



**Carry out Roof Waterproofing, Guardhouse
Construction and Building Refurbishment
Works for EFL's Somosomo Hydro Power
Station**

Tender Number: MR 87/2020

Energy Fiji Limited (EFL) is a statutory body vested with the responsibility for the provision of electricity supply throughout the Fiji Islands.

EFL is responsible for the Generation, Transmission and Retail of electricity on the larger islands, Viti Levu, Vanua Levu and Ovalau, which account for some 90% of the country's population. Installed generation capacity is approximately 237MW, comprising 80MW Monasavu Hydro Scheme and 40MW Nadarivatu Hydro Scheme in Viti Levu and about 112MW of diesel capacity in 14 stations on the three main islands. Of the diesel capacity 92MW is on Viti Levu which has been supplementing the Monasavu hydro scheme for the Viti Levu Interconnected System (VLIS) which has been reaching maximum demand of 152MW. Transmission is provided by 145km of 132kV lines (connecting Wailoa & Nadarivatu Hydro Power Stations to the East and West coasts) and about 350km of 33kV lines. Power distribution is by means of more than 8,000km of 11kV and 415/240V lines.

1.0 INSTRUCTION TO BIDDERS

1. Bidders are requested to read carefully the contents of the tender document.
2. Bidders are to complete the tender document and provide all the related documents information in sufficient detail.
3. All documents must be in English language.
4. All Bidders will be informed accordingly after finalization of tender decision.
5. Bidders should note clearly the date and the time of submittal of the tender document. No late or delayed applications will be accepted. Bidders are reminded that no supplementary material will be entertained by EFL after the close of submission. However EFL may, if necessary, at its sole discretion ask for any clarification regarding the submitted tender and/or related documents.
6. All the bidders including those who have tendered are requested to get in touch with EFL's Supply Chain Office for any tender clarifications.

2.0 REQUIREMENTS

1. Bidder to verify all dimension on site before submitting their tender.
2. Bidder to verify all building surfaces and current condition and advise on any alteration before submitting their tender
3. Bidder to ensure all materials are used as per the plans and specification provided by the EFL.
4. Bidder to ensure all their workers have proper PPE while entering the EFL sites.
5. Bidder to ensure all cleaning and finishing works to be done within proper specification.
6. Bidder to ensure respective work are done by skilled Tradesman.
7. Bidder to use their own scaffolding, plants, machines, transportation, and services as necessary to complete all refurbishment work included in the specifications.
8. Bidder to coordinate with the EFL site supervisor to discuss all site issue and constraints.
9. Left over debris must be inspected by EFL and on approval from the client the same shall be disposed in a manner appropriate by the bidder. Debris that the client deems as not to be disposed shall remain the property of the client.
10. Bidder to provide full company profile.
11. Bidder to provide Tax Compliance Certificate.
12. Bidder to meet all Insurance requirements.

13. Selected bidders are to provide methodology and work program.
14. All workmanship to be of high expected standard with very neat finish.
15. Bidder shall be liable for any damages to the property/resources and repair them at their own cost.
16. An induction shall be done for all contractors together by respective EFL staff.

3.0 PRELIMINARIES

All Bidders are to visit site to view the works outlined in the Scope of Works. All work shall conform to the National Building Code of Fiji for construction with reference to standard below.

Standards and Regulations including but not restricted to:

AS 1170.0 / .1 - 2002 Structural Design Actions

AS 1288-2006 Glass in Buildings. Selection & Installation

AS/NZS 1680.0:1998 Interior Lighting-Safe Movement

AS 2047-1999 Windows in Buildings. Selection & Installation

AS 2311-2000 Painting of Buildings

AS 2870-1996 Residential Slabs and Footings

AS 2904-1995 Damp proof Courses and Flashings

AS/NZS 3500-3.2:1-2003 National Plumbing and Drainage

AS 3600-2001 Concrete Structures

AS 3700-2001 Masonry Code

AS 3727-1993 Guide to Residential Pavements

AS 3740-2004 Waterproofing of Wet Areas within Residential Buildings

AS 3958.1-1991 Ceramic Tiles

4.0 OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

During submission process:

1. Bidders shall submit a current copy of the company:
 - OHS Policy
 - Environment Policy
 - Personal Protective Equipment Policy
 - Working at heights Policy (if applicable)
 - Valid license of your qualified electricians and plumbers
 - OHS professional who will be at the site together with his photos, qualifications and expertise
 - Safe Work Method Statement or Job Safety Analysis (Risk Management) of the project that clearly define in a table format the steps of work (in chronological order) with the associated hazards, risks and controls according to the hierarchy of control method
 - Project site safety inspection checklist and a Tool Box meeting form
 - Workers who will be directly involved at the site with their photos, names and designation/occupation in a A4 paper
2. Any working at heights using scaffolds more than 1.8 meter, the bidder should provide the OHS inspection report.
3. Any Plant mentioned in the (Legal Notice 170) Health and Safety at Work Regulations 1997, the bidder should provide the current and valid certificate.
4. Bidders shall submit sub-contractor management documents if at any stage they will involve in the project.

