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# **INVITATION TO BID – ANNEX 1**

## **General Specification (12 pages)**

**Design, Supply, and Installation of Prefabricated Container office building at 2 sites, Lot 1: Honiara, Guadalcanal Province and Lot 2: Taro, Choiseul Province of Solomon Islands**

ITB No.: UNDP-SOI-ITB-2022-032

Project: Integrated Approach to Disaster Risk Management in Solomon Islands

Country: Solomon Islands

Issued on: 25 July 2022

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*The following General Specification shall be read in conjunction with the Contract, General Conditions of Contract, Particular Conditions of Contract, Drawings, and BOQ.*

## Section 1. General Requirements

### 1.1 Programme of Work

The Contractor shall provide a detailed Programme of Work with construction that commences and is completed in the shortest time possible and prior to the commencement of the wet season in November.

### 1.2 Items Supplied by the Employer

The Employer shall provide a UNDP staff or consultant to serve as the Engineer on site that will act as first point of contact for the contractor on all technical queries and for contract administration purposes.

No other items shall be supplied by the Employer.

### 1.3 Contractor's Representative

The Contractor shall provide contact details of the company personnel who will be responsible for managing the day-to-day construction activities on site, and also for the contractors designated representative for any contractual or financial issues related to this project.

For coordination and communication facilitation, the Contractor must provide their site representative(s) with access to phone with internet, camera, and computer with internet.

### 1.4 Communication and Reporting

The Contractor will submit a written progress report on a weekly basis, outlining:

- A. Substantive works completed to date
- B. Milestones achieved in accordance with the Programme of Work.
- C. Report of any issues on site affecting the performance of the contract
- D. Report of any health & safety or security issues, incidents or concerns.
- E. Any other details deemed relevant.
- F. The Contractor shall take photographic records of each stage of the construction, both before and after each stage is complete.

### 1.5 Surveys and Investigations

The Contractor is responsible for all surveys, investigations, and testing prior to and during construction. This includes but is not limited to topographical, geotechnical, and verification/locating existing utilities and other site infrastructure.

All testing shall be performed in accordance with the national standards and/or AS/NZS standards. The Contractor may propose other equivalent international standards if they wish, however, these need to be approved by the Employer.

### 1.6 Photographic Survey

The Contractor shall perform a photographic survey of the existing facilities, existing equipment, neighboring buildings, and existing roads to document existing conditions prior to start of construction. This shall be performed with a SIMS representative and the UNDP Engineer.

### 1.7 Standards

All construction shall comply with and be executed in accordance with national legislation, regulations, requirements of the Employer, and the design drawings/specifications/BOQ. Any elements of works which are not specifically covered by these standards must be executed in accordance with the internationally recognized quality standard for that field of work, as agreed with the UNDP Engineer. The Australian / New Zealand standards shall be used as a default unless otherwise agreed between the Contractor and UNDP Engineer.

### 1.8 Quality Control & Testing

The Contractor shall establish and implement a quality control, monitoring, and document control system to record and track the construction works and testing at all times. The Contractor or his authorized representative(s) shall inspect all work under this Contract for quality control (QC).

The Contractor is responsible for the overall quality of the work performed by the Contractor and subcontractors working under this Contract. The quality of any part of the work must not be less than that required by the Contract. If the UNDP Engineer determines that the quality of the work does not conform to the Contract, the Employer's representative will notify the Contractor, in writing. The Contractor must correct the identified deficiencies and advise the Employer's representative of the corrective action taken within 7 days of the date of notification.

The Contractor shall perform all field testing specifically required. The cost of testing shall be borne by the Contractor. The Contractor shall furnish all equipment, instruments, qualified personnel and facilities necessary to perform all tests required by the Contract. The required testing services shall be performed by the Contractor or acquired by the Contractor through a qualified commercial testing laboratory. If a commercial testing laboratory is retained to perform tests under this Contract, all test reports shall be certified by the laboratory. Test reports shall include the acceptable value for each specification item, actual test results obtained, methods used, and a statement that the product, equipment or system conforms or does not conform to the Specifications requirements.

### 1.9 Site Requirements

The site and existing buildings will be active and occupied by SIMs staff with equipment in operation. During construction, The Contractor shall have limited use of the Site which shall be confined to the areas requiring construction and construction staging.

The Contractor shall minimize disruption to the public and to activities in and around adjacent roads, streets, buildings and other facilities. Keep driveways and entrances serving the public and adjacent properties clear and useable at all times.

The Contractor shall develop a site establishment plan for review and approval that separates occupants from the construction works at all times. A separate construction entrance shall be established. Any existing buildings, equipment, and utilities shall be protected as required throughout the construction. Any disruption to utilities shall be planned and coordinated with the occupants through the UNDP

Engineer. Provide temporary fencing, barricades, signage, traffic control and personnel necessary for public safety.

Due to the close proximity of the construction to the existing buildings The Contractor shall minimize noise and vibrations during working hours as much as practically possible in compliance with national and local laws. Construction works activities that are particularly disruptive shall be coordinated and performed during hours/days that are agreeable to the occupants through the UNDP Engineer.

The Contractor shall minimize dust & vibration and/or protect sensitive equipment as required. Sensitive equipment shall be identified with SIMS prior to construction to agree on required protection measures. The Contractor shall not use the welfare facilities of the existing buildings.

Provide and maintain barriers and warning signs are required to maintain public safety at construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

Trenches and Excavations: Provide adequate barriers and protection at trenches and excavations. Cover excavations under roadways for safety and to permit passage of traffic. Backfill pipeline trenches as soon as possible to minimize danger. Not more than 300 LF of trench may be left open at any time.

Provide barriers around trees and plants, which may be designated to remain.

Provide barriers around any sensitive existing equipment.

#### 1.10 Temporary Utilities

The Contractor shall be responsible for their own water, electricity, lighting, and ventilation. The Contractor shall pay for all associated costs.

#### 1.11 Welfare Facilities

The Contractor shall provide and maintain suitable welfare facilities (toilets, a potable water supply, cleaning facilities, medical facility etc.) for the benefit of both the Contractor's and Employer's staff working on site. Prior to the Commencement Date, the Contractor shall confirm details to the Employer, for approval, of the welfare facilities that have been provided and that will be maintained for the duration of the Contract. These shall be integrated into the site establishment plan.

#### 1.12 Site Security

The Contractor shall be responsible for arranging its own security at the site.

#### 1.13 Building Construction Approvals and Permits

All construction permits and fees required for this work shall be obtained by and at expense of the Contractor. The Contractor shall furnish the UNDP Engineer final certificates of inspection and approval from the proper government authorities after the completion of work. The contractor shall prepare all shop or working drawings, as-built plans and all other paperwork required by the approving authorities. Approval from authorities of all plans for construction shall be secured by the contractor. Approval for occupancy shall be secured by the contractor. The UNDP Engineer shall facilitate the process as required.

#### 1.14 Health & Safety

The Contractor shall comply with national and local Occupational Health and Safety laws, regulations, standards, and best practices.

The Contractor shall develop and submit a Health and Safety plan to the UNDP Engineer for review and approval. The Contractor's staff, employees, and sub-contractors shall be briefed on the plan, with daily and weekly toolbox talks as required.

Health & Safety Signage shall be posted at the entrance to the construction site and at other locations. Signage shall be updated as required during construction.

#### 1.15 Unexploded Ordinance

Systematic sweeping has not been performed. Take appropriate measures and precautions. Should old unexploded ordinance be unearthed, leave the ordinance undisturbed and report immediately to the Engineer, who will contract an Ordinance Disposal Team for safe removal. Inform all employees of these safety precautions.

#### 1.16 Traffic

Great caution is urged when operating construction equipment along roads or near villages in order that accidents involving local pedestrians can be averted. A Traffic Control Plan is to be developed and implemented by the Contractor for the movement of equipment and material. The Contractor shall use every reasonable means to prevent any of the roads or bridges communicating with or on the routes to the Site from being damaged by any traffic of the Contractor or any of his sub-contractors and, in particular, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of plant and material from and to the Site shall be limited as far as reasonably possible and so that no unnecessary damage may be occasioned to such roads and bridges.

#### 1.17 Cleaning during Construction

Control accumulation of waste materials and rubbish. Periodically dispose of waste off-site. Clean interior areas prior to start of finish work. Maintain areas free of dust and other contaminants during finishing operations.

#### 1.18 Removal

Remove temporary materials, equipment, services, barriers and construction when no longer required prior to substantial completion inspection. Clean and repair damage caused by temporary installation or use of temporary facilities. Remove underground installations to a depth of 2 feet. Grade site as indicated. Restore permanent facilities used during construction to specify or to original condition. Repair damaged surfaces to match adjacent surfaces.

#### 1.19 Code of Conduct

The Contractor shall develop and submit a Code of Conduct to the designated UNDP Engineer for review and approval prior to construction. The Contractor shall consult SIMS staff and UNDP Engineer when developing the Code of Conduct. The Contractor's staff, employees, and sub-contractors shall be briefed and sign the Code of Conduct.

### 1.20 Environmental Protection

During the life of the contract, provide and maintain environmental protective measures to control pollution that develops during normal construction practices. Provide measures to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with all local, State and National rules and regulations pertaining to water, air and noise pollution. There shall be no disposal of materials on the Site and run offs and spillages of materials offsite.

Erosion and Sediment Control shall be implemented by the contractor

### 1.21 Social and Environmental Standards (SES)

The Contractor shall adhere to the latest edition of the UNDP Social and Environmental Standards (SES) and any relevant national/local laws and regulations.

The Contractor shall develop and submit a Contractor's site specific social and environmental management plan (CESMP) to the designated UNDP Engineer for review and approval prior to construction.

The Contractor shall coordinate with the UNDP Engineer regarding the project accountability mechanism (Stakeholder Response Mechanism and Compliance Review). The accountability mechanism shall be communicated to SIMS and relevant stakeholders.

### 1.22 Prevention of Sexual Harassment and SEA

The Contractor is required to adhere to national/local laws and UNDP policies to prevent sexual harassment and sexual exploitation and abuse (SEA). The contractor is required to develop and submit a policy on the prevention of sexual harassment and SEA to the designated UNDP Engineer for review and approval prior to construction.

The Contractor's staff, employees, and sub-contractors shall be briefed and sign the policy.

## Section 2. Other Work Requirements

### 2.1 Progress Photographs

The Contractor shall prepare and maintain an electronic daily photographic record of on-site activities and progress. All photographs shall be taken using a digital camera with a minimum of 3-million-pixel resolution shot at the highest resolution and saved in jpeg format with a minimum size of 1024 x 768 pixels. The photographs shall be appropriately tagged identifying the date, location and objective. The photographic record will be provided as copies in both hard copy (prints) and electronic format (on compact disk) at site meetings.

### 2.2 Pre-Construction Meeting

The UNDP Engineer will schedule a Pre-Construction Meeting after issuance of a Notice to Proceed. The Pre-Construction Meeting shall be attended by the UNDP Engineer, Contractor's team representative designated by the Contractor, and other personnel as required. The Contractor will



record minutes of the meeting and distribute copies to the participants and those affected by the decisions made.

The Agenda shall include, but not be limited to,:

1. Submission of executed Bonds and Insurance Certificates.
2. Distribution of Contract.
3. Submission of the Schedule of Values.
4. Designation of personnel representing the parties to the Contract.
5. Procedures and processing of Requests for Information (RFI), field decisions, submittals, substitutions, applications for payment, change proposals, Change Orders, and contract closeout procedures.
6. Procedures and processing of any pre-construction documentation required by the Contract and Specifications.
7. Scheduling.
8. Construction facilities and temporary controls.

### 2.3 Progress Meetings

*[Reference Clause 14 of the General Conditions of Contract]* The Contractor will schedule and administer meetings throughout progress of the work at intervals to be determined. A weekly site meeting shall be held between the UNDP Engineer, Contractor's team representative designated by the Contractor, and other personnel as required. in order to verify that the Works are progressing normally and are executed in accordance with the Contract. The Contractor will make arrangements for meetings, prepare an agenda, distribute copies to participants and preside over the meetings. The UNDP Engineer will record the minutes and distribute copies to the participants.

