engineer)							
					Approved <input type="checkbox"/>	Rejected <input type="checkbox"/>	
Function	Name	Date	Signature				
<b>Argument in case of rejection</b>							

**COMMUNICATION FORM**


<b>Communication Form (CF)</b>		Page 1 of 1			
 CONSTRUCTION DESIGNERS & CONSULTANTS N.V.		Project #: [.....]		CF # : .....	
		Client: [.....]		Rev. # : .....	
				Date : .....	
Subject :					
Reference Specification :					
<b>Contractor's inquiry: (One query per CF)</b>					
<b>Proposed Remedial actions by Contractor</b>					
Attachments : Yess / No		FUNCTION	NAME	SIGNITURE	DATE
Attachements pages :		Autorisation:			
<b>Reply Request Date:</b>					
<b>Reply / Recommendations</b>		<b>Supervisor</b>			
Attachments : Yess / No		FUNCTION	NAME	SIGNITURE	DATE
Attachements pages :		Autorisation:			

**TECHNICAL INSTRUCTION**


<b>Technical Instruction (TI)</b>		Page 1 of 1			
		Project #: [.....]		TI # : .....	
		Client: [.....]		Rev. # : .....	
				Date : .....	
Subject :					
Reference Specification :					
Empty space for reference specifications					
Attachments : Yess / No		FUNCTION	NAME	SIGNATURE	DATE
Attachements pages :		Autorisation:			



**SPECIFICATION SUBMITTAL**

Specification Submittal (SS)		Page 1 of 1	
 CONSTRUCTION DESIGNERS & CONSULTANTS N.V.		Project #: [.....]	
		Client: [.....]	
		Date : .....	
Subject:			
.....			
<b>In reference to SOW:</b>		<b>Description</b>	
Par.:		The Contractor has gone through the product specifications and hereby states that these are compliant to those required by the Scope of Works, design drawings and specifications.  <b>The Contractor requests the Supervisor for approval of delivery for the following material/product/item:</b>  XXX	
<b>Reason for deviation:</b>			
.....			
.....			
Attachments : Yess / No		<b>FUNCTION</b>	<b>NAME</b>
Attachements pages :			<b>SIGNITURE</b>
<b>Reply Request Date:</b>			
<b>Reply to submitted Specification Submittal</b>			
Supervision		Employer	
		(optional)	
Action Date	Action Code	Name	Signature
Action Codes : <b>A:</b> Approved; <b>B:</b> Conditional Approval Improved Submittal required; <b>C:</b> Rejected			

**REQUEST FOR APPROVAL**

<b>REQUEST FOR APPROVAL</b>		Page 1 of 1	
 CONSTRUCTION DESIGNERS & CONSULTANTS N.V.		Project #: [.....]	
		Client: [.....]	
		Date :.....	
RfA # :.....			
Rev. # :.....			
Subject:			
.....			
<b>In reference to SOW:</b>	<b>Description</b>		
	The Contractor requests the Engineer for approval of changes		
	XXX		
<b>Reason for RfA:</b>			
Attachments : Yess / No	<b>FUNCTION</b>	<b>NAME</b>	<b>SIGNATURE</b>
Attachements pages :			
<b>Reply Request Date:</b>			
<b>Reply to Request for Approval</b>			
Supervision		Employer	
		(optional)	
Action Date	Action Code	Name	Signature
Action Codes : <b>A:</b> Approved; <b>B:</b> Conditional Approval Improve RfA; <b>C:</b> Rejected			

---

**BILL OF QUANTITY**