During project execution:

5. The selected bidder will have to attend the Safety Induction of the project site conducted by the respective EFL personnel.
6. The selected bidder should conduct at least a minimum of two Project meetings in a week to discuss the project safety issues, formal site compliance, site inspections, injury report and etc. This meeting should be recorded in the template and presented to EFL upon request.
7. Selected bidder shall provide an entry point and erect the appropriate applicable Mandatory safety signage's which are to be visible at all times.
9. Selected bidder shall also provide a designated OHS Notice board at the site.
10. Selected bidder should always maintain the safety barricades and signage's during and after the progress of the project at all times
11. The selected bidder should provide their own qualified First Aider and First Aid Kit at the site according to the size and ratio mentioned in the (Legal Notice 25) Health and Safety at Work (General Workplace Condition) Regulation 2003.

After the completion of project:

Should there be any hazard materials accumulated at the site, selected bidder should isolate them properly with mesh barricades before handover to the EFL Project Manager.

OHS Regulations 2003

The Selected Tenderers shall be responsible for ensuring all staff and the tools, equipment and excess materials that they are required to use are all stored safely in accordance with the above Occupational Health and Safety Regulation.

5.0 WORK PLAN

The contractor shall prepare a Work Programme, Work Safety Plan/Risk Assessment Plan in accordance and shall submit the plan to the respective EFL personnel for his/her approval before commencing with work on the site. This should be provided within three (3) working days from the date of the tender award letter.

6.0 MATERIALS

- The selected bidder shall ensure that the products nominated in the tender specification shall be used unless approval for substitute products is given by EFL in writing. Substitute product approval shall not be unreasonably withheld if quality and performance can be assured.
- The selected bidder shall ensure that the product used shall be used in strict accordance with Manufacturer's instructions and may be subject to the Manufacturer's inspections as required.
- The selected bidders shall supply all the necessary materials as new and shall further supply all necessary tools, equipment and access aids to allow the safe and prompt execution of the contractual works.

7.0 SITE CONDITIONS

- a) The selected bidder shall visit site to familiarize themselves with all aspects of the works.
- b) The selected bidder shall provide adequate protection for all adjoining and adjacent building elements. Any damage sustained as a result of the bidders work shall be repaired/ replaced to the EFL satisfaction without cost to the EFL and shall be completed within the Contract period.
- c) The selected bidder is responsible and shall allow for all types of site access, scaffolding, ladders, hoists as well as barricades, hoardings and or temporary fences.
- d) The selected bidder are responsible for and shall allow for any and all Council and regulatory authority fees and permits where such fees & permits apply to the construction, completion and occupation of the building.
- e) The site shall be progressively kept clean with final clean up prior to hand-over.
- f) The selected bidder shall identify, locate, secure and protect all existing services within the premises.
- g) The selected bidder shall prop and secure all elements that may be subject to vibration or movement from the proposed works.
- h) It is essential that the selected bidder give due consideration to the environmental conditions within which this property exists. It will be the selected bidder responsibility to ensure, for example, galvanizing to correct thicknesses, stainless steel components of the correct grade and similar issues should be adhered to appropriate separation for dissimilar materials should be allowed for to avoid any form of corrosion or cracking.
- i) No Parking shall be allowed on site to the selected bidder unless approved.
- j) Storage sheds if required to be supplied by the selected bidders and located as directed by EFL.

8.0 DURATION OF WORK

The expected duration for the completion of work shall be eight weeks.

9.0 TOBACCO /ALCOHOL/DRUG FREE ENVIROMENT

EFL maintains tobacco, alcohol, drug free environment. Any personnel of the contractor found violating the policy will be requested to remove the product and themselves from the sites. Offensive language or actions are not acceptable. The EFL shall have the absolute right to require replacement of any employee the EFL deems objectionable to work on EFL premises.

10. INSURANCE REQUIREMENTS

The Contractor shall be solely responsible for all respective insurance cover of person, tools, equipment involved in carrying out the Works.

The Contractor must obtain and maintain respective insurance cover at all relevant times sufficient to cover any loss or costs that may be incurred and for which the Contractor is liable in connection with the contractual works.