The Agenda shall include, but not be limited to:

1. Minutes of previous meetings.
2. Work progress.
3. Status of payments.
4. Field observations, problems, and decisions.
5. Submittals Schedule and the status of submittals.
6. Status of off-site fabrications and delivery schedules.
7. Progress Schedule.
8. Corrective measures to regain projected schedules, if necessary.
9. Planned progress during the succeeding work period.
10. Quality and work standards and pre-installation meetings
11. Pending change proposals and effect of proposed changes on the progress schedule, and

coordination.

12. Other business relating to the work.

13. Safety Briefs

#### 2.4 Submittals

The Contractor shall provide submittals in a timely manner, and provide adequate time, to the UNDP Engineer for review. The Contractor shall coordinate the preparation and processing of submittals with performance of the work so that the work will not be delayed by submittals. Submittals shall include, but not be limited to, product data sheets, shop drawings, samples, mock-ups, inspection and test results/reports, certificates, manufacturer installation instructions, maintenance and operating manuals, and design calculations.

The UNDP representative shall be provided with a minimum of 7 working days to review submittals, unless the submittal requires another submittal to be provided to ensure coordination. The UNDP Engineer shall stamp each submittal with “Accepted” or “Approved”, “Revise and Resubmit”, or “Returned: Not Required.”

Any review and approval by the UNDP Engineer of any submittal is only for conformance to the general design concept of the work and does not extend to consideration of structural integrity, safety, detailed compliance with the Contract or any other obligation of the Contractor. Review and approval of any such data does not relieve the Contractor from its obligation to meet his requirements under the Contract, nor shall it give rise to any claim in favor of the Contractor or any third party against the Employer.

#### 2.5 Testing Requirements

The Contractor shall comply with the testing requirements detailed in the design and required by the standards. All tests shall be carried out by an independent laboratory accredited for the tests concerned. Should there be elements within the design for which there is no testing requirements specified, the Contractor shall propose such testing requirements it shall deem relevant to the Employer for approval.

Costs associated with the sampling, transporting, testing and submission of results for all materials testing and certification in the Works shall be borne by the Contractor. The Employer will not be held liable for delays incurred on site due to the inability of the Contractor to have suitably certified and calibrated testing equipment available on site or for delays in receiving testing results from independent laboratories.

#### 2.6 Materials and Equipment

The materials used on the Work shall conform to the requirements of the Contract, Drawings, and Specifications. Unless otherwise specified, materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, furnish complete statements to the Engineer as to the origin, composition, and manufacture of all materials to be used in the Work. Furnish these statements promptly after execution of the Contract and, in all cases, prior to delivery of the materials.

Only previously tested and approved materials shall be incorporated in the Work. However, some manufactured products (normally used in large quantities immediately upon, or soon after, delivery to the Project) may, with permission of the Engineer, be incorporated in the Work before they have been tested when they are furnished from sources deemed by the Engineer to have a proven record of furnishing materials complying with specification requirements. The permitted use of an untested material shall not, however, be construed as implied approval of the material, and its use will be at the Contractor's risk, pending completion of subsequent tests made on representative samples of the material.

## 2.7 Supervision Requirements

The Contractor shall provide qualified, experienced and competent site supervisory staff. The duties, responsibilities and authority of the designed supervisor shall be as defined in the Contract.

The total number of, and the experience of the supervisory staff from the Contractor's organization shall be commensurate with the level and type of work being carried out on Site. Notwithstanding this the Contractor's site supervisory staff shall include as a minimum the following staff with the qualifications and experience detailed below:

**One Number Contracts Manager** with a Degree in Civil Engineering or equivalent professional qualification as recognized in the person's home country, to the approval of the Employer and with a minimum of 10 (ten) years' experience in the execution and supervision of civil engineering projects some of which shall be similar to this project.

Individuals proposed to the role of supervisory staff shall be to the approval of the Employer.

## Section 3. As-Built Documents

### 3.1 As Built Records

In accordance with the requirements of the Contract, the Contractor shall provide a complete package of "as-built" documentation for the completed Works showing all building elements, structures, services and arrangements as completed. This documentation shall be provided firstly for review by the Employer and upon approval, the Contractor shall issue a final certified copy.

Copies of all drawings, documents, reports and schedules and manuals shall also be submitted to the Employer in the standard operable format of the element in question (AutoCAD.dwg, Microsoft Word, Microsoft Excel etc) written to a CD-ROM with a lifetime warranty.

The Contractor shall store all records relating to the design and execution of the Works and the remedying of defects in good condition for a period of ten years from the end of the Defects Liability Period. At the end of the said ten-year period the Contractor shall supply, free of charge, a copy of these records to the Employer and may thereafter destroy or dispense such records.

### 3.2 Equipment Manuals and Guarantees

For all equipment, the Contractor shall provide the Employer with all manuals and manufacturer warranties in a single package at the end of Construction.

### 3.3 Operations & Maintenance

The Contractor shall prepare and submit an Operation & Maintenance Manual. The Contractor shall brief the UNDP Engineer and the SIMS designated facilities manager on the Operations & Maintenance at the completion of works and handover. This includes handover of any keys.

The Contractor shall provide training to the designated personnel and facility management as part of substantial completion. The Contractor is required to provide support for operations and maintenance during the defects liability period.

## Section 4. Equipment

### 4.1 Warranties

For all equipment installed, manufacturer user manuals and warranties shall be registered and provided.

-----END-----



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# **INVITATION TO BID – ANNEX 2**

## **Technical Requirements (16 pages)**

**Design, Supply, and Installation of Prefabricated Container office building at 2 sites, Lot 1: Honiara, Guadalcanal Province and Lot 2: Taro, Choiseul Province of Solomon Islands**

ITB No.: UNDP-SOI-ITB-2022-032

Project: Integrated Approach to Disaster Risk Management in Solomon Islands

Country: Solomon Islands

Issued on: 25 July 2022

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*The following Technical Requirements shall be read in conjunction with the Contract, General Conditions of Contract, Particular Conditions of Contract, General Specification, Drawings, and BOQ.*

## Section 1. General Requirements

### 1.1 Design by Contractor

UNDP has provided preliminary concept design drawings/technical specifications/BOQ, upon which the contract is based. However, following the completion of site investigations, the Contractor shall complete a design for the project, which shall be submitted to the UNDP for design review and comment prior to start of construction and ordering of prefabricated containers. The Contractor shall incorporate any design review and client specific requirements of the Employer to its submitted design. Notwithstanding the Contractor's offer to undertake the project, and without adjusting its contract price, the Contractor shall make any alterations to the design necessary based on the results of the geotechnical investigation, topographical investigation, environmental and social impact assessment, existing utility services investigation, and the guiding regulations and standards (listed below).

The Contractor's design submission shall include, but not be limited to, Topographical Survey, Design Criteria Report, Drawings, Calculations, Construction Specifications, Manufacturer data sheets, Equipment data sheets, prefabricated building technical specifications/drawings/manuals, and Bill of Quantities. The design submission shall cover all disciplines required, but not limited to: Architectural, Interior Design, Structural, Mechanical, Electrical, Plumbing/Sanitation, Telecommunication, Civil, Landscape, Fire, Security. All submissions shall be in pdf, excel, doc, and CAD.

Note: The Contractor shall provide an updated Bill of Quantities to UNDP that is reflective of the Contractor's design. The drawings, specifications, and BOQ shall clearly indicate the manufacturer and quality of all materials, equipment, and prefabricated structures. High-quality grade structures, construction, materials, and equipment is expected in accordance with the regulations, laws, standards, and guidelines listed below. Low maintenance is required.

### 1.2 Pre-Design Requirements

The Contractor shall perform a photographic dilapidation survey of the existing conditions of the site/facilities and neighboring structures, documenting the condition prior to construction. The Contractor shall determine where existing services (water, power, sewage, storm, telecom, etc..) are on site to ensure that they are not damaged or are required to be re-located as part of their design.

If the concept design indicates that connections could potentially be made to the facility's services (water, sewage, power, storm, etc..), the Contractor must perform an evaluation report to determine if it is feasible and possible to safely connect to the facility's services while ensuring that the system remains operational. i.e. Ensure that there is sufficient reserve capacity in the existing system and identify if there are any regulatory and/or non-compliances that need to be corrected or repaired.

### 1.3 Standards



The detailed design shall be in accordance with the most recent edition of the following, but is not limited to,:

- i. Solomon Islands National Regulations, laws, standards, and guidelines;
- ii. National Building Code for Solomon Islands (2021 edition)
- iii. Honiara Regulations, laws, standards, and guidelines;
- iv. National Construction Code – Australia
- v. Australian Building Codes Board Standard for Temporary Structures
- vi. Standards produced by the Standards Australia or Standards New Zealand
- vii. AS/NZS 3000 Electrical installations (known as the Australian/New Zealand Wiring Rules)
- viii. UFC 4-141-04 Emergency Operations Center Planning And Design
- ix. The Solomon Islands RWASH Engineering Standards, Technical Design and Construction Standards for Rural Water Supply, Sanitation and Hygiene Facilities
- x. Water Services Association of Australia Codes for sanitation and water supply
- xi. Accessibility Design Guide: Universal Design principles for Australia's Aid Program
- xii. ISO 9223 Corrosion of metals and alloys - Corrosivity of atmospheres - classification

Note: Where discrepancies occur between these technical specifications and the Standards listed above, the more stringent of the Standards or technical specifications shall apply.

The Contractor may propose other alternative international standards that are widely used and approved by an acceptable international body (e.g. American Standards, British Standards, etc...) if they wish, however, these need to be approved by the Employer prior to commencement of design. The provisions and requirements of such alternative standards and codes must be at least the same or stricter than the standards and codes listed above.

#### 1.4 Reference Design Parameters

The Contractor shall utilize the following design parameters for design of structures and components:

MINIMUM BUILDING DESIGN FORCES & CONSIDERATIONS – SOLOMON ISLANDS	
Item	Notes
<b>1. Building Code / Standards</b>	See Section 1.3. Design Features report that clearly lists the design forces and durability requirements for the Buildings.
<b>2. Building Category</b>	Importance Level 4 (per AS/NZS 1170) - Post-Disaster Structure, Emergency Operations Center. The facilities need to be self-sufficient for at least 2 weeks for water and power (water tanks, generators, and sufficient fuel for generator, vehicles, and emergency response equipment). The facilities must be immediately operational with minimal damage after a hazard event.
<b>3. Design Life</b>	Design Working Life shall not be less than 25 years. Time before first maintenance shall not be less than 25 years. All materials shall be durable,

	corrosion resistant, and termite treated.
<b>4. Siting</b>	See location plans. Orient buildings for maximum energy efficiency. Elevate buildings above flood hazards. Site away from trees and other hazards.
<b>5. Dead Load</b>	NBC Solomon Islands, AS/NZS 1170
<b>6. Live Load</b>	NBC Solomon Islands, AS/NZS 1170
<b>7. Storm Surge / Coastal Flood / Tsunami</b>	NBC Solomon Islands. Flood waters or waves resulting from a storm or cyclone with a return period of 30 years must not be allowed to enter a building. All exterior mechanical and electrical equipment, generators, and water tanks must be elevated above the flood level. All sanitation structures below ground shall be sealed to prevent water entry. Foundations must take into account scour and be embedded at an appropriate depth.
<b>8. Wind - Tropical Storms and Cyclones</b>	NBC Solomon Islands, AS/NZS 1170. Region D. Regional wind speed of 69 m/s.
<b>9. Rain</b>	NBC Solomon Islands for guttering and rainwater storage.
<b>10. Earthquake</b>	NBC Solomon Islands, NZS 1170. Larger of Zone 8 with corresponding zone factor for use with NZS 4203 is 0.8 OR 0.9g (10%in50yrs on Rock).
<b>11. Climate Zone</b>	Hot, Humid, Tropical, Coastal climate zone. Climate Zone 1 as per Australia National Construction Code.
<b>12. Corrosion</b>	ISO 9223 Corrosivity Category C5. All structures, components and elements must satisfy this requirement. Mechanical and Electrical equipment must be appropriately selected for corrosion resistance.
<b>13. Termite</b>	Minimize the use of timber. Any timber used shall be termite treated.

## Section 2. Prefabricated Container Requirements

The prefabricated container units shall be similar dimensions of an ISO 20-feet container and will be used for different purposes such as offices, conference room, operations center, kitchen, toilets, storage facilities. These units shall be combinable with the ability to install internal partitions as required. In addition, the units shall be able to accommodate the loads of a roof structure.

