

1. TERMS OF REFERENCE

A. Project Title: Pacific Resilience Programme

Activity Title: *PREP Samoa/CON 12 - Assessment, Design and Supervision (including EIA) of the retrofitting and/or new construction of school building structures in 3 target communities; Taelefaga, Uafato in Fagaloa/Upolu and Neiafu in Savaii.*

B. Pacific Resilience Program (PREP) – Project Background

Disasters, climate and weather extremes and projected changes in climate, are increasingly recognized as a core development challenge, as they adversely impact social and economic development. Accordingly, the Pacific Resilience Program (PREP) has been developed in consultation with the Government of Samoa, along with other beneficiaries in order to respond to these challenges. The overall objective of PREP is to strengthen early warning, resilient investments and financial protection of Samoa.

The PREP (Phase I) has a duration of five years and includes the following four components: Component 1 - Strengthening Early Warning and Preparedness; Component 2 - Risk Reduction and Resilient Investments; Component 3 - Disaster Risk Financing; and Component 4 – Project Management. The initial participants for Phase I are Samoa, Tonga, Marshall Islands, and Vanuatu, as well as the regional organizations the PREP Regional Coordination Unit (RCU) setup in the Pacific Islands Forum Secretariat (PIFS) and the Project Support Unit (PSU) housed in the Pacific Community (SPC).

Due to strong commitments to Disaster Risk Management schemes and programs, Samoa is participating together with Tonga in Phase 1 for all components of the program. The Government of Samoa has therefore agreed to participate in this project to enhance its investments in resilience framework, prioritization and retrofitting of key-public assets to meet international recognized resilience standards.

An initial assessment of the existing school buildings was carried out by the DAC Evacuation Centre Assessment Task Team per the Evacuation Centre Guidelines. This assignment will prepare a package for the retrofitting of the three prioritised schools to make them ‘fit for purpose’ as emergency shelters for evacuation.

The Government of Samoa has received funds from the World Bank under the Pacific Resilience Program (PREP) Phase 1, and intends to apply part of the proceeds for these consultancy services.

C. Assignment Objectives

The consultancy objective is to conduct the structural assessment, design and subsequent construction supervision of buildings at three priority schools. The retrofitting of existing buildings, or construction of new buildings within the school footprints, should be considered as part of the options.

D. Scope of Services

The scope of services for the consultancy is defined as tasks detailed below in two stages:

- Stage 1 – Assessment and Design (Task 1 – 3)
- Stage 2 Construction Supervision and Defects Monitoring (Task 4)

It is encouraged and will be essential for Consultants to visit the sites and read the survey reports prior to submitting its proposal so that it is clear about the scope of design work,

STAGE 1 – ASSESSMENT AND DESIGN

Task 1: Detailed Survey of the 3 Schools and Preparation of Concept Design of the retrofitting works (Stage 1)

The Consultant shall carry out detailed surveys on the following number of schools which have been selected as potential Emergency Evacuation Centres:

- Two (2) in Upolu – Uafato Primary School, Taelefaga Primary School;
- One (1) in Savaii – Neiafu Primary School

The Consultant shall carry out the review of all surveys and reports that have been completed to date on the above schools by the Evacuation Centre Task Team of the Disaster Advisory Committee. Using the *Samoa National Building Code*, the *Ministry of Education, Sports and Culture Safe School Building Design*, the *Evacuation Centre Guidelines* and *ISDRs Safe Schools Guidelines* as references, the Consultant shall then carry out detailed structural assessments of the school buildings to develop an approach by which to address the gaps between existing and required resilience levels for Evacuation Centres, which shall include inter alia:

- a. Document interviews with local informants – school staff and community members residing within the vicinity of selected school buildings to be retrofitted - document local knowledge of the impacts of common (or normal) to extreme climate change hazards and course of action taken in past natural disasters such as cyclones, earthquakes etc. and the types of repairs if any that have been carried out in response;
- b. Assess, identify all risk hazards and vulnerabilities to the buildings location relative to their immediate environment and the National Disaster Management Plan for Samoa and how these hazards can be addressed in the retrofitted or new building works;
- c. Site layout sketches and building coordinates shall be documented for inclusion in to a geospatial asset management database at a later stage (by others);
- d. Prepare drawings, measurements of buildings and redraw to scale, dimensions, list materials and identify appropriate specifications of the existing buildings including floor plans, layout and elevations, including permanent and temporary structures;
- e. Perform a detailed structural assessment of each of the school buildings and verify building structural soundness as a ‘fit for purpose’ emergency shelter in accordance with the Government of Samoa *Evacuation Centre Assessment Guidelines* and *UNISDR Safe Schools Guidelines*;
- f. Validate that building foundation strength and soil capacity to support the retrofitted building if additional floor on top of the existing structure is required;
- g. Identify location and validate detailed plans for all water supply, waste water disposal pipelines; fixtures/fittings, and rainwater management systems are in accordance with Plumbing / SWA standards;
- h. Locate and validate if the existing electrical wiring network inside the buildings and within the site meets EPC Standards;
- i. Identify and provide plans for the Communication systems in place, materials and their conditions to ensure functional operation at all times

Once the surveys are complete, the Consultants shall prepare Concept Design of the Retrofitting Works including cost estimates. These are required for each of the three (3) Schools.

However, if any of the school buildings are determined not suitable to be retrofitted, the Consultant shall prepare Concept Design of the Constructions Works required to replace the existing buildings to operate safely as a school and to function as an evacuation centre.

All material testing required to verify the structural parameters of the buildings shall be allowed for by the Consultant. For the selected schools, the consultant/firm with the approval of the Chief Executive Officer of MNRE will carry out all the required engineering surveys and investigations such as geo-technical investigations, soil surveys, ground water investigation i.e. hydro-geological investigations, etc. The survey will incorporate all the necessary features for design of the retrofitted and/or new works as well as all required infrastructure.

Task 2: Preliminary Design and Environmental Impact Assessment

The following main tasks are required:

Task2a: Preliminary Design:

The preliminary design shall consist of:

Option 1: Retrofitting works to the existing school buildings

Option 2: Construction works for new school buildings that cannot be retrofitted. The new buildings shall incorporate features to function as a school and operate as evacuation centres.

The preliminary design of the required works for the selected schools shall include: determining and agreeing appropriate design criteria & parameters, preliminary structural design, preliminary cost estimates, additional survey and investigation requirements for detailed design, identify statutory requirements and proposed implementation procedures.

The preliminary designs are to be approved by MNRE.

Task 2b: Environmental Impact Assessment: For each selected school, the consultant/firm shall appoint a suitably qualified individual to carry out an Environmental Impact Assessment as per the laws of Samoa and in accordance with the Environmental and Social Management Framework (ESMF) carried out under the Pacific Resilience Program (PREP ESMF). The ESMF can be downloaded via the following link:

<http://documents.worldbank.org/curated/en/2015/02/24096490/pacific-islands-pacific-resilience-program-prep-project-regional-environmental-social-management-framework>

The EIA shall incorporate an Environmental Management Plan (EMP) which shall be approved by MNRE. The consultant/firm shall ensure that the approved EMP forms part of the specifications of the bidding document.

Task 3: Detailed Engineering Designs, Project Cost estimates and Technical Specifications and Preparation of the Retrofitting Works/ New Construction Works Bidding Documents

For each of the three (3) schools the following sub tasks are undertaken:

Task 3a: Detailed Engineering Design and Drawings

The consultant/firm will prepare the detailed engineering design and drawings taking into account the mitigation measures identified in the EIA report and the approved EMP.