11. SITE VISIT

a) All interested bidders must attend a **compulsory** site visit and briefing as follows:

Location	Date	Time	Contact Person
Somosomo Power Station	18/03/20	12.00pm	Shifaa Ali- 999 2401
Waiyevo Power Station	18/03/20	1.00pm	Shifaa Ali- 999 2401

All bidders must come in their own proper PPE (safety boots, helmets, vests, etc) for the site visit. No bidder will be allowed to access the roof without proper PPE's.

b) All tenderers shall inspect and examine the site, its surroundings, and shall satisfy him/her before submitting his/her tender, as to the nature of the work and necessity for the carrying out the contract work.

12. SCOPE OF WORKS

Tender to Carry out Roof Waterproofing and Building Refurbishment Works for EFL's Somosomo Hydro Power Station

ITEM	SCOPE	PRICE(VEP)
	SOMOSOMO POWER STATION UPGRADE WORKS	
1.0	ROOF WATERPROOFING – POWER STATION AND OFFICE	
1.1	<p>a. The roofing membrane shall be a synthetic rubber waterproofing membrane system designed to be used on roofs. The membrane system shall be installed to provide a serviceable life of 20 years minimum.</p> <p>b. The membrane material shall be Butynol or approved equivalent with BRANZ appraisal. The material shall be 1.5mm thickness, heavy duty, suitable for high maintenance areas and in black colour.</p> <p>c. A specially formulated solvent based adhesive, suitable for use with the membrane material and concrete substrate, shall be provided and applied according to the supplier's literature. A specially formulated sealant, suitable for use with the membrane material and concrete substrate, shall be provided and applied according to the supplier's literature.</p> <p>d. Any damage to the substrate found when the original cladding is removed shall be advised to EFL staff for approval of the course of action.</p> <p>e. Prior to application of the membrane system, the concrete substrate shall be prepared in accordance with the supplier's instructions. Surfaces must be smooth and free from nibs, sharp edges, dust, dirt, oil or grease. All surface defects must be filled to achieve an even uniform surface. The relative humidity of the substrate must be 70% or less before membrane application.</p> <p>f. Installation of the membrane must be completed by trained applicators, approved by the supplier. The membrane must be installed in accordance with the supplier's technical literature.</p>	\$
2.0	PAINTING WORKS – POWER STATION AND OFFICE	
2.1	Contractor is to remove, scrape and prepare surface and paint all external walls with two coats waterproofing paint, one coat weather shield acrylic undercoat and two coats of acrylic weather shield X10 Low sheen paint as per EFL approved colors. Refer to appendix 4 (Provide minimum of 10 years of warranties from the paint supplier on every coat applied).	\$

3.0	SCAFFOLDING	
3.1	Contractor is to supply their own scaffolding for the duration of the work. Contractor will also be liable for erected scaffolding on site. All responsibility for the scaffolding on site will remain the contractors throughout the duration of the works and will make good to any damages caused by scaffolding. (All scaffolding should comply with all OHS regulation).	\$
4.0	GUARD HOUSE CONSTRUCTION	
4.1	Contractor to carry out construction of a security Guardhouse (size to be confirmed during site visit) using treated grade timber. The guardhouse should have one door entry, interior and ceilings to be of ply board, exterior walls to be treated wooden claddings. The guardhouse must have a gable type roof structure with trim deck roofing iron securely screwed to the purlins using cyclonic approved screws. Guardhouse to have window allocations on the sides. Carry out construction of toilet structure using Caroma brand cistern and pan with a hand basin within the guardhouse with exterior ply board door with locking provisions. Construct a proper septic tank and soakage pit to cater for 10 to 15 people. Provide lighting and power point provision in the guard house. Paint the entire guardhouse structure using EFL approved colors. Apply pink primer to all timber, one coat of undercoat and two coats of finishing paint as per supplier's instruction. Supply table and chair for the guardhouse.	\$
5.0	PARTITIONING WORKS	
5.1	Contractor is to construct a partition to barricade staff sitting area from control panel room area. Details to be discussed during the site visit	\$
6.0	SITE WORK	
6.1	<ul style="list-style-type: none"> a) Contractor to allow for mobilization and Demonization costs. b) Contractor is responsible to clean and clear site, and restore to initial conditions. 	\$