### 2.1 General

The Contractor is responsible for ordering, coordinating, supplying, shipping, transport, modifying, adding components to, and installing the prefabricated containers. All modifications and additions shall be in compliance with the manufacturer recommendations and in alignment with the standards, design requirements, and codes listed in Section 1.

The Contractor shall clearly provide in their bid the proposed manufacturer prefabricated container model and technical specifications for review. Final plans shall be prepared by the Contractor in coordination with the prefabricated container manufacturer.



Figure 1 - EXAMPLE ONLY



Figure 2 - EXAMPLE ONLY

## 2.2 Salient Features

The prefabricated containers shall be designed keeping in view to optimize the following factors:

- a. Energy efficiency
- b. Water Conservation
- c. Indoor air quality
- d. Natural Ventilation
- e. Natural Lighting
- f. Moisture control
- g. Termite resistant
- h. Occupant comfort
- i. Sustainability

Other features of the prefabricated modular buildings include, but are not limited to, the following:

- a. The modules shall be designed to cater for future expansion needs and reuse.
- b. A module's internal configuration can vary to suit a desired architectural plan
- c. There shall be minimal work on-site to erect/assemble and disassemble the buildings using only basic hand tools and semiskilled/ unskilled laborers. Each unit shall not take more than one working day for assembly/disassembly.
- d. The modules shall be easily removed or disassembled for future reuse or relocation.
- e. The module materials shall have lowest feasible embodied energy, carbon emission and life cycle cost including final disposal/recycling cost
- f. The modules shall be light but robust enough to cater for the design loads, effects of different weather and climatic conditions, repeated dismantling and erection etc.
- g. The assembled modules should be compatible with PV power system installations.
- h. The assembled modules shall have a capability to achieve required reliable and accurate ventilation performance; preventing mold and mildew and trapped moisture.
- i. The assembled modules shall have at least 10 years life expectancy

Sustainability features include

- a. the use of recyclable materials as much as practicably possible;
- b. Hazardous materials strictly prohibited. All air conditioners shall use refrigerants free of Ozone depleting substances with a low global warming potential. The use of Volatile Organic Compounds and other emissions shall be minimal. All building components and materials; including paints and sealants; shall be low emitting materials.

## 2.3 Basic Layout & Design

A basic layout has been provided in the Concept Drawings. The Contractor in close coordination with the prefabricated manufacturer shall provide all design drawings, calculations, and installation guides for review by UNDP prior to ordering, shipping, and installation. The Contractor and Manufacturer shall have the necessary technical resources to perform these tasks. If the Contractor/Manufacturer proposes alternative layouts, the Contractor must demonstrate that these layouts are either equivalent to or exceed the requirements. Supporting documents sufficient for assessment of the proposed alternative shall be provided.

## 2.4 Ease of Operations during Life Cycle

The assembled modules shall be composed of construction and connection elements that provide ease in operation throughout the building design life which includes, but not limited to, the following factors:

- a. Assembly and Erection
- b. Operation and Maintenance
- c. Disassembly, Mobility and Re-erection

#### d. Final Disposal & Recycling

The Offeror shall provide sufficient information how these goals are achieved with detailed demonstration including photographs and manuals for assembly/dis-assembly.

### 2.5 Design Loads

See Section 1. The Contractor shall provide manufacturer technical data indicating that the prefabricated container units satisfy the load and resistance requirements. The Contractor shall submit design calculations for all building elements.

### 2.6 Sound Insulation

Sound insulation shall be the larger of AS/NZS ISO 717.1 & 2 and National Construction Code of Australia and the following:

The Sound Reduction Index (Rw) for external panel elements such as floor, wall and roof elements shall be not less than 45. An alternative measurement method of Sound Transmission Class (STC) may be used and shall not be less than 45. Container module panel elements facing noise generating equipment (generators) shall be a Rw or STC rating not less than 48. The prefabricated container manufacturer technical details shall be provided to verify the Rw or STC ratings.

### 2.7 Thermal Insulation

Thermal insulating materials shall comply with the Solomon Islands NBC and National Construction Code of Australia. Materials shall be non-hazardous, anti-mold/mildew prone (anti-condensation), and satisfying the fire spread requirements. The Climate Zone shall be 1 as per the National Construction Code of Australia.

The U-Values shall be the more stringent of the National Construction Code of Australia or the following (Contractor to provide manufacturer test results of U-Values for building components in bid):

- a. U values (thermal transmittance) of walls, floor and roof structures shall be between 0.36 to 0.60 W/m<sup>2</sup> K. U-values in the lower range are preferred for roof structures.
- b. U value not more than 2.00 W/m<sup>2</sup> K for window sashes and frame combination.
- c. U value not more than 1.00 W/m<sup>2</sup> K for doors and frame combination.

### 2.8 Water Proofing

All building elements must be fabricated with water resistant materials. Vapour barriers shall be proposed for the external envelope where needed to control condensation in internal cavities. All external elements inclusive of any junctions between adjacent elements such as wall panels or wall/roof connections, window sashes, window and door frames must resist water & air penetration tests as per the National Construction Code of Australia. Seals between assembled modular containers shall also satisfy this requirement.

### 2.9 UV Resistance

All building elements must be fabricated for UV resistance and any materials must be UV stabilized. Paint systems must also be UV resistant.

### 2.10 Termite Resistance

All building elements in particular floors and walls must be fabricated with termite resistant materials. For that reason, timber-based materials are not preferred. If these materials are offered, termite treatment is essential and details of treatment must be provided in the bid.

### 2.11 Fire Resistance

All building elements must be tested in accordance with recognized flammability classification testing standards listed in the Solomon Islands NBC and National Construction Code of Australia or equivalent. Test results must be provided in the bid.

### 2.12 Smoke Detector Systems and Fire Extinguishers

All modules must be fitted with a smoke detector with an integral 10-year lithium battery. Kitchen modules must be fitted with a thermal detector with an integral 10-year lithium battery. One fire extinguisher of minimum 1kg capacity and type configured to suit likely hazard classification must be fitted in each module. Offerors shall provide details of the proposed equipment in their bid.

### 2.13 Cyclone Resistance

All elements of the prefabricated containers (panels, doors, windows, etc..) must be designed to resist the wind loads and penetration from flying debris that are present during cyclones as per AS/NZS 1170 and the Australia National Construction Code.

Doors and windows shall be positively anchored and have meet the minimum deflection requirements of the design and testing standards. Doors shall have a minimum of 3 cyclone resistant hinges and at least 2 locking mechanisms that can resist cyclonic forces. Window glazing shall be impact resistant; alternatively, cyclone shutters shall be installed.

### 2.14 Frames

The frame shall be composed of steel or aluminum forms conforming to AS/NZS or equivalent. The frame and joints shall be sized for the lateral forces and have thicknesses appropriate for the corrosive tropical environment. The frames shall have an aluminum-zinc alloy-coating with a factory applied paint systems including primer, corrosion inhibitor, and topcoat that is white. The walls and any internal partitions shall be considered as non-load bearing structures. The floor frame shall contain 2 forklift pockets on the long side as per ISO Standard..

The frame connections between modules and foundations shall be able to transmit all loads.

### 2.15 Walls

The materials for walls shall be of panelized construction. The outer surface material shall be a aluminum-zinc alloy-coated steel sheet with a factory applied paint systems including primer, corrosion inhibitor, and topcoat manufactured to AS1397 and AS/NZS 2728. Exterior topcoat shall be a white or light color. The outer surface of the panels shall be profiled for increased wind resistance. The core of the panel may be a solid material such as foam or a framed construction with added insulation. The inner surface material shall be a durable, washable, smooth surfaced material, with painted finish (non-timber).

The joints between panels and between panels and frames shall be tongue and groove type or other

interlocking type that meet or exceed the code/standard requirements for air and water penetration under cyclonic conditions. The overall wall thickness shall be sufficient for the required level of thermal insulation, acoustic insulation, structural deflection, and structural strength, and other requirements. Additional internal reinforcement of panels shall be provided where shelves or other equipment are to be attached (See Concept plans).

#### 2.16 Roof

The roof shall be a single panel. The outer surface material shall be an aluminum-zinc alloy-coated steel sheet with a factory applied paint systems including primer, corrosion inhibitor, and topcoat manufactured to AS1397 and AS/NZS 2728. Exterior topcoat shall be a white or light color. The outer surface of the panels shall be profiled for increased wind resistance. The core of the panel may be a solid material such as foam or a framed construction with added insulation. The inner surface material shall be a durable, washable, smooth surfaced material, with painted finish (non-timber).

The overall wall thickness shall be sufficient for the required level of thermal insulation, acoustic insulation, structural deflection, and structural strength, and other requirements.

#### 2.17 Secondary Roof System

A secondary roof system shall be installed over the prefabricated containers as indicated in the concept drawings. An appropriate air gap between the prefabricated container roof and secondary roof shall be provided for ventilation and to reduce heat load. Grating shall be provided to prevent nesting birds. Secondary roof system members shall be painted with a corrosion inhibitor and top coat.

The secondary roof system will connect to the corners of the prefabricated containers. The connections shall be bolted using stainless steel or galvanized bolts and nuts. The roof panels shall be an aluminum-zinc alloy-coated steel sheet manufactured to AS1397 and AS/NZS 2728 with sufficient gage thickness for cyclone wind loads and the weight of a maintenance worker. The steel sheets shall be attached to the secondary roof system with cyclone washers and seals.

The roof shall allow easy installation of a rainwater harvesting system. The slope of the roof shall be sufficient enough for the rainwater to drain easily.

The secondary roof system shall be specifically designed and calculated.

#### 2.18 Floors

Floors shall be constructed with a framed structure, load bearing flooring panel spanning over the structural members and an internal floor finish layer. The underside of the framed structure will be enclosed with a lining panel. The overall floor thickness shall be sufficient for the required level of thermal insulation, acoustic insulation, structural deflection, and structural strength, and other requirements.

The interior floor layer shall be slip and water resistant. The floor layer shall be made from durable material with emphasis on tear resistance and easy to clean features.

#### 2.19 Doors

All external doors shall be of sandwich type (coated aluminum sheets with Polyurethane foam core or



similar). The exact thickness of the door panels shall be similar to wall panels.

Door frames shall be made from either aluminum extruded sections with thermal break features with powder coat finish, or a combination material to match the door panels, and be of similar color as the building. Exterior doors will be lockable with three sets of keys for each lock. A minimum of 2 locks per door. Elements of the door, such as hinges, locks and handles will be robust and highly resistant to rough use. Exterior doors, hinges, and locks shall be cyclone and debris impact resistant.

Internal doors and frames shall be compatible systems. Elements of the door, such as hinges, locks and handles will be robust and highly resistant to rough use.

## 2.20 Windows

The frames and window sashes shall be made from either aluminum extruded sections with thermal break features with powder coat finish and be of similar color as the building. The size of the windows may vary, see concept drawings.

Window sashes shall be either sliding or awning type within the frame. All sliding or awning windows will be lockable with three sets of keys for each lock. Elements of the window such as hinges, locks and handles will be robust and highly resistant to rough use.

All windows shall be double-glazed type with minimum 12 mm air space in the core of the glazing. Obscure film to be applied to the inner glass layer for toilet areas. Roller blinds of the Holland type shall be included.

Windows shall be cyclone debris impact resistant in accordance with AS/NZS 1170 or alternatively cyclone shutters shall be installed.

## 2.21 Security Doors, Grilles, and Insect Nets

Security doors to the outside of the normal doors and security grilles over windows shall be provided. The security doors shall be robust doors mounted in compatible frames securely fixed to the structure. These must be inclusive of deadbolts, strike plate reinforcement, fixed pin hinges and other strengthening/ intrusion protection devices able to withstand basic aggressive intruder activity. The security grilles to windows shall be made of galvanized steel rod in angle frames securely fixed to the structure and similar in color with the windows.

Insect netting in frames shall be required for windows. Insect screens shall be of heavy-duty nylon net types mounted in frames compatible with the window sash type.

## 2.22 Foundation

The foundation pads for each module shall be designed to transmit the entire vertical and lateral load to the ground. See concept drawings for foundations. The prefabricated containers shall be positively connected through stainless steel or galvanized anchor bolts.

The Contractor shall submit detailed foundation plans, reinforcing details, and calculations including minimum geotechnical requirements.

The height of the foundations and the bottom of the prefabricated containers shall be set as required by



the building code/standards and concept drawings.