All designs should be in conformity with the guidelines and standards as stated in Stage 1 – Task 1. All necessary design calculations will be prepared to determine and justify the engineering solution proposed for each component of the retrofitting/new construction works will be incorporated into the design reports. Detailed engineering design and drawings shall include civil, electrical, mechanical, potable water reticulation network, sewerage collection, conveyance, treatment and disposal, site storm water collection and disposal and internal public announcement communication system.

Once all the detailed engineering designs and drawings are approved by MNRE, the consultant/firm will prepare all the required Specifications, Bill of Quantities, implementation schedule, and quality control programs. The specifications will be detailed and project-specific, using national or international standards such as AS/NZ, Eurocode or similar may as appropriate. The consultant/firm will prepare construction drawings with sufficient details to permit contractors to construct the work.

Task 3b: Application for Development Consent and Building Permit

The consultant/firm shall prepare all the documentation and submit applications to the relevant Samoan authorities for the Development Consent and Building permit.

Task 3c: Confidential Cost Report: The consultant/firm shall prepare a detailed confidential cost report for each selected school.

Task 3d: Works Bidding Documents: The consultant/firm shall prepare the bidding document for the required works for each selected school. The bidding documents will include instruction to bidders, employer's requirements, general and special conditions of contract, technical specifications, bill of quantities, drawings, forms of contract agreement, etc. and generally any information required for successful bidding and contract implementation. The consultant shall advise MNRE on the most appropriate way to package the works (i.e. one, two or three lots).

The bidding documents should be in accordance with the World Bank Standard Bidding Document (WB SBD, 2017.) for Procurement of Small Works Contracts. The template will be provided to the Consultant.

Task 3e: Evaluation of the Bids

The consultant will assist the Technical Evaluation Committee to evaluate the bids received and provide technical inputs to the draft bid evaluation report.

STAGE 2 - SUPERVISION OF WORKS AND WORKS CONTRACT MONITORING

The consultant, as the Project Manager under the contract, will carry out the supervision of the construction works for each selected school, the main tasks shall include *inter alia*:

- Ensure that the contractor is at all times in possession of all data required for it to meet the contractual works program, through the timely issuing of contract documents, initial, updated and revised construction drawings as required
- Monitor construction methods and quality control;
- Certify the quality of works conformance with the specifications and drawings;
- Regular assessment of the adequacy of the contractor's input materials, labour, equipment, and construction methods;
- Scrutinize construction methods proposed by contractor including environmental, safety, personnel and public issues;
- Regular monitoring of the site activity and overview of progress, with particular attention to ensuring contractors' adherence to the design and construction drawings and specifications.
- Regular review contractor's daily records of the activities on the site, site conditions and contractor's resources
- Random (but at least fortnightly) review of the contractors' daily records, material-testing results, batch records, set-out survey records etc. and report to the MNRE;
- Measure the actual quantities of work carried out and agree these with the contractor; keep appropriate records of measured work;
- Ensure that the works are carried out in accordance with the approved Construction Environmental Management Plan as recommended in the EIA report, as well as the PREP ESMF;
- Record the works completed and provide certification;
- Verify the contractor's claim and issue interim payment certificates;
- Recommend to the client solutions to resolve any contractual issues;
- Carry out all revisions and detailed drawings as necessary during the contract implementation;
- Attend to third party inspections as necessary;
- Assess any contractor's claims for variations/extension, additional compensation, etc., and prepare recommendation for approval by MNRE;
- Conduct and record all site meetings and submit to MNRE
- Prepare monthly progress reports;
- Prepare and certify as-built drawings for the retrofitting works;
- Issue Works Completion Certificate and End of Defects Liability Certificate

The consultant will be responsible to MNRE for construction supervision and administration of the works contract. The consultant will be required to monitor, and audit the quality assurance of the works contractor.