ITEM	SCOPE	PRICE (VEP)
	WAIYEVO POWER STATION UPGRADE WORKS	
1.0	GUARD HOUSE CONSTRUCTION	
1.1	Contractor to carry out construction of a security Guardhouse (size to be confirmed during site visit) using treated grade timber. The guardhouse should have one door entry, interior and ceilings to be of ply board, exterior walls to be treated wooden claddings. The guardhouse must have a gable type roof structure with trim deck roofing iron securely screwed to the purlins using cyclonic approved screws. Guardhouse to have window allocations on the sides. Carry out construction of toilet structure using Caroma brand cistern and pan with a hand basin within the guardhouse with exterior ply board door with locking provisions. Construct a proper septic tank and soakage pit to cater for 10 to 15 people. Provide lighting and power point provision in the guard house. Paint the entire guardhouse structure using EFL approved colors. Apply pink primer to all timber, one coat of undercoat and two coats of finishing paint as per supplier's instruction. Supply table and chair for the guardhouse.	\$
2.0	SITE WORK	
2.1	a. Contractor to allow for mobilization and Demonization costs. b. Contractor is responsible to clean and clear site, and restore to initial conditions.	\$

13. PROJECT PRICE SUMMARY

Somosomo Power Station

Item	Trade	Price - VEP
1.0	Roof waterproofing	\$
2.0	Painting Works	\$
3.0	Scaffolding	\$
4.0	Guard house construction	\$
5.0	Partitioning works	\$
6.0	Site Works	\$
	Total	\$

Waiyevo Power Station

Item	Trade	Price - VEP
1.0	Guard house construction	\$
2.0	Site Works	\$
	Total	\$

Trade Totals \$.....VEP

9% VAT \$.....

Total Price \$..... VIP-FJD

14. SPECIFICATION

Paint Specification:

No	Paint Description	Application
1	Dulux/Apco/Resene/Taubmans Weather Shield acrylic undercoat	All works
2	Dulux/Apco/Resene/Taubmans Ceiling White acrylic	Ceiling
3	Dulux/Apco/Resene/Taubmans Acrylic Weather Shield X10 Low Sheen	Internal painting
4	Dulux/Apco/Resene/Taubmans Acrylic Weather Shield X10 Low Sheen	External painting
5	Dulux/Apco/Resene/Taubmans Enamel Weather Shield X10 Low Sheen	Framing/grills/railing
6	Dulux/Apco/Resene/Taubmans Weather Shield Water Proof for concrete walls	Exterior walls

Note:

- All painting to be conducted as per manufactures instruction.
- All colors to be confirmed by Project manager prior installation.
- All surfaces are to be painted as per Project managers instructions.

Timber:

- H3 treated timber for all internal and external uses.
- F7 treated timber for external uses.

Lock: Yale door lock. (For Internal door lock) or equivalent client approved.

CONCRETE WORK

1. PRELIMINARY

1.1 General

Refer to the General Conditions of Contract and the Preliminary and General Clauses which will also apply to this section of the work.

1.2 Standards

The following standards shall form part of this specification

- NZS 1900 9.3A : Materials and Workmanship
- NZS 1900 9.3A : Metric Handbook to AS 1900 9.3A
- NZS 2086 : Ready Mixed Concrete Production
- NZS 3112 : Methods of Test for concrete
- NZS 3121 : Water and Aggregate for concrete
- NZS 3122 : Portland Cement

1.3 Co-operation

Allow co-operate with other trades to space, position and build in all fixing bolts, pipes, sleeves, nailing ground, chases, conduits, reinforcing, starters, weather-bars, inspection chamber, septic tank, etc. Also co-operative with the Block layer in the filling of cavities.

2 MATERIAL

2.1 General

All material used shall be the best their respective kinds, free from all impurities, properly packaged and supplied in top condition.

2.2 Cement

Shall be Portland cement or Rapid Hardening Portland Cement each conforming to the above standards.

2.3 Concrete

Concrete for any major pour shall be ready mix in accordance with the above standards supplied by a firm approved by the Architect.

2.4 Water

Water shall be clean and free from all impurities conforming to the above standards and of such standard that if required to do so the Contractor will drink it.

3 WORKMANSHIP

All work in this section shall be carried out by tradesmen skilled in the mixing and placing of Concrete to the satisfaction of the Architect and Engineer.

4 FORMWORK

4.1 General

Formwork may be constructed in timber and / or steel.

4.2 Timber

All timber shall be sound and free from knot holes. Timber in contact with concrete shall be not less than 20mm thick, or resin bonded plywood constructed so as to produce mortar tight joints.

4.3 Form Oil

Where form oil is used to preserve the oil shall be of a recognized proprietary brand which shall not affect the bond of plaster to the concrete.

4.4 Workmanship

All formwork shall be securely braced and supported to prevent any distortions due to pressure of Concrete and loads from operations. Particular attention shall be given to all wall and beam surfaces to render them straight and true. Formwork shall be provided with suitable clean out point to ensure the removal of all foreign matter from the interior before each pour. Before placing concrete all forms shall be fixed to proper lines and levels and shall be saturated with water, if form oil is not used.