### 2.23 Heating, Ventilation, and Air Conditioning (HVAC)

All modules are insulated reducing the need for significant heating and cooling equipment to a minimum. The modular building shall use natural ventilation AS MUCH AS POSSIBLE. AN energy efficient split system air-conditioning system WITH ENERGY PERFORMANCE LABELING STANDARD (MEPS) SHALL BE PROVIDED. Window mounted systems shall not be used. These systems shall take into account design criteria such as simplicity, durability and economic operational characteristics, as well as the requirements listed below:

- a. All refrigerants used must be free of ozone depleting substances
- b. Air Conditioner with capacity in both heating and cooling modes between 2.5 to 3.5Kw
- c. Operation of the unit shall have maximum noise output levels of 35 - 45dB for indoor units and 45- 55 dB for outdoor units
- d. All pipes and ducts must be insulated to avoid heat losses through contacts between chilled airflow and ambient airflow in the room or the exterior.

The indoor temperature shall be maintained between 20 to 25 degree centigrade for hot regions. The bidder shall provide a detailed summary of all the proposed ventilation, heating and air conditioning systems demonstrating that these criteria are met along with Technical Brochures and other relevant documents.

### 2.24 Electrical System

All modules shall be compliant with AS/NZS 3000 Electrical installations (known as the Australian/New Zealand Wiring Rules). The electrical system will be connected to the mains as well as a backup generator.

**Socket Outlets:** Minimum of two double outlets per module at floor level (See concept drawings and BOQ for additional sockets). Air-conditioning units shall have a dedicated socket. Kitchen units shall have dedicated and separate sockets for fridge, stove, and other equipment. IT and Communications room shall have a minimum of 8 double outlets. The EOC area shall have additional floor mounted double outlets per module; and additional ceiling level outlets for TVs and other equipment.

**Lighting Fixtures:** Energy Efficient CFLs or LEDs to be provided throughout. Lights shall be on dimmer controls. Indirect light fixtures or parabolic lenses on all light fixtures to reduce glare.

**Required Illumination:** 200 lux for bathrooms and 500 Lux for other areas.

**Main Distribution:** Main distribution boards shall be included. An automatic switch between main and emergency generator power shall be provided.

**Lightning Protection/Grounding:** Required lightning protection and proper grounding of panels and steel units shall be included.

**Module Connections:** Provide one common connection point at the edge of the module to supply power. The manufacturer shall provide all electrical links to chain modules together.

## 2.25 Toilets/Bathrooms

Toilets shall be western style toilet bowl with built-in P-trap or S-Trap, flap seat, cover and low level coupled cistern. The toilet and cistern shall be configured to suit a dual-flush system with different flush volumes: a 6-liter full-flush and a 3-liter half-flush. The gradient of the drain-out pipe shall be sufficient for the smooth flow of flushed water to reduce risk of clogging to a discharge point at the edge of the module.

The shower system shall include a fixed shower head with nozzle with separate taps, soap dish, shower curtain rail with complete plumbing accessories. The shower shall be capable of working in a very low water pressure. The water flow shall be regulated at less than 9 liters/per minute. The shower shall use both cold and hot water. The walls and floors in each shower enclosure shall be completely impervious to water. The shower base must drain to a single floor waste point within the enclosure and have a waste drain to a discharge point at the edge of the module.

The wash basin shall use both hot and cold water through separate taps and have a trap and drain to a discharge point at the edge of the module. The basin will have an integral overflow allowing discharge to the drainage system. The maximum flow of water shall be limited to 5 liters/minute for each tap.

A hot water heater cylinder configured to suit the likely demand profile shall be provided for each module and connected to the hot water outlets. This cylinder shall be electrically operated or through renewable energy to deliver water at 60 degree minimum. It may be either floor or wall mounted, either internal or externally fixed based on the size and mass of the cylinder required for each type of module. Instantaneous electric hot water heaters or gas heaters shall not be used due to energy supply issues.

Provide one common water supply connection point at the edge of the module to supply water to the hot water cylinder, cold water fixtures as needed.

## 2.26 Kitchens

The kitchen modules are to be supplied with the following elements:

- a. Floor mounted cupboard units with benchtops to the perimeter of the room with a minimum lineal length of 4500mm with a depth of 600mm, height 900mm, Cupboards fabricated with robust panels and finishes resistant to water. Provide doors with robust handles and hinge mechanisms.
- b. Wall mounted fixed shelves with 2 shelves 2500mm long and 250mm deep
- c. A stainless steel double bowl sink with drainer one side, hot and cold water taps with swivel sink mixer outlet, trap and waste pipe to a discharge point at the edge of the module. Sink to be mounted in benchtop of cupboard unit
- d. 700mm wide space for a stove with cooktop and oven, recirculating range hood over stove
- e. 700mm wide space for a refrigerator
- f. 3 double socket power outlets above benchtops, one outlet for the refrigerator, one high capacity outlet for the stove, one outlet for the range hood
- g. A hot water heater configured to suit the likely demand profile and connected to the hot water

tap. This cylinder shall be electrically operated to deliver water at 60 degree C minimum.

- h. Provide one common water supply connection point at the edge of the module to supply water to the hot water cylinder, cold water fixtures as needed.

Note that these kitchen modules are intended for use for simple meal preparation and/or tea and coffee making facilities for groups up to approximately 30 persons maximum.

## 2.27 Construction Support Services

The Manufacturer shall provide 1 person to assist the Contractor in training and providing installation guidance during the installation of the prefabricated containers. The Manufacturer's representative shall provide written signoff that the installation was performed in accordance with the manufacturer's requirements.

## 2.28 Warranties and After Sales Service

The modular prefabricated buildings, including equipment supplied or installed with the subject building modules shall bear a minimum two (2) years of warranty against defects in material or workmanship from the date of acceptance. Special conditions, if any, pertaining to the above warranty shall be clearly stated.

All costs related to the bidder's technical visit(s) necessitated under warranty claims, for technical failures or defects in workmanship/materials etc. are to be borne by the Contractor & Manufacturer.

## 2.29 Factory Inspection

UNDP reserves the right to visit the manufacturer's warehouses and factories to inspect the facility, samples or a part of the prefabricated modular containers to check compliance with the Technical requirements.

## 2.30 Packaging

All loose parts e.g. bolts, nuts, electrical fixtures, doors and windows hardware etc. shall be packed separately in suitable transport packaging materials. Protective measures to ensure safe transfer to the final destination is required. Packaging using recyclable materials is highly encouraged.

## 2.31 Transportation Arrangement

The Contractor in close coordination with the manufacturer is responsible for ordering and arranging shipping and transport in closed container (preferred). The Manufacturer shall provide unloading instructions, volumes and weights of the consignment. The Manufacturer shall provide all necessary documentation for customs clearance. The Contractor is responsible for coordinating with the manufacturer the transport of the containers from the port of entry to the sites; including any offloading and unpacking at the site. The specifics of the delivery/transport arrangements shall be the sole responsibility of the Contractor.

## 2.32 Quality Control & Occupational Health and Safety & Environmental Management Plan

The prefabricated container manufacturer shall have a quality control plan, occupational health and safety plan, and environmental management plan. Quality management certifications such as ISO 9001 or equivalent is highly desirable. Adherence to International standards such as OHSAS 18001 or

equivalent is highly desirable. Environmental Management Certifications such as ISO 14001 or equivalent is highly desirable.

## Section 3. Required Documentation

### 3.1 Drawings

The Contractor shall provide following to UNDP for review and approval (in doc, pdf, xls, and CAD)

1. Floor Plan/Layout
2. Elevations and Cross Sections
3. Structural Drawings and Calculations
4. Shop drawings with joint details
5. Foundation Design and layout Plan
6. Electrical Plans and details
7. Plumbing and Sanitation Plans and details
8. HVAC System Design
9. Prefabricated Container Technical Specifications, Calculations, Certifications, and Installation Guides

As-Built drawings shall be provided prior to issuing the certificate of substantial completion.

### 3.2 Manuals & Keys

All equipment manuals, user manuals, and operations and maintenance manuals shall be provided to UNDP as a single package prior to issuing the certificate of substantial completion.

All keys shall be labelled and stored in a single organized key cabinet in the main office.

### 3.2 Certificates

The following certificates shall be provided by the Contractor and the Contractor shall arrange for all certificates required from the Manufacturer:

1. Structural design certified by licensed authorized structural engineer for the prefabricated containers
2. Structural design certified by licensed authorized civil engineer for foundation and other civil elements
3. Thermal Design including Energy rating of the building elements certified by licensed authorized engineer or testing agency
4. Electrical design certified by electrical/mechanical engineer for the prefabricated containers
5. Electrical design certified by electrical/mechanical engineer for the electrical works on site
6. Warranty Certificate from the manufacturer for the prefabricated containers as well as any equipment supplied.

-----END-----



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Resilient nations.*

# LOT 1 - NEOC

## INVITATION TO BID – ANNEX 5

### Concept Drawings (5 pages including cover)

**Design, Supply and Installation of Prefabricated office building at 2 sites**

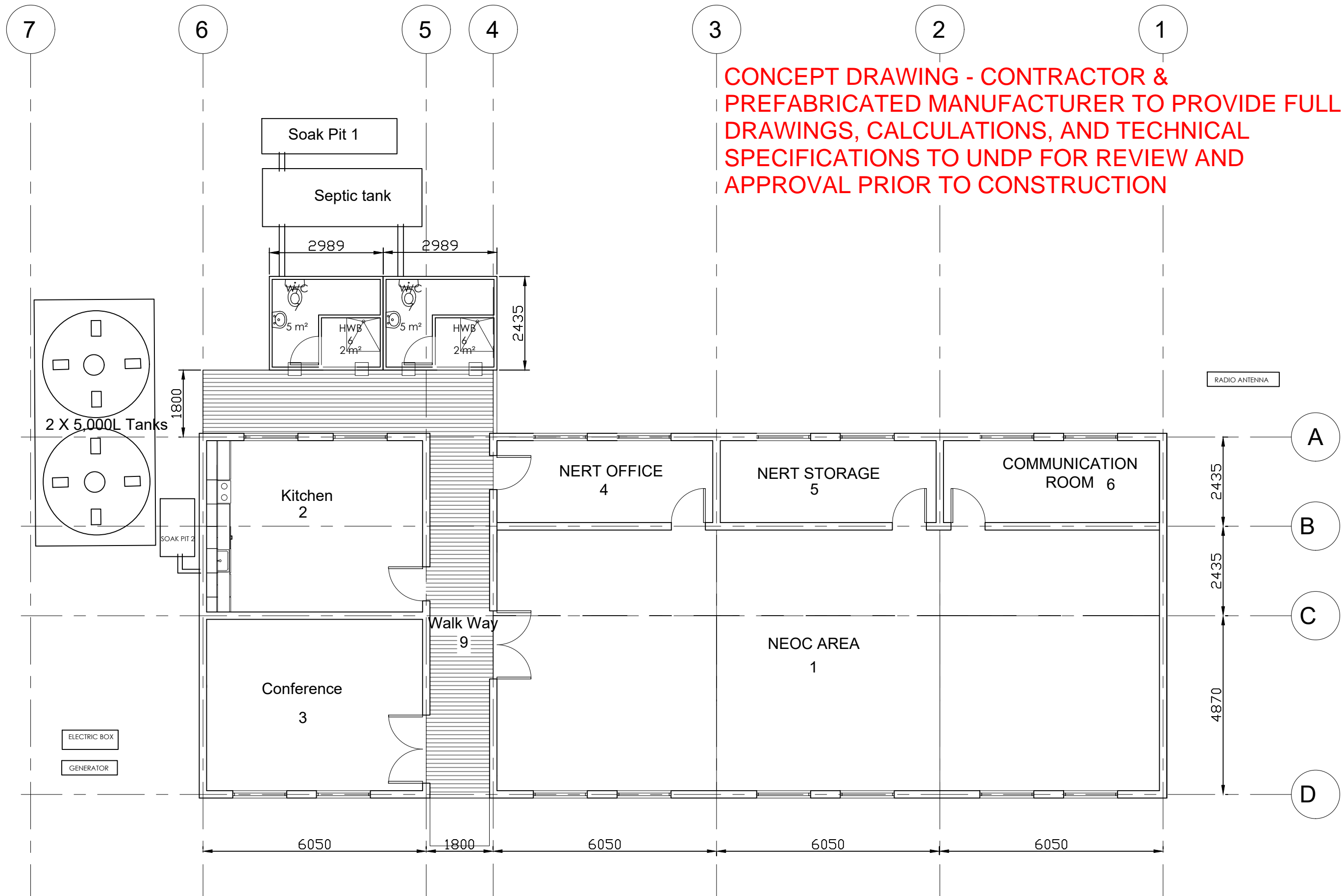
**Lot 1: NEOC - Honiara, Guadalcanal Province**