E.1 Expected Outputs/ Deliverables – Stage 1 - Assessment & Design

The consultant/firm shall deliver the following outputs noting that drafts will need to be submitted for comment to Government of Samoa before final versions are approved:

Output	Content	SCHEDULE
Inception Report & Initial Assessment of the existing buildings	Confirmed Work Implementation Plan showing the various stages from start to end of contract linking personnel time input and deliverables; A visual assessment of the existing building and methodology that will be followed leading up to the detailed survey; of the existing building	One week after contract signing

Output	Content	SCHEDULE
Detailed Survey Report and Concept Design	Detailed Survey of the three (3) schools and Preparation of Concept Design of the required works	4 weeks after commencement
Preliminary Design Report with cost estimate	Preliminary Design: The preliminary designs for the three schools required works will provide technical rationale of the proposed design option recommended after a cost benefit analysis, describe design criteria & parameters, preliminary cost estimates, additional survey and investigation requirements for detailed design, identify statutory requirements and proposed implementation procedures.	4 weeks after acceptance by GoS of Detailed Survey Report and Concept Design
Environmental Impact Assessment	For each selected school, carry out an Environmental Impact Assessment (EIA) as per the laws of Samoa and in accordance with the Environmental and Social Management Framework (ESMF) carried out under the Pacific Resilience Program. The ESMF can be downloaded via the following link - http://documents.worldbank.org/curated/en/2015/02/24096490/pacific-islands-pacific-resilience-program-prep-project-regional-environmental-social-management-framework The EIA shall include an Environmental Management Plan.	4 weeks after acceptance by GoS of Detailed Survey Report and Concept Design
Detailed Engineering Drawings	For each of the three (3) schools, once the preliminary designs are approved by the MNRE, the consultant/firm will prepare detailed engineering designs and drawings for the retrofitting / new construction works taking into account the mitigation measures identified in the EIA report and the approved Environmental Management Plan.	5 weeks after acceptance of Preliminary Design Report by GoS
Confidential Cost Report	For each school, the consultant/firm shall prepare a detailed confidential cost for the retrofitting and/or new construction works.	
Application for Development Consent and Building Permit	For each selected school, the consultant/firm shall prepare all the required documentation and submit applications to the relevant authorities for the Development Consent and Building permit	
Works Bidding Document for the selected schools construction works	The consultant/firm shall prepare the Works Bidding document for each school required works. The Works Bidding documents to be submitted will include technical specifications for all works, employer's requirements, detailed bill of quantities, drawings, etc. as per World Bank requirements and the laws of Samoa.	2 weeks after acceptance of the Detailed Engineering Design Drawings, Confidential Cost Report and Application for Development

Output	Content	SCHEDULE
		Consent and Building Permit
Bidding Process Completion Report. Also mark the end of Design Stage 1	The consultant/firm shall assist prepare the report to include clarifications and addendum/addenda issue to Bidders. Also document all activities leading up to the Final Bid Evaluation Report recommending the preferred Bidder	2 weeks after Bid Evaluation Report is finalised

E.2 Expected Outputs/ Deliverables – Stage 2 – Construction Supervision & Monitoring

Construction Supervision and Contract Monitoring	The consultant/firm, as the Project Manager under the contract, will carry out the supervision of the selected schools construction works. Monthly briefs will be submitted to MNRE during the construction phase to provide updates on progress.	Monthly Progress report
Supervision Completion Report	A Supervision Draft Report at the end of the assignment will be submitted to serve as the final deliverable and trigger balance of payment. This report should include photos, layout diagrams and text describing the finished product, commissioning and checks of all systems including water & sanitation, electrical, environmental, telecommunication etc. A Supervision Final Report	One week before supervision period completion date One week after receiving comments from the Client

F. Institutional Arrangement

The consultant/firm will work under the overall supervision of the ACEO of the Disaster Management Office, MNRE or delegated representative.

The Client will:

- i. Provide the Consultant the following reports: DAC Evacuation Centre Assessment Task Team Report on Government and private school building assessment to utilise as evacuation centres as well as any relevant documents, data, statistics and information available at Government agencies, Ministry of Education Model School Design and related documents.
- ii. Coordinate with stakeholders and other partners to facilitate access to information and meetings including with communities involved, and field visits with DMO, PUMA, Ministry of Education, Sports and Culture and Ministry of Works, Transport and Infrastructure staff.