4.5 Stripping

Formwork shall not be stripped before the times mentioned below. Time for normal hardening cement.

- Foundation Sides : 1 day
- Beam Sides, Wall : 2 days
- Columns : 5 days
- Beam Soffits and slabs : 21 days

5 PLACING

The handling, placing, protection and curing of all concrete shall be strictly in accordance with NZS 1900.Chapter 9. Which forms part of this specification and shall be read in conjunction with it. Care shall be taken to prevent segregation of the concrete spreading of the formwork and other methods likely to cause faulty concrete work. Concrete shall not be dropped over 1350 into forms. Should honeycombing be evident after stripping of boxing, the Engineer shall decide whether the honeycombing has deleterious effect on the structure or appearance in which case the concrete shall be chipped out and replace or if not of a serious nature, surface may be repaired by plastering, at the expense of the contractor. Adequate means of protection finished concrete surface shall be taken and effective damp curing by use of polythene sheet or sand covering kept continuously damp is also essential. All concrete shall be thoroughly consolidated by vibration. Minor surface blemishes on face concrete.

6 PROTECTION AND CURING

Placed concrete shall be protected from rain, sun and drying winds, by suitable coverings, immediately available on site. The whole of the surface area of concrete shall be properly cured by being kept continuously damp for 7 days. Artifice curing such as sand kept consciously wet shall be allowed for at all times. Polythene sheet may also be used.

7 REINFORCING

7.1 General

Refer to the Preliminary and General clauses which will also apply to this section of the work.

7.2 Standards

In addition to standards cited elsewhere the relevant provision of the following shall apply, unless modified accordingly:-

- NZS 1900 9.3A : Concrete-General requirements
- NZS 3402 : Hot rolled bars for reinforcements
- NZS 3421 : Hard drawn wire reinforcement
- NZS 3422 : Welded reinforcing fabric
- Standard arc welding (Minor Works) Witness

7.3 Read this section in conjunction with Masonry Section.

7.3 Materials

Provide all supports, hangers, spacers, and ties to approval where not shown.

7.5 Plain and deformed bars shall comply with NZS 3402P and be of mild steel and shall have a guaranteed minimum yield point of 275 megapascals.

7.6 Welded wire fabric shall conform with the NZS 2422.

7.7 Alternative steels for reinforcement may be approved provided that by composition, manufacture, Certified tests of strength, elongation, fatigue resistance and walkability the alternative has equivalent properties to that specified above.

7.8 Origin and Specification

Before delivery provide certificate stating origin, manufacturer's name, steel specification; also test certificates to prove steel conforms to specifications stated. All steel delivered to site shall be clearly marked for identification with the relevant certificate.

7.9 Protection

Store steel clear of ground mesh under cover.

7.10 Provide walkways to approval required.

7.11 Brace adequately all reinforcement projecting more than 1200mm from concrete, cut out defects around bars caused by movement as directed before resuming concreting.

7.12 Fabrication

Fit ties and stirrups tightly round main reinforcement.

7.13 Bend deformed bars around rollers, not fixed pins.

7.14 Bend deformed bars only once.

7.15 Tolerance and Protective Cove

Tolerance shall be as set out in Clause 12.2.1 of NZS 1900 9.3A.

7.16 The concrete cover shown in the drawings into the surface of main reinforcement.

7.17 Placing and Fastening

Support top steel on high chairs or by other approved means, precast blocks may be permitted.

7.18 Unless otherwise detailed, support slab reinforcement at maximum 1000mm, except reinforcement 10mm in dia. and smaller at maximum 600mm centers.

7.19 Tie reinforcement with not less than 1.25 mm soft black iron wire sufficiently to maintain correct relative positions. Bundle bars should be tied tighter at 500 ctrs with 2.65 mm min. soft wire.

7.20 Laps

Excepting as shown no lapping of reinforcement is permitted without written approval.

7.21 Where lengths of laps are not shown, as for approval.

7.22 Welding

Welding of reinforcement shall comply with 'standard arc welding (minor works)' unless otherwise specified.

7.23 Excepting as shown on welding reinforcement is not permitted without written approval.

7.24 Identify rods or bars to be welded with tags or branding.

7.25 Inspection before Concreting

Before concreting, reinforcement must be inspected by supervising officer. Arrange with Engineer suitable time for inspection before approval. Work done without approval will be rejected.

7.26 Prior approval of cleaning, fabrication and securing reinforcement is subject to the reinforcement being satisfactory at time of concreting.

7.27 Extra will not be paid for remedial work caused by the inspection.

8 DAMP PROOF COURSE

Where shown on drawings, lay under floor slabs on ground 0.5 polythene DPC over sand blinding. Carefully check blinding for any protrusion likely to puncture the DPC. Tape all joints, protrusions, around pipes, tears, etc. with pressure sensitive tape. Carry DPC under thickening in slab and seal DPC to foundations walls. It is essential that the DPC is continuous so that dampness cannot penetrate.

9 CONSTRUCTION AND CONTROL JOINTS

Floor slabs on ground shall be poured to a maximum of 25 M² and length of any side is not to exceed

7.5M. Reinforcement to be continuous and joints shall be well cleaned be in the positions indicated on the drawings. Construction joints in beams shall be generally located at the midpoint of the span; however the Engineer should be notified prior to pouring so that he may approve the location.

10 FOUNDATIONS

10.1 Set Out

The accurate set out of the foundations is very important to the satisfactory construction of the rest of the building. Refer to the Drawing setting out the exact dimensions for this work.

10.2 Footings

Ensure that the bed all footings is on solid bearing, fill soft spots with weak concrete, provide a solid, even, clean base for the pouring of the footings. Pour the footings to the shape and sizes indicated on the structural drawings. Co-operate with the Block layer in the location all starter and construction of the block foundation walls.

11 BEAMS

Ensure that prior to the pouring of concrete, the formwork for the bearing is adequately supported so as to prevent deflection and spreading upon the pouring of the concrete. Pour the beam to the sizes and profiles indicated on the structural drawings.

12 DRAINAGE WORKS

Co-operate with the Drain layer in the construction of the septic tank, inspection chambers, etc., indicated on the drainage plan.

13 BLOCKWORK

Work in and co-operate with the Block layer in the construction of block walls, filing and reinforcing of the same and location of all starters, bars etc.

14 BUILDING - IN

All to co-operate with other trades, space, and position and build in all fixing bolts, pipe sleeves, nailing, locking, chases, conduits, reinforcing, starters, weather bars, etc. as shown on the drawings.

15 TESTING

15.1 Compressing Test

Allow take three concrete test cylinders either (304.8 X 152.4) per concrete batch or as many others as may be directed by the Engineer. These cylinders shall be taken from any random delivery of concrete for the test or as directed by the Engineer and shall be cures on site in conditions as near as possible to those under which the pour they were taken from being cured. The cylinders shall be prepared from a representative sample of the delivery.

15.2 Slump Test

This test shall be made in accordance with the requirements of NZSS 3112. A Slump Test shall be made immediately concreting is started at all times Compression Test samples are taken and at such other times when directed. Slump tests shall be made in accordance with AZSS 3112.

15 PLASTERER

15.1 GENERAL

Refer to the Preliminary and General clauses which also apply to this section of the works.

17 EXTENT OF WORK

The work specified under this section included all applied solid plastering, cement render and hard plaster finish to walls, internally, slab soffits, floor slabs to provide correct grades, with falls to outlets, stairways and for applied finishes as necessary.

18 MATERIALS

18.1 Cement, Sand and Water

Cement shall be normal Portland cement as specified for Concreter. Sand shall be clean, sharp, washed and free from salt or organic matter. All sand is passed through an approved sieve on site prior to mixing. Water shall be of drinking quality.

18.2 Lime

Lime shall be of approved quality run to a putty before use and run through a 20 sieve.

18.3 Waterproofing Additive

Waterproofing liquid for cement shall be Colemaboid No, 1 use and run through a 20 sieve.

18.4 Storage

Store all cement lime and plaster in clean dry areas and use in order of delivery store sand in covered bins or on clean hard surface and cover to prevent intrusion of foreign materials

19 WORKMANSHIP

19.1 Generally

All plasterwork shall be carried out by competent tradesmen. Finish surfaces flat, even, straight, hard and true. Free from imperfections. Finish angles plumb and square and surfaces uniformly textured. Carry render up walls 75mm above finished ceiling lines.

19.2 Surface Preparation

Clean surfaces of dust and loose particles. Ensure that all chasing plugging, rough cutting, pipe sleeves or fixings on, in and through the background are completed before beginning plasterwork. Carry out any dubbing-out-necessary. Provide key for plasterwork on dense, smooth and strong materials by dash coating with a cement rich slurry and fine crushed stone screenings thrown on to the surface to a depth of 3mm - 6mm without smoothing and smoothing and protect from drying out. Before plasterwork commence, wet background surfaces to reduce suction.

19.3 Mixing

Measure materials by volume in gauge boxes and machine mix. Do not use mixes containing cement more than two hours or mixes contain gypsum plaster more than 30 minutes after the addition of water.

19.4 Curing

Prevent rapid drying out of plaster surfaces by spraying with water. Ensure that each coat dries out for at least one day before applying the succeeding coat.

19.5 Protection

Protect all finished surfaces from damage by other trades and leave perfect on completion.

19.6 Control Joints

Form straight deep trowel cut finished with a "V" joint to control between background of different materials and at construction joints.

19.7 Waterproofing Liquid

Shall be "Colemanoid No. 1" or similar and equal used in accordance with the manufacturer's instructions.

20 LAYING

20.1 Floors

Set out floors accurately between skirting graded with falls to drainage outlets as required and bed tiles in 3:1 cement mortar of 19mm minimum thickness. Cut tiles accurately around plumbing and projections. Soak off and remove backing material. Grout floor joints flushed up solid with dry mix of 1:1 sand and cement mixed with waterproofing liquid and well packed.

21 CLEANING

At least 48 hours after laying is completed, scrub down tiles with soap and water.

22 LOCATIONS

Refer to floor plan for location of quarry floor tiles.

23 VINYL TILES

23.1 Materials

Vinyl flooring tiles shall be 300 X 300 X 3mm thick selected vinyl floor tiles of approved manufactures. Contractor to allow for laying and adhesive. Adhesives for vinyl tiles shall be as recommended by the

manufacture for particular application. Spread evenly with the correct notched tool in small areas just ahead of the laying.

23.2 Laying

Ensure that the base surface is thoroughly clean dry before laying vinyl. Carry out tests for dampness by approved means and confer with the manufacturer's representative as to the dryness of the base to suit his products before laying. The builder will be held responsible for any failure of applied flooring due to dampness in the base. Level up concrete surfaces with a rubber based floor leveling compound if necessary or grind to remove rough patches on high spots, remove and loose particles and ensure surfaces are perfectly smooth and clean before laying tiles. Set tiles from centers of each area and scribe to all walls, projections and recesses. Spread adhesive evenly over the sub-floor and lay tiles accurately close butted. Roll tiles with a suitable roller within 30 minutes of laying. Spread adhesive evenly over wall face and fix skirting accurately.

23.3 Finishing

Seal and polish vinyl floors on completion in accordance with the floor manufacturer's instructions, finishing to a uniform low sheen non-lip surface, after removing surplus adhesive and thoroughly cleaning.

23.4 Location

Refer to floor plan for location of vinyl tiles.

24 METAL WORKERS

25 GENERAL

Refer to the Preliminary and General clauses which also apply to this section of the works.

26 EXTENT OF WORK

The work in this section included the supply and fixing of all metal items specified or shown in the drawings or implied.

27 SAMPLES

Submit samples of finishes to metal items for the Owner's approval before work on the items concerned is started

28 PROTECTIONS AND CLEANING

Protect all exposed metalwork during the currency of the works and on completion clean off protective materials, using non-abrasive cleaning methods to avoid damaging finishes. The Builder shall ensure that finished metal surfaces installed or stored on site are protected at all times from physical damage and from cement, chemical or other stains.

29 MATERIALS

29.1 Generally

Materials shall be as specified under the particular items. Mild steel where specified shall comply with SAA specification No. 149 Mild Steel for General Structural Purposes. Galvanizing shall be by the hot dip process giving a coating weight of 32 oz. of pure zinc for external applications and 24 Oz internally.

30 COVERS

Provide and build in reinforced concrete removable covers to pits, pumps and inspection chambers. Fit heavy duty covers to vehicular traffic areas. Finish flush with adjoining surface levels.

30.1 Cast Iron Gratings

Provide and build in light duty cast iron removable gratings to drainage sumps.

31 BRACKETS, PLATES, BOLTS, NUTS, WASHERS, STEEL STUDS ETC.

All items included in this sub-section are to be galvanized. Non- galvanized items may only be used with the Architect's approval, but shall otherwise be rejected.

ROOFER

32. GENERAL

Refer to the Preliminary and General Clauses which apply to this section of the works.

33. EXTENT OF WORK

The work covered in this section includes the supply and fixing to all roof areas of roof coverings, roof plumbing, and insulation and metal claddings as shown on the drawings.

34. Storage of material

Store sheet materials horizontally in a dry area and provide protective covering. Handle carefully to avoid damage to protective coatings.

35. CLEANING

Clean away trimmings, offcuts and other surplus materials from roof areas as they accumulate, clean out gutters and leave clean on completion.

36. ROOFING MATERIALS

36.1 Metal Roof

Supply and screw fix metal roof complete with all fixing. Fix for hurricane conditions in accordance with manufacturer's instructions. Supply and fix all necessary galvanized flashings to required and/ or detailed profiles.

36.2 Insulation

Insulate under all roofs with double sided aluminum foil sisalation. Fit tightly around protrusions and pipes.

36.3 Flashings

Flash all vent pipes and penetrations through roofing materials and leave watertight on completion. Over flash with preflashings. Vertical flashings and capping's shall over flash sections below not less than 50mm. Flashings shall be galvanised.

37. ROOF PLUMBING

37.1 Eaves Gutters

Eaves gutters shall be standard UPVC Marley gutters or as selected. Fix with proprietary brackets as per manufacturer's specification.

37.2 Down Pipes

Down pipes shall be of Class B UPVC 100 dia, complete with all junction bends and fitting required. Adequately support on approved clips. Supply and install grate at rainwater head and sump as detailed.

DRAINLAYER

38. GENERAL

Refer to the Preliminary and General Clauses which apply to this section of the works.

39. EXTENT OF WORK

This work shall include the laying of all storm water, soil and sullage lines, manholes, inspection chambers and septic tank.

40. AUTHORITIES

All work under this trade shall be installed in accordance with the By-laws and Regulations of the Local Authorities. All work shall be carried out under the direction of a licensed drain layer. Obtain all permits and approvals as required.

41. SOIL DRAINS

41.1 Inspection Chambers

Chambers shall be 600mm x depth as required, construction to be of 100mm thick concrete walls and floor reinforced with 225mm mesh or 10mm dia. rods. Provide and fit concrete lids. The drain pipe shall be cut away where it passes through the chamber. The chamber bottom shall be steel floated to fall at a 1:2 gradient towards the pipe, incoming pipes shall discharge above the chamber bottom.

41.2 Septic Tank

10-12 person septic tanks are required.

41.3 Sullage Drains

Lay PVC Class B sullage drains to sizes and locations shown. Lay with minimum cover and falls as for sewer drains. Provide all bends, branches and other fittings necessary for the works. Connect into soak holes as shown.

41.4 Inspection and Testing

All systems shall be tested in the presence of the Architect and the Health Inspector before filling of trenches.

42. STORMWATER

Excavate for and lay agricultural lines in positions shown in drawings. Connect to open natural drainage system. Reform to even falls with minimum grade 1:100. Carry to storm water mains outlet. Re-form existing natural drains to even grade 1:100 minimum. Shape sides of drains to allow for planting grass. Allow for precast concrete pipes of suitable diameter under all buildings, walkways and traffic areas as required or necessary to connect into open drains.

TENDER SUBMISSION CHECK LIST

The Bidders must ensure that the details and documentation mention below must be submitted as part of their tender Bid

Tender Number _____

Tender Name _____

1. Full Company / Business Name:

(Attach copy of Registration Certificate)

2. Director/Owner(s): _____

3. Postal Address: _____

4. Phone Contact: _____

5. Fax Number: _____

6. Email address: _____

7. Office Location: _____

8. TIN Number:

(Attach copy of the VAT/TIN Registration Certificate - Local Bidders Only (Mandatory))

9. FNPF Employer Registration Number: _____ **(For Local Bidders only) (Mandatory)**

10. Provide a copy of Valid FNPF Compliance Certificate (Mandatory- Local Bidders only)

11. Provide a copy of Valid FRCS (Tax) Compliance Certificate (Mandatory Local Bidders only)

12. Contact Person:

I declare that all the above information is correct.

Name: _____

Position: _____

Sign: _____

Date: _____

Submission of Tender

Two (2) hard copies of the tender bids in sealed envelope shall be deposited in the tender box located at the Supply Chain Office at the EFL Head Office, 2 Marlow Street, Suva, Fiji.

Courier charges for delivery of Tender Document must be paid by the bidders.

This tender closes at 4:00 p.m. (16.00hrs Fiji time) on Wednesday 25th March, 2020.

Each tender shall be sealed in an envelope with the envelope bearing only the following marking:

MR 87/2020

Carry out Roof Waterproofing, Guardhouse Construction & Building Refurbishment Works for EFL's Somosomo Hydro Power Station, Taveuni

The Secretary, Tender Committee

Energy Fiji Limited

Supply Chain Office

Private Mail Bag,

Suva

It must also indicate the name and address of the tenderer on the reverse of the envelope.

All late tenders, unmarked Envelopes and envelopes without bidder's name and address on the reverse on the envelope will be returned to the Tenderers unopened. (Bids via e-mail or fax will not be considered).

The bidders must ensure that their bid is inclusive of all Taxes payable under Fiji Income Tax Act and must have the most current Tax Compliance Certificate.

For further information or clarification please contact our Supply Chain Office on phone (+679) 3224360 or (+679) 9991587.

Bidders are requested to submit a:

- Valid Tax Compliance Certificate
- FNPF Compliance Certificate

(Tender Submission via email or fax will not be accepted)