ITB No.: UNDP-SOI-ITB-2022-032

Project: Integrated Approach to Disaster Risk Management in Solomon Islands

Country: Solomon Islands

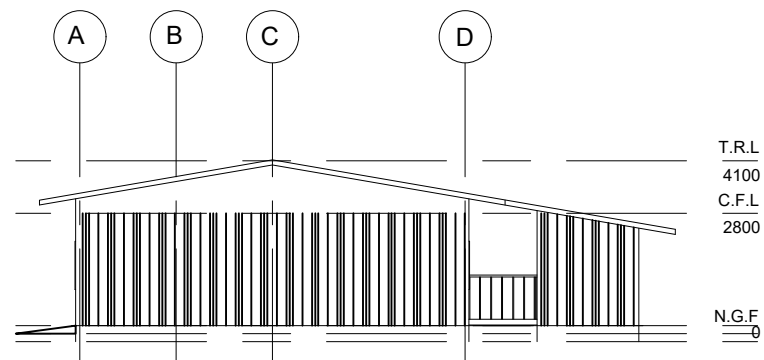
Issued on: 25 July 2022



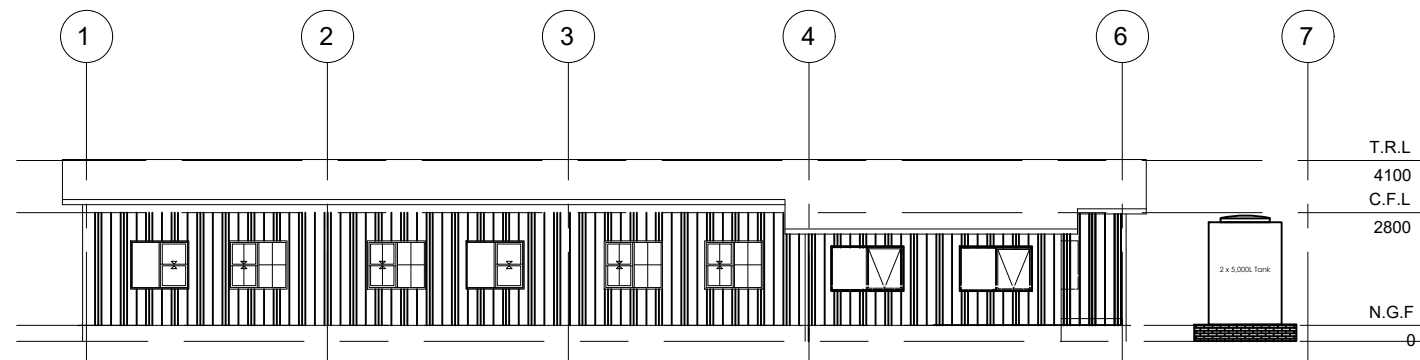
**A FLOOR PLAN**

NTS @ A3

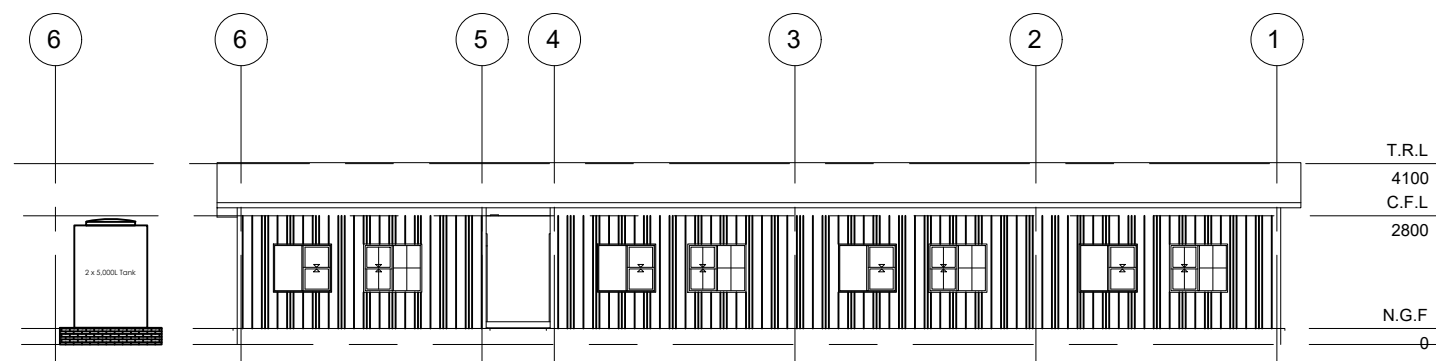




**1 ELEVATION A**  
NTS



**2 ELEVATION B**  
NTS

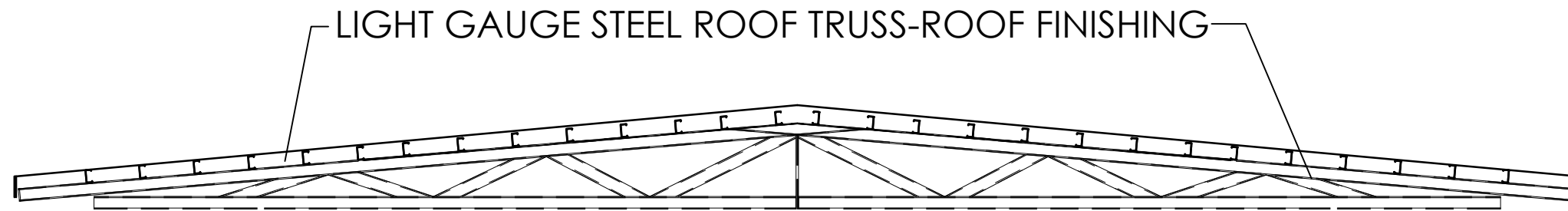


**1 ELEVATION C**  
NTS

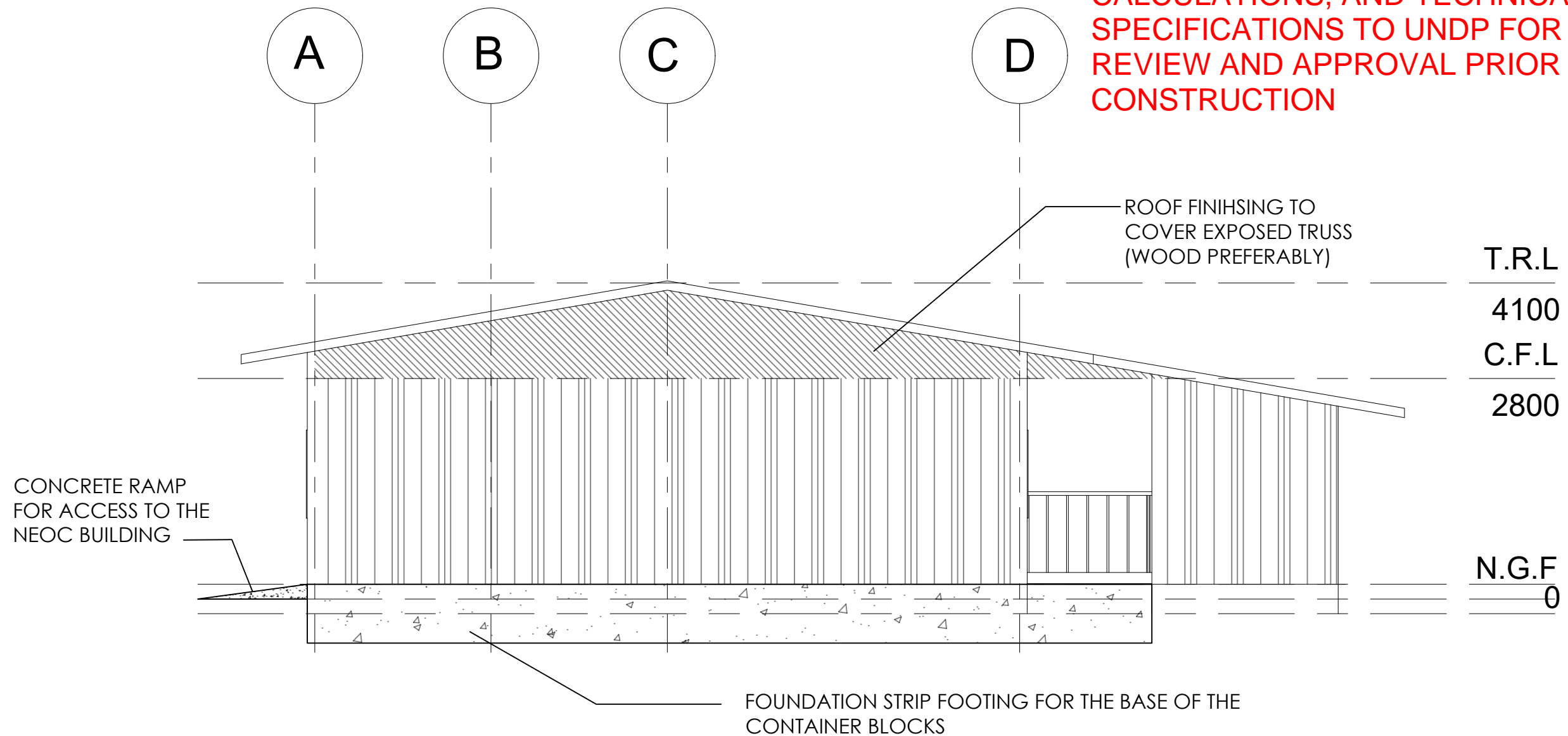


**CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS TO UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION**





**CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS TO UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION**

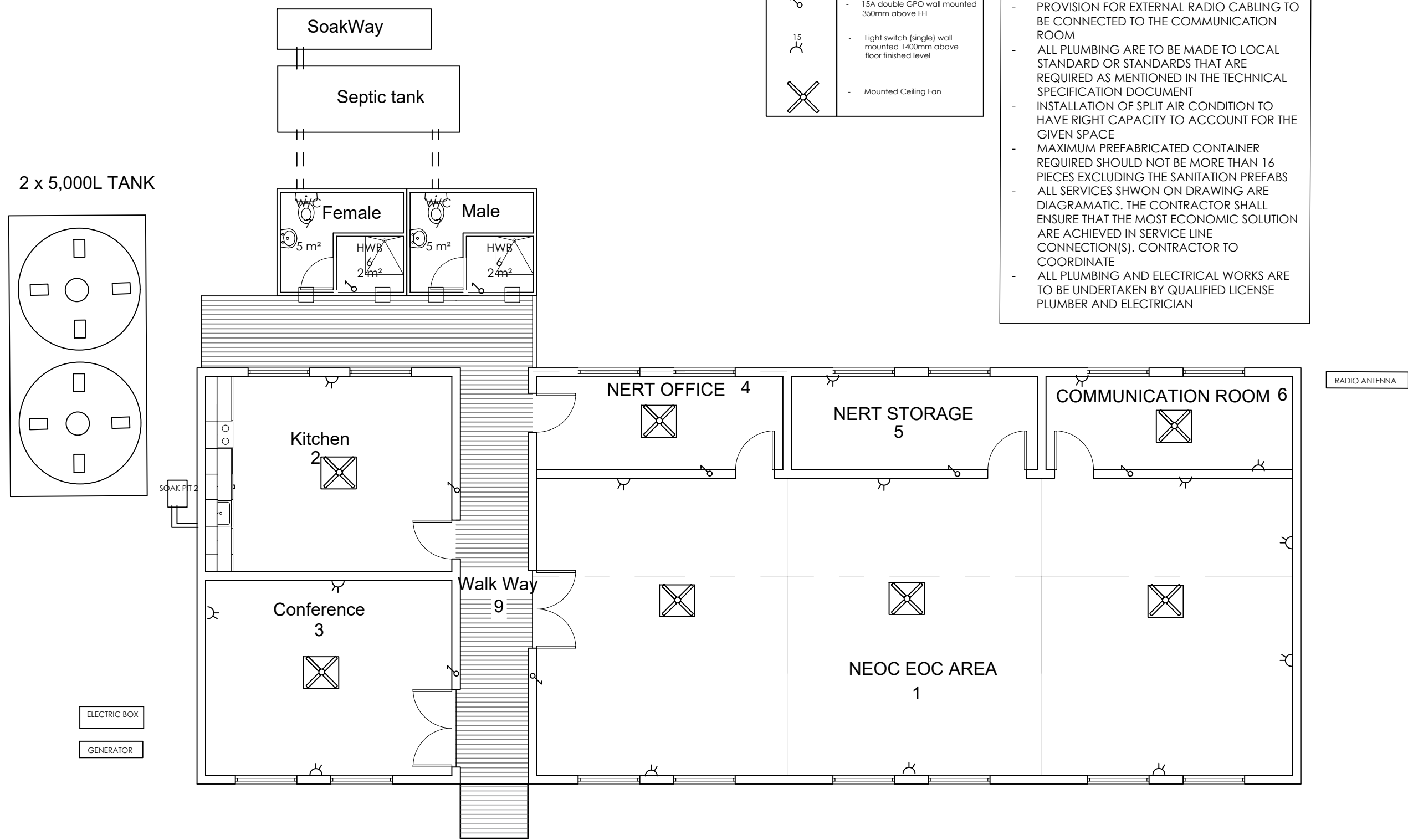


**GENERAL DETAIL SECTION**  
XX NTS

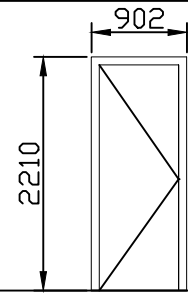




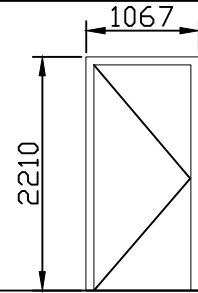
CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS TO UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION



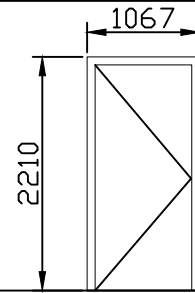
PLUMBING & ELECTRICAL PLAN  
NTS



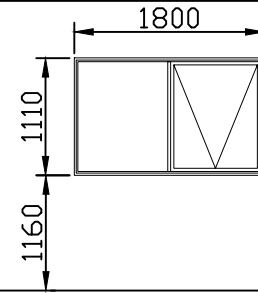
Hollow Core Door  
TOILET ROOM DOOR



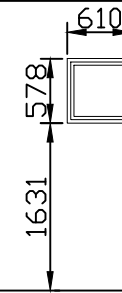
Hollow Core Door  
OFFICE DOOR



Hollow Core Door  
TOILET ROOM



Altair SLIDING WINDOW with  
Aluminum Security Mesh



Altair FIXED WINDOW with Aluminum  
Security Mesh  
TOILET ROOM WINDOW

CONCEPT DRAWING - CONTRACTOR &  
PREFABRICATED MANUFACTURER TO PROVIDE FULL  
DRAWINGS, CALCULATIONS, AND TECHNICAL  
SPECIFICATIONS TO UNDP FOR REVIEW AND  
APPROVAL PRIOR TO CONSTRUCTION



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Resilient nations.*

# LOT 2 - PEOC

## INVITATION TO BID – ANNEX 6

### Drawings (6 pages including cover)

**Design, Supply and Installation of Prefabricated office building at  
2 sites**

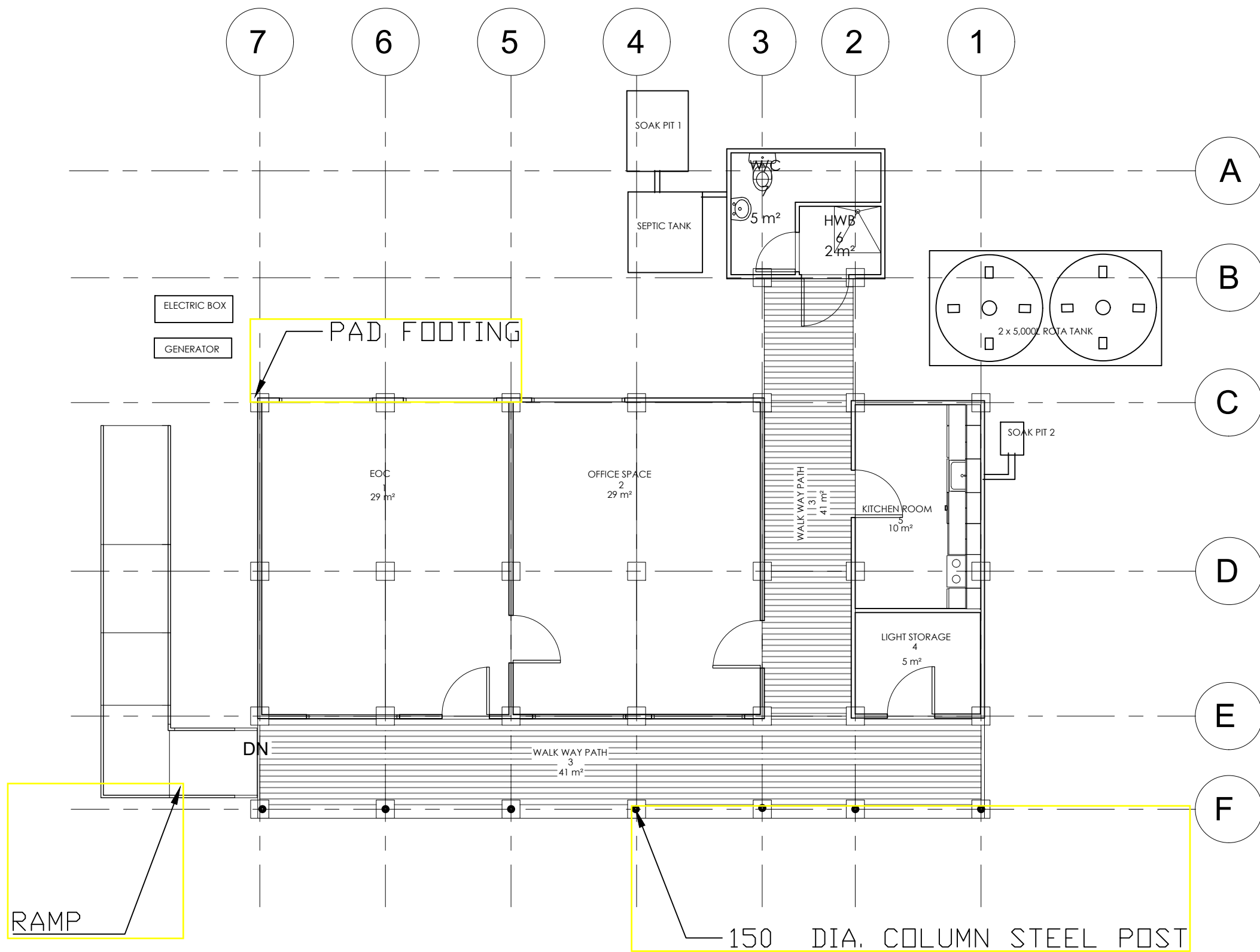
#### **Lot 2: PEOC - Taro, Choiseul Province**

ITB No.: UNDP-SOI-ITB-2022-032

Project: Integrated Approach to Disaster Risk Management in Solomon Islands

Country: Solomon Islands

Issued on: 25 July 2022

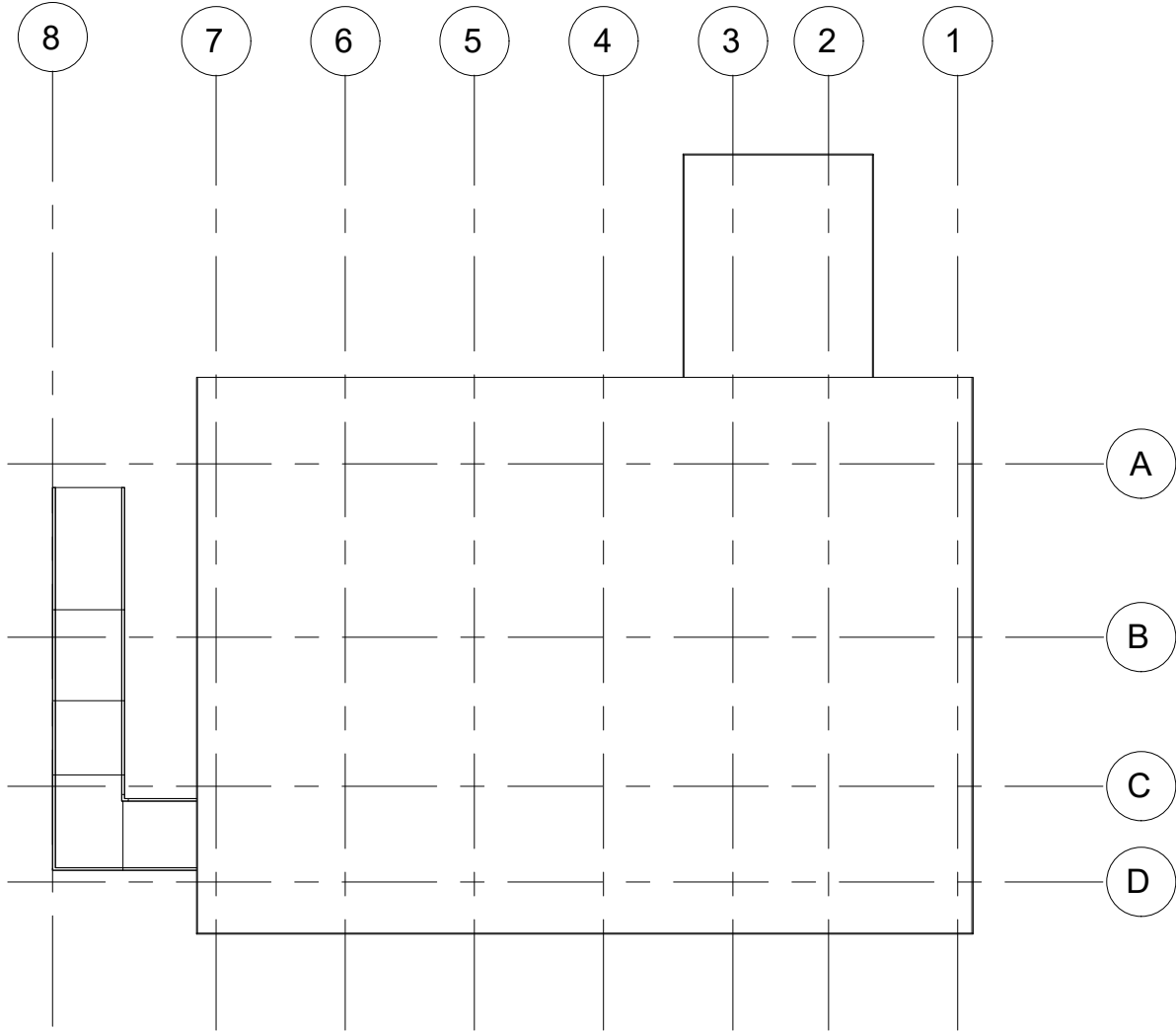
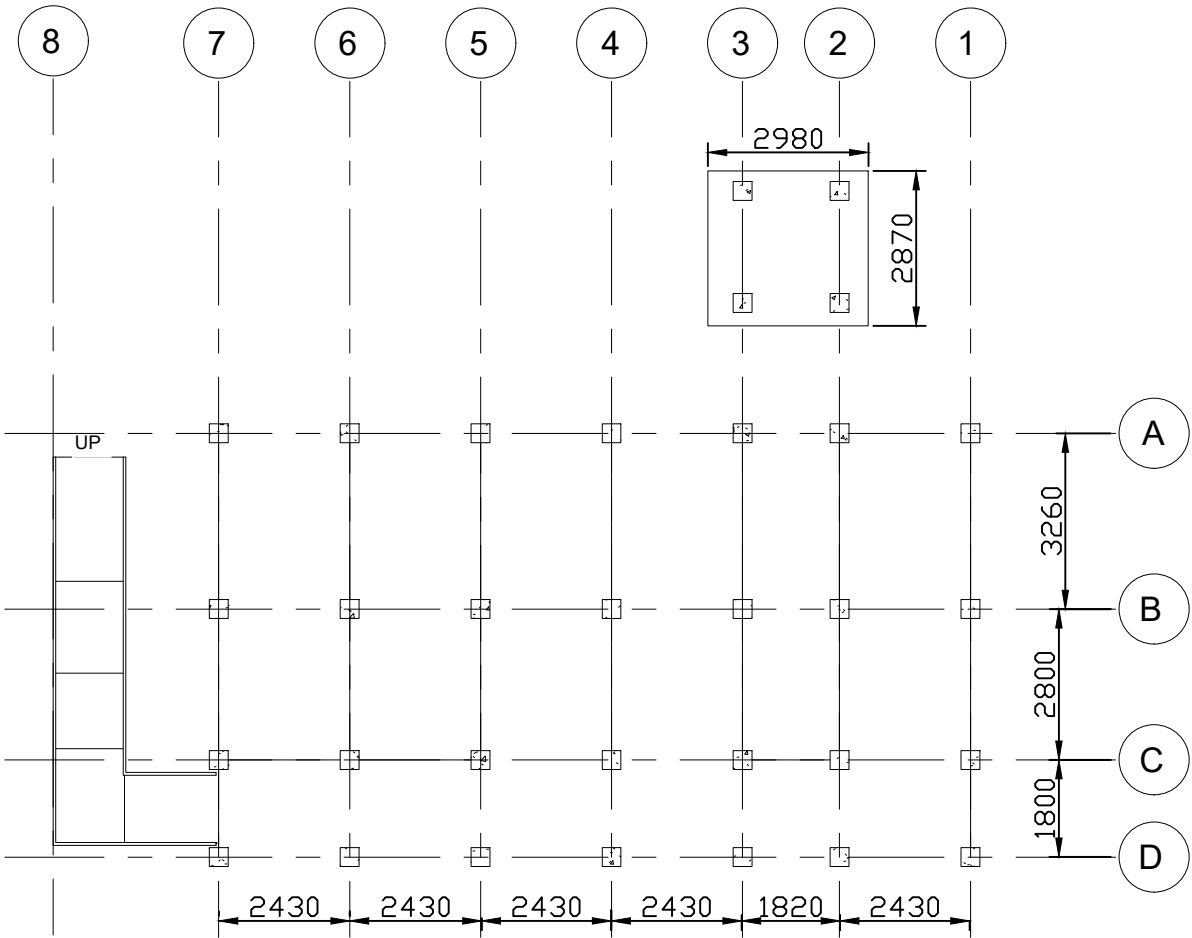