G. Duration of the Services

The selected consultant/firm must ensure all tasks specified in section E above are completed in a timely manner.

It is estimated that the duration of services for:

Stage 1: Assessment, Design, Preparation of Bidding document and Bid Evaluation will be completed within a five (5) months period. It is essential that the firm visits the sites and has access to any survey results before submitting its proposal, so that the fee is based on a realistic assessment of the scope of design work involved

Stage 2: Supervision of Works is estimated at 10 months.

The duration periods provided for Stages 1 and 2 are indicative, the Consultant will provide their own estimate based on their proposed methodology and work plan. .

H. Duty Station

The consultant/firm shall be responsible to organise its own local office in Samoa to fulfil its contractual obligations and shall bear the associated costs.

I. Qualifications of Key Staff

Key staff should have a minimum level of qualifications and experience as follows:

Skills Required	Tasks	Formal Qualifications & Experience
Civil - Structural Engineer/Team Leader (Stage 1) & Project Manager (Stage 2)	Oversee contract progress, lead the team to ensure deliverables meet target dates. Design Phase – undertake building structural assessment, develop decision support tool. Preliminary and detailed design of civil and structural elements. Preparation of bidding documentation. Supervision Phase – Site Engineer supervising construction of retrofitting building.	First degree in Structural /Civil Engineering + full membership of recognized professional institution. Ten (10) years’ of relevant work experience, within the Pacific Region and abroad, also recent experience (within the last 5years) directly related to this assignment (design & supervision of retrofitting structures to increase resilience)
Architecture	Climate resilient building design	First degree in relevant architectural discipline Ten (10) years’ of relevant work experience, within the Pacific Region and abroad, also recent experience (within the last 5years) directly related to this assignment
Building Services (Mechanical, Electrical and Public Health)	Design MEP	First degree in relevant engineering discipline + full membership of recognized professional institution. Ten (10) years’ of relevant work experiences, within the Pacific Region and abroad, also recent experience (within the

Skills Required	Tasks	Formal Qualifications & Experience
		last 5years) directly related to this assignment
Geotechnical Engineer	Investigation geotechnical site investigation and survey report	Qualification in geotechnical or soil engineering or similar discipline; Ten (10) years' of relevant work experiences, within the Pacific Region and abroad, also recent experience (within the last 5years) directly related to this assignment
Environmental Consultant	Prepare the EIA report and development consent.	First Degree in environmental engineering or similar discipline + 10 years' with experience in drafting EIA Report and Development Consent applications; Ten (10) years' of relevant work experiences, within the Pacific Region and abroad, also within the last 5years directly related recent experiences;
Clerk of Works	General office support to the project staff	Diploma in building/civil engineering works

J. Contractual arrangements

The assignment will be conducted in two parts.

Stage 1 - Assessment & Design will be contracted as a **LUMP SUM TYPE** Contract based on deliverables identified in E.1 Expected Outputs/ Deliverables. It is essential that the firm visits the sites and has access to any survey results before submitting its proposal, so that the fee is based on a realistic assessment of the scope of design work involved

Stage 2 – Construction Supervision & Monitoring will be contracted as a **TIME BASED** Contract following the decision made by Government on the school buildings to be retrofitted or constructed following Stage 1. The supervision may cover one, two or all three schools.

K. ESTIMATED INPUTS

Stage 1: Estimated person-month input of 7.5 over contract period of 5 months

Stage 2: Estimated person-month input of 17.5 over contract period of 10 months

L. CONFIDENTIALITY

All deliberations relating to preparations of the design specifications including information collected from MNRE and other informants shall be kept confidential and shall not be divulged to any third party either verbally or in writing or in any other form.