ROOM SCHEDULES			
Name	Number	Area	Perimeter
EOC	1	29 m²	21644
OFFICE SPACE	2	29 m²	21644
WALK WAY PATH	3	41 m²	48964
LIGHT STORAGE	4	5 m²	8764
KITCHEN ROOM	5	10 m²	12726
HWB	6	2 m²	5796
W/C	7	5 m²	10514

**CONCEPT DRAWING -  
CONTRACTOR &  
PREFABRICATED  
MANUFACTURER TO  
PROVIDE FULL DRAWINGS,  
CALCULATIONS, AND  
TECHNICAL  
SPECIFICATIONS TO UNDP  
FOR REVIEW AND  
APPROVAL PRIOR TO  
CONSTRUCTION**

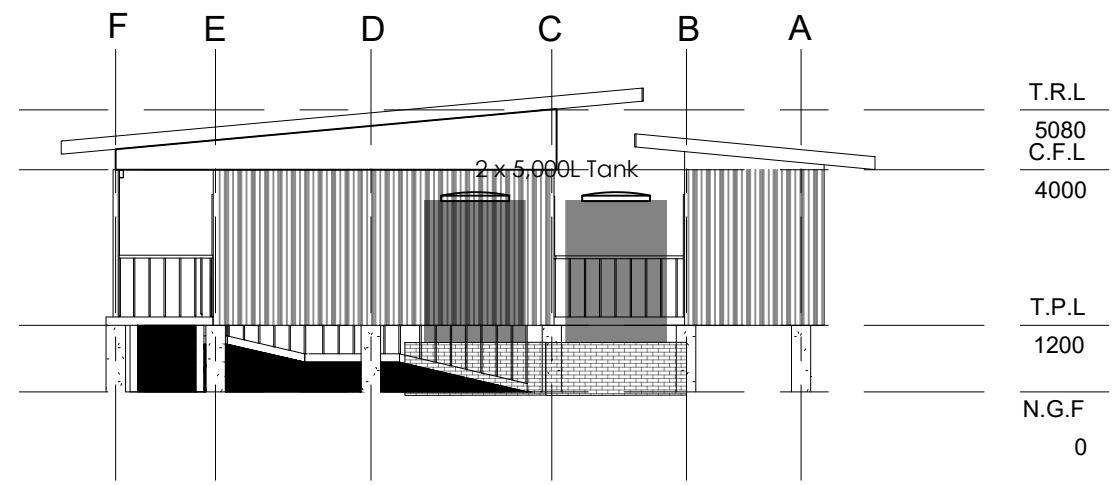
**FLOOR PLAN**  
1:100

CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS TO UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION

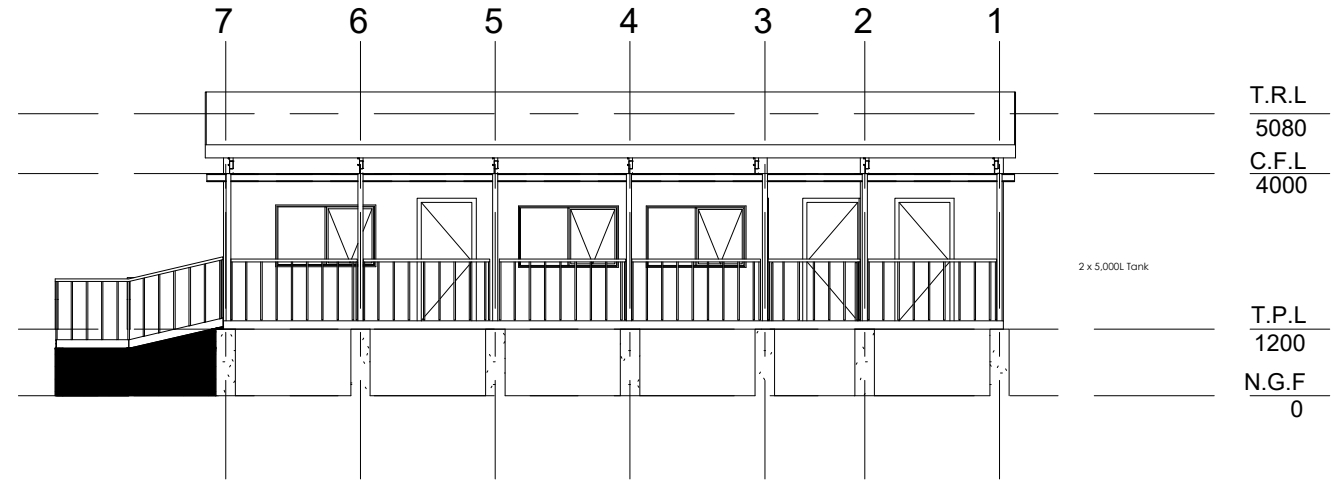


**PAD FOOTING SECTION**  
XX NTS

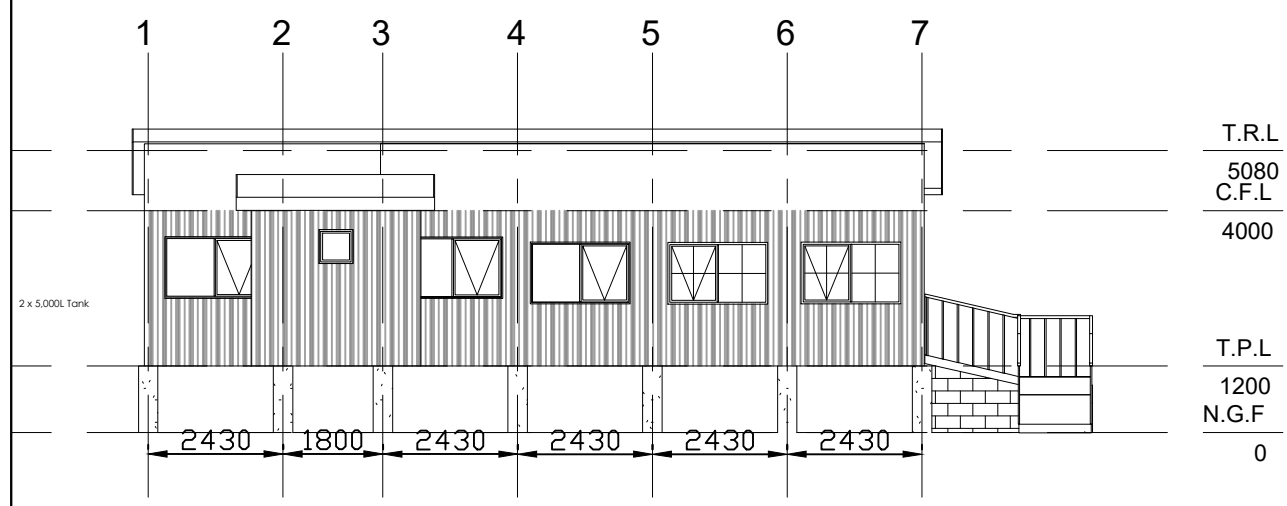
CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO  
PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS TO  
UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION



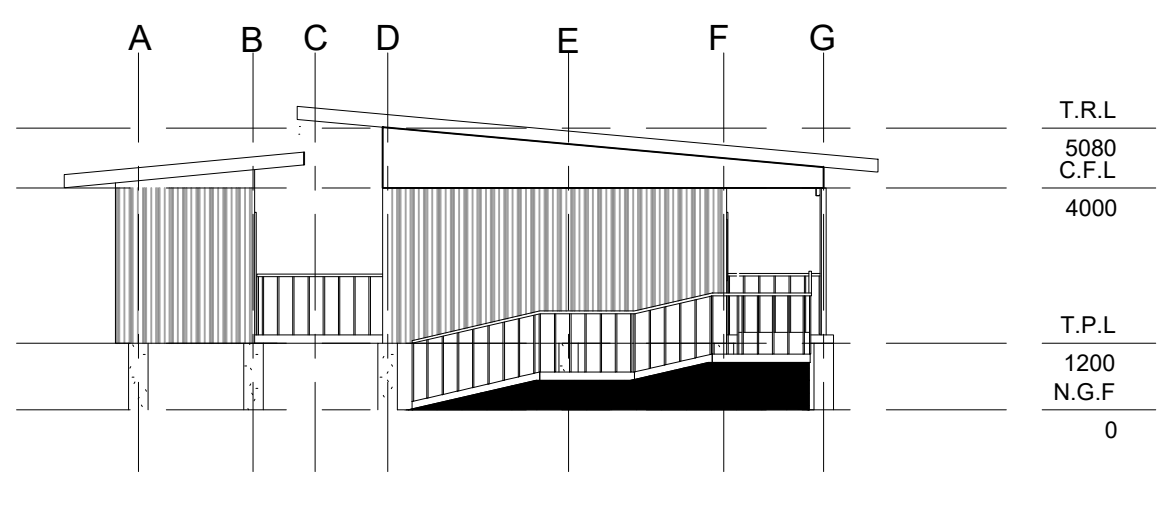
**A** ELEVATION A  
1: 100 @ A3



**B** ELEVATION B  
1: 100 @ A3



**C** ELEVATION C  
1: 100 @ A3



**D** ELEVATION D  
1: 100 @ A3

**ELEVATIONS**  
1:

ARTECH COMPANY  
ARCHITECTS & ENGINEERS.  
C/- P O BOX 85, HONIARA, SOLOMON ISLANDS.  
MOBILE (+677) 8466497  
EMAIL: johny.samane@gmail.com

CLIENT LOGO

CLIENT  
UNDP  
IDRM PROJECT

ISSUE  
22/06/22  
REVISION  
7/06/22

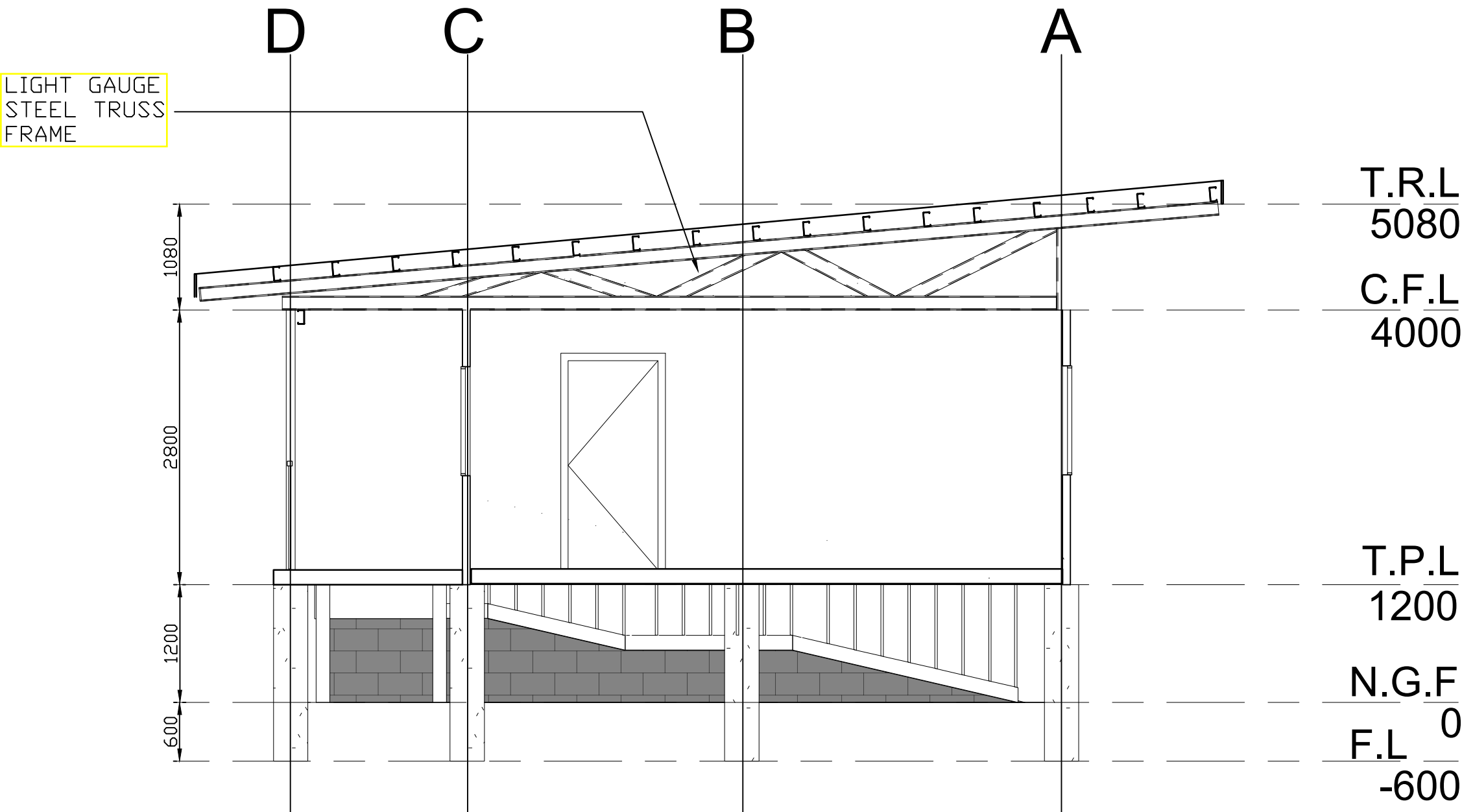
DRAWN BY  
JS  
DESCRIPTION  
PROPOSED  
ELEVATION PLANS

PROJECT NO.  
0100  
PROJECT  
CHOISEUL  
PEOC BUILDING

**A**

SHEET #  
**02**

CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO  
PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS  
TO UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION



**A** SECTION B-B  
1: 50 @ A3

**NOTE:**

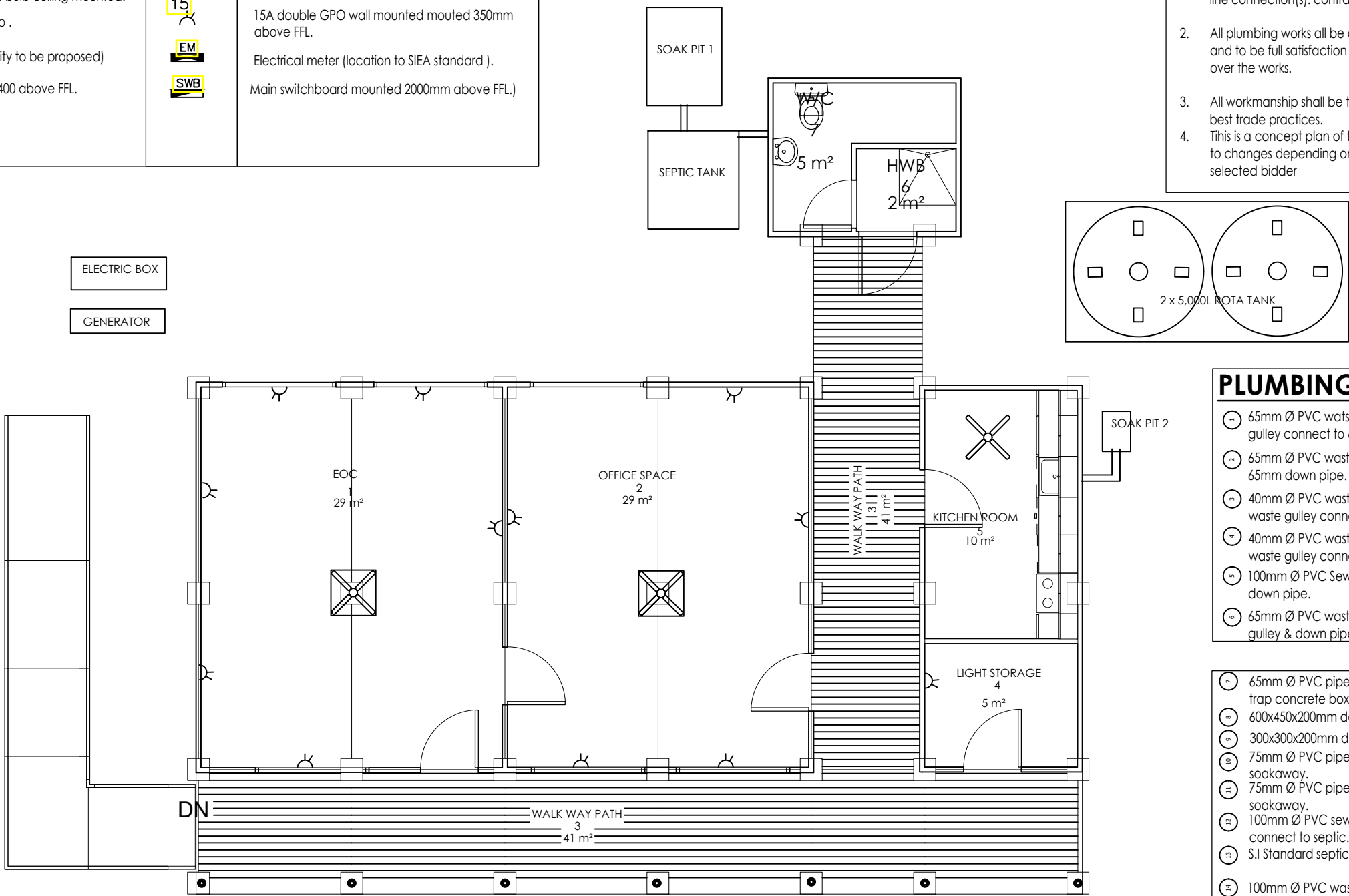
- ROOFING SHOULD BE LIGHT GAUGE STEEL FRAME USED FOR TRUSS
- 17MPa MASONRY WITH 25MPa CONCRETE FOR THE RAMP
- WALKWAY SHOULD BE WELL SEASONED AND STAINED VASA TIMBER OR TIMBER WITH SIMILAR PROPERTIES

ELECTRICAL FIXTURES

	1200mm 1x40W flourescent bulb ceiling mounted.		Light swiich (single) wall mounted 1400mm above floor finished level.
	600mm 1x20W flourescent bulb ceiling mounted.		15A double GPO wall mounted mouted 350mm above FFL.
	Compact flourescent bulb .		Electrical meter (location to SIEA standard ).
	Split Aircondition (Capacity to be proposed)		Main switchboard mounted 2000mm above FFL.)
	Fan regulator mounted 1400 above FFL.		
	Mounted Ceiling Fan		

NOTE:

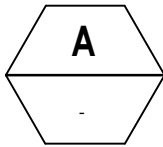
1. All services shown on drawing are diagramatic, the contractor shall ensure that the most economic solutions are archieved in service line connection(s), contractor to coordinate.
2. All plumbing works all be carried out by licensed trades person(s) and to be full satisfaction of the local authority with jurisdictions over the works.
3. All workmanship shall be to highest quality tradesmanship and to best trade practices.
4. Tihi is a concept plan of the whole PEOC building which is subject to changes depending on the final design proposal by the selected bidder



PLUMBING SCHEDULE

- 65mm Ø PVC watsw pipe from kitchen sink & Floor waste gulley connect to 65mm down pipe.
- 65mm Ø PVC waste pipe from shower tray connect to 65mm down pipe.
- 40mm Ø PVC waste pipe from hand wash basin & Floor waste gulley connect to 65mm down pipe.
- 40mm Ø PVC waste pipe from hand wash basin & Floor waste gulley connect to 65mm down pipe.
- 100mm Ø PVC Sewer waste pipe connect to 100 PVC down pipe.
- 65mm Ø PVC waste pipe from Laundry Sink, Floor waste gulley & down pipe connect to Inspection Box.
- 65mm Ø PVC pipe from Kitchen Sink connect to grease trap concrete box.
- 600x450x200mm deep grease trap concrete box.
- 300x300x200mm deep inspection outlet.
- 75mm Ø PVC pipe from inspection box connect to soakaway.
- 75mm Ø PVC pipe from grease trap connect to soakaway.
- 100mm Ø PVC sewer pipe from wc (upper floor) connect to septic.
- S.I Standard septic tank 12 persons
- 100mm Ø PVC waste pipe from septic tank connect to soakaway pit.

CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS TO UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION



GROUND FLOOR PLUMBING & ELECTREICAL PLAN

SC 1:100

ARTECH COMPANY  
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CLIENT LOGO

CLIENT  
UNDP  
IDRM PROJECT

ISSUE  
22/06/22  
REVISE

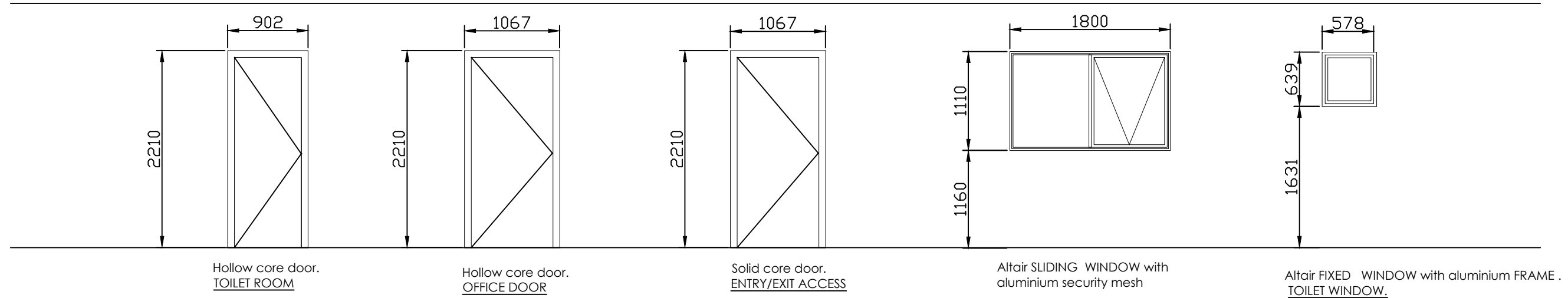
PROJECT NO.  
0100  
PROJECT  
CHOISEUL  
PEOC BUILDING

DRAWN BY  
JS  
DESCRIPTION  
GROUND  
FLOOR PLUMBING  
& ELECTRICAL PLAN

A

SHEET #  
04





**CONCEPT DRAWING - CONTRACTOR & PREFABRICATED MANUFACTURER TO PROVIDE FULL DRAWINGS, CALCULATIONS, AND TECHNICAL SPECIFICATIONS TO UNDP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION**