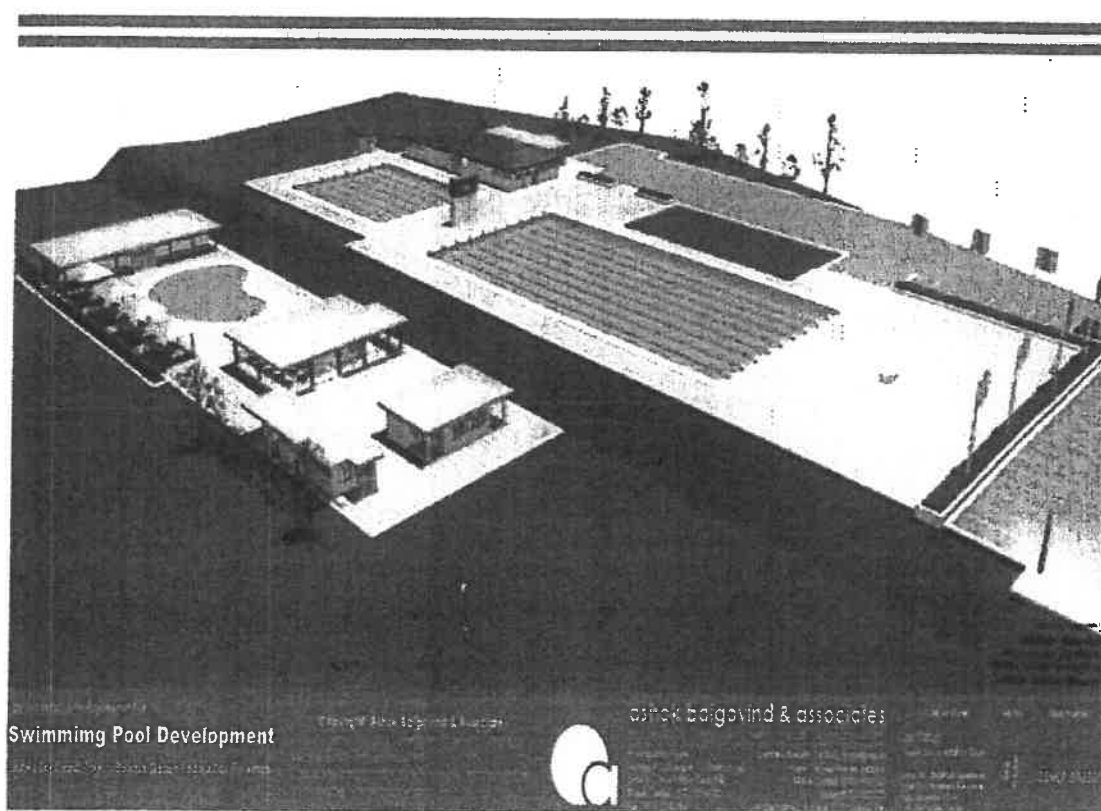


# CONTRACT DOCUMENTS

For

## AQUATIC CENTRE - OLYMPIC POOL COMPLEX



## LAUTOKA CITY COUNCIL LAUTOKA



**ashok balgovind & associates**

**Registered Architects, Engineers & Planning Consultants**

Ph: 3314883 / Fax: 3314884. 1-3 Berry Road, Suva. FTU HQ Complex

GPO Box 15090, Suva, Fiji Islands. E-mail: abasfj@gmail.com

Handwritten signatures and initials.



# AGREEMENT FOR AQUATIC CENTRE, OLYMPIC POOL COMPLEX, LAUTOKA

THIS AGREEMENT is made this 8<sup>th</sup> day of June 2018.

**BETWEEN:** LAUTOKA CITY COUNCIL ("Client") of 169 Vitogo Parade, Lautoka of the one part;

**AND:** METALWORKS & JOINERY LTD a duly registered company with its principal place of business at 1 Veitari Road, Lautoka ("Contractor") of the other part.

(May individually be referred to as "Party" and collectively as "Parties")

## WHEREAS:

- A. The Client or its representative wishes to engage the Contractor to perform the Works and the Contractor agrees to conduct the Works based on the drawing specifications in Appendix B for the Payments in relation to the Project under the terms and conditions set out in this Agreement.
- B. The Parties agree that the Client or its representative engages the Contractor to provide the Works in **Appendix B** according to the 'Terms of Agreement for Works' in **Appendix A**. The Contractor agrees to perform the Works in accordance with its accompanying proposed work plan presented in **Appendix C** ("Work Action Plan").
- C. In consideration of which, the Client or its representative agrees to pay the Contractor the Payments, in the manner set out in **Appendix D**.
- D. The correspondences between Client or its representative and contractor prior to signing of the agreement shall be a part of this contract agreement and set out in **Appendix E**.

The following documents shall form part of this Agreement:

- |                   |   |  |
|-------------------|---|--|
| <b>Appendix A</b> | - | <b>Terms of Agreement for Works and the Standard Contract as amended and Annexed</b> |
| <b>Appendix B</b> | - | <b>Scope of Works &amp; Drawings, technical specifications</b>                       |
| <b>Appendix C</b> | - | <b>Contractor's Work Action Plan</b>   |
| <b>Appendix D</b> | - | <b>Payment Schedule</b>  |
| <b>Appendix E</b> | - | <b>Prior Correspondences between Client or its representative and Contractor</b>     |

In interpreting this Agreement, if any term or provision of the above documents is inconsistent with a term or provision of another document, the term or provision of the document listed first in the list above shall have priority to the extent of any inconsistency.

*[Handwritten signature]* 1



## SCHEDULE

<u>Item No.</u>	<u>Description</u>
Item 1	<u>Contractor</u> Metalworks & Joinery Ltd
Item 2	<u>Payments</u> Three million Nine Hundred sixty-five thousand Two Hundred Dollars Only (\$3,965,200.00) (VIP)
Item 3	<u>Project</u> WORKS FOR THE AQUATIC CENTRE: OLYMPIC POOL COMPLEX FOR THE LAUTOKA CITY COUNCIL
	<u>Site</u> Botanical Garden
Item 4	<u>Commencement Date</u> 18/6/18 Date of signing this Agreement 18 <sup>th</sup> June 2018
Item 5	<u>Anticipated Completion Date</u> - 18 <sup>th</sup> March 2019
Item 6	<u>Liquidated/Delay Damages</u> \$500 per day

## Appendix A

### Terms of Agreement for Works

#### PART 1 - DEFINITIONS

1.1 Unless the context otherwise requires, then in construing this Agreement:

"Agreement" : means the entire Agreement between the Parties and includes the Schedule and any variations,



- (d) a reference to a clause or Schedule is a reference to a clause or Schedule in this Agreement;
- (e) a reference to a Party to a document includes the Party's executors, administrators, successors and permitted assigns and substitutes;
- (f) a reference to a statute, ordinance, code or other law includes regulations and other instruments under it and consolidations, amendments, reenactments or replacements of any of them;
- (g) a reference to money shall be deemed to be a reference to Fijian Dollars;
- (h) the meaning of general words is not limited by specific examples introduced by including, for example or similar expressions;
- (i) a rule of construction does not apply to the disadvantage of a Party because the Party was responsible for the preparation of this document or any part of it; and
- (j) headings are for ease of reference only and do not affect interpretation.

## **PART 2 – DURATION OF AGREEMENT**

- 2.1 This Agreement shall commence on the date of this Agreement and shall terminate on the later of:
- (a) completion of the Works described in Appendix B;
  - (b) completion of the defects liability period (six months after completion); and
  - (c) payment for the Works according to the Payment Schedule at Appendix D,

Unless the Agreement term is varied by agreement in writing between the Parties or terminated in accordance with this Agreement.

- 2.2 The Works shall commence on the Commencement Date or such later date as agreed between the Parties in writing.

## **PART 3 – ROLE OF THE CONTRACTOR**

### **3.1 Professional Standard of Care**

In performing the Works, the Contractor shall:

- (a) carry out the Works with the degree of skill, care and diligence and in a professional and workmanlike manner normally exercised by members of the Contractor's profession engaged in works of a similar nature by providing experienced, qualified and trained personnel;
- (b) take full responsibility for the adequacy, stability and safety of all site operations; and





#### **4.2 Give Notice of Matters Likely to Change Scope or Timing of Works**

If the Client or its representative becomes aware of any matter which may be reasonably expected to change the scope or timing of the Works the Client or its representative will give written notice to the Contractor.

#### **4.3 Architect**

- (a) Ashok Balgovind & Associates has been appointed as Architect that has the technical knowledge and expertise to carry out the monitoring process during the Agreement shall work on behalf of the Client or its representative.
- (b) The Architect shall act solely as inspector on behalf of the Client or its representative to ensure that the Contractor has met the required standard of workmanship and the Works comply with any relevant codes.
- (c) The Architect shall supervise the performance of the Works in accordance with the Client's or its representative policy and will liaise with the Contractor regarding the progress of the Works for the purposes of payment in accordance with Appendix D.
- (d) If in the opinion of the Architect, the Contractor is not performing the Works in accordance with this Agreement and Appendix B, the Architect may notify the Contractor and direct the Contractor to perform the Works in accordance with this Agreement. The Architect may issue any instructions in writing to the Contractor that the Architect (acting reasonably) deems necessary to complete the Works to the satisfaction of the Client or its representative and the Contractor shall comply with the instructions issued by the Architect.

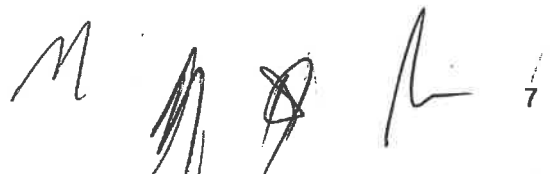
#### **4.4 Review**

The Client or its representative will review the Contractor's Works from time to time and may change the scope of the Works without any change in the Payment unless the Parties agree in writing on any entailing change in the payment. Any additional works shall be undertaken only after due agreement in writing between the Parties.

### **PART 5 – PAYMENTS**

#### **5.1 Client to make Payment**

- (a) Subject to paragraph (b) below, in consideration of the promise by the Contractor to perform the Works, the Client or its representative promises to pay the Contractor at the times and in the manner set out in Appendix D.
- (b) Payment is subject to authorisation by the Permanent Secretary of the Client or its representative following confirmation by the Architect that the Works have been completed as required in Appendix B to a standard acceptable to the Client.





### **6.3 Practical Completion Certificate**

Upon completion of all the Works to a standard acceptable to the Client or its representative (at the Client's or its representative sole discretion), the Architect shall arrange to issue a certificate to the Contractor to certify that the Works have been satisfactorily performed, subject to rectification of any defects ("**Practical Completion Certificate**").

### **6.4 Removal of Equipment**

Within 14 days after the date the Practical Completion Certificate is issued, the Contractor shall remove all temporary works, construction plant and equipment and scrap material from the Site. If the Contractor fails to comply with the preceding obligations in this clause, the Client or its representative may have the actions referred to in this clause carried out by a third party and the Client or its representative shall certify the cost incurred as moneys due from the Contractor to the Client or its representative.

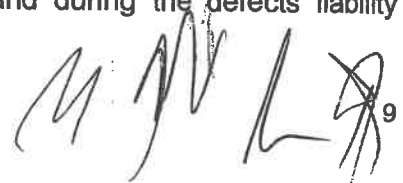
### **6.5 Job site safety**

- (a) The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to employees on the Works and other persons who may be affected thereby.
- (b) The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury, or loss.
- (c) The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

## **PART 7 – SCOPE OF LIABILITY**

### **7.1 Defects Liability Period**

- (a) The defects liability period shall commence on the date the Practical Completion Certificate is issued and shall be for a period of six (6) months. At the commencement of Defect Liability Period, the retention sum shall be reduced to 2.5% of the Contract Sum.
- (b) The Contractor shall carry out rectification during the defects liability period at times and in a manner causing as little inconvenience to the Client or its representative as is reasonably possible. Within six (6) months from the commencement of the defects liability period, the Contractor shall rectify all defects identified at the commencement of and during the defects liability period.

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- (iii) other insurance appropriate to the Contractor's business, assets and operations (such as business interruption and professional indemnity insurance); and
  - (iv) any other policy of insurance which the Client acting reasonably may from time to time require the Contractor to effect and maintain with an amount of cover and on such terms as the Client may reasonably specify.
- (b) The Contractor must ensure that each insurance policy referred to in clause 7.3(a) ('Insurance Policy'):
  - (i) is with an insurer approved by the Client;
  - (ii) is on terms and for an amount specified by the Client (or, failing specification, that a prudent person would obtain and maintain in the circumstances);
  - (iii) (except for an Insurance Policy for professional indemnity, employers' liability or workers' compensation insurance) names the Client as an insured; and
  - (iv) covers events occurring while the policy is current regardless of when claims are made.
- (c) The Contractor must:
  - (i) pay all insurance premiums on any policies referred to in this clause 7.3 not later than the due date for payment specified in the first premium notice or demand for payment;
  - (ii) on request, promptly deliver to the Client a copy of each Insurance Policy and any variations made from time to time;
  - (iii) not do or allow anything to be done or omit to do anything which might cause an Insurance Policy, or a claim under it, to be prejudiced;
  - (iv) not materially change the cover under an Insurance Policy without the Client's consent; and
  - (v) notify the Client immediately if something happens which could give rise to a claim under or could prejudice any policy or allow the insurer to cancel the relevant policy.
- (d) If:
  - (i) the Contractor fails to take out or to keep in force an Insurance Policy as required in this clause 7.3; or
  - (ii) the Client reasonably determines that an insurer either may become entitled to cancel or avoid an Insurance Policy or may not be capable of meeting a claim under the Insurance Policy,

the Contractor agrees that the Client may do anything it determines necessary or desirable to take out, maintain or replace the Insurance Policy at the Contractor's cost. The Client is not obliged to do anything under this clause.





### 9.3 Breach of Agreement

Breach of this Agreement includes but is not limited to the following:

- (a) failure of the Contractor to commence the Works by the date stipulated in this Agreement;
- (b) where the Contractor abandons the Works and the Site prior to the Anticipated Completion Date and this is verified by the Client or its representative;
- (c) where the Contractor consistently refuses to commence the Works within one week of the Commencement Date;
- (d) where the Contractor consistently refuses to execute the Works in accordance with the details of the Works as described in Appendix B;
- (e) if the Contractor performs the Works that is below the standard that is required by the Client or its representative ;
- (f) if the Contractor without reasonable cause fails to proceed diligently with the Works or wholly fails to follow the Client's instructions; and
- (g) the failure of the Contractor to make good defective Works.

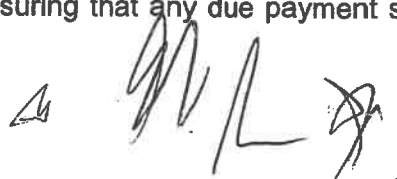
### 9.4 Immediate termination

The Client or its representative may terminate this Agreement immediately by written notice if the Contractor:

- (a) engages in any illegal activities, including but not limited to bribery and corruption or commits any criminal offence pursuant to law during the performance of this Agreement;
- (b) being an individual, at any time be adjudged bankrupt or has a receiving order for the administration of the Contractor's estate made against the Contractor or takes any proceeding or liquidation or composition under the *Bankruptcy Act 1944*, or makes any conveyance or assignment of the Contractor's effects or composition or arrangement for the benefit of the Contractor's creditors, or purports so to do;
- (c) being a company, passes a resolution or the court makes an order for the liquidation of its affairs, or a receiver or manager on behalf of the debenture holders shall be appointed or circumstances shall have risen which entitles the court or debenture holders to appoint a receiver or manager or the Contractor becomes the subject of winding-up proceedings; or
- (d) fails to be able to pay its debts when due.

### 9.5 Discretionary

The Client reserves the right to terminate this Agreement for any reason whatsoever with 7-days' notice in writing to the Contractor, ensuring that any due payment shall be settled.

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- (b) In the case of Client Representative to: 169 Vitogo Parade, Lautoka

In the case of Contractor to: 1 Veitari Road, Lautoka

- (c) That a Party shall notify the other Party to this Agreement of a change to its name, relevant addressee, address or fax number for the purposes of clause 10.2 provided that such notification shall only be effective on:

- (i) the date specified in the notification as the date on which the change is to take place; or
- (ii) if no date is specified or the date specified is less than 5 business days after the date on which notice is given, the date falling 5 business days after that date.

### **10.3 Amendments**

This Agreement may be revised, amended or modified at any time after consultation and mutual agreement in writing between the Parties and shall enter into force on such date as may be determined by the Parties and shall form an integral part of this Agreement. Consent of the Parties to any amendment must be confirmed in writing.

### **10.4 Assignment**

The Contractor shall not assign any obligation under this Agreement to other personnel or sub-contract any portion of the Works without the prior written consent of the Client or its representative.

### **10.5 Entirety of the Agreement**

This Agreement constitutes the complete agreement between the Parties incorporating all previous agreements or representations.

### **10.6 Environment**

The Contractor must ensure that all rubbish is cleared from the Site after completion of the Works.

The Contractor shall take all reasonable steps to protect the environment (both on and off the site) and to limit damage and nuisance to people and property resulting from noise, disposal of discarded materials, and other results of its operations while the Works are in progress. The Contractor will not interfere with other works that may be ongoing at the site and will consult the Client as and when required.

### **10.7 Independent Contractor**

The Contractor's relationship with the Client or its representative is one of independent contractor. Nothing in this Agreement shall create an employment or agency relationship, nor shall the Contractor act as an agent or employee of the Client representative. The Works are to be performed solely by the Contractor. The



- (ii) disclosure is required by law or a regulatory body (including a relevant stock exchange); or
  - (iii) disclosure is made to an advisor of the Contractor or a person who must know for the purposes of this Agreement on the basis that the advisor or person keeps the information confidential.
- (b) The Contractor shall not publish or disseminate information derived from the implementation of this Project without prior notification of and written approval of the Client or its representative
- (c) This clause survives termination of this Agreement.

#### 10.11 Governing Laws

This Agreement shall be governed by and construed in accordance with the Laws of Fiji.

#### 10.12 Force Majeure

- (a) Neither of the Parties shall be considered in default in the performance of the obligations under this Agreement if the default is due to force majeure. *Force majeure* shall be any cause beyond the control of the Parties which they could not reasonably have foreseen and guarded against, including but not limited to strikes, lockouts, earthquakes, fires, riots, interference by civil or military authorities, compliance with the regulations or order of any government authority or war.
- (b) In the event of *force majeure*, the Parties shall discuss and agree upon suitable measures to be taken to eliminate, mitigate and minimise the unfavourable consequences of the force majeure.

#### 10.13 Performance Bond

- (a) The Contractor will be required to provide a 10% in two parts of 5% performance bond security, within fourteen (14) days of the written acceptance of the Contractor's tender by the Client for the total sum of \$396,520.00 (VIP) (Three Hundred and Ninety six thousand, Five Hundred and Twenty dollars) in the form of a bank guarantee or insurance bond furnished by a recognized trading bank company (acceptable to the Client and in accordance with the Client of Finance's 'Determination of Performance Bonds' as amended from time to time) represented and with offices in Fiji ("**Performance Bond**"). The Performance Bond shall ensure payment of any obligations, penalty, liquidated damages or expenses for which the Contractor may become liable to the Client and shall be submitted on the standard form contained in the contract documents or any other form acceptable to the Client.
- (b) One part of the Performance Bond of \$198,260.00 will be returned within 14 days of Practical Completion and the second part of \$198,260.00 will be returned to the Contractor within 14 days of the expiration of the Defects Liability Period and certification of final completion by the Architect.



#### **10.16 Safety**

- (a) The Contractor shall ensure and take all necessary steps to safeguard the safety of its employees and of the Client and others on the premises in the implementation of the terms of this Agreement. This includes protection against all risks to its health while on the premises of the Client or work site and also ensuring that in the event of any such risk being perceived, adequate and prompt disclosure is made to the Client while at the same time steps are taken by the Contractor to ameliorate the health and safety hazards.
- (b) The Contractor shall require any subcontractor to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of any sub-contractor's work, which the Contractor assumes toward the Client.
- (c) The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of this Agreement.
- (d) The Contractor shall take reasonable precautions for the safety of, its employees and shall provide reasonable protection to prevent damage, injury or loss to employees in relation to the performance of the Works and other persons who may be affected thereby.
- (e) The Contractor shall comply with and give notices required by applicable laws, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.
- (f) The Contractor shall erect and maintain, as required by existing conditions and performance of this Agreement, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

#### **10.17 Suspension of works**

- (a) The Client may, by written notice of suspension to the Contractor, instruct the Contractor to suspend the performance of the Works if an event or circumstances occurs which, in the opinion of the Client, may or will substantially delay or hinder the performance of the Works but short of an uncontrollable event. This provision may only be exercised;
  - (i) after consultation with the Contractor;
  - (ii) so that during the period of suspension communication between the Client and the Contractor shall be maintained; and
  - (iii) on the understanding that the Contractor shall not be obliged to perform any of the Works during the period of suspension and agreed payment remains the same.

#### **10.18 Disruption of services**

- (a) The Contractor shall ensure that the Works shall be conducted with a minimum disruption of Works to the staff and stakeholders of the Client especially during implementation stages.

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### **APPENDIX C**

(Work Plan Attached Below)

### **APPENDIX D**

#### **PAYMENT SCHEDULE FOR WORKS**

Subject to Part 5, in conducting this activity, the Contractor will be paid accordingly to stages in the project activity outlined. Total amount for **\$3,965,200.00(VIP)**.

**Note: The above cost may be final cost for the completion of works; nothing shall be paid extra over the quoted cost.**

### **APPENDIX E**

List of Correspondence:

1. Approval Documents for Revised Tender
2. Revised tender for Metalwork
3. Company Registration

AG MDA/L



APP-B

**CONTRACT:** **ASHOK BALGOVIND & ASSOCIATES**  
**AQUATIC CENTRE - OLYMPIC POOL**  
**LAUTOKA CITY COUNCIL, LAUTOKA**

**NOTICE TO CONTRACTORS NO 1**

This notice shall be read in conjunction with and shall form part of the specification for this contract. Where conflict exists between the requirements stated in this notice and in the specification, the requirements herein shall take precedence.

1. **SITE**

- a. The site is at Botanical Garden, Lautoka. Refer to drawings.
- b. Water supply is available on the road. Allow for connection and pay for usage. Provide protection to meters. .
- c. Electricity is available in the area. Allow for connection.
- d. All Tenderers shall inspect and examine the site; it's surrounding, and shall satisfy himself before submitting his tender. This is being leveled to the required platforms by Lautoka City Council

2. **COMPLETION TIME**

Time of completion for building and site works shall be **10 months** from the date of acceptance of the tender. The Contractor shall complete the work within the time. Works to be in phases as shown in the work schedule.

3. **CONTINGENCY SUM**

Allow the contingency sum of **ONE HUNDRED THOUSAND DOLLARS (\$100,000.00)** to be used only as the Architect may direct in writing. The whole or any unexpended portion shall be deducted from the contract sum at completion.

4. **PROJECT ARCHITECT AND ARCHITECT'S ASSISTANTS AND OTHER CONSULTANTS**

- a. The Project Architect for this contract will be Mr. Ashok Balgovind and Assisted by Rohitash Balgovind. The Architect may send his Representatives on the site for inspection / supervision who shall be given reasonable access and assistance by the Contractor.
- b. The Engineer for the project shall be Vijay Krishnan of Engineered Designs.
- c. The Quantity Surveyor shall be Quantech Pacific
- d. Hydraulic Consultant shall be Garry Wenck of Leisure Engineering Pty Ltd

5. **PROPERTY PROTECTION**

The contractor's attention is drawn to the relevant clause of the specification. Ensure that damage is not done to existing structure and services especially water, electricity.

6. **WATER SUPPLY**

The contractor is to make his own arrangement for the supply of water connection for the purpose of carrying out construction work during contract period from existing water supply on site. Water mains of dia 100 is to be procured from the mains. Piping for fire hose reel to be dia. 25 galv. pipe as per FNA requirements and pipes to be installed by main Contractor to fit hose supplied and fixed by equipment supplier. Contractor to pay for all charges for the mains supply and connection (except meter deposits)

M N S R



7. **DAMAGES FOR LATE COMPLETION AND FOLLOWS**  
A sum of \$500.00 (FIVE HUNDRED DOLLARS) per working day in the event of works / completion exceeds the completion time or any extended completion date. Refer to clause 2. (6 days a week)
8. **CONDITIONS OF CONTRACT**  
"The Fiji Standard Form of Building Contract - without quantities, private" shall apply over this contract except for:
- All items that are specially detailed and required under all the "Notices to Contractors" and "Tender Forms" and "Specification" for the above contract shall be preferred and shall override.
  - The payment shall be monthly per measure of work by the Architect.
  - The "fluctuations" Clause shall not apply here as the contract is "lump sum".
  - A "Quantity Surveyor" shall be called in as seen necessary by the Architect and if agreed upon and shall be paid by the owner.
  - The following clauses of the Fiji Standard Form of Building Contract are to be deleted and shall not be applicable. Clause 27, 28, 30, 31 where it refers to discounts.
9. **EXCAVATED MATERIALS**  
While doing excavation if the Contractor finds any residuous material like trees, timber etc in the ground then these shall be removed and back filled with approved fill to required level. Any excavated materials when digging pools shall be carted to Nadovi Park by contractor.
10. **CONTRACT SUM**  
The main contract shall be "lump sum" and no fluctuation shall be allowed in the rates. Only regulatory changes shall be allowed.
11. **PAYMENT**  
Shall be monthly per measure of work by the Architect and certified by the Architect. It is to be noted that once contractor has mobilized and started work on site he is eligible to claim 10% of Project Cost as 1<sup>st</sup> Payment which is to be deducted in your four consequent payments.
12. **RETENTION**
- A sum of 5% to be retained from each progress payment up to the stage where the job is given "Provisional completion".
  - At this stage, the retention shall be kept at 2.5% as "Maintenance Retention" for the maintenance period or until such time as the Architect gives the Final Certificate.
13. **MAINTENANCE PERIOD**  
Maintenance period shall be 6 months from the date of Architect's "Provisional completion" Certificate.
14. **INSURANCE & WORKMEN'S COMPENSATION**  
The contractor shall take out all the necessary Insurance and to allow for these in his tender. Insurance for damage by hurricane is a must.
15. **EXTENTION OF TIME**  
Extension of time may only be granted in accordance to Conditions of Contract and notice to Contractors' hereby. No extension of time due to existing local or statutory holidays falling within the Contract period shall be entertained.





16. **TENDER DEPOSIT**

Tender deposit shall be forfeited if the contractor, who is awarded the contract, fails to realize the contract.

17. **ELECTRICAL WORKS**

Electrical Tender will be called separately and he will be taken on as nominated sub-contractor. The sub-contractor shall carry out the electrical works as detailed. He shall allow for underground inlet of required size. The main contractor is still held responsible for the works of his Sub-Contractor (s). The work done shall conform to the FEA wiring rules. All electrical gadgets used shall be of standard quality and approved by the Architect. Electrical contractor to allow for placing of sleeves in beams where needed prior to pouring.

18. **BOND**

Bond is 10% of Contract sum.

19. **PHASING OF WORK** (where applicable)

Contractor is to phase out work in consultation with owner and Architect as shown in Tender documents

20. **AMBIGUITY**

Any ambiguity should be resolved prior to tendering to ensure these are adjusted in the contract sum.

Ambiguity or clarification resolved after the Contract signing shall be as decided upon by the Architect and no variation shall be paid for any work that is deemed to be necessary to complete the work in the contract.

21. **ALCOHOL OR OTHER DRINKS**

No Alcohol or grog and drinking of alcohol will be allowed to be consumed on the site on the job site during the working hours or any extended working hours. .

22. **PRICES**

The prices are valid for 3 months plus the contract period and the extended contract period.

23. **SITE CARE**

The contractor is responsible of taking care of the site from the date of starting of contract to the end of his contract.

24. **WORK PRESCRIPTION**

The following are to be noted:

24.1 **SETTING OUT BY SURVEYOR**

The contractor is required to have the buildings and the swimming pools setting and dimensions checked, certified by a registered Surveyor in relation to the boundary. He shall also provide the levels for setting out from the DATUM provided on survey plans. The contractor may procure the services of Surveyors who have pegged out the site.

24.2 **CONCRETE FOOTPATH**

The contractor is to keep clear the footpath and driveway for neighboring property at all times. They are to fence off the whole site to ensure safety requirements.

24.3 **TILE**

Tiles are to be laid as of the size, quality, color pattern mentioned in the contract drawings or to detail supplied by the Architect. Contractor to pay particular attention to the size, color with of tile for pools to ensure they are as required by the pool design as given in the information





sheets. Particular attention is to be given to necessary additives water proofing agents required to need for pool apron tiling

24.4 **JOINERY AND PARTITIONING**

**General**

The whole of this work shall be done in accordance with the best trade practice. The nature of works demands a high level of proficiency.

24.5 **TIMBER**

All framing timbers shall be structurally sound and free from knots or other defects where exposed. All timbers used shall be dried of required strength.

24.6 **NAIL AND SCREWS**

All nails in exposed work shall be punched past flush and the holes filled with putty and painted nails.

24.7 **JOINERY FINISHING**

All joinery and finishing shall be made, framed and finished in strict accordance with the drawings and general specification:

- surfaces must be sanded and approved by the architect before painting is commenced.
- if any joinery showing warping, splitting or shrinkage before the end of the maintenance period, such joinery shall be taken down, refitted and redecorate or new joinery put in place. All work disturbed shall be made good.

25. **NOMINATED SUBCONTRACTORS**

Shall be nominated by the Architect and are declared to be employed by the Contractor. The contractor shall provide them with their necessary requirements in order to smooth completion of the project.

The main contractor shall be responsible for works, which are not completed by the sub-contractor, and in case the delay exceeds the completion time then the relevant clauses of the contract shall apply to both (subcontractor and contractor).

The contractor or his sub contractors shall read and understand the details and drawings before commencing or any work, and in case of any faults or misplaced details, the architect shall confirm these in writing before further work is carried out. The main contractor shall execute the contract approved by the Architect, with their sub-contractors.

26. **ADDITIONAL COPIES**

Three copies will be provided to contractor. Additional copies of the documents may be procured after payment of the charges at to be prescribed by the Architect.

27. **LATE TENDER**

Any tender arriving after closing date and time shall not be accepted.

28. **LIENS**

The contractor must note that the suppliers and sub-contractors are to be appropriately paid.

If a supplier or a sub-contractor presents to the Architect a 'liens' claim on the project and he (Architect) is convinced or satisfied of the supplier, subcontractors claim, to ensure smooth flow and completion of the project, this payment may be made direct and deductions made from the payment to contractor.

29. **CASH DISCOUNT**

Delete all aspects of cash discounts.

29.1 Clause 27 Delete all 2.5% cash discount to nominated sub-contractors.

29.2 Clause 28 Delete all 5% cash discount to nominated suppliers.


29.3 Clause 30 Delete all cash discounts to nominated Sub-Contractors and Nominated suppliers.



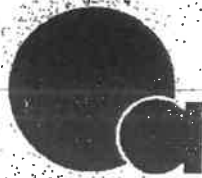


30. **TREE PRESERVATION (where Applicable)**  
Contractor to protect and preserve existing trees shown and remove only those that come directly in the way of construction. Where it say "trim" this is to be done as directed to ensure the tree remains at no more than 3m in height or "diameter".
31. **HEALTH & SAFETY ACT**  
The contractor is to ensure complete compliance with Health & Safety Act and shall take full responsibility of non-compliance. The contractor shall also ensure that all workers on site are safely equipped with suitable footwear & hard-hat. A competent foreman to be on site at all times. He shall exonerate the owner and the Architect from any responsibility for any misdoings on site.
32. **HURRICANE INSURANCE CERTIFICATE**  
The contractor to carry out all works required for Hurricane Certificate by Engineers. He is to procure the certificate from the Engineers
33. **SIGNAGE**  
Contractor to provide 4.8m x 1.2m signboard to detail provided by Architect. It shall be on screen paste with clear graphics.
34. **SITE OFFICE**  
The Contractor to provide a 5m x 3.6m x 3m site office with toilet and HB and sink and Air condition and appropriate windows with view to site.
35. **PENETRATION FOR PIPING, VALVES ETC.**  
The main contractor to allow for forming of penetration, placing of pipes and valves etc. in the structure by hydraulics suppliers etc. He is to ensure water sealing of the fitting.
36. **FULL OR PART TENDER**  
You may tender for full or part of the tender. You have to specify which part you are tendering by filling all details for that part in the schedule in Annexure A.

**Note:** PC Sum to be included in your tender.







# ashok balgovind & associates

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29<sup>th</sup> March 2017

The Manager

Dear Sir

Re: **AQUATIC CENTRE: OLYMPIC POOL COMPLEX FOR LAUTOKA CITY COUNCIL - NOTICE TO CONTRACTORS 2**

**Please Note**

1. Item A - Concrete post CX in lieu of steel post Also truss in IT-01 truss (page IT05) is truss 3 and 3A (not 5,6)
2. Item B - RB1 over 150 wall and 200 UB 30 in open space at ends of building over the showers on sheet IT-11 plate size is 350 x 200 x 12 mm (IT 12) with 4-M16 bolts to fix UB. Truss in Truss 1 and 1A (Not 2) on page IT-12
3. Item 3 - IT 13-18 instead of RB 2 truss 3A  
Make 200 x 100 RHS where it says RB 2 to support truss 3 and fixing as for UB.  
Plate fix purlins to standard details given  
Mark 3A in short truss
4. Item F - Sheet IT-19 - floor is 125mm thick (not 100)  
For NC in lieu of pipe post at corner  
Sheet IT-22 - fascia brace dia 37 galv.  
Roof brace M16 with tightening end bolt at top chord level.  
Vertical steel dia 12 at 400cfs (not 600)  
Sheet IT-23 - Detail 2 - Truss fix as shown in enlargement not as in section and detail 1 and detail 2.  
Base plate to be 300 x 120 x 12mm fixed with 2-M16 anchor bolts.  
Sheet IT-25 - fixing 12U bolt to be replaced by M16 bolts with 75 x 75 x 6 L plates welded on each side. (section P-P)
5. Item F - Sheet IT-30 Allow and show TVGT and connect all GR to GT then to IC  
Sheet IT-31 Provide IC. Show TV on elevation  
Sheet IT-32 Reconfigure truss to allow for 40 x 40 struts to meet on top of beam and fix top chord to beam with 75 x 75 x 6mm L  
Floor to be 125 thick  
Sheet IT-33 Floor to be 125 thick

Ashok Balgovind (B.Arch., A.N.Z.I.A., M.F.A.A.)  
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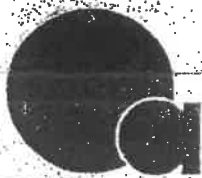
- Sheet IT-34 Note – Truss 4 and 4 A is similar to Truss 3 and 3A except different configuration  
page IT32 outrigger to be 150 x 75 fixed to beam with 4- diameter 12 anchor bolts with 200 x 200 x 10mm MS plate fix to beam  
Delete outriggers at corners
6. Item Q      Sheet CT01 -QT – Quarry tiles on floor and Terrace  
Sheet CT 05 -horizontal reinforcement is dia 12 (not dia 16)  
All Vertical reformed is dia 12 @ 400 crs  
All cavities grouted  
Sheet AO5 Block binding corner is reinforced with 3 – dia 12  
And others (not dia 16)  
And 1 – dia 12 (not 1- Dia 16) at door and windows opening  
Dia 75 column to have 15m mortar pak.
7. Apron grating      All grating to be galvanized (not stainless steel)  
Pool grating      Pool edge grating can be polypropalene
8. Cover batten      Cover batten to all ceiling shall be ex 75mm to 25mm to all building unless shown otherwise.
9. Concrete strength      For building – 25mpa  
For pools, yard, Apron Driveway & Carpark – 30mpa
10. Roof      All roof to be 0.48 trimdek color bond.
11. Security mesh & doors      All building to have security mesh
- Windows to have 50 x 50mm mesh in 40 x 40mm galvanized tubing fixed to wall with dia 10 bolts at 400 crs with 5 mm galvanised plates and 5
  - All doors to have 50 x 50 galvanised mesh in 50 x 50 frame with 3 x 100 x 40 robust hinges and dead lock.
12. Floors to all building      (except pump houses). All building floors to be 125 mm reinforced with 665 mesh.
13. Truss hold down      - All Truss to be fixed with 2 – 75 x 75 x 6 mm L brackets fixed to beam with 2 – M16 bolts

Yours faithfully

  
**ASHOK BALGOVIND**







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Fax : 331 4884 Email: abas\_fj@hotmail.com

4<sup>th</sup> June 2017

The Manager

Dear Sir

Re: **AQUATIC CENTRE: OLYMPIC POOL COMPLEX FOR LAUTOKA CITY COUNCIL- NOTICE TO CONTRACTORS 3**

Please note the following clarifications

1. **Ceiling in terraces**  
Ceiling in terrace to be 6m cement board on 100 x 50 ceiling joists at 600-900crs with 50 x 50 nogging at 600crs, unless shown otherwise
2. **Item HD - Hydraulic in part 3**  
Please note this section is for all pipes to and from the pools to pump rooms, balance tank etc, and its connections. Also the valves etc. that go into the pools etc. and the inlet and outlets in the pool
3. **PC Sum (PC1)**  
PC1 Pool pumps etc.  
This is for pumps etc. that go into the pump house etc. with chemical tanks etc. this is PC and will be procured later.
4. **PC Sum (PC2) for pool equipment**  
This is for electronic equipment and requirements for competition and will be procured later.
5. **Size of Pump Rooms**  
Please note the change of size of pump rooms as given in the hydraulics details. (MR1 and MR2). The sizes are amended accordingly as per amended drawing attached. Also note no drop in floor. Note truss change from 100 x 50 truss to 150 x 75 RHS and 125 x 75RHS (attached)
6. **Apron is 150 thick reinforced with 665 mesh.**
7. **Driveway and Carpark**  
Reinforce with 603 instead of 665/605.
8. **Galvanized pipe post**  
Diameter 75 for building post - Grade A  
Diameter 50/Diameter 37-38 for building and fence - Grade B

Yours faithfully

  
**ASHOK BALGOVIND**

Ashok Balgovind (B.Arch., A.N.Z.I.A., M.F.A.A.)  
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APP - B  
(ii)  
Appendix

## Appendix

Defects Liability Period [if none other stated is 6 months from the day named in the Certificate of Practical Completion of the Works]

Clause

15, 16 and 30 6 months

Insurance cover for any one of occurrence arising out of one event.

19 (1) (a) \$1,000,000.00

Percentage to cover Professional fees

20 [A] ---

Date for Possession

21 to be decided 18/6/18

Date for Completion

21 to be decided as per Condition of Contract 18/3/19

Liquidated and Ascertained Damages

22 at the rate of \$500.00 per day

Period of delay:<sup>17</sup>

(i) by reason of loss or damage caused by any one of the contingencies referred to in clause 20 [A0 or clause 20[B] (if applicable)  
(ii) for any other reason

26 ---

Prime cost sum for which the Contractor desires to tender

27 (g) ---

Period of Interim Certificates [if None stated is one month]

30 (1) Monthly

Retention Percentage (if less than five per cent.)<sup>18</sup>

30 (3) 5%

Period of Final Measurement and

30(5) 6 months

Valuation [if none stated is 6 months from the day named in the Certificate of Practical Completion of the Works].

Percentage Additions

31E ---

<sup>17</sup> it is suggest that the periods should be (i) three months and (ii) one month. It is essential that periods be inserted since otherwise no. period of dealt be prescribed

<sup>18</sup> The percentage will be five per cent unless a lower rate is specified here.

M M L B



# Fiji Standard Form of Building Contract

**without** quantities  
**private** edition 1978



## The Conditions hereinbefore referred to

Contractor's  
Obligations.

- 1 (1) The Contractor shall upon and subject to these Conditions carry out and complete the Works shown upon the Contract Drawings and described by or referred to in the Specification and in the Articles of Agreement and these Conditions (which Drawings, Specification, Articles of Agreement and Conditions are hereinafter called 'the Contract Documents') in compliance therewith, using materials and workmanship of the quality and standards therein specified, provided that where and to the extent that approval of the quality of materials or of the standards of workmanship is a matter for the opinion of the Architect, such quality and standards shall be to the reasonable satisfaction of the Architect:

(2) If the Contractor shall find any discrepancy in or divergence between any two or more of the following documents, including a divergence between parts of any one of them or between documents of the same description, namely:

- (i) the Contract Drawings,
- (ii) the Specification,
- (iii) any instructions issued by the Architect under these Conditions (save insofar as any such instruction requires a variation in accordance with the provisions of clause 11 (1) of these Conditions), and
- (iv) any drawings or documents issued by the Architect under clause 3 (3), clause 3 (4) or clause 5 of these Conditions

he shall immediately give to the Architect a written notice specifying the discrepancy or divergence, and the Architect shall issue instructions in regard thereto.

Architect's  
Instructions.

- 2 (1) The Contractor shall (subject to sub-clauses (2) and (3) of this Condition) forthwith comply with all instructions issued to him by the Architect in regard to any matter in respect of which the Architect is expressly empowered by these Conditions to issue instructions. If within seven days after receipt of a written notice from the Architect requiring compliance with an instruction the Contractor does not comply therewith, then the Employer may employ and pay other persons to execute any work whatsoever which may be necessary to give effect to such instruction and all costs incurred in connection with such employment shall be recoverable from the Contractor by the Employer as a debt or may be deducted by him from any monies due or to become due to the Contractor under this Contract.

(2) Upon receipt of what purports to be an instruction issued to him by the Architect the Contractor may request the Architect to specify in writing the provision of these Conditions which empowers the issue of the said instruction. The Architect shall forthwith comply with any such request, and if the Contractor shall thereafter comply with the said instruction (neither party before such compliance having given to the other a written request to concur in the appointment of an arbitrator under clause 33 of these Conditions in order that it may be decided whether the provision specified by the Architect empowers the issue of the said instruction), then the issue of the same shall be deemed for all the purposes of this contract to have been empowered by the provision of these Conditions specified by the Architect in answer to the Contractor's request.

(3) All instructions issued by the Architect shall be issued in writing. Any instruction issued orally shall be of no immediate effect, but shall be confirmed in writing by the Contractor to the Architect within seven days, and if not dissented from in writing by the Architect to the Contractor within seven days from receipt of the Contractor's confirmation shall take effect as from the expiration of the latter said seven days.

Provided always:

- (a) That if the Architect within seven days of giving such an oral instruction shall himself confirm the same in writing, then the Contractor shall not be obliged to confirm as aforesaid, and the said instruction shall take effect as from the date of the Architect's confirmation, and
- (b) That if neither the Contractor nor the Architect shall confirm such an oral instruction in the manner and at the time aforesaid but the Contractor shall nevertheless comply with the same, then the Architect may confirm the same in writing at any time prior to the issue of the Final Certificate, and the said instruction shall thereupon be deemed to have taken effect on the date on which it was issued.



3 (1) The Contract Drawings, the Specification and the Schedule of Rates hereinafter referred to shall remain in the custody of the Architect so as to be available at all reasonable times for the inspection of the Employer or of the Contractor.

Contract documents.

(2) (a) Immediately after the execution of this Contract the Architect without charge to the Contractor shall furnish him (unless he shall have been previously furnished) with—

- (i) one copy certified on behalf of the Employer of the Articles of Agreement and of these Conditions,
- (ii) two copies of the Contract Drawings, and
- (iii) two copies of the Specification.

(b) Immediately after the execution of this Contract the Contractor without charge to the Employer shall furnish the Architect (unless he shall have been previously furnished) with a schedule of the rates upon which the Contractor's estimate was based. Such schedule is hereinafter referred to as 'the Schedule of Rates'.

(3) As and when from time to time may be necessary the Architect without charge to the Contractor shall furnish him with two copies of such drawings or details as are reasonably necessary either to explain and amplify the Contract Drawings or to enable the Contractor to carry out and complete the Works in accordance with these Conditions.

(4) The Contractor shall keep one copy of the Contract Drawings, one copy of the Specification, and one copy of the drawings and details referred to in sub-clause (3) of this Condition upon the Works so as to be available to the Architect or his representative at all reasonable times.

(5) Upon final payment under clause 30 (6) of these Conditions the Contractor shall if so requested by the Architect, forthwith return to the Architect all drawings, details, specifications, descriptive schedules and other documents of a like nature which bear his name.

(6) None of the documents hereinbefore mentioned (except the Schedule of Rates) and no bill of quantities or other statement as to quantities of work at any time supplied to the Contractor shall be used by him for any purpose other than this Contract and neither the Employer, the Architect nor the Quantity Surveyor shall divulge or use except for the purposes of this Contract any of the rates in the Schedule of Rates.

(7) Any certificate to be issued by the Architect under these Conditions shall be issued to the Contractor.

4 (1) (a) The Contractor shall comply with, and give all notices required by, any Act of Parliament any instrument rule or order made under any Act of Parliament, or any regulation or byelaw of any local authority or of any statutory undertaker which has any jurisdiction with regard to the Works or with whose systems the same are or will be connected (all requirements to be so complied with being referred to in these Conditions as 'the statutory requirements').

Statutory obligations, notices, fees and charges.

(b) If the Contractor shall find any divergence between the statutory requirements and all or any of the documents referred to in clause 1 (2) of these Conditions or any variation instruction issued in accordance with clause 11 (1) of these Conditions, he shall immediately give to the Architect a written notice specifying the divergence.

(c) If the Contractor gives notice under paragraph (b) of this sub-clause or if the Architect shall otherwise discover or receive notice of a divergence between the statutory requirements and all or any of the documents referred to in clause 1 (2) of these Conditions or any variation instruction issued in accordance with clause 11 (1) of these Conditions, the Architect shall within 7 days of the discovery or receipt of a notice issue instructions in relation of the divergence. If and insofar as the instructions require the Works to be varied, they shall be deemed to be Architect's instructions issued in accordance with clause 11 (1) of these Conditions.

(d) (i) If in any emergency compliance with paragraph (a) of this sub-clause requires the Contractor to supply materials or execute work before receiving instructions under paragraph (c) of this sub-clause the Contractor shall supply such limited materials and execute such limited work as are reasonably necessary to secure immediate compliance with the statutory requirements.

(ii) The Contractor shall forthwith inform the Architect of the emergency and of the steps that he is taking under this paragraph of this Condition.

(iii) Work executed and materials supplied by the Contractor under sub-paragraph (i) of this paragraph shall be deemed to have been executed and supplied pursuant to an Architect's instruction in accordance with clause 11 (1) of these Conditions provided



that the emergency arose because of a divergence between the statutory requirements and all or any of the documents referred to in clause 1 (2) of these Conditions or any variation instruction issued in accordance with clause 11 (1) of these Conditions, and the Contractor has complied with sub-paragraph (ii).

- (e) Provided that the Contractor complies with paragraph (b) of this sub-clause, the Contractor shall not be liable to the Employer under this Contract if the Works do not comply with the statutory requirements where and to the extent that such non-compliance of the Works results from the Contractor having carried out work in accordance with the documents referred to in clause 1 (2) of these Conditions or any variation instruction issued in accordance with clause 11 (1) of these Conditions.

(2) The Contractor shall pay and indemnify the Employer against liability in respect of any fees or charges (including any rates or taxes) legally demandable under any Act of Parliament, any instrument, rule or order made under any Act of Parliament, or any regulation or byelaw of any local authority or of any statutory undertaker in respect of the Works. Provided that the amount of any such fees or charges (including any rates or taxes) shall be added to the Contract Sum unless they

- (a) arise in respect of work executed or materials or goods supplied by a local authority or statutory undertaker for which a prime cost sum is included in the Specification or for which a prime cost sum has arisen as a result of Architect's instructions given under clause 11 (3) of these Conditions, or

- (b) are priced or stated by way of a provisional sum in the Specification.

(3) None of the provisions of clause 27 (nominated sub-contractors) nor of clause 28 (nominated suppliers) of these Conditions shall apply where prime cost sums are included in the Specification or arise as a result of an instruction by the Architect in regard to the expenditure of provisional sums in respect of any fees or charges for work executed or materials or goods supplied by a local authority or statutory undertaker solely in pursuance of its statutory obligations. Such fees or charges shall be dealt with under the provisions of sub-clause (2) of this Condition and any amount properly paid by the Contractor to any local authority or statutory undertaker shall be added to the amount that would otherwise be stated as due in the next interim certificate.

Levels and  
setting out of  
the Works.

- 5 The Architect shall determine any levels which may be required for the execution of the Works, and shall furnish to the Contractor by way of accurately dimensioned drawings such information as shall enable the Contractor to set out the Works at ground level. Unless the Architect shall otherwise instruct, in which case the contract sum shall be adjusted accordingly, the Contractor shall be responsible for and shall entirely at his own cost amend any errors arising from his own inaccurate setting out.

Materials, goods  
and workman-  
ship to conform  
to description,  
testing and  
inspection.

- 6 (1) All materials, goods and workmanship shall so far as procurable be of the respective kinds and standards described in the Specification.

(2) The Contractor shall upon the request of the Architect furnish him with vouchers to prove that the materials and goods comply with sub-clause (1) of this Condition.

(3) The Architect may issue instruction requiring the Contractor to open up for inspection any work covered up or to arrange for or carry out any test of any materials or goods (whether or not already incorporated in the Works) or of any executed work, and the cost of such opening up or testing (together with the cost of making good in consequence thereof) shall be added to the Contract Sum unless provided for in the Specification or unless the inspection or test shows that the work, materials or goods are not in accordance with this Contract.

(4) The Architect may issue instructions in regard to the removal from the site of any work, materials or goods which are not in accordance with this Contract.

(5) The Architect may (but not unreasonably or vexatiously) issue instructions requiring the dismissal from the Works of any person employed thereon.

Royalties and  
patent rights.

- 7 All royalties or other sums payable in respect of the supply and use in carrying out the Works as described by or referred to in the Specification of any patented articles, processes or inventions shall be deemed to have been included in the Contract Sum, and the Contractor shall indemnify the Employer from and against all claims, proceedings, damages, costs and expenses which may be brought or made against the Employer or to which he may be put by reason of the Contractor infringing or being held to have infringed any patent rights in relation to any such articles, processes and inventions. Provided that where in compliance with Architect's instructions the Contractor shall supply and use in carrying out the Works any patented articles, processes or inventions, the Contractor shall not be liable in respect of any infringement or alleged infringement of any patent rights in relation to any such articles, processes and



inventions and all royalties damages or other monies which the Contractor may be liable to pay to the persons entitled to such patent rights shall be added to the Contract Sum.

- 8 The Contractor shall constantly keep upon the Works a competent foreman-in-charge and any instructions given to him by the Architect shall be deemed to have been issued to the Contractor. Foreman-in-Charge.
- 9 The Architect and his representatives shall at all reasonable times have access to the Works and to the workshops or other places of the Contractor where work is being prepared for the Contract, and when work is to be so prepared in workshops or other places of a sub-contractor (whether or not a nominated sub-contractor as defined in clause 27 of these Conditions) the Contractor shall by a term in the sub-contract so far as possible secure a similar right of access to those workshops or places for the Architect and his representatives and shall do all things reasonably necessary to make such right effective. Access for Architect to the Works.
- 10 The Employer shall be entitled to appoint a clerk of works whose duty shall be to act solely as inspector on behalf of the Employer under the directions of the Architect, and the Contractor shall afford every reasonable facility for the performance of that duty. If any directions are given to the Contractor or to his foreman upon the Works by the clerk of works the same shall be of no effect unless given in regard to a matter in respect of which the Architect is expressly empowered by these Conditions to issue instructions and unless confirmed in writing by the Architect within two working days of their being given. If any such directions are so given and confirmed then as from the date of confirmation they shall be deemed to be Architect's instructions. Clerk of Works.
- 11 (1) The Architect may issue instructions requiring a variation and he may sanction in writing any variation made by the Contractor otherwise than pursuant to an instruction of the Architect. No variation required by the Architect or subsequently sanctioned by him shall vitiate this Contract. Variations, provisional and prime cost sums.
- (2) The term 'variation' as used in these Conditions means the alteration or modification of the design, quality or quantity of the Works as shown upon the Contract Drawings and described by or referred to in the Specification, and includes the addition, omission or substitution of any work, the alteration of the kind or standard of any of the materials or goods to be used in the Works, and the removal from the site of any work materials or goods executed or brought thereon by the Contractor for the purposes of the Works other than work materials or goods which are not in accordance with this Contract.
- (3) The Architect shall issue instructions in regard to the expenditure of prime cost\* and provisional sums included in the Specification and of prime cost sums which arise as a result of instructions issued in regard to the expenditure of provisional sums.
- (4) All variations required by the Architect or subsequently sanctioned by him in writing and all work executed by the Contractor for which provisional sums are included in the Specification (other than work for which a tender made under clause 27 (g) of these Conditions has been accepted) shall be measured and valued by the Quantity Surveyor who shall give to the Contractor an opportunity of being present at the time of such measurement and of taking such notes and measurements as the Contractor may require. The valuation of variations and of work executed by the Contractor for which a provisional sum is included in the Specification (other than work for which a tender has been accepted as aforesaid) unless otherwise agreed shall be made in accordance with the following rules:—
- (a) The prices in the Schedule of Rates shall determine the valuation of work of similar character executed under similar conditions as work priced therein;
- (b) The said prices, where work is not of a similar character or executed under similar conditions as aforesaid, shall be the basis of prices for the same so far as may be reasonable, failing which a fair valuation thereof shall be made;
- (c) Where work cannot properly be measured and valued the Contractor shall unless otherwise agreed be allowed:
- (i) the prime cost of such work calculated in accordance with the 'Definition of Prime Cost of Daywork carried out under a Building Contract' issued by the Fiji Association of Architects and the Fiji Master Builders' Association and current at the date of tender as defined in clause 31D (6) (a) of these Conditions together with percentage

\*Footnote.—The term 'prime cost' may be indicated by the abbreviation 'P.C.' in any document relating to this Contract (including the Specification), and wherever the abbreviation is used it shall be deemed to mean 'prime cost'.

4 1-2-11



additions to each section of the prime cost at the rates set out by the Contractor in the Schedule of Rates; or

- (ii) where the work is within the province of any specialist trade and the Fiji Association of Architects, or other appropriate professional body, and the appropriate body representing the employers in that trade have agreed and issued a definition of prime cost of daywork, the prime cost of such work calculated in accordance with that definition and current at the date of tender as defined in clause 31D (6) (a) of these Conditions together with percentage additions on the prime cost at the rates set out by the Contractor in the Schedule of rates.

Provided that in any case vouchers specifying the time daily spent upon the work (and if required by the Architect the workmen's names) and the materials employed shall be delivered for verification to the Architect or his authorised representative not later than the end of the week following that in which the work has been executed;

- (d) The rates contained in the Schedule of Rates shall determine the valuation of items omitted; provided that if omissions substantially vary the conditions under which any remaining items of work are carried out the prices for such remaining items shall be valued under rule (b) of this sub-clause.

(5) Effect shall be given to the measurement and valuation of variations under sub-clause (4) of this Condition in Interim Certificates and by adjustment of the Contract Sum; and effect shall be given to the measurement and valuation of work for which a provisional sum is included in the Specification under the said sub-clause in Interim Certificates and by adjustment of the Contract Sum in accordance with clause 30 (5) (c) of these Conditions.

(6) If upon the written application being made to him by the Contractor, the Architect is of the opinion that a variation or the execution by the Contractor of work for which a provisional sum is included in the Specification (other than work for which a tender made under clause 27 (g) of these Conditions has been accepted) has involved the Contractor in direct loss and/or expense for which he would not be reimbursed by payment in respect of a valuation made in accordance with the rules contained in sub-clause (4) of this Condition and if the said application is made within a reasonable time of the loss or expense having been incurred, then the Architect shall either himself ascertain or shall instruct the Quantity Surveyor to ascertain the amount of such loss or expense. Any amount from time to time so ascertained shall be added to the Contract Sum, and if an Interim Certificate is issued after the date of ascertainment any such amount shall be added to the amount which would otherwise be stated as due in such Certificate.

- 12 (1) The quality and quantity of the work included in the Contract Sum shall be deemed to be that which is shown upon the Contract Drawings or described in the Specification, but save as aforesaid nothing contained in the Contract Drawings or the Specification shall override, modify, or affect in any way whatsoever the application or interpretation of that which is contained in these Conditions.

(2) Any error in description or in quantity or in omission of items from the Contract Drawings and/or the Specification shall not vitiate this Contract but shall be corrected and deemed to be a variation required by the Architect.

(3) Any bills of quantities or other statements as to quantities of work which may at any time be supplied to the Contractor shall not form part of this Contract, and the rates contained in the Schedule of Rates shall apply notwithstanding any discrepancy between such rates and anything contained in any such bill or other statement.

- 13 The Contract Sum shall not be adjusted or altered in any way whatsoever otherwise than in accordance with the express provisions of these Conditions, and subject to clause 12 (2) of these Conditions any error whether of arithmetic or not in the computation of the Contract Sum shall be deemed to have been accepted by the parties hereto.

- 14 (1) Unfixed materials and goods delivered to, placed on or adjacent to the Works and intended therefor shall not be removed except for use upon the Works unless the Architect has consented in writing to such removal which consent shall not be unreasonably withheld. Where the value of any such materials or goods has in accordance with clause 30 (2) of these Conditions been included in any Interim Certificate under which the Contractor has received payment, such materials and goods shall become the property of the Employer, but subject to clause 20 [B] or clause 20 [C] of these Conditions (if applicable), the Contractor shall remain responsible for loss or damage to the same.

(2) Where the value of any materials or goods has in accordance with clause 30 (2A) of these



Conditions been included in any Interim Certificate under which the Contractor has received payment, such materials and goods shall become the property of the Employer, and thereafter the Contractor shall not, except for use upon the Works, remove or cause or permit the same to be moved or removed from the premises where they are, but the Contractor shall nevertheless be responsible for any loss thereof or damage thereto and for the cost of storage, handling and insurance of the same until such time as they are delivered to and placed on or adjacent to the Works whereupon the provisions of sub-clause (1) of this clause (except the words 'where the value' to the words 'the Employer but') shall apply thereto.

- 15 (1) When in the opinion of the Architect the Works are practically completed, he shall forthwith issue a certificate to that effect and Practical Completion of the Works shall be deemed for all the purposes of this Contract to have taken place on the day named in such certificate.

Practical completion and defects liability.

(2) Any defects, shrinkages or other faults which shall appear within the Defects Liability Period stated in the appendix to these Conditions and which are due to materials or workmanship not in accordance with this Contract, shall be specified by the Architect in a Schedule of Defects which he shall deliver to the Contractor not later than 14 days after the expiration of the said Defects Liability Period, and within a reasonable time after receipt of such Schedule the defects, shrinkages and other faults therein specified shall be made good by the Contractor and (unless the Architect shall otherwise instruct, in which case the Contract Sum shall be adjusted accordingly) entirely at his own cost.

(3) Notwithstanding sub-clause (2) of this Condition the Architect may, whenever he considers it necessary so to do, issue instructions requiring any defect, shrinkage or other fault which shall appear within the Defects Liability Period named in the appendix to these Conditions and which is due to materials or workmanship not in accordance with this Contract to be made good, and the Contractor shall within a reasonable time after receipt of such instructions comply with the same and (unless the Architect shall otherwise instruct, in which case the Contract Sum shall be adjusted accordingly) entirely at his own cost. Provided that no such instructions shall be issued after delivery of a Schedule of Defects or after 14 days from the expiration of the said Defects Liability Period.

(4) When in the opinion of the Architect any defects, shrinkages or other faults which he may have required to be made good under sub-clauses (2) and (3) of this Condition shall have been made good he shall issue a certificate to that effect, and completion of making good defects shall be deemed for all the purposes of this Contract to have taken place on the day named in such certificate.

If at any time or times before Practical Completion of the Works the Employer with the consent of the Contractor shall take possession of any part or parts of the same (any such part being hereinafter in this clause referred to as 'the relevant part'), then notwithstanding anything expressed or implied elsewhere in this Contract:—

Partial possession by Employer.

- (a) Within seven days from the date on which the Employer shall have taken possession of the relevant part the Architect shall issue a certificate stating his estimate of the approximate total value of the said part, and for all the purposes of this Condition (but for no other) the value so stated shall be deemed to be the total value of the said part.
- (b) For the purposes of sub-paragraph (iii) of paragraph (f) of this Condition and of sub-clauses (2) and (3) of clause 15 of these Conditions, Practical Completion of the relevant part shall be deemed to have occurred and the Defects Liability Period in respect of the relevant part shall be deemed to have commenced on the date on which the Employer shall have taken possession thereof.
- (c) When in the opinion of the Architect any defects, shrinkages or other faults in the relevant part which he may have required to be made good under sub-clause (2) or sub-clause (3) of clause 15 of these Conditions shall have been made good he shall issue a certificate to that effect.
- (d) The Contractor shall reduce the value insured under clause 20 [A] of these Conditions (if applicable) by the full value of the relevant part, and the said relevant part shall as from the date on which the Employer shall have taken possession thereof be at the sole risk of the Employer as regards any of the contingencies referred to in the said clause.
- (e) In lieu of any sum to be paid or allowed by the Contractor under clause 22 of these Conditions in respect of any period during which the Works may remain incomplete occurring after the date on which the Employer shall have taken possession of the relevant part there shall be paid or allowed such sum as bears the same ratio to the sum which would be paid or allowed apart from the provisions of this Condition as does the Contract Sum



less the total value of the said relevant part to the Contract Sum.

(f) (i) Within fourteen days of the date on which the Employer shall have taken possession of the relevant part there shall be paid to the Contractor from the sums then retained under clause 30 (3) of these Conditions a percentage (which percentage shall be equal to half the Retention Percentage) of the total value (subject to paragraph (iii) of this sub-clause) of the relevant part.

(ii) On the expiration of the Defects Liability Period named in the Appendix to these Conditions in respect of the relevant part or on the issue of the Certificate of Completion of Making Good Defects in respect of the relevant part, whichever is the later, there shall be paid to the Contractor from the sums then retained under clause 30 (3) of these Conditions a percentage (which percentage shall be equal to half the Retention Percentage) of the total value (subject to paragraph (iii) of this sub-clause) of the relevant part.

(iii) Where the total value of the relevant part includes works in respect of which a final payment to a nominated sub-contractor has been made under the provisions of clause 27 (e) of these Conditions, the said total value for the purposes of paragraphs (i) and (ii) of this sub-clause shall be deemed to be reduced by the value of the said sub-contractor's work carried out in the relevant part.

Assignment or  
sub-letting.

17 (1) The Employer shall not without the written consent of the Contractor assign this Contract.

(2) The Contractor shall not without the written consent of the Employer assign this Contract, and shall not without the written consent of the Architect (which consent shall not be unreasonably withheld to the prejudice of the Contractor) sub-let any portion of the Works. Provided that it shall be a condition in any sub-letting which may occur that the employment of the sub-contractor under the sub-contract shall determine immediately upon the determination (for any reason) of the Contractor's employment under this Contract.

Injury to  
persons and  
property and  
Employer's  
indemnity.

18 (1) The Contractor shall be liable for, and shall indemnify the Employer against, any liability, loss, claim or proceedings whatsoever arising under any statute or at common law in respect of personal injury to or the death of any person whomsoever arising out of or in the course of or caused by the carrying out of the Works, unless due to any act or neglect of the Employer or of any person for whom the Employer is responsible.

(2) Except for such loss or damage as is at the risk of the Employer under clause 20 [B] or clause 20 [C] of these Conditions (if applicable) the Contractor shall be liable for, and shall indemnify the Employer against, any expense, liability, loss, claim or proceedings in respect of any injury or damage whatsoever to any property real or personal in so far as such injury or damage arises out of or in the course of or by reason of the carrying out of the Works, and provided always that the same is due to any negligence omission or default of the Contractor, his servants or agents.

Insurance  
against injury  
to persons and  
property.

19 (1) (a) Without prejudice to his liability to indemnify the Employer under clause 18 of these Conditions the Contractor shall maintain and shall cause any sub-contractor to maintain such insurances as are necessary to cover the liability of the Contractor or, as the case may be, of such sub-contractor in respect of personal injury or death arising out of or in the course of or caused by the carrying out of the Works not due to any act or neglect of the Employer or of any person for whom the Employer is responsible and in respect of injury or damage to property, real or personal, arising out of or in the course of or by reason of the carrying out of the Works and caused by any negligence, omission or default of the Contractor, his servants or agents or, as the case may be, of such sub-contractor, his servants or agents. The insurance in respect of claims for personal injury to, or the death of, any person under a contract of service or apprenticeship with the Contractor or the sub-contractor as the case may be, and arising out of and in the course of such person's employment, shall comply with the Workmen's Compensation Ordinance (Chapter 77). For all other claims to which this sub-clause applies the insurance cover shall be the sum stated in the Appendix to these Conditions (or such greater sum as the Contractor may choose) for any one occurrence or series of occurrences arising out of one event.

(b) As and when he is reasonably required so to do by the Architect the Contractor shall produce and shall cause any sub-contractor to produce for inspection by the Employer documentary evidence that the insurances required by this sub-clause are properly maintained, but on any occasion the Employer may (but not unreasonably or vexatiously) require to have produced for his inspection the policies and receipts in question.

(c) Should the Contractor or any sub-contractor make default in insuring or in continuing or in causing to insure as provided in this sub-clause the Employer may himself insure against any risk with respect to which the default shall have occurred and may deduct a sum or sums



equivalent to the amount paid or payable in respect of premiums from any monies due or to become due to the Contractor.

(2) (a) The Contractor shall maintain in the joint names of the Employer and the Contractor insurances for such amounts of indemnity as may be specified by way of provisional sum items in the Specification in respect of any expense, liability, loss, claim, or proceedings which the Employer may incur or sustain by reason of damage to any property other than the Works caused by collapse, subsidence, vibration, weakening or removal of support or lowering of ground water arising out of or in the course of or by reason of the carrying out of the Works excepting damage

(i) caused by the negligence, omission or default of the Contractor, his servants or agents or of any sub-contractor his servants or agent;

(ii) attributable to errors or omissions in the designing of the Works;

(iii) which can reasonably be foreseen to be inevitable having regard to the nature of the work to be executed or the manner of its execution;

(iv) which is at the risk of the Employer under clause 20 [B] or clause 20 [C] of these Conditions (if applicable);

(v) arising from a nuclear risk or war risk;

(b) Any such insurance as is referred to in the immediately preceding paragraph shall be placed with insurers to be approved by the Architect, and the Contractor shall deposit with him the policy or policies and the receipts in respect of premiums paid.

(c) Should the Contractor make default in insuring or in continuing to insure as provided in this sub-clause the Employer may himself insure against any risk with respect to which the default shall have occurred and the amounts paid or payable by the Employer in respect of premiums shall not be set against the relevant provisional sum in the settlement of accounts under clause 30 (5) (c) of these Conditions.

19A Notwithstanding the provisions of clauses 18 (2) or 19 of these Conditions, the Contractor shall not be liable either to indemnify the Employer or to insure against any damage, loss or injury caused to the Works, the site, or any property, by the effect of ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof, pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;

Excepted Risks  
—Nuclear perils  
etc.

20 \* [A] (1) The Contractor shall in the joint names of the Employer and Contractor insure against loss and damage by \*\* fire, lightning, explosion, storm, tempest, flood, bursting or overflowing of water tanks, apparatus or pipes, earthquake, aircraft and other aerial devices or articles dropped therefrom, riot and civil commotion (excluding any loss or damage caused by ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof, pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds) for the full value thereof (plus the percentage (if any) named in the Appendix to these Conditions to cover professional fees) all work executed and all unfixed materials and goods, delivered to, placed on or adjacent to the Works and intended therefor but excluding temporary buildings, plant, tools and equipment owned or hired by the Contractor or any sub-contractor; and shall keep such work, materials and goods so insured until Practical Completion of the Works. Such insurance shall be with insurers approved by the Architect and the Contractor shall deposit with him the policy or policies and the receipts in respect of premiums paid and should the Contractor make default in insuring or continuing to insure as aforesaid the Employer may himself insure against any risk in respect of which the default shall have occurred and deduct a sum equivalent to the amount

Insurance of  
the Works  
against Fire, etc.

\*Footnote.—Clause 20 [A] is applicable to the erection of a new building if the Contractor is required to insure against loss or damage by fire, etc.; clause 20 [B] is applicable to the erection of a new building if the Employer is to bear the risk in respect of loss or damage by fire, etc.; and clause 20 [C] is applicable to alterations of or extensions to an existing building; therefore strike out clauses [B] and (C) or clauses (A) and [C] or clauses (A) and (B) as the case may require.

\*\*Footnote.—In some cases it may not be possible for insurance to be taken out against certain of the risks mentioned in this clause; in others insurance may be required against risks not mentioned. This matter should be arranged between the parties at the tender stage and the clause amended accordingly.



paid him in respect of premiums from any monies due or to become due to the Contractor.

Provided always that if the Contractor shall independently of his obligations under this Contract maintain a policy of insurance which covers *inter alia* the said work, materials and goods against the aforesaid contingencies to the full value thereof (plus the aforesaid percentage (if any)), then the maintenance by the Contractor of such policy shall, if the Employer's interest in that policy of insurance is endorsed thereon, be a discharge of the Contractor's obligation to insure in the joint names of the Employer and Contractor; if and so long as the Contractor is able to produce for inspection as and when he is reasonably required so to do by the Architect documentary evidence that the said policy is properly endorsed and maintained then the Contractor shall be discharged from his obligation to deposit a policy or policies and receipts with the Employer but on any occasion the Employer may (but not unreasonably or vexatiously) require to have produced for his inspection the policy and receipts in question.

(2) Upon acceptance of any claim under the insurances aforesaid the Contractor with due diligence shall restore work damaged, replace or repair any unfixed materials or goods which have been destroyed or injured, remove and dispose of any debris and proceed with the carrying out and completion of the Works. All monies received from such insurances (less only the aforesaid percentage, (if any)) shall be paid to the Contractor by instalments under certificates of the Architect issued at the period of Interim Certificates named in the Appendix to these Conditions. The Contractor shall not be entitled to any payment in respect of the restoration of work damaged, the replacement and repair of any unfixed materials or goods, and the removal and disposal of debris other than the monies received under the said insurances.

\*[B] All work executed and all unfixed materials and goods, delivered to, placed on or adjacent to the Works and intended therefor (except temporary buildings, plant, tools and equipment owned or hired by the Contractor or any sub-contractor) shall be at the sole risk of the Employer as regards loss or damage by fire, lightning, explosion, storm, tempest, bursting or overflowing of water tanks, apparatus or pipes, earthquake, aircraft and other aerial devices or articles dropped therefrom, riot and civil commotion (excluding any loss or damage caused by ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof, pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds). The Employer shall maintain a proper policy of insurance\*\* against that risk, and such policy and the receipt for the last premium paid for its renewal shall upon request be produced for inspection by the Contractor. If the Employer shall at any time fail upon request to produce any receipt showing such a policy as aforesaid to be effective then the Contractor may in the name and on behalf of the Employer insure all work executed and all unfixed materials and goods as aforesaid against loss or damage occasioned by the said contingencies and shall upon production of the receipt for any premium paid by him be entitled to have its amount added to the Contract Sum. If any loss or damage affecting the Works or any part thereof or any such unfixed materials or goods is occasioned by any one or more of the said contingencies then, upon discovering the said loss or damage the Contractor shall forthwith give notice in writing both to the Architect and to the Employer of the extent, nature and location thereof and

- (a) The occurrence of such loss or damage shall be disregarded in computing any amounts payable to the Contractor under or by virtue of this Contract.
- (b) The Contractor with due diligence shall restore work damaged, replace or repair any unfixed materials or goods which have been destroyed or injured, remove and dispose of any debris and proceed with the carrying out and completion of the Works. The restoration of work damaged, the replacement and repair of unfixed materials and goods and the removal and disposal of debris shall be deemed to be a variation required by the Architect.

\*Footnote.—Clause 20 [A] is applicable to the erection of a new building if the Contractor is required to insure against loss or damage by fire, etc.; clause 20 [B] is applicable to the erection of a new building if the Employer is to bear the risk in respect of loss or damage by fire, etc.; and clause 20 [C] is applicable to alterations of or extensions to an existing building; therefore strike out clauses [B] and (C) or clauses (A) and [C] or clauses (A) and (B) as the case may require.

\*\*Footnote.—In some cases it may not be possible for insurance to be taken out against certain of the risks mentioned in this clause; in others insurance may be required against risks not mentioned. This matter should be arranged between the parties at the tender stage and the clause amended accordingly.



\*[C] The existing structures together with the contents thereof owned by him or for which he is responsible and the Works and all unfixed materials and goods, delivered to, placed on or adjacent to the Works and intended therefor (except temporary buildings, plant, tools and equipment owned or hired by the Contractor or any sub-contractor) shall be at the sole of the Employer as regards loss or damage by fire, lightning, explosion, storm, tempest, flood, bursting or overflowing of water tanks, apparatus or pipes, earthquake, aircraft and other aerial devices or articles dropped therefrom, riot and civil commotion (excluding any loss or damage caused by ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof, pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds) and the Employer shall maintain adequate insurance against those risks. \*\* If the Employer shall at any time fail upon request to produce any receipt showing such a policy as aforesaid to be effective, then the Contractor may in the name and on behalf of the Employer insure the existing structures together with the aforesaid contents, the Works and all unfixed materials and goods as aforesaid against loss or damage occasioned by the said contingencies, and for that purpose shall have such right of entry and inspection as may be required to make a survey and inventory of the existing structures and the aforesaid contents and shall upon production of the receipt for any premium paid by him be entitled to have its amount added to the Contract Sum. If any loss or damage affecting the Works or any part thereof or any such unfixed materials or goods is occasioned by any one or more of the said contingencies then, upon discovering the said loss or damage the Contractor shall forthwith give notice in writing both to the Architect and to the Employer of the extent, nature and location thereof and

- (a) The occurrence of such loss or damage shall be disregarded in computing any amounts payable to the Contractor under or by virtue of this Contract.
  - (b) (i) If it is just and equitable so to do the employment of the Contractor under this Contract may within 28 days of the occurrence of such loss or damage be determined at the option of either party by notice by registered post or recorded delivery from either party to the other. Within 7 days of receiving such a notice (but not thereafter) either party may give to the other a written request to concur in the appointment of an arbitrator under clause 33 of these Conditions in order that it may be determined whether such determination will be just and equitable.
  - (ii) Upon the giving or receiving by the Employer of such a notice of determination or, where a reference to arbitration is made as aforesaid, upon the arbitrator upholding the notice of determination, the provisions of sub-clause (2) (except sub-paragraph (vi) of paragraph (b)) of clause 26 of these Conditions shall apply.
  - (c) If no notice of determination is served as aforesaid, or, where a reference to arbitration is made as aforesaid, if the arbitrator decides against the notice of determination, then
    - (i) the Contractor with due diligence shall reinstate or make good such loss or damage, and proceed with the carrying out and completion of the Works;
    - (ii) the Architect may issue instructions requiring the Contractor to remove and dispose of any debris; and
    - (iii) the reinstatement and making good of such loss or damage and (when required) the removal and disposal of debris shall be deemed to be a variation required by the Architect.
- 21 (1) On the Date for Possession stated in the Appendix to these Conditions possession of the site shall be given to the Contractor who shall thereupon begin the Works and regularly and diligently proceed with the same, and who shall complete the same on or before the Date for Completion stated in the said Appendix subject nevertheless to the provisions for extension of time contained in clause 23 of these Conditions.

Possession  
completion and  
postponement.

\*Footnote.—Clause 20 [A] is applicable to the erection of a new building if the Contractor is required to insure against loss or damage by fire, etc.; clause 20 [B] is applicable to the erection of a new building if the Employer is to bear the risk in respect of loss or damage by fire, etc.; and clause 20 [C] is applicable to alterations of or extensions to an existing building; therefore strike out clauses [B] and (C) or clauses (A) and [C] or clauses (A) and (B) as the case may require.

\*\*Footnote.—In some cases it may not be possible for insurance to be taken out against certain of the risks mentioned in this clause; in others insurance may be required against risks not mentioned. This matter should be arranged between the parties at the tender stage and the clause amended accordingly.



(2) The Architect may issue instructions in regard to the postponement of any work to be executed under the provisions of this Contract.

- ages for completion.
- 22 If the Contractor fails to complete the Works by the Date for Completion stated in the Appendix to these Conditions or within any extended time fixed under clause 23 of these Conditions and the Architect certifies in writing that in his opinion the same ought reasonably so to have been completed, then the Contractor shall pay or allow to the Employer a sum calculated at the rate stated in the said Appendix as Liquidated and Ascertained Damages for the period during which the Works shall so remain or have remained incomplete and the Employer may deduct such sum from any monies due or to become due to the Contractor under this Contract.
- 23 Upon it becoming reasonably apparent that the progress of the Works is delayed, the Contractor shall forthwith give written notice of the cause of the delay to the Architect, and if in the opinion of the Architect the completion of the Works is likely to be or has been delayed beyond the Date for Completion stated in the Appendix to these Conditions or beyond any extended time previously fixed under this clause,
- (a) by force majeure, or
  - (b) by reason of any exceptionally inclement weather, or
  - (c) by reason of loss or damage occasioned by any one or more of the contingencies referred to in clause 20 [A], [B] or [C] of these Conditions, or
  - (d) by reason of civil commotion, local combination of workmen, strike or lockout affecting any of the trades employed upon the Works or any of the trades engaged in the preparation, manufacture or transportation of any of the goods or materials required for the Works, or
  - (e) by reason of Architect's instructions issued under clauses 1 (2), 11 (1) or 21 (2) of these Conditions, or
  - (f) by reason of the Contractor not having received in due time necessary instructions, drawings, details or levels from the Architect for which he specifically applied in writing on a date which having regard to the Date of Completion stated in the Appendix to these Conditions or to any extension of time then fixed under this clause was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for him to receive the same, or
  - (g) by delay on the part of nominated sub-contractors or nominated suppliers which the Contractor has taken all practicable steps to avoid or reduce, or
  - (h) by delay on the part of artists, tradesmen or others engaged by the Employer in executing work not forming part of this Contract, or
  - (i) by reason of the opening up for inspection of any work covered up or of the testing of any of the work materials or goods in accordance with clause 6 (3) of these Conditions (including making good in consequences of such opening up or testing), unless the inspection or test showed that the work materials or goods were not in accordance with this Contract, or
  - \* (j) (i) by the Contractor's inability for reasons beyond his control and which he could not reasonably have foreseen at the date of this Contract to secure such labour as is essential to the proper carrying out of the Works, or
  - (ii) by the Contractor's inability for reasons beyond his control and which he could not reasonably have foreseen at the date of this Contract to secure such goods and/or materials as are essential to the proper carrying out of the Works, or
  - (k) by reason of compliance with the provisions of Clause 32 of these Conditions or with Architect's instructions issued thereunder, or
  - (l) by a local authority or statutory undertaker in carrying out work in pursuance of its statutory obligations in relation to the Works, or in failing to carry out such work.

then the Architect shall so soon as he is able to estimate the length of the delay beyond the date or time aforesaid make in writing a fair and reasonable extension of time for completion of the Works. Provided always that the Contractor shall use constantly his best endeavours to prevent delay and shall do all that may reasonably be required to the satisfaction of the Architect to proceed with the Works.

\*Footnote.—Strike out either or both of the sub-clauses (j) (i) or (j) (ii) if not to apply.



24 (1) If upon written application being made to him by the Contractor the Architect is of the opinion that the Contractor has been involved in direct loss and/or expense for which he would not be reimbursed by a payment made under any other provision in this Contract by reason of the regular progress of the Works or of any part thereof having been materially affected by:

Loss and expenses caused by disturbance of regular progress of the Works.

- (a) The Contractor not having received in due time necessary instructions, drawings, details or levels from the Architect for which he specifically applied in writing on a date which having regard to the Date for Completion stated in the Appendix to these Conditions or to any extension of time then fixed under clause 23 of these Conditions was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for him to receive the same; or
- (b) The opening up for inspection of any work covered up or the testing of any of the work materials or goods in accordance with clause 6 (3) of these Conditions (including making good in consequence of such opening up or testing), unless the inspection or test showed that the work, materials or goods were not in accordance with this Contract; or
- (c) Any discrepancy in or divergence between the Contract Drawings and/or the Specification; or
- (d) Delay on the part of artists, tradesmen or others engaged by the Employer in executing work not forming part of this Contract; or
- (e) Architect's instructions issued in regard to the postponement of any work to be executed under the provisions of this Contract;

and if the written application is made within a reasonable time of it becoming apparent that the progress of the Works or of any part thereof has been affected as aforesaid, then the Architect shall either himself ascertain or shall instruct the Quantity Surveyor to ascertain the amount of such loss and/or expense. Any amount from time to time so ascertained shall be added to the Contract Sum, and if an Interim Certificate is issued after the date of ascertainment any such amount shall be added to the amount which would otherwise be stated as due in such Certificate.

(2) The provisions of this Condition are without prejudice to any other rights and remedies which the Contractor may possess.

25 (1) Without prejudice to any other rights or remedies which the Employer may possess, if the Contractor shall make default in any one or more of the following respects, that is to say:—

Determination by Employer.

- (a) If he without reasonable cause wholly suspends the carrying out of the Works before completion thereof; or
- (b) If he fails to proceed regularly and diligently with the Works; or
- (c) If he refuses or persistently neglects to comply with a written notice from the Architect requiring him to remove defective work or improper materials or goods and by such refusal or neglect the Works are materially affected; or
- (d) If he fails to comply with the provisions of clause 17 of these Conditions,

then the Architect may give to him a notice by registered post or recorded delivery specifying the default, and if the Contractor either shall continue such default for fourteen days after receipt of such notice or shall at any time thereafter repeat such default (whether previously repeated or not), then the Employer may within ten days after such continuance or repetition by notice by registered post or recorded delivery forthwith determine the Employment of the Contractor under this Contract, provided that such notice shall be given unreasonably or vexatiously.

(2) In the event of the Contractor becoming bankrupt or making a composition or arrangement with his creditors or having a winding up order made or (except for purposes of reconstruction) a resolution for voluntary winding up passed or a provisional liquidator receiver or manager of his business or undertaking duly appointed, or possession taken, by or on behalf of the holders of any debentures secured by a floating charge, or any property comprised in or subject to the floating charge, the employment of the Contractor under this Contract shall be forthwith automatically determined but the said employment may be reinstated and continued if the Employer and the Contractor his trustee in bankruptcy liquidator provisional liquidator receiver or manager as the case may be shall so agree.

(3) In the event of the employment of the Contractor being determined as aforesaid and so long as it has been reinstated and continued, the following shall be the respective rights and duties of the Employer and Contractor:—

- (a) The Employer may employ and pay other persons to carry out and complete the Works and he or they may enter upon the Works and use all temporary buildings, plant, tools, equipment, goods and materials intended for, delivered to and placed on or adjacent to



the Works, and may purchase all materials and goods necessary for the carrying out and completion of the Works.

- (b) The Contractor shall (except where the determination occurs by reason of the bankruptcy of the Contractor or of him having a winding up order made or (except for the purposes of reconstruction) a resolution for voluntary winding up passed), if so required by the Employer or Architect within fourteen days of the date of determination, assign to the Employer without payment the benefit of any agreement for the supply of materials or goods and/or for the execution of any work for the purposes of this Contract but on the terms that a supplier or sub-contractor shall be entitled to make any reasonable objection to any further assignment thereof by the Employer. In any case the Employer may pay any supplier or sub-contractor for any materials or goods delivered or works executed for the purposes of this Contract (whether before or after the date of determination) in so far as the price thereof has not already been paid by the Contractor. The Employer's rights under this paragraph are in addition to his rights to pay nominated sub-contractors as provided in clause 27 (c) of these Conditions and payments made under this paragraph may be deducted from any sum due or to become due to the Contractor.
- (c) The Contractor shall as and when required in writing by the Architect so to do (but not before) remove from the Works any temporary buildings, plant, tools, equipment, goods and materials belonging to or hired by him. If within a reasonable time after any such requirement has been made the Contractor has not complied therewith then the Employer may (but without being responsible for any loss or damage) remove and sell any such property of the Contractor, holding the proceeds less all costs incurred to the credit of the Contractor.
- (d) The Contractor shall allow or pay to the Employer in the manner hereinafter appearing the amount of any direct loss and/or damage caused to the Employer by the determination. Until after completion of the Works under paragraph (a) of this sub-clause the Employer shall not be bound by any provision of this Contract to make any further payment to the Contractor, but upon such completion and the verification within a reasonable time of the accounts therefor the Architect shall certify the amount of expenses properly incurred by the Employer and the amount of any direct loss and/or damage caused to the Employer by the determination and, if such amounts when added to the monies paid to the Contractor before the date of determination exceed the total amount which would have been payable on due completion in accordance with this Contract, the difference shall be a debt payable to the Employer by the Contractor; and if the said amounts when added to the said monies be less than the said total amount, the difference shall be a debt payable by the Employer to the Contractor.

26 (1) Without prejudice to any other rights and remedies which the Contractor may possess, if

- (a) The Employer does not pay to the Contractor the amount due on any certificate within 14 days from the presentation of that certificate and continues such default for seven days after receipt by registered post or recorded delivery of a notice from the Contractor stating that notice of determination under this Condition will be served if payment is not made within seven days from receipt thereof; or
- (b) The Employer interferes with or obstructs the issue of any certificate due under this Contract; or
- (c) The carrying out of the whole or substantially the whole of the uncompleted Works (other than the execution of work required under clause 15 of these Conditions) is suspended for a continuous period of the length named in the Appendix to these Conditions by reason of:
  - (i) by *force majeure*, or
  - (ii) loss or damage (unless caused by the negligence of the Contractor, his servants or agents or of any sub-contractor, his servants or agents) occasioned by any one or more of the contingencies referred to in clause 20[A] or clause 20[B] of these Conditions (if applicable), or
  - (iii) civil commotion, or
  - (iv) Architect's instructions issued under clauses 1 (2), 11 (1) or 21 (2) of these Conditions unless caused by reason of some negligence or default of the Contractor, or
  - (v) the Contractor not having received in due time necessary instructions, drawings, details or levels from the Architect for which he specifically applied in writing on a date which having regard to the Date of Completion stated in the appendix to these Conditions or to any extension of time then fixed under clause 23 of these Conditions



was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for him to receive the same, or

(vi) delay on the part of artists, tradesmen or other engaged by the Employer in executing work not forming part of this Contract, or

(vii) the opening up for inspection of any work covered up or of the testing of any of the work materials or goods in accordance with clause 6 (3) of these Conditions (including making good in consequence of such opening up or testing), unless the inspection or test showed that the work materials or goods were not in accordance with this Contract.

(d) The Employer becomes bankrupt or makes a composition or arrangement with his creditors or has a winding up order made or (except for the purposes of reconstruction) a resolution for voluntary winding up passed or a receiver or manager of his business or undertaking is duly appointed, or possession is taken by or on behalf of the holders of any debentures secured by a floating charge, of any property comprised in or subject to the floating charge.

then the Contractor may thereupon by notice by registered post or recorded delivery to the Employer or Architect forthwith determine the employment of the Contractor under this Contract; provided that such notice shall not be given unreasonably or vexatiously.

(2) Upon such determination, then without prejudice to the accrued rights or remedies of either party or to any liability of the classes mentioned in clause 18 of these Conditions which may accrue either before the Contractor or any sub-contractors shall have removed his temporary buildings, plant, tools, equipment, goods or materials or by reason of his or their so removing the same, the respective rights and liabilities of the Contractor and the Employer shall be as follows, that is to say:—

(a) The Contractor shall with all reasonable dispatch and in such manner and with such precautions as will prevent injury, death or damage of the classes in respect of which before the date of determination he was liable to indemnify the Employer under clause 18 of these Conditions remove from the site all his temporary buildings, plant, tools equipment, goods and materials and shall give facilities for his sub-contractors to do the same, but subject always to the provisions of sub-paragraph (iv) of paragraph (b) of this sub-clause.

(b) After taking into account amounts previously paid under this Contract the Contractor shall be paid by the Employer:—

(i) The total value of work completed at the date of determination.

(ii) The total value of work begun and executed but not completed at the date of determination, the value being ascertained in accordance with clause 11 (4) of these Conditions as if such work were a variation required by the Architect.

(iii) Any sum ascertained in respect of direct loss and/or expense under clauses 11 (6), 24 and 32 (3) of these Conditions (whether ascertained before or after the date of determination).

(iv) The cost of materials or goods properly ordered for the Works for which the Contractor shall have paid or for which the Contractor is legally bound to pay, and on such payment by the Employer any materials or goods so paid for shall become the property of the Employer.

(v) The reasonable cost of removal under paragraph (a) of this sub-clause.

(vi) Any direct loss and/or damage caused to the Contractor by the determination.

Provided that in addition to all other remedies the Contractor upon such determination may take possession of and shall have a lien upon all unfixed goods and materials, which may have become the property of the Employer under clause 14 of these Conditions until payment of all monies due to the Contractor from the Employer.

27 The following provisions of this Condition shall apply where prime cost sums are included in the Specification or arise as a result of Architect's instructions given in regard to the expenditure of provisional sums in respect of persons to be nominated by the Architect to supply and fix materials or goods or to execute work.

Nominated  
sub-contractors.

(a) Such sums shall be deemed to include 2½ per cent. cash discount and shall be expended in favour of such persons as the Architect shall instruct, and all specialists or others who are nominated by the Architect are hereby declared to be sub-contractors employed by the Contractor and are referred to in these Conditions as 'nominated sub-contractors'.

DELETE



Provided that the Architect shall not nominate any person as a sub-contractor against whom the Contractor shall make reasonable objection, or (save where the Architect and Contractor shall otherwise agree) who will not enter into a sub-contract which provides (*inter alia*) :—

- (i) That the nominated sub-contractor shall carry out and complete the sub-contract Works in every respect to the reasonable satisfaction of the Contractor and of the Architect, and in conformity with all the reasonable directions and requirements of the Contractor.
- (ii) That the nominated sub-contractor shall observe, perform and comply with all the provisions of this Contract on the part of the Contractor to be observed, performed and complied with (other than clause 20 [A] of these Conditions, if applicable) so far as they relate and apply to the sub-contract Works or to any portion of the same.
- (iii) That the nominated sub-contractor shall indemnify the Contractor against the same liabilities in respect of the sub-contract Works as those for which the Contractor is liable to indemnify the Employer under this Contract.
- (iv) That the nominated sub-contractor shall indemnify the Contractor against claims in respect of any negligence, omission or default of such sub-contractor, his servants or agents or any misuse by him or them of any scaffolding or other plant, and shall insure himself against any such claims and produce the policy or policies and receipts in respect of premiums paid as and when required by either the Architect or the Contractor.
- (v) That the sub-contract Works shall be completed within the period or (where they are to be completed in sections) periods therein specified, that the Contractor shall not without the written consent of the Architect grant any extension of time for the completion of the sub-contract Works or any section thereof, and that the Contractor shall inform the Architect of any representation made by the nominated sub-contractor as to the cause of any delay in the progress or completion of the sub-contract Works or of any section thereof.
- (vi) That if the nominated sub-contractor shall fail to complete the sub-contract Works or (where the sub-contract Works are to be completed in sections) any section thereof within the period therein specified or within any extended time granted by the Contractor with the written consent of the Architect, and the Architect certifies in writing to the Contractor that the same ought reasonably so to have been completed, the nominated sub-contractor shall pay or allow to the Contractor either a sum calculated at the rate therein agreed as liquidated and ascertained damages for the period during which the said Works or any section thereof, as the case may be, shall so remain or have remained incomplete or (where no such rate is therein agreed) a sum equivalent to any loss or damage suffered or incurred by the Contractor and caused by the failure of the nominated sub-contractor as aforesaid.
- (vii) That payment in respect of any work, materials or goods comprised in the sub-contract shall be made within 14 days after receipt by the Contractor of the Architect's certificate under clause 30 of these Conditions which states as due an amount calculated by including the total value of such work, materials or goods, and shall when due be subject to the retention by the Contractor of the sums mentioned in sub-paragraph (viii) of paragraph (a) of this Condition, ~~and to a discount for cash of 2½ per cent. if made within the said period of 14 days.~~ DELETE
- (viii) That the Contractor shall retain from the sum directed by the Architect as having been included in the calculation of the amount due in any certificate issued under clause 30 of these Conditions in respect of the total value of work, materials or goods executed or supplied by the nominated sub-contractor a percentage (which percentage shall be equal to the percentage currently being retained by the Employer under clause 30 of these Conditions) of such value; and that the Contractor's interest in any sums so retained (by whomsoever held) shall be fiduciary as trustee for the nominated sub-contractor (but without obligation to invest); and that the nominated sub-contractor's beneficial interest in such sums shall be subject only to the right of the Contractor to have recourse thereto from time to time for payment of any amount which he is entitled under the sub-contract to deduct from any sum due or to become due to the nominated sub-contractor; and that if and when such sums or any part thereof are released to the nominated sub-contractor they shall be paid in full less only a discount for cash of 2½ per cent. if paid within 14 days of the date fixed for their release in the sub-contract. DELETE



- (ix) That the Architect and his representatives shall have a right of access to the workshops and other places of the nominated sub-contractor as mentioned in clause 9 of these Conditions.
- (x) That the employment of the nominated sub-contractor under the sub-contract shall determine immediately upon the determination (for any reason) of the Contractor's employment under this Contract.
- (b) The Architect shall direct the Contractor as to the total value of the work, materials or goods executed or supplied by a nominated sub-contractor included in the calculation of the amount stated as due in any certificate issued under clause 30 of these Conditions and shall forthwith inform the nominated sub-contractor in writing of the amount of the said total value. The sum representing such total value shall be paid by the Contractor to the nominated sub-contractor within 14 days of receiving from the Architect the certificate less only (i) any retention money which the Contractor may be entitled to deduct under the terms of the sub-contract, (ii) any sum to which the Contractor may be entitled in respect of delay in the completion of the sub-contract Works or any section thereof, and ~~(iii) a discount for cash of 2 1/4 per cent.~~ **DELETE**
- (c) Before issuing any certificate under clause 30 of these Conditions the Architect may request the Contractor to furnish to him reasonable proof that all amounts included in the calculation of the amount stated as due in previous certificates in respect of the total value of the work, materials or goods executed or supplied by any nominated sub-contractor have been duly discharged, and if the Contractor fails to comply with any such request the Architect shall issue a certificate to that effect and thereupon the Employer may himself pay such amounts to any nominated sub-contractor concerned and deduct the same from any sums due or to become due to the Contractor.
- (d) (i) The Contractor shall not grant to any nominated sub-contractor any extension of the period within which the sub-contract Works or (where the sub-contract Works are to be completed in sections) any section thereof is to be completed without the written consent of the Architect, provided always that the Contractor shall inform the Architect of any representations made by the nominated sub-contractor as to the cause of any delay in the progress of completion of the sub-contract Works or of any section thereof, and that the consent of the Architect shall not be unreasonably withheld.
- (ii) If any nominated sub-contractor fails to complete the sub-contract Works or (where the sub-contract Works are to be completed in sections) any section thereof within the period specified in the sub-contract or within any extended time granted by the Contractor with the written consent of the Architect, then if the same ought reasonably so to have been completed the Architect shall certify in writing accordingly; immediately upon issue the Architect shall send a duplicate of any such certificate to the nominated sub-contractor.
- (e) If the Architect desires to secure final payment to any nominated sub-contractor before final payment is due to the Contractor, and if such sub-contractor has satisfactorily indemnified the Contractor against any latent defects, then the Architect may in an Interim Certificate include an amount to cover the said final payment, and thereupon the Contractor shall pay to such nominated sub-contractor the amount so certified ~~less only a discount for cash of 2 1/4 per cent.~~ Upon such final payment the Contractor shall, save for latent defects, be discharged from all liability for the work materials or goods executed or supplied by such sub-contractor under the sub-contract to which the payment relates. **DELETE**
- (f) Neither the existence nor the exercise of the foregoing powers nor anything else contained in these Conditions shall render the Employer in any way liable to any nominated sub-contractor.
- (g) (i) Where the Contractor in the ordinary course of his business directly carries out works for which prime cost sums are included in the Specification and where items of such works are set out in the Appendix to these Conditions and the Architect is prepared to receive tenders from the Contractor for such items, then the Contractor shall be permitted to tender for the same or any of them but without prejudice to the Employer's right to reject the lowest or any tender. If the Contractor's tender is accepted, he shall not sublet the work without the consent of the Architect. Provided that where a prime cost sum arises under Architect's instructions issued under clause 11 (3) of these Conditions it shall be deemed for the purposes of this paragraph to have been included in the Specification and the item of work to which



it relates shall likewise be deemed to have been set out in the Appendix to these Conditions.

- (ii) It shall be a condition of any tender accepted under this paragraph that clause 11 of these Conditions shall apply in respect of the items of work included in the tender as if for the reference therein to the Contract Drawings, the Specification and the Schedule of Rates there were references to the equivalent documents included in or referred to in the tender.

- 28 The following provisions of this Condition shall apply where prime cost sums are included in the Specification, or arise as a result of Architect's instructions given in regard to the expenditure of provisional sums, in respect of any materials or goods to be fixed by the Contractor.

~~(a) Such shall be deemed to include 5 per cent. cash discount and the term prime cost when included or arising as aforesaid, shall be understood to mean the net cost to be defrayed as a prime cost after deducting any trade or other discount (except the said discount of 5 per cent.), and shall include any tax or duty not otherwise recoverable under this contract by whomsoever payable which is payable under or by virtue of any Act of Parliament on the import, purchase, sale, appropriation, processing, alteration, adapting for sale, or use of the materials or goods to be supplied, and the cost of packing, carriage and delivery. Provided that, where in the opinion of the Architect the Contractor has incurred expense for special packing or special expense shall be allowed as part of the sums actually paid by the Contractor.~~

(b) Such sums shall be expended in favour of such persons as the Architect shall instruct, and all specialists, merchants, tradesmen or others who are nominated by the Architect to supply materials or goods are hereby declared to be suppliers to the Contractor and are referred to in these Conditions as 'nominated suppliers'. Provided that the Architect shall not (save where the Architect and Contractor shall otherwise agree) nominate as a supplier a person who will not enter into a contract of sale which provides (*inter alia*):—

- (i) That the materials or goods to be supplied shall be to the reasonable satisfaction of the Architect.
- (ii) That the nominated supplier shall make good by replacement or otherwise any defects in the materials or goods supplied which appear within such period as is therein mentioned and shall bear any expenses reasonably incurred by the Contractor as a direct consequence of such defects, provided that:—

- (1) where the materials or goods have been used or fixed such defects are not such that examination by the Contractor ought to have revealed them before using or fixing;
- (2) such defects are due solely to defective workmanship or materials in the goods supplied and shall not have been caused by improper storage by the Contractor or by misuse or by any act or neglect of either the Contractor the Architect or the Employer or by any person or persons for whom they may be responsible.

- (iii) That delivery of the materials or goods supplied shall be commenced and completed at such times as the Contractor may reasonably direct.

~~(iv) That the nominated supplier shall allow the Contractor a discount for cash of 5 per cent. if the Contractor makes payment in full within 30 days of the end of the month during which delivery is made.~~

~~(v) That the nominated supplier shall not be obliged to make any delivery of materials or goods (except any which may have been paid for in full less only the discount for cash) after the determination (for any reason) of the Contractor's employment under this Contract.~~

~~(c) All payments by the Contractor for materials or goods supplied by a nominated supplier shall be in full and shall be paid within 30 days of the end of the month during which delivery is made less only a discount for cash of 5 per cent. if so paid.~~

(d) Where the said contract of sale between the Contractor and the nominated supplier in any way restricts, limits or excludes the liability of the nominated supplier to the Contractor in respect of materials or goods supplied or to be supplied, and the Architect has specifically approved in writing the said restrictions, limitations or exclusions, the liability of the Contractor to the Employer in respect of the said materials or goods shall be restricted, limited or excluded to the same extent. The Contractor shall not be obliged to enter into a contract with, nor expend prime cost sums in favour of, the nominated supplier until the Architect has specifically approved in writing the said restrictions, limitations or exclusions.

- 29 The Contractor shall permit the execution of work not forming part of this Contract by artists, tradesmen or others engaged by the Employer. Every such person shall for the purposes of



clause 18 of these Conditions be deemed to be a person for whom the Employer is responsible and not to be a sub-contractor.

30 (1) Interim valuations shall be made whenever the Architect considers them to be necessary for the purpose of ascertaining the amount to be stated as due in an Interim Certificate. The Architect shall from time to time as provided in this sub-clause issue Interim Certificates stating the amount due to the Contractor from the Employer; and the Contractor shall be entitled to payment therefor within 14 days from the presentation of that Certificate. Before the issue of the Certificate of Practical Completion, Interim Certificates shall be issued at the Period of Interim Certificates specified in the Appendix to these Conditions. After the issue of the Certificate of Practical Completion, Interim Certificates shall be issued as and when further amounts are due to the Contractor from the Employer provided always that the Architect shall not be required to issue an Interim Certificate within one calendar month of having issued a previous Interim Certificate.

Certificates  
and payments.

(2) The amount stated as due in an Interim Certificate shall, subject to any agreement between the parties as to stage payments, be the total value of the work properly executed and of the materials and goods delivered to or adjacent to the Works for use thereon up to and including a date not more than seven days before the date of the said certificate less any amount which may be retained by the Employer (as provided in sub-clause (3) of this Condition) and less any instalments previously paid under this Condition. Provided that such certificate shall only include the value of the said materials and goods as and from such time as they are reasonably properly and not prematurely brought to or placed adjacent to the Works and then only if adequately protected against weather or other casualties.

(2A) The amount stated as due in an Interim Certificate may in the discretion of the Architect include the value of any materials or goods before delivery thereof to or adjacent to the Works provided that:—

- (a) Such materials or goods are intended for inclusion in the Works;
- (b) Nothing remains to be done to such materials or goods to complete the same up to the point of their incorporation in the Works;
- (c) Such materials or goods have been and are set apart at the premises where they have been manufactured or assembled or are stored, and have been clearly and visibly marked, individually or in sets, either by letters or figures or by reference to a pre-determined code, so as to identify:
  - (i) Where they are stored on premises of the Contractor, the Employer, and in any other case, the person to whose order they are held; and
  - (ii) Their destination as being the Works;
- (d) Where such materials or goods were ordered from a supplier by the Contractor or a sub-contractor, the contract for their supply is in writing and expressly provides that the property therein shall pass unconditionally to the Contractor or the sub-contractor (as the case may be) not later than the happening of the events set out in paragraphs (b) and (c) of this sub-clause;
- (e) Where such materials or goods were ordered from a supplier by the sub-contractor, the relevant sub-contract is in writing and expressly provides that on the property in such materials or goods passing to the sub-contractor the same shall immediately thereon pass to the Contractor;
- (f) Where such materials or goods were manufactured or assembled by a sub-contractor, the sub-contract is in writing and expressly provides that the property in such materials or goods shall pass unconditionally to the Contractor not later than the happening of the events set out in paragraphs (b) and (c) of this sub-clause;
- (g) The materials or goods are in accordance with this Contract;
- (h) The Contractor furnishes to the Architect reasonable proof that the property in such materials or goods is in him and that the appropriate conditions set out in paragraphs (a) to (g) of this sub-clause have been complied with;

The Contractor furnishes the Architect with reasonable proof that such materials or goods are insured against loss or damage for their full value under a policy of insurance protecting the interests of the Employer and the Contractor in respect of the contingencies referred to in clause 20 of these Conditions, during the period commencing with the transfer of property in such materials or goods to the Contractor until they are delivered to, or adjacent to, the Works.

- (3) (a) In respect of any Interim Certificate issued before the issue of the Certificate of Practical Completion the Employer may, subject to paragraph (c) of this sub-clause, retain a per-



centage (in these Conditions called "the Retention Percentage") of the total value of the work, materials and goods referred to in sub-clauses (2) and (2A) of this Condition.\* The Retention Percentage shall be 5 per cent. unless a lower rate shall be agreed between the parties and specified in the Appendix to these Conditions as the Retention Percentage.

- (b) If any Interim Certificate is issued after the issue of the Certificate of Practical Completion but before the issue of the Certificate for the residue of the amounts then so retained referred to in sub-clause (4) (c) of this Condition the Employer in respect of the said Interim Certificate may, subject to paragraph (c) of this sub-clause, retain a percentage (which percentage shall be equal to half the Retention Percentage) of the total value of the work, materials and goods referred to in sub-clauses (2) and (2A) of this Condition.
  - (c) The amount which the Employer may retain by virtue of paragraphs (a) and/or (b) of this sub-clause shall be reduced by the amounts of any releases of retention made to the Contractor in pursuance of clause 16 (f) and/or clause 27 (e) of these Conditions.
- (4) The amounts retained by virtue of sub-clause (3) of this Condition shall be subject to the following rules:—

- (a) The Employer's interest in any amount so retained shall be fiduciary as trustee for the Contractor (but without obligation to invest) and the Contractor's beneficial interest therein shall be subject only to the right of the Employer to have recourse thereto from time to time for payment of any amount which he is entitled under the provisions of this Contract to deduct from any sum due or to become due to the Contractor.
  - (b) On the issue of the Certificate of Practical Completion the Architect shall issue a certificate for one moiety of the total amounts then so retained and the Contractor shall, on presenting any such certificate to the Employer, be entitled to payment of the said moiety within 14 days from the presentation of that certificate.
  - (c) On the expiration of the Defects Liability Period named in the Appendix to these Conditions, or on the issue of the Certificate of Completion of Making Good Defects, whichever is the later, the Architect shall issue a Certificate for the residue of the amounts then so retained and the Contractor shall, on presenting any such certificate to the Employer, be entitled to payment of the said residue within 14 days from the presentation of that certificate.
- (5) (a) The measurement and valuation of the Works shall be completed within the Period of Final Measurement and Valuation stated in the Appendix to these Conditions, and the Contractor shall be supplied with a copy of the priced Bills of Variation not later than the end of the said Period and before the issue of the Final Certificate under sub-clause (6) of this Condition.
- (b) Either before or within a reasonable time after Practical Completion of the Works the Contractor shall send to the Architect all documents necessary for the purposes of the computations required by these Conditions including all documents relating to the accounts of nominated sub-contractors and nominated suppliers.
- (c) In the settlement of accounts the amounts paid or payable under the appropriate contracts by the Contractor to nominated sub-contractors or nominated suppliers (including the discounts for cash mentioned in clauses 27 and 28 of these Conditions), the amounts paid or payable by virtue of clause 4 (2) of these Conditions in respect of fees or charges, the amounts paid or payable in respect of any insurances maintained in compliance with clause 19 (2) of these Conditions, the tender sum (or such other sum as is appropriate in accordance with the terms of the tender) for any work for which a tender made under clause 27 (g) of these Conditions is accepted and the value of any work executed by the Contractor for which a provisional sum is included in the Specification shall be set against the relevant prime cost or provisional sum mentioned in the Specification or arising under Architect's instructions issued under clause 11 (3) of these Conditions as the case may be, and the balance, after allowing in all cases *pro rata* for the Contractor's profit at the rates shown in the Schedule of Rates, shall be added to or deducted from the Contract sum. Provided that no deduction shall be made in respect of any damages paid or allowed to the Contractor by any sub-contractor or supplier.
- (6) So soon as is practicable but before the expiration of 3 months from the end of the Defects Liability Period stated in the Appendix to these Conditions or from completion of making good defects under clause 15 of these Conditions or from receipt by the Architect of the documents referred to in paragraph (b) of sub-clause (5) of this Condition, whichever is the latest, the Architect shall issue the Final Certificate. The Final Certificate shall state:—

\*Footnote.—Where the Employer at tender stage estimates the Contract Sum to be \$500,000 or over the Retention Percentage should not be more than three per cent.



(a) The sum of the amounts already paid to the Contractor under Interim Certificates and Certificates issued under sub-clauses (4) (b) and (4) (c) of this Condition, and

(b) The Contract Sum adjusted as necessary in accordance with the terms of these Conditions, and the difference (if any) between the two sums shall be expressed in the said certificate as a balance due to the Contractor from the Employer or to the Employer from the Contractor as the case may be. Subject to any deductions authorised by these Conditions, the said balance as from the fourteenth day after presentation of the Final Certificate by the Contractor to the Employer shall be a debt payable by the Employer to the Contractor or as the case may be as from the fourteenth day after issue of the Final Certificate shall be debt payable by the Contractor to the Employer.

(7) (a) Except as provided in paragraphs (b) and (c) of this sub-clause (and save in respect of fraud), the Final Certificate shall have effect in any proceedings arising out of or in connection with this Contract (whether by arbitration under clause 33 of these Conditions or otherwise) as

(i) conclusive evidence that where the quality of materials or the standards of workmanship are to be to the reasonable satisfaction of the Architect the same are to such satisfaction, and

(ii) conclusive evidence that any necessary effect has been given to all the terms of this Contract which require an adjustment to be made of the Contract Sum save where there has been any accidental inclusion or exclusion of any work, materials, goods or figure in any computation or any arithmetical error in any computation, in which event the Final Certificate shall have effect as conclusive evidence as to all other computations.

(b) If any arbitration or other proceedings have been commenced by either party before the Final Certificate has been issued the Final Certificate shall have effect as conclusive evidence as provided in paragraph (a) of this sub-clause after either

(i) such proceedings have been concluded, whereupon the Final Certificate shall be subject to the terms of any award or judgement in or settlement of such proceedings, or

(ii) a period of twelve months during which neither party has taken any further step in such proceedings, whereupon the Final Certificate shall be subject to any terms agreed in partial settlement,

whichever shall be the earlier.

(c) If any arbitration or other proceedings have been commenced by either party within 14 days after the Final Certificate has been issued, the Final Certificate shall have effect as conclusive evidence as provided in paragraph (a) of this sub-clause save only in respect of all matters to which these proceedings relate.

(8) Save as aforesaid no certificate of the Architect shall of itself be conclusive evidence that any works materials or goods to which it relates are in accordance with this Contract.

\*31A. The Contract Sum shall be deemed to have been calculated in the manner set out below and shall be subject to adjustment in the events specified hereunder:—

Fluctuations.

(a) (i) The prices (including the cost of workmen's compensation insurance and of third party insurance) contained in the Schedule of Rates are based upon the rates of wages and the other emoluments and expenses which will be payable by the Contractor to or in respect of workpeople engaged upon or in connection with the Works in accordance with the provisions of the Wages Regulation (Building and Civil and Electrical Engineering Trades) Order which will be applicable to the Works and which have been promulgated at the date of tender, or in the case of workpeople so engaged whose rates of wages and other emoluments and expenses order or by the terms of an agreement\*\* between the Contractor and a registered

\*Footnote.—See \*footnote on Page 24

\*\*Footnote.—The terms of any such agreement, or any subsequent alteration thereto, shall be those established by machinery of negotiation or arbitration to which the parties are an organisation of employers and a trade union representative respectively of substantial proportions of the employers and workers engaged in the trade or industry. If an organisation of employers is not itself a party to any such agreement, then its terms, or any subsequent alteration thereto, shall be those endorsed by such an organisation, or, in the absence of any such organisation, shall not be inconsistent with those observed by other employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.



and recognised trade union, in accordance with the provisions or terms of such other wages regulation order or agreement which will be applicable and which have been promulgated as aforesaid.

- (ii) If any of the said rates of wages or other emoluments and expenses are increased or decreased by reason of any alteration in the said provisions or terms promulgated after the date of tender, then the net amount of the increase or decrease in wages and other emoluments and expenses together with the net amount of any consequential increase or decrease in the cost of workmen's compensation insurance, of third party insurance and of any contribution, levy or tax payable by a person in his capacity as an employer, shall, as the case may be, be paid to or allowed by the Contractor.
- (b) (i) The prices contained in the Schedule of Rates are based upon the types and rates of contribution, levy and tax payable by a person in his capacity as an employer and which at the date of tender are payable by the Contractor. A type and a rate so payable are in the next sub-paragraph referred to as a 'tender type' and a 'tender rate'.
- (ii) If any of the tender rates other than a rate of levy payable by virtue of the Fiji National Training Act 1973, is increased or decreased, or if a tender ceases to be payable, or if a new type of contribution, levy or tax which is payable by a person in his capacity as an employer becomes payable after the date of tender, then in any such case the net amount of the difference between what the Contractor actually pays or will pay in respect of workpeople whilst they are engaged upon or in connection with the Works or because of his employment of such workpeople upon or in connection with the Works, and what he would have paid had the alteration, cessation or new type of contribution, levy or tax not become effective, shall, as the case may be, be paid to or allowed by the Contractor.
- (iii) The prices contained in the Schedule of Rates are based upon the types and rates of refund of contributions, levies and taxes payable by a person in his capacity as an employer and upon the types and rates of premium receivable by a person in his capacity as an employer being in each case types and rates which at the date of tender are receivable by the Contractor. Such a type and such a rate are in the next sub-paragraph referred to as a 'tender type' and a 'tender rate'.
- (iv) If any of the tender rates is increased or decreased or if a tender type ceases to be payable or if a new type of refund of any contribution levy or tax payable by a person in his capacity as an employer becomes receivable or if a new type of premium receivable by a person in his capacity as an employer becomes receivable after the date of tender, then in any such case the net amount of the difference between what the Contractor actually receives or will receive in respect of workpeople whilst they are engaged upon or in connection with the Works or because of his employment of such workpeople upon or in connection with the Works, and what he would have received had the alteration, cessation or new type of refund or premium not become effective, shall, as the case may be, be allowed by or paid to the Contractor.
- (v) The references in the two preceding sub-paragraphs to premiums shall be construed as meaning all payments howsoever they are described which are made under or by virtue of an Act of Parliament to a person in his capacity as an employer and which affect the cost to an employer of having persons in his employment.
- (vi) The references in sub-paragraphs (ii) to (iv) of this paragraph to contributions, levies and taxes shall be construed as meaning all impositions payable by a person in his capacity as an employer howsoever they are described and whoever the recipient which are imposed under or by virtue of an Act of Parliament and which affect the cost to an employer of having persons in his employment.
- (c) (i) The prices contained in the Schedule of Rates are based upon the market prices of the materials and goods specified in the list attached thereto which were current at the date of tender. Such prices are hereinafter referred to as 'basic prices', and the prices stated by the Contractor on the said list shall be deemed to be the basic prices of the specified materials and goods.

*\*Footnote.—Parts A, C, D and E should be used where the parties have agreed to allow the labour and materials cost and tax fluctuations to which Part A refers. Otherwise Parts B, C, D and E should be used.*



- (ii) If after the date of tender the market price of any of the materials or goods specified as aforesaid increases or decreases, then the net amount of the difference between the basic price thereof and the market price payable by the Contractor and current when the materials or goods are bought shall, as the case may be, be paid to or allowed by the Contractor.
- (iii) The references in the two preceding sub-paragraphs to 'market prices' shall be construed as including any duty or tax by whomsoever payable which is payable under or by virtue of any Act of Parliament on the import, purchase, sale, appropriation, processing or use of the materials or goods specified as aforesaid.

**\*31B** The Contract Sum shall be deemed to have been calculated in the manner set out below and shall be subject to adjustment in the events specified hereunder:—

- (a) (i) The prices contained in the Schedule of Rates are based upon the types and rates of contribution, levy and tax payable by a person in his capacity as an employer and which at the date of tender are payable by the Contractor. A type and a rate so payable are in the next sub-paragraph referred to as a 'tender type' and a 'tender rate'.
- (ii) If any of the tender rates under than a rate of levy payable by virtue of the Fiji National Training Act 1973, is increased or decreased, or if a tender ceases to be payable or if a new type of contribution, levy or tax which is payable by a person in his capacity as an employer becomes payable after the date of tender, then in any such case the net amount of the difference between what the Contractor actually pays or will pay in respect of workpeople whilst they are engaged upon or in connection with the Works or because of his employment of such workpeople upon or in connection with the Works, and what he would have paid had the alteration, cessation or new type of contribution, levy or tax not become effective, shall, as the case may be, be paid to or allowed by the Contractor.
- (iii) The prices contained in the Schedule of Rates are based upon the types and rates of refund of contributions, levies and taxes payable by a person in his capacity as an employer and upon the types and rates of premium receivable by a person in his capacity as an employer being in each case types and rates which at the date of tender are receivable by the Contractor. Such a type and such a rate are in the next sub-paragraph referred to as a 'tender type' and a 'tender rate'.
- (iv) If any of the tender rates is increased or decreased or if a tender type ceases to be payable or if a new type of refund of any contribution levy or tax payable by a person in his capacity as an employer becomes receivable or if a new type of premium receivable by a person in his capacity as an employer becomes receivable after the date of tender, then in any such case the net amount of the difference between what the Contractor actually receives or will receive in respect of workpeople whilst they are engaged upon or in connection with the Works or because of his employment of such workpeople upon or in connection with the Works, and what he would have received had the alteration, cessation or new type of refund or premium not become effective, shall, as the case may be, be allowed by or paid to the Contractor.
- (v) The references in the two preceding sub-paragraphs to premiums shall be construed as meaning all payments howsoever they are described which are made under or by virtue of an Act of Parliament to a person in his capacity as an employer and which affect the cost to an employer of having persons in his employment.
- (vi) The references in sub-paragraphs (i) to (iv) of this paragraph to contributions, levies and taxes shall be construed as meaning all impositions payable by a person in his capacity as an employer howsoever they are described and whoever the recipient which are imposed under or by virtue of an Act of Parliament and which affect the cost to an employer of having persons in his employment.
- (b) (i) The prices contained in the Schedule of Rates are based upon the types and rates of duty if any and tax if any by whomsoever payable which at the date of tender are payable on the import, purchase, sale, appropriation, processing or use of the materials and goods specified in the list attached thereto under or by virtue of any Act of Parliament. A type and a rate so payable are in the next sub-paragraph referred to as a 'tender type' and a 'tender rate'.

*\*Footnote.—Parts A, C, D and E should be used where the parties have agreed to allow the labour and materials cost and tax fluctuations to which Part A refers. Otherwise Parts B, C, D and E should be used.*



- (ii) If in relation to any materials or goods specified as aforesaid a tender rate is increased or decreased, or a tender type ceases to be payable or a new type of duty or tax becomes payable on the import, purchase, sale, appropriation, processing or use of those materials or goods, then in any such case the net amount of the difference between what the Contractor actually pays in respect of those materials or goods, and what he would have paid in respect of them had the alteration, cessation or imposition not occurred, shall, as the case may be, be paid to or allowed by the Contractor. In this sub-paragraph the expression 'a new type of duty or tax' includes an additional duty or tax and a duty or tax imposed in regard to specified materials or goods in respect of which no duty or tax whatever was previously payable.

**31C (1)** If the Contractor shall decide subject to clause 17 of these Conditions to sublet any portion of the Works he shall incorporate in the sub-contract provisions to the like effect as the provisions of clauses 31 A, 31 D and 31 E/closures 31 B, 31 D and 31 E (as applicable) which are applicable for the purposes of this Contract.

(2) If the price payable under such a sub-contract as aforesaid is decreased below or increased above the price in such sub-contract by reason of the operation of the said incorporated provisions, then the net amount of such decrease or increase shall, as the case may be, be allowed by or paid to the Contractor under this Contract.

**31D (1)** The Contractor shall give a written notice to the Architect of the occurrence of any of the events referred to in such of the following provisions as are applicable for the purpose of this Contract:

- (a) Clause 31 A(a)(ii);
- (b) Clause 31 A(b)(ii);
- (c) Clause 31 A(b)(iv);
- (d) Clause 31 A(c)(ii);
- (e) Clause 31 B(a)(ii);
- (f) Clause 31 B(a)(iv);
- (g) Clause 31 B(b)(ii);
- (h) Clause 31 C(2).

(2) Any notice required to be given by the preceding sub-clause shall be given within a reasonable time after the occurrence of that to which the notice relates, and the giving of a written notice in that time shall be a condition precedent to any payment being made to the Contractor in respect of the event in question.

(3) The Quantity Surveyor and the Contractor may agree what shall be deemed for all the purposes of this Contract to be the net amount payable to or allowable by the Contractor in respect of the occurrence of any event such as is referred to in any of the provisions listed in sub-clause (1) of this Condition.

(4) Any amount which from time to time becomes payable to or allowable by the Contractor by virtue of clause 31 A or clause 31 B or clause 31 C of these Conditions shall, as the case may be, be added to or subtracted from:

- (a) The Contract Sum; and
- (b) Any amounts payable to the Contractor and which are calculated in accordance with either sub-paragraph (i) or sub-paragraph (ii) of paragraph (b) of sub-clause 2 of clause 26 of these Conditions; and
- (c) The amount which would otherwise be stated as due in the next Interim Certificate.

Provided:

- (i) No addition to or subtraction from the amount which would otherwise be stated as due in an Interim Certificate shall be made by virtue of this sub-clause unless on or before the date as at which the total value of work, materials and goods is ascertained for the purposes of that Certificate the Contractor shall have actually paid or received the sum which is payable by or to him in consequence of the event in respect of which the payment or allowance arises.
- (ii) No addition to or subtraction from the Contract Sum made by virtue of this sub-clause shall alter in any way the amount of profit of the Contractor included in that Sum.

(5) Clause 31 A, clause 31 B and clause 31 C shall not apply in respect of:

- (a) Work for which the contractor is allowed daywork rates under clause 11(4) (c) of these Conditions.



(b) Work executed or materials or goods supplied by any nominated sub-contractor or nominated supplier (fluctuations in relation to nominated sub-contractors and nominated suppliers shall be dealt with under any provision in relation thereto which may be included in the appropriate sub-contract of sale), or

(c) Work executed by the Contractor for which a tender made under Clause 27(g) of these Conditions has been accepted.

(6) In Clause 31 A and clause 31 B of these Conditions:

(a) The expression 'the date of tender' means the date 10 days before the date fixed for the receipt of tenders by the Employer; and

(b) The expressions 'materials' and 'goods' include timber used in formwork but do not include other consumable stores, plant and machinery.

(c) The expression 'workpeople' means persons whose rates of wages and other emoluments and expenses are governed by the provisions of the Wages Regulation (Building and Civil and Electrical Engineering Trades) Order, or by the provisions of some other wages regulation order for trades associated with the building industry, or by the terms of an agreement between the Contractor and a registered and recognised trade union.

31E There shall be added to the amount paid to or allowed by the Contractor under:

(a) Clause 31 A(a)(ii);

(b) Clause 31 A(b)(ii);

(c) Clause 31 A(b)(iv);

(d) Clause 31 A(c)(ii);

(e) Clause 31 B(a)(ii);

(f) Clause 31 B(a)(iv);

(g) Clause 31 B(b)(ii);

the percentage stated in the Appendix to these Conditions.

32. (1) All fossils, antiquities and other objects of interest or value which may be found on the site or in excavating the same during the Works shall become the property of the Employer, and upon discovery of such an object the Contractor shall forthwith:

Antiquities.

(a) use his best endeavours not to disturb the object and shall cease work if and insofar as the continuance of work would endanger the object or prevent or impede its excavation or its removal;

(b) take all steps which may be necessary to preserve the object in the exact position and condition in which it was found; and

(c) inform the Architect or the Clerk of Works of the discovery and precise location of the object.

(2) The Architect shall issue instructions in regard to what is to be done concerning an object reported by the Contractor under the preceding sub-clause, and (without prejudice to the generality of this power) such instructions may require the Contractor to permit the examination, excavation or removal of the object by a third party. Any such third party shall for the purposes of clause 18 of these Conditions be deemed to be a person for whom the Employer is responsible and not to be a sub-contractor.

(3) If in the opinion of the Architect compliance with the provisions of sub-clause (1) of this Condition or with an instruction issued under sub-clause (2) of this Condition has involved the Contractor in direct loss and/or expense for which he would not be reimbursed by a payment made under any other provision in this Contract then the Architect shall either himself ascertain or shall instruct the Quantity Surveyor to ascertain the amount of such loss and/or expense. Any amount from time to time so ascertained shall be added to the Contract Sum, and if an Interim Certificate is issued after the date of ascertainment any such amount shall be added to the amount which would otherwise be stated as due in such a Certificate.

33 (1) Provided always that in case any dispute or difference shall arise between the Employer or the Architect on his behalf and the Contractor, either during the progress or after the completion or abandonment of the Works, as to the construction of this Contract or as to any matter or thing of whatsoever nature arising thereunder or in connection therewith (including any matter or thing left by this Contract to the discretion of the Architect or the withholding by the Architect of any certificate to which the Contractor may claim to be entitled or the measurement and valuation mentioned in clause 30 (5) (a) of these Conditions or the rights and liabilities of the parties under clauses 25 or 26 of these Conditions), then such dispute or difference shall be and is hereby referred to the arbitration and final decision of a person to be agreed between

Arbitration.



the parties, or, failing agreement within 14 days after either party has given to the other a written request to concur in the appointment of an Arbitrator, a person to be appointed on the request of either party by the President or a Vice-President for the time being of the Fiji Association of Architects.

(2) Such reference, except on article 3 or article 4 of the Articles of Agreement, or on the questions whether or not the issue of an instruction is empowered by these Conditions, whether or not a certificate has been improperly withheld or is not in accordance with these Conditions, shall not be opened until after Practical Completion or alleged Practical Completion of the Works or termination or alleged termination of the Contractor's employment under this Contract, or abandonment of the Works, unless with the written consent of the Employer or the Architect on his behalf and the Contractor.

(3) Subject to the provisions of clauses 2 (2), 30 (7) and 31 D (3) of these Conditions, the Arbitrator shall, without prejudice to the generality of his powers, have power to direct such measurements and/or valuations as may in his opinion be desirable in order to determine the rights of the parties and to ascertain and award any sum which ought to have been the subject of or included in any certificate and to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision, requirement or notice had been given.

(4) The award of such Arbitrator shall be final and binding on the parties.

(5) \*Whatever the nationality, residence or domicile of the Employer, the Contractor, any sub-contractor or supplier or the Arbitrator, and wherever the Works, or any part thereof, are situated, the law of Fiji shall be the proper law of this Contract and in particular (but not so as Chapter 30) shall apply to any arbitration under this Contract wherever the same, or any part of it, shall be conducted.

*\*Footnote.—Where the parties do not wish the proper law of the contract to be the law of Fiji and/or do not wish the provisions of the Arbitration Ordinance (Chapter 30) to apply to any arbitration under the contract held under the procedural law of another country appropriate amendments to this sub-clause should be made.*



**\* As Witness** the hands of the said parties:

*Signed by the said*

.....JONE NAKAUVADRA.....

.....PRAVIN LAL.....

LAUTOKA CITY COUNCIL.....

**STAMP**

*In the presence of*

Name: .....ASHOK BALGOVIND.....

Address.....4 YAKA STREET, NASINU.....

Description...ARCHITECT.....

*Signed by the said*

.....SAILESH SINGH.....

.....DEWA SAMI.....

METAL WORKS & JOINERY LIMITED.....

**STAMP**

*In the presence of*

Name: .....ASHOK BALGOVIND.....

Address.....4 YAKA STREET, NASINU.....

Description...ARCHITECT.....

*\*Footnote. – If the Contract is to be executed under seal, this clause and the words following it must be altered accordingly.*

10 1/2 21



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## APPENDIX

### AMENDMENTS TO STANDARD CONTRACT

The Fiji Standard Form of Building Contract (without quantities) shall apply on this contract.

1.1. The parties have agreed that the following amendments are made to the Standard Contract.

- (i) On page 6, clause 5 is amended by inserting 'Engage a registered Surveyor to accurately set out the work' as the last sentence. (Covered in 24.1 'condition of contract No1')
- (ii) On page 7, Clause 8 is amended by inserting "the prospective Contractor shall before tender acceptance nominate his proposed foreman for the works together with those persons Curriculum Vitae. The accepted foreman shall remain constantly on the works and shall not be replaced without the consent of the Architect" as the last sentence;
- (iii) On page 8, clause 13 is amended to read '(1) the Contract Sum.....'
- (iv) On page 8, clause 13 is amended by inserting '(2) The Contract Sum shall be inclusive of the value added tax introduced by the value added tax act 1991;
- (v) On page 13, clause 20 (B) and (C) is deleted.
- (vi) On page 14, clause 23 is amended to insert "within seven days' after 'given written notice' in the first paragraph;
- (vii) On page 14, clause 23 is amended to insert '23 (b.). delay for exceptionally inclement weather shall be define thus;

The Contractor shall allow for average wet weather to be anticipated during the Contract period, in accordance with the records kept by the Bureau of Meteorology, Fiji, for the district in which the works are located. Unless extraordinary circumstance arise in the opinion of the Architect, extensions of time for inclement weather, if any, shall be granted, only according to the number of 'wet days' shall be determined from the figures recorded by the Meteorology Bureau over the last five years. A 'wet day' shall be any 24 hour period during normal working days when the rainfall exceeds 12mm as recorded by the Meteorology Bureau.

The Contractor is to give the Architect in support of any claim for 'wet weather' a copy of the meteorology Bureau records for average and actual rainfalls for the period involved.

Extensions under this formula shall not apply after work has been enclosed or otherwise protected in accordance with the Contract, nor if work is behind schedule, including approved extensions and would otherwise have been protected;

- (viii) On page 15, clause 23 (c), sub-clauses (j) and (i) are deleted;
- (ix) On page 15, clause 23(c), sub-clauses (k) is amended to (j);
- (x) On page 15, clause 23 (c), sub-clauses (i) is amended to (k);
- (xi) On page 18, Clause 27 is amended to delete '(a) shall be deemed to include two and one half percent cash discount and' and after 'Such sums'.
- (xii) On page 18, clause 27 is amended after 'or (save where the Architect/Supervising Officer and the Contractor shall otherwise agree) in sub-clause by deleting (a) the remainder of the text and inserting 'who will not enter into the Fiji Master Builders Association sub-contract, the use of which is mandatory and which provided (inter alia):-';
- (xiii) One page 19, Clause 27 is amended by deleting the remainder of the text after 'of this condition' in sub-clause (a) (viii);
- (xiv) On page 19, Clause 27 is amended by deleting the remainder of text after "paid in full" in sub-clause (a) (viii);
- (xv) On page 19, Clause 27 is amended by deleting the remainder of the text after "any section thereof" in sub-clause (b);
- (xvi) On page 20, Clause 27 is amended by deleting "less only a discount for cash of two and one and half per cent" after "the amount so certified" in sub-clause (vii);
- (xvii) On page 20, Clause 28 is amended by deleting "shall be deemed to include five per cent cash discount "after "such sums" in sub-clause (a);
- (xviii) On page 20, Clause 28 is amended by deleting "( except the said discount of five per cent )" after "other discount" in sub-clauses (a);
- (xix) On page 21, Clause 28 is amended by deleting sub-clause (iv);



- (xx) On page 21, Clause 28 is amended by deleting "less only the discount for cash" after "in full" in sub-clauses (b) (v);
- (xxi) On page 21, Clause 28 (v) to read (iv);
- (xxii) On page 21, Clause 28 is amended by deleting the remainder of text after "delivery is made" in sub-clauses (c);
- (xxiii) On page 23, Clause 30 is amended by deleting "(including discounts for cash mentioned in clauses 24 and 28 of this conditions )" after "to nominated sub-constructors or nominated suppliers";
- (xxiv) On page 24 and 25, Clause 31A is deleted.
- (xxv) On page 25, Clause 31B is amended to "31A Fluctuations"
- (xxvi) On page 26, Clause 31C is amended to "31B Fluctuations"
- (xxvii) On page 27, Clause 31D is amended to "31C Fluctuations"
- (xxviii) On page 28 Clause 31E is amended to "31D Fluctuations"
- (xxix) On page 28, Clause 32 is amended to "31 Antiquities"
- (xxx) On page 29, Clause 33 is amended to read "chapter 29" in sub-clauses 5: and
- (xxxi) On page 28, Clause 33 is amended to "32 Arbitration"

### General Provisions

1. The Contractor must comply with all applicable laws in performing its obligations under this contract.
2. Time shall be of the essence for the completion of the works.
3. Changes to contract sum will only be accepted in respect to change of law or Government's policy relating to VAT etc.
4. The Contractor's relationship with the Employer is one of independent contractor. Nothing in this contract shall create an employment or agency relationship nor shall the contractor act as agent or employee of the employer. The works are to be performed solely by the contractor.
5. The Contractor shall not perform any contracted services or works in a manner which would be injurious to the reputation and good will for the employer.
6. Any Notice, waiver or consent in respect to this contract must be in writing.
7. A waiver by a party to this contract shall not prejudice the party's rights in respect of any subsequent breach of the contract by the other party and is subject to any conditions imposed in writing by the waiving party.
8. If any provisions of this contract shall be determined by law or any court to be legal, invalid, void or of no effect, the legality or validity of the remainder of this contract shall not be affected and the provisions shall continue in force and full effect. The provisions deemed illegal, invalid, void or of no effect shall be deleted to the extent and effect and effects as if it had not been incorporated.
9. This Contract embodies and sets forth the entire agreement and the understanding of the parties and supersedes all prior oral or written agreement, understanding or agreements relating to the subject matter of this contract. Neither party shall be entitled to rely on any agreement, understanding or agreement not expressly set forth in this contract save any representation made fraudulently.
10. This contract shall not be varied except in writing by both parties.
11. The person signing this Contract (including and amendments to this contract) has, at the time of such signing, the authority to sign such documents.
12. This Contract shall be governed by the laws of Republic of Fiji.



LAUTOKA CITY COUNCIL



RE-ADVERTISED

**EXPRESSION OF INTEREST  
CONSTRUCTION OF OLYMPIC STANDARD SWIMMING POOL  
AT BOTANICAL GARDEN**

Lautoka City Council with assistance from the National Government is proposing to construct an Olympic standard swimming pool with associate facilities at the south end of Botanical Garden.

**OBJECTIVE**

The objective of Lautoka City Council is to seek Expression of Interest from reputable contractors to construct Olympic Standard Swimming Pool with a Warm Up Pool and Kids/ Learners Pool as per FINA requirements.

**SCOPE OF WORKS**

The interested parties are to express interest for the construction of Olympic Standard Swimming Pool with FINA Certification and provide the specialized services as follows:-

1. Civil works
2. General building construction works
3. Electrical works
4. Plumbing works
5. Mechanical works
6. Electronic and IT works for electronic score board and Data recording system for the pool.

Interested parties must submit an Expression of Interest detailing the following:-

1. Company profile with previous major projects completed and current project commitments.
2. Company organization structure
3. Schedule of equipment's and key management proposed to manage the project.
4. Directors curriculum vitae
5. Articles of company registration
6. Memorandum of association
7. Audited Financial Statements for the past three years
8. FNP Compliance letter
9. VAT Registration Certificate
10. Business License
11. OHS Policy Statement
12. Evidence of Insurance held
13. Current resource capabilities
14. Written recommendations from three reputable referees
15. Any Other relevant information as deemed necessary.

Expression of Interests closes at 4.00 pm on 3rd day of April, 2017. Expression of Interest shall be submitted in a sealed envelope marked as **Expression of Interest for Contractors - Botanical Garden Swimming Pool Project** and addressed to The Chief Executive Officer, Lautoka City Council, P.O. Box 124, Lautoka or hand delivered to the Civic Centre at 169 Vitogo Parade, Lautoka.

The firms that had already registered interest may not again submit its Expression of Interest.

Submissions can also be made via email address: [lcc@connect.com.fj](mailto:lcc@connect.com.fj)

  
[Mr. JONE QIO NAKAUVADRA]  
CHIEF EXECUTIVE OFFICER

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**LAUTOKA CITY COUNCIL**



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Submissions can also be made via email address: [lcc@connect.com.fj](mailto:lcc@connect.com.fj)

  
**[Mr. JONE QIO NAKAUVADRA]**  
**CHIEF EXECUTIVE OFFICER**





## MORTGAGEE SALE RESIDENTIAL PROPERTY

**WRITTEN OFFERS** are invited for the purchase of property comprised in Housing Authority Sub-Lease 595257 in the name of **Asinate Adikurikuru**.

Details of the property are as follows:

Description : Lot 19 on DP5085  
Area : 293.40 square meters  
Zoning : Residential  
Lease Remaining Term : 56 years

Property is located at Lot 19 Segali Road, Nadera.

### Improvements:

The improvement consists of a single storey concrete barrack housing for residential purpose. And accommodates a lounge/dining/kitchen combined.

### Conditions:

The sale is on "as is where is" basis. All offers received will be VAT exclusive. Any or the highest tender will not necessarily be accepted.

All enquiries should be directed to **Ms. Tarisi Kuboutawa** during office hours on telephone number 3239203 or mobile number 9991349. Tender closes on 23rd February, 2017 and will open on Monday 27th February, 2017 at 10.00 a.m. Interested parties are welcome.

Tenders to be sent in a sealed envelope marked: **"Mortgagee Sale Tender No: 05/2017"** to The Chairman of Tender Committee

HFC BANK  
PO Box 161  
Suva

Or place it on the tender box on the following address

3rd Floor  
HFC Bank Centre  
HFC Bank  
371 Victoria Parade  
Suva

## MORTGAGEE SALE RESIDENTIAL PROPERTY

**WRITTEN OFFERS** are invited for the purchase of property comprised in Native Lease 22549 in the name of **Pauliasi Tuivai**.

Details of the property are as follows:

Description : Lot 25 on S071  
Area : 381 square meters  
Zoning : Residential  
Lease Remaining Term : 63 years

Property is located at Lot 25 Kellend Street, Narere, Nasinu.

### Improvements:

Improvement consists of a single storey timber and concrete dwelling comprising of 2 flats. The front flat consists of 3 bed-rooms (inclusive of master bedroom), a sitting/dining room, kitchen, shower/water closet with a carport beneath.

Flat 2 consists of 3 bedrooms, sitting/dining/kitchen, shower, water closet and a laundry

### Conditions:

The sale is on "as is where is" basis. All offers received will be VAT exclusive. Any or the highest tender will not necessarily be accepted.

All enquiries should be directed to **Ms. Tarisi Kuboutawa** during office hours on telephone number 3239203 or mobile number 9991349. Tender closes on 23rd February, 2017 and will open on Monday 27th February, 2017 at 10.00 a.m. Interested parties are welcome.

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HFC Bank  
371 Victoria Parade  
Suva

## LAUTOKA CITY COUNCIL



## EXPRESSION OF INTEREST CONSTRUCTION OF OLYMPIC STANDARD SWIMMING POOL AT BOTANICAL GARDEN

Lautoka City Council with partnership from the National Government is proposing to construct an Olympic standard swimming pool with associated facilities at the south end of Botanical Garden.

### OBJECTIVE

The objective of Lautoka City Council is to seek Expression of Interest from reputable contractors to construct Olympic Standard Swimming Pool with a Warm Up Pool and Kids/ Learners Pool as per FINA requirements.

### SCOPE OF WORKS

The interested parties are to Express Interest for the construction of Olympic Standard Swimming Pool with FINA Certification and provide the specialized services as follows:-

1. Civil works
2. General building construction works
3. Electrical works
4. Plumbing works
5. Mechanical works
6. Electronic and IT works for electronic score board and Data recording system for the pool.

Interested parties must submit an Expression of Interest detailing the following:-

1. Company profile with previous major projects completed and current project commitments.
2. Company organization structure
3. Schedule of equipment's and key management proposed to manage the project.
4. Directors curriculum vitae
5. Articles of company registration
6. Memorandum of association
7. Audited Financial Statements for the past three years
8. FNPF Compliance letter
9. VAT Registration Certificate
10. Business License
11. OHS Policy Statement
12. Evidence of Insurance held (Public liability cover and Workmen's Compensation)
13. Current resource capabilities
14. Written recommendations from three reputable referees
15. Any Other relevant information as deemed necessary.

Expression of Interests closes at 4.00 pm on 17TH day of February, 2017. Expression of Interest shall be submitted in a sealed envelope marked as **Expression of Interest for Contractors - Botanical Garden Swimming Pool Project** and addressed to The Chief Executive Officer, Lautoka City Council, P.O. Box 124, Lautoka or hand delivered to the Civic Centre at 169 Vitogo Parade, Lautoka.

Submissions can also be made via email address: [lcc@connect.com.fj](mailto:lcc@connect.com.fj)

[Mr. JONE QIO NAKAUVADRA]  
CHIEF EXECUTIVE OFFICER

**LOOKING  
FOR A  
PROPERTY  
LOOK IN**

**FIJI  
Sun**

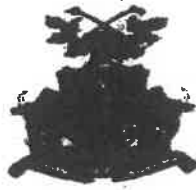


**EVERY SATURDAY  
TO LET  
FOR SALE  
WANTED TO BUY  
LAND FOR SALE  
AND MUCH MORE.....**







**LAUTOKA CITY COUNCIL**

**EXPRESSION OF INTEREST  
CONSTRUCTION OF OLYMPIC STANDARD SWIMMING POOL  
AT BOTANICAL GARDEN**

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3. Schedule of equipment's and key management proposed to manage the project.
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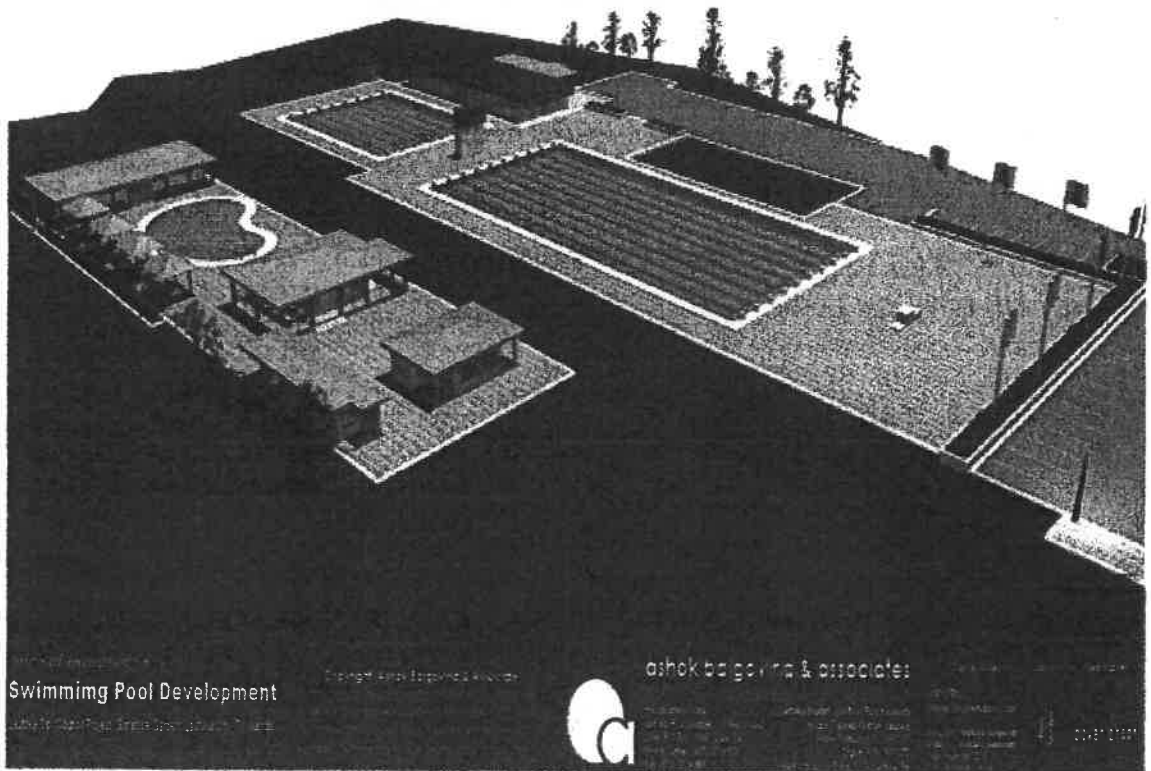
[Mr. JONE QIO NAKAUVADRA]  
CHIEF EXECUTIVE OFFICER

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# **TENDER DOCUMENTS & SPECIFICATION**

## **AQUATIC CENTRE - OLYMPIC POOL COMPLEX**



## **LAUTOKA CITY COUNCIL LAUTOKA**



**ashok balgovind & associates**

**Registered Architects, Engineers & Planning Consultants**

Ph: 3314883 / Fax: 3314884. 1-3 Berry Road, Suva. FTU HQ Complex  
GPO Box 15090, Suva, Fiji Islands. E-mail: abasfj@gmail.com

M R A



**A1. P & G**

## A2. Foundation

**A4. Walls, Columns & beams complete**

**A6. Roof Complete including gutter & downpipe**

### A8. Ceiling and Finishing

**A10. Tiling works complete for Building & Terrace**

## A12. Miscellaneous

**Total A**

**B1. P & G**

**B3. Floor Fill including terrace**

### B5. Roof frame

**B6. Roof Complete including gutter & downpipe**

ALDZ



- B7. Plumbing & Plumbing fittings works complete  
and connected to mains
- B8. Ceiling and Finishing
- B9. Joinery woks complete
- B10. Tiling works complete for Building & Terrace
- B11. Plaster & Painting works complete\_
- B12. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
**Total B**

**ITEM C - BUILDING C**

- C1. P & G
- C2. Foundation
- C3. Floor Fill including terrace
- C4. Walls, Columns & beams complete
- C5. Roof frame
- C6. Roof Complete including gutter & downpipe
- C7. Plumbing & Plumbing fittings works complete  
and connected to mains
- C8. Ceiling and Finishing
- C9. Joinery woks complete
- C10. Tiling works complete – Building & Terrace
- C11. Plaster & Painting works complete\_
- C12. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
**Total C**

*[Handwritten signatures and initials]*







E10. Tiling works complete for Building & Terrace

E11. Plaster & Painting works complete

E12. Miscellaneous

Total

Plus VAT

**Total E**

**ITEM F. BUILDING F**

F1. P & G

F2. Foundation

F3. Floor Fill including terrace

F4. Walls, Columns & beams complete

F5. Roof frame

F6. Roof Complete including gutter & downpipe

F7. Plumbing & Plumbing fittings works complete  
and connected to mains

F8. Ceiling and Finishing

F9. Joinery works complete

F10. Tiling works complete for Building & Terrace

F11. Plaster & Painting works complete

F12. Miscellaneous

Total

Plus VAT

**Total F**

**ITEM G - BUILDING G**

G1. P & G

G2. Foundation

G3. Floor Fill including terrace

10 11 12



- G4. Walls, Columns & beams complete  
G5. Roof frame  
G6. Roof Complete including gutter & downpipe  
G7. Plumbing & Plumbing fittings works complete  
and connected to mains  
G8. Ceiling and Finishing  
G9. Joinery woks complete  
G10. Tiling works complete for Building & Terrace  
G11. Plaster & Painting works complete  
G12. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
Total G

**ITEM H - TICKET BOTH**

- H1. P & G  
H2. Foundation  
H3. Floor Fill including terrace  
H4. Walls, Columns & beams complete  
H5. Roof frame  
H6. Roof Complete including gutter & downpipe  
H7. Plumbing & Plumbing fittings works complete  
and connected to mains  
H8. Ceiling and Finishing  
H9. Joinery woks complete  
H10. Tiling works complete for Building & Terrace  
H11. Plaster & Painting works complete  
H12. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
Total H

*[Signature]*



**ITEM I - PUMP ROOM**

I1. P &amp; G

I2. Foundation

I3. Floor Fill Complete

I4. Walls &amp; Columns

I5. Roof Complete

I6. Plaster, Finishing &amp; Painting

I7. Plumbing Complete

I8. Miscellaneous

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**Total****Plus VAT****Total I****ITEM J - PUMP ROOM 2**

J1. P &amp; G

J2. Foundation

J3. Floor Fill Complete

J4. Walls &amp; Columns

J5. Roof Complete

J6. Plaster, Finishing &amp; Painting

J7. Plumbing Complete

J8. Miscellaneous

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**Total****Plus VAT****Total J**



**ITEM K - WATER LEVEL ROOM 1**

- K1. P & G
- K2. Foundation
- K3. Floor Fill Complete
- K4. Walls, Columns & beams
- K5. Roof Complete
- K6. Plaster, Finishing & Painting & Joinery
- K7. Plumbing Complete
- K8. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
Total K

**ITEM L - WATER LEVEL ROOM 2**

- L1. P & G
- L2. Foundation
- L3. Floor Fill Complete
- L4. Walls & Columns & Beams
- L5. Roof Complete
- L6. Plaster & Painting & water proofing
- L7. Finishing & Joinery
- L8. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
Total L

4 M/L



**ITEM M - WATER LEVEL ROOM 3**

M1. P & G

M2. Foundation

M3. Floor Fill Complete

M4. Walls & Columns & Beams

M5. Roof Complete

M6. Plaster & Painting & water proofing

M7. Finishing & Joinery

M8. Miscellaneous

Total

Plus VAT

**Total M**

**ITEM N - BIG SCREEN & TIME CLOCK STRUCTURE (NO SCREEN)**

N1. P & G

N2. Foundation

N3. Floor & Beam Fill Complete

N4. Columns & beams

N5. Steel Frame

N6. Plaster & Finishing

N7. Painting & Tiling

N7. Miscellaneous

Total

Plus VAT

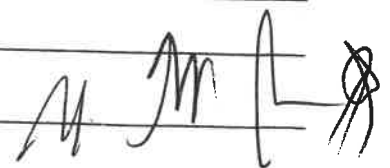
**Total N**

**ITEM O - CAR PARK (INCLUDING CHANNEL DRAINS)**

O1. P & G

O2. Car park & kerb O1

O3. Car park & kerb O2





04. Car park & kerb 05

05. Miscellaneous

Total

Plus VAT

Total O

**ITEM P - DRIVEWAY**

P1. P & G

P2. Driveway

P3. Kerb, Footpath and channel drain

P4. Miscellaneous

Total

Plus VAT

Total P

**ITEM Q - CONTROL ROOM**

Q1. P & G

Q2. Foundation

Q3. Floor Fill incl. terrace

Q4. Walls & Columns & beams complete

Q5. Roof frame

Q6. Roof Completed

Q7. Plumbing works including plumbing fitting complete

Q8. Ceiling and Finishing

Q9. Joinery works complete

Q10. Tiling works complete

Q11. Plaster & Painting works complete

Q12. Miscellaneous

Total

Plus VAT

Total Q

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**ITEM R - DRAINAGE (STORMWATER) INCLUDING SUMP & GRATING**

- | STORMWATER INFILTRATION |  |
|-------------------------|--|
| R1.                     | P & G                                    |
| R2.                     | Drain 1- V drains                        |
| R3.                     | Drain 2 – dia 300 culvert                |
| R4.                     | Drain 3 – dia 600 culvert                |
| R5.                     | Drain 4 – 250-300 x 400-500 with grating |
| R6.                     | Drain 5 – 300 C with grating             |
| R7.                     | Miscellaneous                            |

Total

**Plus VAT**

**Total R**

**ITEM S - SEWER MAINS INCLUDING INSPECTION CHAMBERS (COMPLETE)**

- S1. P & G**
- S2. Sewer reticulation - dia 100 upvc**
- S3. Sewer reticulation – dia 150 upvc**
- S4. Sewer reticulation – dia 200 upvc**
- S4. Diameter 300 upvc Sewer reticulation connection to WAF mains**
- S5. Miscellaneous**

Total

**Plus VAT**

**Total S**

## **ITEM T - WATER MAINS AND WATER RETICULATION**

- T1. P & G**
- T2. Water mains – dia 100 with connection for WAF mains**
- T3. Diameter 50 subsidiary**
- T4. Diameter 25 subsidiary**
- T5. Diameter 20 subsidiary**

N M.L



## **PRELIMINARY & GENERAL**

### **1.1 GENERAL CONDITIONS**

The Contractor shall comply with the applicable Fiji Standard Form of Building Contract (Private works) 1978 (without quantities) with deletions as mentioned in Conditions of Contract and any special conditions or notices as per forgoing sections this forms part of this specification and may be viewed at the Office of the Architect. The works to comply with the National Building Code at the relevant NZS and AS where specified.

### **1.2 TENDERER TO INFORM HIMSELF FULLY**

All tenderers shall inspect and examine the site, its surroundings, and shall satisfy himself before, submitting his tender, as to the nature of the ground and subsoil, the form and nature of the site, the quantities and natures of work and materials necessary for the site, the accommodation he may require, the availability conditions and rates of pay of labour and in general shall himself obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect his tender.

In particular each tenderer shall make all allowance he deems necessary to ensure the works are completed within the contract time, including all over time, double time, week-end work and other incidental allowances as required.

If a tenderer has any doubt as to the meaning of any portion of the works, he shall have this clarified prior to the submission of Tender.

### **1.3 CURRENCY**

Tender shall only be submitted in Fiji Currency and payments by the employer to the Contractor in terms of this contract will be the same.

### **1.4 BILL OF QUANTITIES**

The bill is deemed to be for the assistance of the Tenderers in making up his price and for the purpose of adjusting variations. It forms part of the Contract. Contractor shall forward the fully priced Bill of Quantities and Labour rates with his tender.

### **1.5 CONTINGENCY SUM**

Allow a contingency sum as set out in Notice, Schedule of Monetary Allowances. The expenditure of this amount being solely at the discretion of the Architect in accordance with the Fiji Standard Form of Building contract. Any unexpended balance from this sum shall be deducted from the Contract Sum.

### **1.6 LIQUIDATED & ASCERTAINED DAMAGES FOR DELAY IN COMPLETION**

Liquidation and ascertained damages for delay in completion in accordance with Clause 22 of the Conditions as set out in Appendix/ Notice to Contractors.

Tenderers shall undertake to complete all works included herein before the date for completion stated in appendix to the Fiji Standard Form of Building Contract Item 21.

Extension to time may be authorized as set out in Clause 23 of the Fiji Standard Form of building Contract and as detailed in Notice to Tenderers.

Claims for extension of time in respect to additional works not covered by Clause 23, Fiji Standard Form of Building Contract, Conditions of Contract, may be claimed when pricing the variation Price request. Extensions of time not claimed at that stage will not be recognized.





### 1.7 DRAWING & SPECIFICATION

Figured dimensions take preference over scaled dimensions and large scale dimensions take preference over small.

The Drawing & Specification are considered solely as instruments of service and must be returned to the Architect at completion of the Contract.

Two sets of Contract Drawings and Specifications and of all subsequent details will be issued free of charge to the Contractor.

The Drawing and specifications supplement one another. Any part of the work mentioned in one and not represented in the other shall be done the same as if it has represented in the other.

The Contractor and/or all sub-contractors shall verify all dimensions on the job before commencement of shop drawing of his and his Sub-Contractors to the Architect for approval.

Only general arrangement dimensions and details shall be checked and approval of shop drawing shall not relieve the Contractor and/or Sub-Contractors from the responsibility of correcting at their own cost any errors, omission or rectifications which may be required later.

A full set of drawings shall be made available on the job with Specification at all times. The Engineering specification is to be taken in complement to the Architects specification and are to be complied with.

### 1.8 MATERIALS WORKMANSHIP

Material in all trades shall be new and shall be first class and the best of their respective kinds specified and where necessary complying with relevant standards mentioned herein and subject to approval or rejection by the Architect.

Supply all materials, labour, plant and tools as necessary for the works. The work shall be carried out in a first class tradesman like manner in all respect to the reasonable satisfaction of the Architect in accordance with relevant standards mentioned herein drawing as may be provided and in accordance with such instructions, directions and explanations as from time to time may be given by the Architect and subject to approval and rejection by him.

When liable to damage the materials shall be properly handled, stacked and /or stored with adequate protection. No substitute materials shall be used on the works unless approved. The Contractor shall remove at his own expense and time any substitute materials used without prior approval. All labour and workmanship throughout shall be executed in a manner consistent with first-class building practice.

Generally, all materials and workmanship shall comply with relevant Specifications and Codes as given in this present specification and Drawings and with relevant Rules and regulations of the appropriate Local Authorities have jurisdiction over the particular items of work. In the event of conflict in the above requirements, the last named shall apply.

It is the Contractors responsibility to maintain quality control, and to protect all fixed and unfixed materials from damage or disfigurement until completion and handing over of the works.

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**2.5 SERVICES**

Ensure that all service pipes or wiring by demolition operation are rendered safe before commencing work.

Where required, break out seal services in conformity with the relevant Local Authority regulations.

Cooperate with the respective Local authority concerning the removal of any service fixtures or fittings which may come under their jurisdiction.

Conform to the Acts, Regulations and by laws of the Local Authority and give all the notices required.

**2.6 REINSTATEMENT**

Reinstate any damage caused through work operations to parts of contract site or adjoining property make good with materials, finish workmanship to match in every respect the surrounding work. Such work to be totally in accordance with the instructions of the Architect.

**2.7 OWNERSHIP OF MATERIALS**

All unused materials having no salvage value and not otherwise noted will become the subcontractor's property and shall be removed from the site.

Ownership of materials does not include power or gas board meters, water meters etc. which may be removed by the Local Authority concerned when existing services are disconnected

**2.8 EQUIPMENT**

All mechanical equipment, cables shackles, hooks and like shall be in sound condition and proper working order.

Operator shall be skilled in the handling and control of all mechanical equipment employed and shall be fully conversant with the safe use and rigging of any tacking or cables used for the work.

All mechanical equipment used shall not damage adjoining buildings, roadways, or services by shock vibration, or other detrimental effect and the Contractor shall follow all direction issued by the Architect.

**2.9 DEMOLITION PROCEDURE**

The Contractor shall submit his proposed method of demolishing the floor to the Architect for his approval prior to commencing work.

The Contractor shall ensure that the Architect is given reasonable notice to inspect the demolition work. Contractor shall employ only such demolition methods as sanctioned by the Architect.

All brickwork and concrete being demolished shall be done so progressively so that no portion of a wall is left in an unstable state and in any case the sub contractor shall make allowance in his tender for shoring and supporting wall where required, in a safe and stable conditions.

The methods of lowering walls shall be arranged to avoid damage by collapse of parts of the building on to the remaining elements. All demolition shall be carried out progressively so that in no instance shall any freestanding walls project more than one storey height or 4.5 meters maximum above the remaining structure. Debris and rubble shall not accumulate or be piled against remaining walls. The Architect or his representative may direct that the work shall stop until debris is removed where in his opinion; such debris is a hazard.



## **2. DEMOLITION**

### **2.1 OTHER DOCUMENT**

This specification must be read in conjunction with Preliminary & General specification, the Conditions of Contract and the other contract documents.

### **2.2 SCOPE**

This section of the work involves a variety of demolition works, which are specially noted in the drawing. Generally they are as follows:

- I) Demolition of existing fence, kerbs, paths and wall etc. as shown.
- II) Removal and termination of services within site to accept work.

Demolition is to be carried out in within the limitations of site boundaries that t apply for the main.

Demolition is to be carried out in an organized manner. Allow for the provision of all scaffolding, plant gear, labour materials and services etc., to execute the work in accordance with the requirements of the specification and drawings.

No extras will be allowed for any variation, arising form the contractors lack of knowledge of site or any adjoining structure, property or service.

### **2.3 SECURITY, SAFETY, NUISANCE, PROTECTION OF BUILDING & OCCUPANTS**

The demolition Sub-contractors shall carry out his work in a planned manner agreed with the contractors/Architect and in total accordance with all the printed requirements contained in the general and special Conditions of Contract, and preliminary & General section of the Contract Documents.

Contractor to ensure Council properties are not damaged. Any gap in the wall to be sealed, restitute to ensure no thorough from outside to the pool.

The instructions of the Architect, with regard to these aspects of the demolition trade are to be strictly adhered to.

### **2.4 REGULATIONS AND PERMITS**

All work covered by this contract shall be carried out strictly in accordance with the Construction Regulation and Amendments.

The Sub-contractor shall be thoroughly conversant with these regulations and shall allow for all regulations requirements with tendering.

No extras will be allowed for any variations arising from the sub-contractors lack of knowledge of any existing structure, including all services.

Where reference is made in this specification to any Act, Regulation, Statutory Instrument, Code of Practice of similar publication it shall be construed to mean the editions with all amendments current at the time of the issue of contract documents.

All work covered by this contract shall be carried out strictly in accordance with the Construction Regulation and Amendments. The contractor shall allow for all requirements when submitting his tender.

The contractor shall comply with all safety regulation.





**1.48 KEYS**

Keys to be handed over with Formica name tag (40 x 50mm) or other approved for each door with all the keys for the door address to be clearly identified and placed in order.

**1.49 GENERAL PROTECTION**

The Contractor shall provide protection to the neighbouring properties and the general public within the vicinity of the site against any debris, construction material, construction equipment and the like from the site.

In particular, the Contractor shall provide, at all times as the building progresses adequate screens around the perimeter of the building to safeguard against any falling debris and/ or objects and safety for workers.

**1.50 Specification**

This specification is to be read in conjunction with the Engineers specification for the specific works.

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#### **1.44.2 PRACTICAL COMPLETION OF THE WORKS**

The expression 'When in the opinion of the Architect the works are practically completed' as used in Clause 5 (1) of the agreement, it shall mean completion of the works, including structures, finishes, equipment and services in adequate working order, all allowing full and uninterrupted occupation by the Employer or his tenants.

Minor incomplete items external or internal which in the opinion of the Architect, do not conflict with the fore-going shall not prevent the issue of the Notice of Practical Completion. (see also Clause 15 of the Conditions)

#### **1.45 INFORMATION BOARD**

Within two (2) weeks of commencing operations the contractor shall provide and erect an information board as detailed below at main entrance.

The nature and extent of information will be given by the Architect and shall include the name of the building, clients, Project Managers, Architects, Consultants, Contractors names. Space shall be left on the signboard for later addition of the main sub-contractors as directed by the Architect. No other signs will be permitted.

Provide 20m marine ply 2/2400 x 1200 fixed to 100 x 100 x 5mm steel frame and secured fixed in position to be directed to the contractor stating or as other details as provided by the Architect. Contractor to light up the sign at night. A graphic of Project supplied by Architect to be painted on the Board. A detail of the signage shall be provided by the Architect.

#### **1.46 GUARANTEES**

Where required by this specification guarantees shall be submitted in accordance with the Fiji Standard Form of Building Contract and handed to the Architect before issue of the final payment.

The Contractor shall provide the Guarantees as specified under the various trades except where this is not reasonably possible and where the contractor has so notified the Architect in writing before the works proceed with or the item ordered.

The Contractor to procure such guarantees, or equivalent guarantees, to be effectively transferred to or issued directly in favor of the owner as that thereafter the Guarantor shall be directly responsible to the owner.

#### **1.47 COMPLETION**

##### **1.47.1 Cleaning up on completion**

The Contractor shall, throughout the duration of the Contract maintain the works in an orderly, clean and tidy manner. Materials shall be stacked and handled in an orderly manner to facilitate inspection and checking. The site and work shall be cleaned and maintained in a tidy manner as the works proceeds by the removal of all debris or condemned materials as and when required. All combustible rubbish from inside or adjacent to buildings, plants etc., shall be removed daily.

**1.47.2** At completion thoroughly clean down all windows, floors etc., free of all paint spots, dropping, etc. thoroughly broom out all areas, clean all fixtures, glass, tiles floor and easing of windows, doors and the like, the oiling of locks and other movable metalwork, the labeling and handing over of keys with tags and generally leaving the premises clean and fit for occupation.

**1.47.3** The Contractor shall remove all temporary works that he may have constructed for his own convenience while carrying out the works, including the sign-board, and all equipment and surplus materials and any remaining rubbish, which may have accumulated.





**1.41 TRADE NAMES/MANUFACTURERS & SUPPLIERS REFERENCE**

Trade Names or Manufacturers Reference given throughout this specification, unless specifically stated in the schedule PC and Provisional sums, is for the Contractors guidance only. If the contractor so requires he may use alternative materials of equal quality and standard, with prior written approval by the Architect. Where necessary the Contractor shall, at all time of applying to the Architect for approval of an equivalent alternative, submit samples and, specification details of the suggested items. The final approval or rejection is the Architects, and the Contractor to comply.

Suppliers Reference given, unless specifically stated as a Nominated Supplier is for the Contractors guidance only. He may obtain the specified materials from alternative suppliers.

It is the Contractors responsibility, prior to firm order, to ensure availability, delivery time etc. of any materials including those included under this section.

**1.42 AS BUILT DRAWINGS**

The Contractor shall keep 'As Built' as the work proceed, give exact dimensioned locations and inverts of all pipes, drains, conduits, service ducts, cables, etc. in and around the works (including works of sub-contractors)

On completion, provide 3 sets "as Built" drawings to the Architect. Contractor to allow for these.

**1.43 ORDERING MATERIALS**

The contractor must order all materials – local and imported –within one month of commencement of contract; and inform the manufactures/suppliers of specific date when material is required on the site, at time of order. All materials affecting the critical path of the Programme must be ordered (within 2 weeks) of commencement of contract

When ordering materials the Contractor must provide a copy of the relevant soon after specification clauses or other details, part of the documents to be manufacturer/supplier. When taking delivery the contractor must again ensure that the goods supplied are in accordance with the specification requirements enquire from manufactures and suppliers whether they provide guarantees/warranties for their materials and goods. Order form those who provide guarantees/warranties.

**1.44 SPECIAL CONDITIONS OF CONTRACT**

The following special conditions apply.

Delay for Inclement Weather (see also Clause 23(b) of the Conditions of Contract)

- 1.44.1** The Contractor shall allow for average wet weather be to anticipated during the Contract period, in accordance with the records kept by the bureau of Meteorology, Fiji, for the district in which the works are located. Unless extra-ordinary circumstances arise in the opinion of the Architect's extension of time for inclement weather, if any, shall be granted only according to the number of 'wet days' in that quarter excess of the average number of 'wet days' shall be determined from the figures recorded by the Meteorology Bureau over the last 5 years. A 'wet day' shall be 24 hours period during normal working days when rainfall exceeds 14mm as recorded by the Meteorology Bureau. The Contractor is to give the Architect in support of any claims for 'wet weather' a copy of the Meteorology Bureau records for average and actual rainfalls for the period involve. Extension under this formula shall not apply after works have been enclosed or otherwise protected in accordance with the period with the Contract not if work is behind protected.

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**1.34 AMBIGUITY, ERROR, DISCREPANCY**

These have to be clarified prior to closing of Tender (see previous section)

Any errors or discrepancies between Drawings and specifications that are not notified in writing by the tenderer to the Architect as required by the tenderer shall be carried out as directed by the Architect and no variation is to be paid unless approved by Architect that it is variation (Architect's) decision shall be final.

**1.35 SUB-CONTRACTORS**

No sub-contract shall be let without the approval of the Architect who shall have power to object to any sub-contractor or to any work being sub-let

Sub-Contractors either nominated by the Architect or by the main Contractor shall be the main Contractors responsibility, who must order, co-ordinate pay for and direct the works that fall under the sub-contracts and take responsibility for the quality of work and materials and time for completion unless otherwise agreed upon. The Contractor shall not hold back the Sub-Contractors payments unnecessarily once certified and paid for by the Architect. If such is brought to the notice of the Architect, he may direct alternative mode of payment provided he is satisfied with the claims.

The Contractor shall enter into a written agreement with all sub-contractors to the works. Such agreement to be to the general approval of the Architect.

**1.36 FACILITIES FOR SUB-CONTRACTORS**

Provide all facilities, attendances, and all necessary services for the proper and complete execution of all sub-contractors work in accordance with the sub-contract agreement, including allowing free use of scaffolding, plant, sheds, latrines, etc. wait upon and make good as required.

**1.37 ATTENDANCE AND MAKING GOOD**

The Contractor shall attend upon, cut away for building in etc., and make good after all trades where and when required and shall make good any damage to existing works, cables, services or other works caused by or attributable in any way to the carrying out of the works.

**1.38 ARCHITECTS SATISFACTION**

No expression of the Architect's/Supervising Officer's reasonable satisfaction or approval shall be deemed to be an acceptance of the defective materials or workmanship not complying with the terms of this Contract nor as authority for any variation unless it is authorized as provided in this contract in writing by the Architect.

**1.39 RUBBISH & CARTAGE**

The Contractor shall remove and cart away all rubbish and trade debris as it accumulates during the progress of the work.

The Contractor shall, when directed by the Architect clean any areas that are considered by the Architect to be noticeably dirtied or damaged by reason of the Contractor carrying out the works.

**1.40 STANDARD DETAILS**

Although standard details are listed in the index under the predominant trades to which they apply, all trades should be fully conversant with them.





The Architect's or his representative shall chair such meeting and shall prepare records of the proceedings and shall provide copies to all matters discussed and confirmed at Site Meetings shall be deemed to become Architects Instruction.

**1.28 SETTING OUT**

The Contractor shall be responsible for the correct detailed setting out of the works as indicated in the Contract Documents and shall, at his own cost, amend any errors during the progress of the works arising from inaccurate setting out.

All dimensions as indicated on the drawings shall be checked on the site. Any discrepancies shall be referred to the Architect immediately for a decision. The Contractor is responsible for all correct setting out dimensions on site and shall rectify all mistakes at his own cost and time.

The Contractor shall after setting out the works, submit to the Architect a certificate obtained from a Licensed Surveyor certifying that the works have been laid out in accordance with the drawing supplied by the Architect. The Contractor shall allow for and pay the Surveyor. Surveyor to give a drawing giving setting out in the title plan including all reserves.

The Contractor shall have a Registered Surveyor to set out the vertical frame to ensure the erection of the structural framework and the accuracy in both vertical and horizontal directions, of all basic structural works and set-outs and who shall verify all boundaries.

The results of such surveys shall be made available to the Architect immediately upon request by the Architect to the Contractor.

**1.29 POSITION OF FITTING**

Before fixing in place, the Architect's direction shall be sought regarding the exact height and positioning of all sanitary fittings, hardware and electrical outlets.

**1.30 CONTRACTOR'S OFFICE & STORAGE REQUIREMENTS**

Contractor shall provide weatherproof sheds for storage of materials, tools and plant. They shall be located adjacent to the site of the works, in a location approved by the Architect.

**1.31 TOILET FACILITIES, WATER, POWER, TELEPHONE**

Contractor shall provide temporary toilet facilities connected to sewer on site for his workmen and allow for keeping these hygienic and clean. Remove on completion of works.

Contractor shall arrange to supply water, and power and site offices. Provide on site a temporary telephone/fax service for the durations of the contract.

The Contractor shall arrange for the installation of a temporary telephone service shall pay all charges, rental calls and shall make the telephone available to all persons concerned with the execution of the Contract. Mobile facility to foreman, separate toilet plus all kitchen facilities to be provided for the meeting room for use by consultants.

**1.32 INFERRED WORK**

All works necessary to be included as fundamentally necessary for the proper erection and completion of the works shall be deemed to be included and no extra will be allowed for any claim for any such items.

**1.33 SPECIFICATION SECTIONS**

This specification is written in section for convenience only, and it is not guaranteed that all works is included solely within one trade section.

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**1.19 REGULATIONS AND STANDARDS**

The whole of the work shall comply with the relevant Health and Buildings regulations of Nausori Town Council and Fiji Town Planning Regulations and the current National Building Code and the code referred to by the Engineers.

Standards Noted in specification may not be the latest edition or possibly even superceeded.

The reference to a Standard on the Trade infurs the latest standard information with respect to the trade. Contractor to familiars himself with these latest standards and be fully compliant.

**1.20 SUBSTITUTION**

The Contractor may make written request to the Architect for approval of the substitution of materials or construction other than those shown in the specification or drawings. Substitution shall NOT be made without approval. The Architect may accept or reject this as his prerogative.

**1.21 INSTALLATIONS BY OUTSIDE WORKMEN**

The Contractor is to permit access to the premises by outside workmen employed directly by the owner for installation of equipment and works as may be convenient, as portions of the structure become ready.

**1.22 PROJECT MANAGEMENT**

The main Contractor shall be responsible for all work, executed under the contract including the work of sub-contractors, nominated or otherwise. The main Contractor shall be responsible for the proper supervision of all works which he is responsible and shall take all necessary measures to ensure quality control and faithful workmanship.

**1.23 GENERAL FOREMAN**

The Contractor shall appoint a competent General foreman who shall be constantly on the works during the progress of same, to whom instructions may be given by the Architect.

The Architect may require the Contractor to dismiss the General Foreman or any other person employed on the site if such General Foreman or other person shall be incompetent or shall miss-conduct himself for any other good reason to be assigned by the Architect to the contractor.

**1.24 FOREMAN**

Each trade shall be under the constant and special direction of a trade foreman fully licensed, authorities and approved by all relevant authorities and the Architect for that particular trade for which he is responsible.

**1.25 NOTICES**

Give adequate notices (minimum of 2 days), list dimensions of all instructions, details and special inspections required on the job.

Give notice 24 hours minimum for inspection prior to pouring concrete.

Contractor to arrange with local authority for their inspection.

**1.26 SITE OFFICES**

To be built as and when required in the Special Conditions. Telephone, fax machine and email services to be available in the site office.

**1.27 SITE MEETING**

A regular programme of site meeting shall bee established by the Architect at which the Contractor, Client, all sub-contractors and all consultants will attend as necessary. Contractor to facilitate. Frequency to be confirmed by Architect.

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1.16.2 A retention of 5% shall be held upon progress payment up to the issue of the practical completion Certificate. The retention will then be reduced to 2.5% to cover the Defects Liability Period. (Refer clause 15 of the Fiji Standard Form of Building Contract).

**1.17 PAYMENTS WITHHELD**

The Architect may decline to approve an application for payment and withhold his Certificate in whole or in part, or nullify the whole or any part of any certificate for payment previously issued to such an extent may be necessary in his opinion to protect the Owner from loss because of:

- a. Defective work not remedied
- b. Claims filed or reasonable evidence indicating probable filing of claim, including lien claims.
- c. Failure of the Contractor to make payments to sub-contractors, or supplier or for labour materials or equipment.
- d. Reasonable doubt that the work can be completed for the unpaid balance of the Contract Sum.
- e. Reasonable indication that the work will not be completed within the Contract time.
- f. Satisfactory executive of the work by the Contractor.

When the above grounds have been removed, payments will be made for amounts withheld because of them.

**1.18 PROGRAMME OF WORK**

The Contractor within 2 weeks of acceptance of the tender shall submit for approval by Architect four copies of a fully detailed and extended programme chart setting out his construction programme and order of work. The work of all trades including ordering of materials, plant and equipment shall be clearly shown.

One copy of the approval programme shall be kept on the site at all time and shall thereon indicate the actual progress throughout the Contract.

The programme must show the order of procedure and methods in which he proposes to carry out the works with the Critical Path, that is, those elements as being able to be affected by inclement weather, shown clearly. The submission to and approval by the Architect of such a programme or the furnishings or such further particulars as may be required shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

The Contractor shall maintain and amend the work programme as may be necessary from time to time and issue copies to the Architects and have a current copy available on the site at all times for inspection by anyone concerned.

The Programme must include all nominated Sub-Contractors work and their requirements and shall show the date for commencement and completion of all sections of the works included in the Contract. The progress of the works shall be kept on the site. The Contractor is responsible for all Nominate Subcontractors adhering strictly to the programme.

The Contractor shall submit to the Architect together with the Progress Schedule, a list of items requiring selection, detailing directions and instructions, etc., by the architects, together with the corresponding dates by which the selection, details instructions and directions etc., required. Time extensions will not be approved for lack of selection, details instructions and directions etc., by the Architect unless the content of the above paragraph is observed by the Contractor.

The programme shall clearly indicate all holidays falling within the contract period.





**1.9 PERMITS**

The Architect on behalf of the Employer; will arrange for the Building Permit and the owner will pay the necessary fee thereon. The Contractor shall pay all other fees and obtain other permit and give all notices required. The other fee to be paid by the owner shall be FEA consumer deposit. The Contractor to procure the Completion Certificate from the Suva City Council at completion.

**1.10 PLANT AND EQUIPMENT**

The Contractor shall allow for the supply, delivery, assembly and erection, operation, maintaining and removal at completion of all construction plant and equipment shall be of an efficient and recognized type and approved of where necessary by the relevant Inspector.

**1.11 INSURANCES**

Refer to Clause 18, 19, 20 of Conditions and Appendix for Insurances that the Contractor shall effect. Cover notes or policies shall be lodged with the Architect for approval prior to issuance of the first progress payment. Contractor must ensure he has insurance cover to damage by hurricane and 'peril'.

**1.12 HOARDING, SECURITY & DUST SCREENS**

Allow for all necessary general hoarding as required to keep the general public clear of works, and so maintain the building secure and burglar proof at all times. Contractor must allow for and construct at least 2m high fence around the site as required also around existing trees as shown.

Allow to keep all areas free from dust and debris through-out the works. Ensure that footpaths are kept clean at all times and make good of any damage. At least once a week clean-down footpaths to Local Authority satisfaction.

**1.13 PROTECTION OF THE WORK**

Loss through accident, theft or damage shall be responsibility of the Contractor. He shall take necessary steps to safeguard his interests. The Contractor shall employ a watchman at all times as required.

Each Contractor and sub-contractor shall adequately protect all preceding and existing work from damage caused by him or his works.

The Contractor shall be responsible for all damage, injury or loss sustained including all cost to make good or replace arising out of his failure or neglect to provide adequate temporary protection.

**1.14 DAMAGE TO ADJOINING PROPERTIES**

The Contractor shall be responsible for and make good any damage to adjoining properties, fences, streets, footpaths etc., and shall indemnify the owner against any claims from the Local Body, adjoining owners or other arising out of his operations.

**1.15 NIGHT LIGHTING**

The Contractor shall provide proper lighting to site, barricades, materials, etc. that may be stacked in any public place and all temporary lighting that may be required for night work as per requirements of the FEA.

**1.16 PROGRESS PAYMENT AND RETENTIONS**

1.16.1 Refer to clause 30 of the Conditions for payment





## INDEX TO SPECIFICATIONS

SECTION	TRADE	
NC1	NOTICE TO TENDERERS & SCOPE OF WORK	NC1.0-NC 62.
1.	PRELIMINARY & GENERAL	1.1 – 1.50
2.	DEMOLITION	2.1-2.15
3.	EXCAVATOR/BLOCK WORK/STEEL WORK	3.1-3.20
4.	CONCRETOR	4.1-4.14.10
5.	BLOCK WORK	5.1-5.13
6.	ROOFING	6.1-6.21
7.	CARPENTER & JOINER	7.1-7.18
8.	STRUCTURAL STEEL WORKER	8.1-8.11
9.	METAL WORKER	9.1-9.7
10.	PLUMBER	10.1 – 10.19
11.	FLOOR WALL CEILING FINISHES	11.1-11.11.12
12.	ELECTRICAL SERVICES	12.1-12.29
13.	PAINTER	13.1-13.9.9
14.	EXTERIOR JOINERY	14.1-14.21
15.	MECHANICAL SERVICES	15.1 – 15.3
16.	FIRE REQUIREMENTS	16.1-16.3
17.	PC SUM	17.1 -17.4

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	<b>PART FIVE</b>			
	<b>ITEM PC- PC SUM</b>			
PC1.	Pool pumps and hydraulics for pool pumps & Chemical etc.	450,000.00		
PC2.	Pool equipment, starting blocker	450,000.00		
PC3.	Flag Poles off	6,000.00		
PC4.	Podium (Portable)	5,000.00		
PC5.	Tower Lights	600,000.00		
PC6.	Street Lights	30,000.00		
PC7.	Solar Lights (6 off)	30,000.00		
PC8.	Fire Hose reel & Extinguishers & Protection System	10,000.00		
PC9.	Fitout FT1 – FT8	15,000.00		
PC10.	Air Condition supply and fit	5,000.00		
PC11.	Electrical & Security Cameras	40,000.00		
PC12.	Telecom	10,000.00		
PC13.	Bid screen & video	400,000.00		
	<b>TOTAL PC</b>	<b>2,051,000.00</b>		
PC14.	Contingency Sum	100,000.00		
	<b>TOTAL PART FIVE</b>		<b>2,151,000.00</b>	
	<b>TOTAL PART 1+2+3+4+5</b>			

NAME: \_\_\_\_\_

COMPANY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

(STAMP)

*[Handwritten signatures and initials]*



## ANNEXURE A


## SUMMARY LIST

	Item Amount	Total for Part	Grand Total
<b>PART ONE</b>			
ITEM A - BUILDING A			
ITEM B - BUILDING B			
ITEM C - BUILDING C			
ITEM D - BUILDING D			
ITEM E - BUILDING E			
ITEM F - BUILDING F			
ITEM G - BUILDING G			
ITEM H - TICKET BOTH			
ITEM I - PUMP ROOM			
ITEM J - PUMP ROOM 2			
ITEM K - WATER LEVEL ROOM 1			
ITEM L - WATER LEVEL ROOM 2			
ITEM M - WATER LEVEL ROOM 3			
ITEM N - BIG SCREEN & TIME CLOCK STRUCTURE (NO SCREEN)			
ITEM O - CAR PARK (INCLUDING CHANNEL DRAINS)			
ITEM P - DRIVEWAY			
ITEM Q - CONTROL ROOM			
ITEM R - DRAINAGE (STORMWATER) INCLUDING SUMP & GRATING			
ITEM S - SEWER MAINS INCLUDING INSPECTION CHAMBER (COMPLEX)			
ITEM T - WATER MAINS			
ITEM U - SITE WORKS			
ITEM V - FENCING			
ITEM W - APRON FORMING & TILING (WHERE SHOWN)			
<b>TOTAL PART ONE</b>			
<b>PART TWO</b>			
ITEM MP- MAIN POOL - OLYMPIC POOL (POOL 1)			
ITEM TP: TRAINING POOL (POOL NO. 2)			
ITEM CP: CHILDRENS POOL			
<b>TOTAL PART TWO</b>			
<b>PART THREE</b>			
ITEM HD- HYDRAULIC INCLUDING P & G			
<b>TOTAL PART THREE</b>			
<b>PART FOUR</b>			
ITEM TW- LIGHT TOWERS - FOUNDATION ONLY (TOWERS IN PC)			
<b>TOTAL PART FOUR</b>			



30. **TREE PRESERVATION (where Applicable)**  
Contractor to protect and preserve existing trees shown and remove only those that come directly in the way of construction. Where it say "trim" this is to be done as directed to ensure the tree remains at no more than 3m in height or "diameter".
31. **HEALTH & SAFETY ACT**  
The contractor is to ensure complete compliance with Health & Safety Act and shall take full responsibility of non-compliance. The contractor shall also ensure that all workers on site are safely equipped with suitable footwear & hard-hat. A competent foreman to be on site at all times. He shall exonerate the owner and the Architect from any responsibility for any misdoings on site.
32. **HURRICANE INSURANCE CERTIFICATE**  
The contractor to carry out all works required for Hurricane Certificate by Engineers. He is to procure the certificate from the Engineers
33. **SIGNAGE**  
Contractor to provide 4.8m x 1.2m signboard to detail provided by Architect. It shall be on screen paste with clear graphics.
34. **SITE OFFICE**  
The Contractor to provide a 5m x 3.6m x 3m site office with toilet and HB and sink and Air condition and appropriate windows with view to site.
35. **PENETRATION FOR PIPING, VALVES ETC.**  
The main contractor to allow for forming of penetration, placing of pipes and valves etc. in the structure by hydraulics suppliers etc. He is to ensure water sealing of the fitting.
36. **FULL OR PART TENDER**  
You may tender for full or part of the tender. You have to specify which part you are tendering by filling all details for that part in the schedule in Annexure A.

**Note:** PC Sum to be included in your tender.





24.4 **JOINERY AND PARTITIONING**

**General**

The whole of this work shall be done in accordance with the best trade practice. The nature of works demands a high level of proficiency.

24.5 **TIMBER**

All framing timbers shall be structurally sound and free from knots or other defects where exposed. All timbers used shall be dried of required strength.

24.6 **NAIL AND SCREWS**

All nails in exposed work shall be punched past flush and the holes filled with putty and painted nails.

24.7 **JOINERY FINISHING**

All joinery and finishing shall be made, framed and finished in strict accordance with the drawings and general specification:

- surfaces must be sanded and approved by the architect before painting is commenced.
- if any joinery showing warping, splitting or shrinkage before the end of the maintenance period, such joinery shall be taken down, refitted and redecorate or new joinery put in place. All work disturbed shall be made good.

25. **NOMINATED SUBCONTRACTORS**

Shall be nominated by the Architect and are declared to be employed by the Contractor. The contractor shall provide them with their necessary requirements in order to smooth completion of the project.

The main contractor shall be responsible for works, which are not completed by the sub-contractor, and in case the delay exceeds the completion time then the relevant clauses of the contract shall apply to both (subcontractor and contractor).

The contractor or his sub contractors shall read and understand the details and drawings before commencing or any work, and in case of any faults or misplaced details, the architect shall confirm these in writing before further work is carried out. The main contractor shall execute the contract approved by the Architect, with their sub-contractors.

26. **ADDITIONAL COPIES**

Three copies will be provided to contractor. Additional copies of the documents may be procured after payment of the charges at to be prescribed by the Architect.

27. **LATE TENDER**

Any tender arriving after closing date and time shall not be accepted.

28. **LIENS**

The contractor must note that the suppliers and sub-contractors are to be appropriately paid.

If a supplier or a sub-contractor presents to the Architect a 'liens' claim on the project and he (Architect) is convinced or satisfied of the supplier, subcontractors claim, to ensure smooth flow and completion of the project, this payment may be made direct and deductions made from the payment to contractor.

29. **CASH DISCOUNT**

Delete all aspects of cash discounts.

29.1 Clause 27 Delete all 2.5% cash discount to nominated sub-contractors.

29.2 Clause 28 Delete all 5% cash discount to nominated suppliers.

29.3 Clause 30 Delete all cash discounts to nominated Sub-Contractors and Nominated suppliers.



16. **TENDER DEPOSIT**

Tender deposit shall be forfeited if the contractor, who is awarded the contract, fails to realize the contract.

17. **ELECTRICAL WORKS**

Electrical Tender will be called separately and he will be taken on as nominated sub-contractor. The sub-contractor shall carry out the electrical works as detailed. He shall allow for underground inlet of required size. The main contractor is still held responsible for the works of his Sub-Contractor (s). The work done shall conform to the FEA wiring rules. All electrical gadgets used shall be of standard quality and approved by the Architect. Electrical contractor to allow for placing of sleeves in beams where needed prior to pouring.

18. **BOND**

Bond is 10% of Contract sum.

19. **PHASING OF WORK (where applicable)**

Contractor is to phase out work in consultation with owner and Architect as shown in Tender documents

20. **AMBIGUITY**

Any ambiguity should be resolved prior to tendering to ensure these are adjusted in the contract sum.

Ambiguity or clarification resolved after the Contract signing shall be as decided upon by the Architect and no variation shall be paid for any work that is deemed to be necessary to complete the work in the contract.

21. **ALCOHOL OR OTHER DRINKS**

No Alcohol or grog and drinking of alcohol will be allowed to be consumed on the site on the job site during the working hours or any extended working hours.

22. **PRICES**

The prices are valid for 3 months plus the contract period and the extended contract period.

23. **SITE CARE**

The contractor is responsible of taking care of the site from the date of starting of contract to the end of his contract.

24. **WORK PRESCRIPTION**

The following are to be noted:

24.1 **SETTING OUT BY SURVEYOR**

The contractor is required to have the buildings and the swimming pools setting and dimensions checked, certified by a registered Surveyor in relation to the boundary. He shall also provide the levels for setting out from the DATUM provided on survey plans. The contractor may procure the services of Surveyors who have pegged out the site.

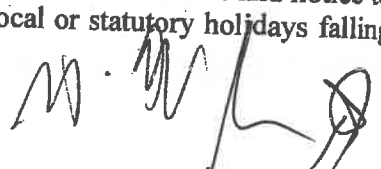
24.2 **CONCRETE FOOTPATH**

The contractor is to keep clear the footpath and driveway for neighboring property at all times. They are to fence off the whole site to ensure safety requirements.

24.3 **TILE**

Tiles are to be laid as of the size, quality, color pattern mentioned in the contract drawings or to detail supplied by the Architect. Contractor to pay particular attention to the size, color with of tile for pools to ensure they are as required by the pool design as given in the information sheets. Particular attention is to be given to necessary additives water proofing agents required to need for pool apron tiling



7. **DAMAGES FOR LATE COMPLETION AND FOLLOWS**  
A sum of \$500.00 (FIVE HUNDRED DOLLARS) per working day in the event of works / completion exceeds the completion time or any extended completion date. Refer to clause 2. (6 days a week)
8. **CONDITIONS OF CONTRACT**  
"The Fiji Standard Form of Building Contract - without quantities, private" shall apply over this contract except for:
- All items that are specially detailed and required under all the "Notices to Contractors" and "Tender Forms" and "Specification" for the above contract shall be preferred and shall override.
  - The payment shall be monthly per measure of work by the Architect.
  - The "fluctuations" Clause shall not apply here as the contract is "lump sum".
  - A "Quantity Surveyor" shall be called in as seen necessary by the Architect and if agreed upon and shall be paid by the owner.
  - The following clauses of the Fiji Standard Form of Building Contract are to be deleted and shall not be applicable. Clause 27, 28, 30, 31 where it refers to discounts.
9. **EXCAVATED MATERIALS**  
While doing excavation if the Contractor finds any residuous material like trees, timber etc in the ground then these shall be removed and back filled with approved fill to required level. Any excavated materials when digging pools shall be carted to Nadovi Park by contractor.
10. **CONTRACT SUM**  
The main contract shall be "lump sum" and no fluctuation shall be allowed in the rates. Only regulatory changes shall be allowed.
11. **PAYMENT**  
Shall be monthly per measure of work by the Architect and certified by the Architect. It is to be noted that once contractor has mobilized and started work on site he is eligible to claim 10% of Project Cost as 1<sup>st</sup> Payment which is to be deducted in your four consequent payments.
12. **RETENTION**
- A sum of 5% to be retained from each progress payment up to the stage where the job is given "Provisional completion".
  - At this stage, the retention shall be kept at 2.5% as "Maintenance Retention" for the maintenance period or until such time as the Architect gives the Final Certificate.
13. **MAINTENANCE PERIOD**  
Maintenance period shall be 6 months from the date of Architect's "Provisional completion" Certificate.
14. **INSURANCE & WORKMEN'S COMPENSATION**  
The contractor shall take out all the necessary Insurance and to allow for these in his tender. Insurance for damage by hurricane is a must.
15. **EXTENTION OF TIME**  
Extension of time may only be granted in accordance to Conditions of Contract and notice to Contractors' hereby. No extension of time due to existing local or statutory holidays falling within the Contract period shall be entertained.
- 



**ASHOK BALGOVIND & ASSOCIATES**  
**CONTRACT: AQUATIC CENTRE - OLYMPIC POOL COMPLEX FOR**  
**LAUTOKA CITY COUNCIL, LAUTOKA**

**NOTICE TO CONTRACTORS NO 1**

This notice shall be read in conjunction with and shall form part of the specification for this contract. Where conflict exists between the requirements stated in this notice and in the specification, the requirements herein shall take precedence.

1. **SITE**

- a. The site is at Botanical Garden, Lautoka. Refer to drawings.
- b. Water supply is available on the road. Allow for connection and pay for usage. Provide protection to meters. .
- c. Electricity is available in the area. Allow for connection.
- d. All Tenderers shall inspect and examine the site; it's surrounding, and shall satisfy himself before submitting his tender. This is being leveled to the required platforms by Lautoka City Council

2. **COMPLETION TIME**

Time of completion for building and site works shall be **10 months** from the date of acceptance of the tender. The Contractor shall complete the work within the time. Works to be in phases as shown in the work schedule.

3. **CONTINGENCY SUM**

Allow the contingency sum of **ONE HUNDRED THOUSAND DOLLARS (\$100,000.00)** to be used only as the Architect may direct in writing. The whole or any unexpended portion shall be deducted from the contract sum at completion.

4. **PROJECT ARCHITECT AND ARCHITECT'S ASSISTANTS AND OTHER CONSULTANTS**

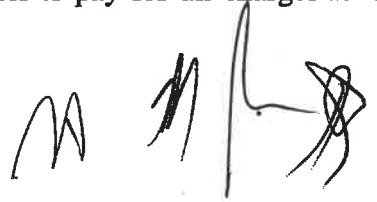
- a. The Project Architect for this contract will be Mr. Ashok Balgovind and Assisted by Rohitash Balgovind. The Architect may send his Representatives on the site for inspection / supervision who shall be given reasonable access and assistance by the Contractor.
- b. The Engineer for the project shall be Vijay Krishnan of Engineered Designs.
- c. The Quantity Surveyor shall be Quantech Pacific
- d. Hydraulic Consultant shall be Garry Wenck of Leisure Engineering Pty Ltd

5. **PROPERTY PROTECTION**

The contractor's attention is drawn to the relevant clause of the specification. Ensure that damage is not done to existing structure and services especially water, electricity.

6. **WATER SUPPLY**

The contractor is to make his own arrangement for the supply of water connection for the purpose of carrying out construction work during contract period from existing water supply on site. Water mains of dia 100 is to be procured from the mains. Piping for fire hose reel to be dia. 25 galv. pipe as per FNA requirements and pipes to be installed by main Contractor to fit hose supplied and fixed by equipment supplier. Contractor to pay for all charges for the mains supply and connection (except meter deposits)





**FORM OF TENDER II – PART FIVE**  
**ITEM PC- PC SUM**

PC1. Pool pumps and hydraulics for pool pumps & Chemical etc.	450,000.00	
PC2. Pool equipment, starting blocks etc.	450,000.00	
PC3. Flag Poles (3 off)	6,000.00	
PC4. Podium (Portable)	5,000.00	
PC5. Tower Lights	600,000.00	
PC6. Street Lights	30,000.00	
PC7. Solar Lights (6 off)	30,000.00	
PC8. Fire Hose reel & Extinguishes & Protection System	10,000.00	
PC9. Fitout	15,000.00	
PC10. Air Condition supply and fit	5,000.00	
PC11. Electronic & Security Cameras	40,000.00	
PC12. Telecom	10,000.00	
PC13. Big screen & video	400,000.00	2,051,000.00
PC14. <u>Contingency Sum</u>		100,000.00
<b><u>TOTAL PC</u></b>		
<b><u>TOTAL PART FIVE</u></b>		
<b><u>TOTAL PART 1+2+3+4+5</u></b>		\$

**Contractors on cost on PC Sum**

**NAME:**

**COMPANY:**

**SIGNATURE:**

**DATE:**





**FORM OF TENDER II – PART FOUR**  
**ITEM TW– LIGHT TOWERS – FOUNDATION ONLY (TOWERS IN PC)**

TW0. P & G

TW1. Light towers Type TW 1 (4 off)

TW2. Light towers Type TW 2 (2 off)

TW3. Light Towers Type TW 3 (4 off)

TW4. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total

Plus VAT

Total TW

**TOTAL PART FOUR**

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**FORM OF TENDER II - PART THREE**  
**ITEM HD- HYDRAULIC**

HD1. P & G

HD2. Excavation

HD3. Reticulation Pipes

HD4. Fixtures

HD5. Penetration with water seal etc.

HD6. Pumps

HD7. Other equipment's e.g. inlet, outlet, valves

HD8. Miscellaneous:

Total

Plus VAT

Total HD

**TOTAL PART THREE**

M. H. R.



**ITEM CP: CHILDRENS POOL**

- CP1. P & G
- CP2. Excavation
- CP3. Steel works for floor & walls
- CP4. Floor work complete for pool
- CP5. Walls for pool completed
- CP6. Water proofing
- CP7. Edge Apron Area as marked
- CP8. Plaster works complete
- CP9. Painting works complete
- CP10. Plumbing works complete and connect to existing  
to pump room etc.
- CP11. Storm water drainage complete
- CP12. Finishing complete
- CP13. Tile & Tiling complete.  
Tile Purchase price \$40/m<sup>2</sup>  
Allow for cost of laying: Labour  
Glue, grout etc.  
Glue to be high quality (Superfixall)
- CP14. Stainless Steel rails with stainless steel fixing
- CP15. Miscellaneous:

\_\_\_\_\_

\_\_\_\_\_

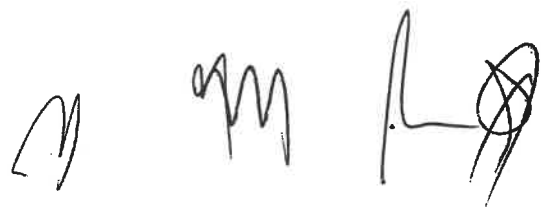
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**Total**

**Plus VAT**

**Total CP**

**TOTAL PART TWO**





**ITEM TP: TRAINING POOL (POOL NO. 2)**

- TP1. P & G
- TP2. Excavation
- TP3. Steel works for floor and walls
- TP4. Floor filled work complete for pool
- TP5. Walls for pool completed
- TP6. Water proofing
- TP7. Edge Apron Area as marked
- TP8. Plaster works complete
- TP9. Painting & furnishing works complete
- TP10. Plumbing works complete and connect to existing  
pipes to pump room etc.
- TP11. Storm water drainage complete with grating
- TP12. Finishing complete
- TP13. Tile & Tiling complete.  
Tile Purchase price \$40/m<sup>2</sup>  
Allow for cost of laying: Labour  
Glue, grout etc.  
Glue to be high quality (Superfixall)
- TP14. Stainless Steel rails with stainless steel fixing
- TP15. Miscellaneous:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
**Total**  
**Plus VAT**  
**Total TP**

*[Handwritten signatures]*



**FORM OF TENDER II – PART TWO**  
**ITEM MP- MAIN POOL – OLYMPIC POOL (POOL 1)**

MP1. P & G

MP2. Excavation

MP3. Steel works for floor and walls

MP4 Floor work complete for pool

MP5. Walls for pool filled

MP6. Water proofing

MP7. Edge Apron Area as marked

MP8. Plaster works complete

MP9. Painting & finishing works complete

MP10.Plumbing works complete and connect to existing  
pipes to pump room etc.

MP11.Storm water drainage complete with grating

MP12.Finishing complete

MP13.Tile & Tiling complete.

Tile Purchase price \$40/m<sup>2</sup>

Allow for cost of laying: Labour

Glue, grout etc.

Glue to be high quality (Superfixall)

MP14.Stainless Steel rails with stainless steel fixing

MP15.Miscellaneous:

Total

Plus VAT

**Total MP 1**

M M / S



**ITEM W - APRON FORMING & TILING ( WHERE SHOWN )**

W1.	P & G	
W2.	Apron 1	
W3.	Apron 2	
W4.	Apron 3	
W5.	Apron 4	
W6.	Block wall & driveway / walkway	
W7.	Tile & Tiling complete.	
	Tile Purchase price \$40/m <sup>2</sup>	
	Allow for cost of laying: Labour	
	Glue, grout etc.	
	Glue to be high quality (Superfixall)	
W8.	Miscellaneous	
	Total	
	Plus VAT	
	Total W	
<b>TOTAL PART ONE</b>		

**Note:**

1. All tile purchase at the rate of \$40 sq. m VEP to be allowed
2. Use 'superfixall' or similar approved for laying tiles.

*W* *mt* *8*



T6. Diameter 25 Galvanized for fire hose reels

T7. Miscellaneous

Total

Plus VAT

**Total T**

**ITEM U - SITE WORKS**

U1. P & G

U2. Bench forming – rear bench BT1 with walls

U3. Bench forming between Olympic pools BT2  
& children Pools with walls

U4. Wall formed at top of BT2

U5. Green area grassed with kerbs

U6. Miscellaneous

Total

Plus VAT

**Total U**

**ITEM V - FENCING**

V1. P & G

V2. Fence F1

V3. Fence F2

V4. Front gates 3 off with posts with signage wall

V4. Other Gates

G1 (2 off)

G2 (1 off)

G3 (1 off)

V5. Miscellaneous

Total

Plus VAT

**Total V**

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**2.10 NOISE CONTROL**

Plant and equipment shall be so operated as to prevent undue generation of noise from motors, compressors and other machinery.

**2.11 NUISANCE**

Ensure minimum nuisance or inconvenience to occupants of the adjoining spaces and buildings. In the event of dispute the Architect's instruction shall be followed.

**2.12 THOROUGHFARES**

The contractor shall be responsible for any debris falling on roads or pathways from his trucks and shall keep roads and paths in the vicinity of the contract free from obstruction and at all times safe to the public.

Contractor shall be responsible for any damage to roadways or pathways during the course of the operations. Ensure public freedom of access to adjoining buildings and property at all times.

**2.13 INSURANCE**

Refer to the General special Conditions of Contract, and the Preliminary & General section of his specification for Insurance requirements.

**2.14 REMOVAL**

All demolition rubble and materials/items shall be removed from site. Salvaged materials remaining in the ownership of the Building Owners shall be removed to an agreed place of storage.

**2.15 PROTECTION**

Provide for temporary protection to all existing trees that are to be retained to be maintained.

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### 3. EXCAVATOR & EARTHWORKS

#### 3.1 GENERAL

Refer to the Preliminary and General Clauses which apply to all trades.

#### 3.2 SCOPE

This section of the Contract includes the leveling of ground to levels indicated on drawings, general site trimming, excavation in soil for foundations, drains, bulk excavation, forming of road and car parking areas etc., the provision of hard fill, backfilling and ramming around foundations.

#### 3.3 WORKMANSHIP

All work to be carried out in a safe and competent manner by capable workmen and in accordance with current Labour Department Regulations.

#### 3.4 SETTING OUT

The setting out of the work shall be carried out by a registered surveyor in accordance with the architectural and civil drawings.

#### 3.5 CLEARANCE SITE

3.5.1 Excavate to remove top soil and grass from all areas to be covered by buildings, roadways and yards as well as from those areas to be grassed, if designated, on the drawings as required to be striped.

3.5.2 Stock pile selected soil for backfilling garden areas and flower boxes, if required and as directed by Architect and remove remainder from the site.

#### 3.6 EXCAVATIONS GENERALLY

Excavate as required to reduce levels, for foundations and all structures shown. Minimum depth shall be in accordance with structural drawings, into solid soapstone but should satisfactory ground is reached. All subsoil from the foundations, etc., shall be removed from the building platform area.

All excavated material surplus to requirements for backfilling shall be removed from the site. Levels in any excavations excavated too deep or where damaged material has had to be removed shall be made up with concrete or compacted gravel as the Architect may direct.

Divert as necessary all ditches, field drains and other water-ways encountered during excavations. Remove any dis-used drains, manholes or old foundations encountered during the excavations and backfill locally with approved material. Provide all necessary timbering, shoring, sheet piling, etc., necessary to keep the excavations open and safe for working at all times.

It is the Contractors responsibility to keep excavations free of water during building operations.


#### 3.7 BULK EXCAVATION

Contractor to carry out bulk excavation (when applicable) to form the base and driveway. He must ensure the excavations are carried out to the survey and levels required.

The surplus excavated materials to be cart Via rear route to be direct within one kilometer of site

#### FOR BASEMENT

The methods of lowering walls shall be arranged to avoid damage by collapse of part of the building on to the remaining elements. All demolition shall be carried out progressively so that in no instance shall freestanding wall project more than one storey height or 4.5 meters maximum above the remaining structure. Debris and rubble shall not accumulate or be piled against remaining walls. The architect or his representative may direct that the work shall stop until debris is removed where in his opinion; such debris is a hazard.





### 3.8 SHORING FOR EXCAVATION

Contractor to erect shoring, metal casing, timbering etc., of sufficient strength and quality to prevent materials slipping or falling or being shaken from the side of the excavations. If in the opinion of the Engineer, sufficient or proper support has not been provided at any point he may order additional support to be supplied and fixed at the Contractor's expense. Such action of the Engineer will not release the Contractor of any responsibility for the sufficiency of these, or any other supports. Care must be taken to prevent voids forming outside the sheeting. Should voids occur, they shall be backfilled with consolidation materials to the Engineer's satisfaction.

Work to proceed in a careful safe way, with all due precautions being taken against accidents.

### 3.9 EXCAVATION BEYOND CONTROL DEPTH

Obtain written instructions before excavating beyond the depths and levels in the contract. Any additional excavation shall be paid at rates in the bill or as assessed by Architect.

### 3.10 DEWATERING

The Contractor shall allow in his tender for any dewatering required to allow him to excavate the areas necessary for the construction of foundations.

### 3.11 BACKFILLING

#### 3.11.1 GENERAL

Backfilling where required shall be carried out neatly to the levels indicated. Sound granular materials shall be used for this purpose. All materials used shall not contain silt or clay and topsoil. Thoroughly compact in 100 layers using vibrating roller or other approved method.

#### 3.11.2 FOUNDATION SUPPORT

Care shall be taken when placing backfilling against foundation wall. It is the Contractor's responsibility to brace walls should this be necessary or where directed.

#### 3.11.3 RETAINING WALL

Where indicated on the drawings retaining walls shall be backfilled with sound granular graded materials after the application of a damp proof course as specified elsewhere. Behind such walls, lay where indicated "Novaflo" or similar approved field drains of the sizes and positions indicated on the drawings.

#### 3.11.4 LOWER BASE BACKFILLING

Where asphalt paved surface are required by the drawing or specified elsewhere in this specification, the Contractor shall allow to backfill all asphalt paved areas to a depth of 150mm below the finished surface with 100mm depth of second grade 62 all-in, well graded crushed metal. This sub-base course shall be thoroughly compacted with vibrating rollers and graded to the general falls required by the asphalt paved areas.

### 3.12 HARDFILL

3.12.1 Lay consolidation hardfill to a minimum depth as shown on the drawings, graded hardfill consisting of clean sizes up to 10mm. thoroughly compact with an approved compactor with particular attention being given to the outside edges.

#### 3.12.2 BLINDING

After compaction cover all hardfill with 50mm minimum sand or concrete blinding as noted. Ensure that the sand adequately covers all hardfill and that any protruding rocks, etc., are removed or adequately covered with sand.





**3.13 DAMP PROOFING**

Where retaining walls are indicated coat walls as detailed or where not shown with 3 coats approved bitumastic paint DPC and protect from damages with second grade pinex softboard or similar.

**3.14 TRENCHES**

Co-operate with various trades in the excavation of all trenches for drains, sewer/storm water electrical and telephone conduits, septic tanks, rubble drains, fire riser etc. Prior to backfilling ensure that pipes have adequate cover and protection in accordance with the regulations and that all necessary tests have been carried out by the respective authorities and the respective consultants.

**3.15 BATTERS**

All batters shall be clean of all loose or unstable material immediately prior to backfilling.

**3.16 BENCHING & SLOPE PREPARATION**

Where filling is to be placed on a slope steeper than one vertical to five horizontal, unless directed otherwise by the Architect. All benches shall be sufficiently wide to accommodate compaction equipment and in one case shall be less than 2700mm in width. Benching shall be started on the lowest areas and constructed as the filling proceeds.

Excavated materials from the higher benches may be used as filling on the lower ones. The benches shall have a longitudinal fall of not less than in fifty (1:50) towards drainage outlets. Each bench shall also have a cross-fall of approx. one in twenty (1:20) to drain towards the hillside.

Filling shall on no account be placed during heavy rain or under wet conditions following rain.

**3.17 FORMING OF FILL AREAS**

Generally the quality of fill material and the nature of frequency of tests to check and control this quality shall be determined and specified before fill placing commences.

All earthworks materials placed in or below fill areas below formation level in cut areas, or else where in the works shall be deposited and compacted as soon as practicable after excavation, in a systematic manner, with near horizontal layers, each being deposited progressively across the full area of a fill in 150mm layers, or in layers of thickness appropriate to the compaction plant used.

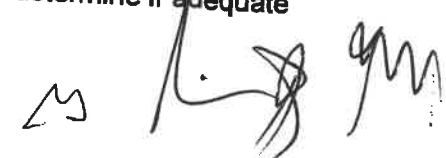
The surface shall be maintained at all times with sufficient falls and sufficiently even to enable surface water to drain readily from them.

During the construction of fill areas the Contractor shall control and direct construction traffic uniformly over the whole area of the filling. Damage to compacted layers by constructional traffic shall be made good by the Contractor.

**3.18 COMPACTION**

Separate compaction machinery shall be required. Construction traffic, by itself, will not be accepted as providing adequate compaction. A sheep's foot or tamping type of roller or mechanical equipment that produces a similar effect shall be used to penetrate loose material and compact the layer from the bottom upwards in order to produce uniformity throughout its thickness. See Compaction Schedule

The Architect will carry out the tests during the progress of the work, to determine if adequate compaction of the fill material is being achieved.





The Architect/Engineer may direct that work be suspended or methods altered, or additional machinery be brought into use if he considers that reasonable compaction is not being achieved due to weather, type of machinery, spread of earthmoving equipment across the fill, thickness of spread layers, soil type and or moisture content, or for any other reason.

No additional payment or rate adjustment shall be due by such but permission to continue or to use accepted methods will not be withheld by the Engineer.

In all cases the rate for excavation shall include the placing and compaction (or disposal) of the material to the specified standards elsewhere.

### 3.19 **CERTIFICATE**

Prior to proceeding with construction, submit to the Architect a Registered Surveyor's certificate and diagram indicating the true location of the works in relation to boundary lines and adjacent existing building

### **COMPACTION SCHEDULE**

Compaction of fill materials shall be carried out in accordance with the following schedule:

Type of Compaction Plant	Load in tones per metre	Maximum thickness of compact layer in millimeters	Minimum no of passes
Smooth Wheeled Roller	2.1-2.7	125	8
	2.7-5.4	125	6
	Over 5.4	150	4
Grid roller	2.7-5.4	150	10
Wedge foot Roller Sheepsfoot Roller	5.4-8.0	150	8
Pneumatic Tyred Roller	over 8.0 wheel load	150	4
	40-80	150	6
	80-160	188	4
	160-240	300	4
	Over 240	375	4
Vibrating Roller	Static Load		
	1.25-1.78	125	8
	1.78-2.68	150	4
	2.68-3.57	200	4
	Over 3.57	250	4

### 3.20 **CONCRETE STRUCTURE**

Unless specified otherwise the following shall be the concrete strength requirement at 28 days.

Minor Structure- 20Mpa

Multi Structure – 30Mpa or 25Mpa (as marked in Engineers Structural notes)

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#### 4. CONCERTOR/BLOCK WORK/STEEL WORK

##### 4.1 GENERAL

Refer to the 'Preliminary and General' Clauses which apply to all trades. Also refer to Structural Notes for specific structural requirements which shall take precedence over this section

##### 4.2 STANDARDS

The following Standards, together with their amendments and other related Standards form part of this specification. The following documents shall comply unless expressly modified herein:

NZS 3103	Sands for mortars for internal and external renderings
NZS 3104	Concrete production – high and special grades
NZS 3108	Concrete production – ordinary grade
NZS 3109	Concrete construction
NZS 3112	Methods for test for concrete
NZS 3114	Concrete surface finishes
NZS 3420P	Hot rolled steel bars for the reinforcement of concrete
NZS 3422	Welded fabric of drawn steel wire for concrete reinforcement
NZS 3121	Specification for water and aggregate for concrete
NAS 3122	Specification for portland and blended concrete.

##### 4.3 MATERIALS

###### 4.3.1 CEMENT

Portland cement to B.S.S or locally manufactured (Pacific) brand cements conforming with ASTM standards. It shall be delivered to the site in the manufactures' original sealed bags, stored in dry condition in a damp proof shed and protected against deteriorated and contamination. Cement which is lumpy or has deteriorated by moisture or otherwise shall be removed immediately from site of the works.

###### 4.3.2 FINE AGGREGATE

Clean sand or fine gravel screening passing through a 3mm sieve free from salinity, clay, loam or other deleterious matter. If not clean to the satisfaction of the architect, sand shall be washed in running water.

###### 4.3.3 COARSE AGGREGATE

Crushed metal from an approved source. In all cases coarse aggregate shall be well graded. Any aggregate not clean and shown must be washed before using in concrete work the size of aggregate shall be such that it will pass through a 25mm sieve and graded evenly between these limits. Submit samples of aggregate to the engineer before commencing work. Only plain bars shall be used for stirrups unless shown otherwise. Refer to drawings for details.

###### 4.3.4 WATER

Drinking Quality water only to be used

###### 4.3.5 REINFORCEMENT

Reinforcement shall be grade 300 deformed and plain bars manufactures to NZS 3402:1989 unless shown otherwise. All reinforcement shall be clean and free from loose rust, scale, grease or paint.

###### 4.3.6 CONCRETE

###### 4.3.6.1 PROPORTIONS

The quality of cement shall be measured by weight ( at the rate of 0.33m<sup>3</sup> to 50 Kg). The quantities of fine and coarse aggregate shall be measured by the volume in approved measuring boxes. The builder shall ensure by experiment that the proportions of fine and

M L S m



coarse aggregate provide a mixture of maximum density to the approval for the architect and if necessary, at his own cost, adjust these proportions as directed by the architect.

4.3.6.2 Concrete shall be manufactured at a plant and in a manner complying in all respects with the provisions of NZS 3109:1980, and supplied by a firm approved by architect.

4.3.6.3 Site mixed concrete may be used after obtaining approval from architect. Concrete mixes shall result in homogenous concrete with required strength, durability and surface finish. Normally for 20mpa the proportion shall be 3:1½:1= Crushed gravel: Fine sand: Cement.

For all structures compaction of concrete shall be carried out principally by use of vibrators of approved size and type.

All concrete shall be handled from the mixer, or in case of ready mixed concrete, from the agitator truck to the place of final deposit as rapidly as predictable by methods which shall prevent segregation. Concrete shall be placed in approximately 30 minutes after discharge from the mixer or agitator vehicle. Under no circumstances shall concrete that has partially hardened be placed in the work.

Concreting shall be carried out in such a manner as to avoid unnecessary delays in placing a fresh layer of concrete upon preceding layer. In case of concrete compacted by hand, fresh concrete shall not be placed upon the preceding layer after an interval exceeding 45 minutes, unless otherwise required by Architect.

In the case of concrete compacted by vibration a fresh layer may not be placed unless revibration of the lower layer causes the concrete to become plastic.

Where delays have been too great for the foregoing to be complied with, the surface of the concrete shall be treated as for a construction joint. The retempering of concrete which has partially hardened will not be permitted. Placing of concrete by pumping will be permitted subject to compliance of the concrete requirements.

#### 4.4 CONSTRUCTION JOINTS

The location of construction joints are as identified in plans. Any variations to these shall be approved by the Architect/ Engineer.

Where saw cuts are required by Engineer, these shall be done as soon as possible after pouring but no later than 36 hours. The pouring of concrete shall be continuous without cessation throughout any section of work between approved joints. Confirm with Engineer as to set out.


#### 4.5 CURING

The work shall be adequately protected from the direct rays of the sun, drying winds. After the concrete has set, the exposed surface and all concrete and formwork shall be continuously damp for not less than seven(7) days, by the use of an approved curing compound or wet bag and hosing.

All other slabs be kept moist in accordance with above by the use of approved curing compound or by covering with 25mm of sand, kept wet for seven (7) days. Pounding of water on slabs will be permitted as an alternative, provided the complete surface is covered for the full seven (7) days.

All other concrete and formwork shall be kept moist in accordance with the above by the use of wet bags.

No repairs to hardened concrete are to take place without the knowledge of the Architect/ Engineer.





The concrete surface finishes are to be smooth and even with true, clean arises, free from voids, honeycombing or other large blemishes. Small surface blemishes caused by entrapped air or water shall be repaired while the concrete is still green. There shall be no staining or discoloration from the release agent. There shall be no staining from stacking on timber or other material while left for curing.

#### 4.6 **FORMWORK**

Formwork shall be constructed that it accurate conforms to the true concrete shape. Level and plump, with sufficient strength and supports to adequately retain its shape. All in-situ concrete shall be poured on ply or steel formwork.

Clamps, wedges and bolts shall be used where possible in preference to nails. Bolt holes within the concrete shall be filled with drypack.

The use of oil on the boxing not be permitted except with approval of the Architect. Proprietary surface renders or special form release oils require approval from the Architect. Formwork to all slabs shall be constructed as to permit removal of loose shuttering without removal of props as directed. Design of all formwork must receive the Architect's approval. It remains the responsibility of the builder to obtain the various profiles shown in the drawings and to ensure that all formwork is structurally sound and capable of carrying the imposed loads in accordance with relevant New Zealand loading and design standards.

#### **STEEL COVER**

Concrete cover over main reinforcing steel shall be as scheduled here under except where specified otherwise on the structural drawings.

COVER IN MILLIMETERS					
Member	Against Natural Ground	Below Ground level and against Approved boxing	Exposed to weather and unplastered	Exposed to weather and plastered	Not exposed to Weather
Foundation	75	50			
Beams and Column	75	50	50	40	40
Slabs	50	30	30	20	20
Walls	50	40	40	25	25

#### 4.8 **STEEL COVER**

The contractor shall take great care in setting out steel that there is sufficient space between rods to allow aggregate to pass through and to ensure that each rod is properly embedded and bonded in concrete.

#### 4.9 **CONCRETE TESTS**

4.9.1 Test shall be arranged and carried out by the builder under the direction of the Architect/Engineer. The builder shall (except where specified to the contrary) provide all apparatus and materials and labour necessary for the execution of the tests:

##### 4.9.2a) **CONSISTENCY**

The quantity of water used for each batch shall be based on the consistency of the concrete as shown be Slump Tests. The Contractor shall provide a slump cone of 22 gauge P.G Iron



300 mm high, 100mm diameter at top and 200mm diameter at base. The slump for different parts of the work shall be within the range of 70mm to 90mm,

The Builder shall arrange Permissible slump within this range shall be in accordance with the Architect's instructions but will be approximately 70 mm for slabs and footings and 80 mm for walls, beams, columns and other confined areas. Should any test disclose a slump greater than directed for that particular part of the work, the concrete in that condition shall not be used in the work, but the quantity of mixing water shall be reduced until the proper consistency is attained. Approval to use concrete of any slump does not relieve the builder from his responsibility in complying with the requirements of sub-clause 4.7.2 (b)

#### 4.9.2b) COMPRESSION TESTS

The builder shall cast 150 mm standard concrete test cylinders, three (3) at a time as specified below and/or upon infractions from the Architect/Engineer;

No. of Batches		No. of Tests
1	5m <sup>3</sup>	1
2-5	up to 20m <sup>3</sup>	2
6-10	up to 40m <sup>3</sup>	3
11-20	up to 80m <sup>3</sup>	4
Each extra batch	above 80m <sup>3</sup>	1 extra

The builder shall provide at least three (3) steel moulds of standards approved design for casting of cylinders. Minimum values for concrete tested to destruction shall be:

Column pads and footings	-	30 Mpa at 28 days
Column/beams and floor slab	-	30 Mpa at 28 days
Blinding Concrete	-	14 Mpa at 28 days
Ground floor slab	-	30 Mpa

Unless noted otherwise in the drawings. Refer to structural notes for concrete strengths.

Test a shall be carried out at 7 and 28 days in accordance with NZS 3112. The builder shall keep record of all results and shall submit these to the Architect as and when they become available. Should compression tests reveal values less than those set out above, the Architect may, at his discretion, require further tests to substantiate quality of concrete. All costs of these further tests, irrespective of result of tests, shall be borne by the Builder. Any concrete which does not comply with the above requirements shall be demolished.

Allow for testing cylinders only at a laboratory approved by the architect. All other costs for testing including transport of cylinders are to be included in tender.

#### 4.10 BUILDING IN

4.10.1 Build into concrete and blockwork as the work proceeds all plugs, anchors, bolts, pipes conduits, etc., required for the works.

#### 4.10.2 DRAINS & PIPES UNDER FLOORS

Co-operate with drain layer in the construction of inspection chambers, etc., and before laying new floors and make provisions for pipes, conduits, etc., under floors for other trades. Where drains or pipes because of falls, levels, etc., are coincident with footing allow penetrations of the same.

#### 4.11 CONCRETE SLAB

Unless shown otherwise, slab shall be cast in panels on a chequerboard pattern maximum size of any panel not more than 25 square metres. No new concrete shall be cast against panels less than 2days old unless approved by Engineer.

#### 4.12 FINISH TO CONCRETE FLOORS



#### 4.12.1 PLASTER

Where specified for plastering rough screed to form a good face for later plastering.

#### 4.12.2 MONOLITHIC SLABS (if applicable)

Where as scheduled the concrete shall be treated as follows:

- (a) Concrete shall be placed vibrated and screeded with an approved steel vibrating screed.
- (b) After placing of concrete wood float surface immediately after screeding. Do not float excessively while concrete is in wet state but sufficient only to provide workable surface.
- (c) After concrete has attained an initial set and water has commenced 'bleeding' steel trowel surface. Continue steel troweling until all surface bleeding has stopped.
- (d) The use of sand or cement as drying agents applied is NOT permitted.
- (e) The above provisions will be strictly enforced. Any concrete slabs not done in accordance with above shall be rejected, be removed and redone.

All floors shall be left perfectly plane and true, showing no defects at junctions of concrete pours, and left ready for tiling as specified

- (f) Allow for construction joints as directed by Engineer.

#### 4.13 WATER PROOF MEMBRANE

Where shown on drawings, apply under floor slabs and beams, Premseal 450 or similar over 50mm concrete/sand building. Premseal be applied in accordance with the manufacturer's instructions.

It is essential that the Premseal 450 is continuous so that dampness cannot penetrate. Prior to the pouring of concrete the whole of the membrane shall be checked for any puncture which shall then be repaired. The Architect/Engineer shall be notified prior to the pouring of concrete so that it may be inspected.

#### 4.14 REINFORCING STEEL

##### 4.14.1 GENERAL

Refer to 'Preliminary & general' clauses which will also apply to this section of the work.

##### 4.14.2 STANDARDS

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

NZS 3109:	:	Concrete Construction
NZS 1900:	9.3A	: Concrete-General requirements
NZS 4671:	:	Hot rolled bars for reinforcement
NZS 3421:	:	Hard drawn wire reinforcement
NZS 3422:		Welded reinforcing fabric.
Standard Arc Welding		(Minor works)


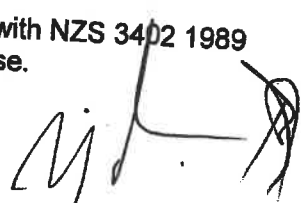
Read this section in conjunction with Section 5- Masonry and also structural notes in the drawings.

#### 4.14.3 MATERIALS

##### 4.14.3.1 GENERAL

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

Plain and deformed bars shall be min. grade 275 and comply with NZS 3402 1989  
Only plain bars shall be used for stirrups unless noted otherwise.





Welded wire fabric shall conform with NZS 3422.

4.14.3.2 **ORIGIN & 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 carefully marked for identifications with the relevant certificate.

4.14.4 **PROTECTION**

Store steel clear of ground and mesh under cover. Provide walk ways to approval if required. Brace adequately all reinforcement projecting more than 3 meters from concrete, cut out defects around bars caused by movement as directed before resuming concreting.

4.14.5 **FABRICATION**

Fit ties and stirrups tightly around main reinforcement. Bend deformed bars around rollers, not fixed pins.

Bend deformed bars only once. Re-bending is not permitted unless approved by Architect/Engineer.

4.14.6 **TOLERANCES & PROTECTIVE COVER**

Tolerances shall be as set out in Clause 32.2.1 of NZS 1900 9.3A. The concrete cover is to the surface of main reinforcement.

4.14.7 **PLACING & FASTENING**

Support top steel on high chairs or by other approved means, precast blocks are not permitted, unless otherwise detailed, support slab reinforcement at maximum 1 metre centers, except reinforcement 10mm in diameter and smaller at maximum 600 mm centers. Tie reinforcement with not less than 1.25 mm soft black iron wire sufficiently to maintain correct relative positions. Bundle bars should be tied together at 500cfs with 2.65 mm min. soft wire.

4.14.8 **LAPS**

Lap steel as shown only in the main steel. Normal lapping is 40 times diameter of bar unless noted otherwise.

4.14.9 **WELDING**

Welding of reinforcement shall comply with Standard Arch Welding (Minor Works) unless otherwise specified.

Welding reinforcement is not permitted without written approval of Architect/Engineer. Identify rods or bars to be welded with tags or branding.

4.14.10 **INSPECTION**

Before concreting, reinforcement must be inspected by Supervising Officers. Arrange with Architect/Engineer suitable time for inspection before approval. Work done without his approval will be rejected. Minimum of 1 day notice is required.

Remove all formwork preventing proper inspection.



5. **BLOCKWORK**  
5.1 **GENERAL**

Refer to 'Preliminary and General' clauses which apply to all trades. Also refer to Structural Notes for specific structural requirements which shall take precedence over this section

5.2 **MATERIALS & WORKMANSHIP**

Blocks shall be standard size class A 200mm, 150, 100mm thick, and with all necessary supplementary units. All block shall be true to size, square, with clean arises and even and consistent surface texture. Blocks that have chips, cracks or other defects shall be rejected.

The Contractor shall use standard modular cement blocks of approved manufacture. Block strength shall be not less than 14 mpa over the net area of the block. Mortar shall be mixed in the proportion of one part of cement to one quarter part of lime to three parts of sand provided that the lime may be replaced by an approved Plasticizer and waterproofing agent in the proportions recommended by the manufacturer. Mortar shall have minimum compressive strength of 12.5MPa after 28 days. Mortar must be troweled to the blockwork to give a full continuous mortar bed on each face, tampered to give 10 mm even mortar joints both horizontally and vertically. Mortar must also be troweled onto the end of each block prior to laying and NOT laid and the perpends pointed after. Where blockwork so plastered joints shall be left raked suitable for plaster finish.

Block prior to laying shall be protected from rain and shall not be placed while wet. Mortar mixed more than 20 minutes shall not be used.

5.3 **SCOPE**

Generally construct all walls complete with reinforcing bond beams, lintels, grout filling openings etc. as shown on the drawings and specified herein.

5.4 **LAYING OF BLOCKS**

Units shall be wetted but free of surface water before laying. Do not raise any part of a continuous wall more than 900 mm above another at one time. Lay mortar on face shells (i.e. longitudinal surface) or exterior wall units only and not on middle or end webs. Build walls in accordance with details and best trade practice. Use full blocks throughout except where closers are required and keep well plumbed straight and true throughout. Do not cut blocks.

5.5 **GROUT FILLING**

Blockwork containing reinforcement shall be filled with 17.5 mpa grout. Clean out all debris, remove projecting mortar before filling. Filling shall occur as the walls are built. Not more than 4 courses being built up before filling commences. Fill all cores of exterior block walls, walls below ground level and lift shaft and where specified, in the drawings.

Internal block walls grout fill all reinforced cells vertically and horizontally.

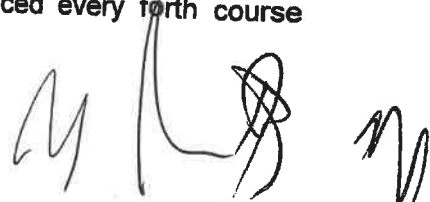
**REINFORCEMENT**  
**GENERAL**

To delivery of reinforcing steel from the steelworker as specified under Contractor and build in as work proceeds. Main reinforcing to blockwork shall be with deformed mild steel with plain steel for ties.

**TIES**

Use mechanical ties where bonding is not possible such as wall and junctions. Mechanical ties shall be 34 x 10 mild steel flats 675 long bended ends spaced every forth course vertically.

**PROVIDE AS SHOWN IN THE DRAWINGS**

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Where the reinforcement is not specified the following should adhere to:

- a) 200 Blockwork
  - Vertical :12 diam every 400 mm
  - Horizontal :16 diam every 3<sup>rd</sup> course in a bond beam
- b) 150 Blockwork:
  - Vertical :12 diam every 600mm
  - Horizontal :16 diam every 4<sup>th</sup> course in a bond beam or 12 diam every 3<sup>rd</sup> course in a bond beam
- c) 100 Blockwork:
  - Horizontal :12 diam every 3<sup>rd</sup> course in a bond beam
  - Vertical : 10 diam every @ 600mm

At top of 100 blockwork provide 100 x 300 beams reinforce with 2-12 diam and 6, ties at 150 crs.

- d) Unless detailed otherwise provide 400 x 200 and 400 x 150 mm concrete beams over top of all blockwalls reinforced with 4 nos. 16 diameter bars and no. 6 diameter links at 200 mm centres unless shown otherwise on the drawings.
- e) At all window and door jambs provided one 12 mm diameter rod extending from foundations to floor to roof beam.

#### **JOINTS**

Where indicated on the drawing all masonry joints are to be constructed with preformed joint filler consisting of selected impregnated fibres, such as Expedite Joint Filler. The filler is to be the same thickness as the joint width and is to extend through the full thickness of the masonry except where specified otherwise.

#### **5.8 BOLTS, PLATES, ETC**

Build in all bolts, straps, ground soap holders, etc. provided by the Carpenter.

#### **PIPES**

Build in pipes, conduits, electrical switch boxes, switchboards, etc., provided by others.

#### **5.9 FAIRFACE BLOCKWORK (where applicable)**

All fairface blockwork shall be laid in accordance with the relevant clauses of NZS 1900 Chapter 9.2

Blockwalls shall be perfectly true and plumb. Joints shall be even thickness and shall not vary beyond the tolerance of plus or minus 2 mm but shall average out at 10 mm over walls. Any blockwall which shows more than 6 mm under part of a 800 mm long straight edge placed anywhere across the blockwork surface will be condemned, broken down the rebuilt to be within the above mentioned tolerances at the Contractor's expense.

Point up with mortar on all faces as the laying proceeds and build in all fixing required and provided by other trades.

#### **5.10 CUTTING OF BLOCKWORK**

Note that where blocks are required to be cut they shall only be cut with a vebrapac or other suitable masonry saw. Holes and opening in fairface block shall be neatly cut to the required shape and size.

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5.11 **CONCEALED PIPEWORK**

It is most important that the provisions of pipework, wastes and vents which are required to be concealed in the Concrete Blockwork. No allowance will be made for any pipes not treated as specified and the usual required to be concealed at the Contractors expense.

5.12 **DEFECTS**

Before decorative finishes are applied to a face blockwork all surfaces shall be properly cleaned down; the work will then be inspected and the Architect will direct what attention is required if any defects exist. Generally minor defects may be carefully patched but faulty block or badly damaged blocks will be condemned and must be cut out and replaced. Where blockwork is to receive paint or other decorative treatment, minor defects may be patched provided that such patching will be completely concealed by the paint, etc. allow to make good where pipes, etc., penetrate the blockwalls.

5.13 **CLEANING DOWN**

On completion clean down walls remove all mortar projections and irregularities. Make good damaged corners, arises, on surface or fairface blockwork. Patch and make good around pipes, etc., penetrating blockwork. Leave walls to be plastered suitable for the application of plaster.

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6. **ROOFING**  
6.1 **GENERAL**

Refer to Preliminary & General section of this specification all clauses of which affect this section of the works.

6.2 **SCOPE**

This scope includes the supply and fixing of proprietary overlap jointed profiled sheet metal roofing and trim of like materials needed to make the building watertight, and includes all flashing work associated with the roof and all rainwater heads and downpipes.

Supply and installation of roofing underlay and building paper.

Supply and installation of all materials necessary to clad the roof complete with all ridges, barge, gutters, penetrations, flashings and accessories.

Supply and fix gutter etc. as detailed and specified.

Supply and fix 'Sunturf' roof as detailed to manufacturer's specification. (where applicable)

6.3 **STANDARDS**

All roofing shall be applied strictly in accordance with the manufactures' instruction if need be by specialist firms approved by the Architect. Any discrepancy between the manufacturer's instructions and the specification shall be referred to the Architect for decision.

6.4 **METAL ROOF MATERIALS**

Unless otherwise shown, the roofing etc. shall be:

i. **Roofing/Sheathing (as shown)**

Kliplok / Trimdeck Zincalume (ZAG) 0.48mm BMT colorbond or as detailed. Roofing Cladding – single lengths where possible

ii. **Flashings**

Unless specified otherwise, .55 Zincalume sheet steel with 1.5 oz Zinc coating or similar approved to match main roof colour.

iii. **Finishings**

Fix to purlins with Buildex type 17 self drillings screws or similar as per details and manufacturer's specification and same colour head and capping.

All screws to be fixed with cyclone washers and neoprene sealing washers and fix in accordance with the manufacturers specifications to withstand a design wind velocity of 57 meters per second/ or as required by the Engineer drawings. Joints shall be made with mechanical fasteners and sealant.

iv. **Sealants**

As recommended by manufacturer.

v. **Roofing Underlay**

Unifoil sisalation –(2 way Aluminum Foil) complying with the Fire Spread regulation.

vi. **Pipe outlet flashing: matching colorbond.**

Aquaseal pipe flashing installed to all pipes and vents to manufacturers instructions.

vii. **Gutter**

0.6TCT Zincalume sheet steel with 1.5oz Coating – to match rain roof colour.





All materials shall be the best of their respective kinds free from defects and suitable for the job they have to perform. Allow to store materials in such manner as to prevent damage. Leave the roof surface completely water tight at completion of the work. Supplier of material shall be Lysaght or other approved by Architect.

6.5 **CO-OPERATION**

Allow to co-operate with the Plumber in the installation of the flashings, location of pipes, downpipes, over flows, spoutings, vents, etc.

6.6 **WORKMANSHIP**

Workmanship shall be of the highest standard and in accordance with manufacturer's recommendation to the satisfaction of the manufacturer and the Architect.

6.7 **CONDITION & PROTECTION**

Sheathing materials are not to be deformed or damaged, zinc coating to be clean without sign of corrosive action of any description. Ensure to use 'magnetic' attachments or other means to drill to prevent 'hot' drilling scrap falling onto roofing.

Defective materials even if fixed shall be removed from the site forthwith and replaced to Architects satisfaction at no extra cost.

Take measures to accessories shall be installed so as to resist wind loadings generated by wind expected at this particular site. Note that the area is within a highly exposed wind zone.

Confirm fixing details prior to commencing on site.

Ensure that all preparatory support work, flashings, underlay etc. have been completed satisfactorily.

6.8 **SETTING OUT**

Set out the planned layout before fixing commences to ensure true line, proper relationship to modules, grids and roof features.

6.9 **DAMAGE**

Do not use products, profiles, components that are damaged.

6.10 **MARKING OUT**

Do not use scribes.

6.11 **FORMING**

Roll form or machine bend or press all profiles off site. Only small scale local forming is allowed on site.

6.12 **UNDERLAY**

All foil and building paper to be laid at right angles to roofing material.

6.13 **CLEANDOWN**

Remove all strains, nails, debris and scrapes of any kind from the surfaces covered by the work of this section, regularly and at the completion of the work.

Remove all fillings/drilling swarf each day to prevent rust action – upon completion thoroughly clean the total roof surface prior to inspections. Prevent hot drilling swarf falling onto the roof while hot. Use cardboard or other protective spread during drilling.

6.14 **FIXERS**

Use only fixers approved by the manufacturer.





6.15 **FIXING SHEETS**

Fix sheets to structure in accordance with manufacture's recommendations using approved leadhead or springhead nails. Allow for four rows of screw/sliding washer fixings to all lower ends of sheets. Washer to be color matched to roof color.

6.16 **FLASHINGS**

Provide slip/movement joints equally spaced where indicated on the drawings and otherwise recommended by the material manufacturer. Generally flashing to be fixed with the roofing materials using the same types of fixings. Use of rivets should be minimized.

6.17 **SOLDERING WILL NOT BE PERMITTED**

Make provision for expansion joints at 900mm centres.  
Flashings set into concrete or blockwork shall be painted one coat bituminous paint. Elsewhere prime flashings all round before fixing with one full coat of approved galvanized iron zinc rich primer to manufacturers specifications.

Provide flashing etc. to parapets, down side of walls at junction with roofs, etc., and wherever required to leave building fully watertight whether specifically mentioned or not.

6.18 **PRIMING** (Where Applicable)

Clean down and prime with approved quality primer where required.

Fix flashing so that they move with the cladding. Paint nail/screw heads of all wall sheathing/flashing fixings to colour match roof. Painting to be in accordance with roof/paint manufacture's recommendations.

6.19 **COMPLETION**

At completion leave all roofs free of debris, clean all gutters downpipes, ensure all flashings are securely fixed and leave the works all waterproof and in perfect condition.

6.20 **GUARANTEE**

Guarantee the work in this section against faulty material or workmanship which may result in the lack of water lightness of the roof system. This is deemed to be accepted by the Contractor when signing the contract.

The guarantee to be for a minimum period of 10years from the completion of the work and to cover materials and labour for making good. Make out in the name of the Owner and supply to the Architect. No payments shall be due until this has been done.

**GUARANTEE THE ZINCALUME** or similar finish for a minimum period of 10years.

6.21 **'SUNTURF'** (where applicable and shown in drawings)

Provide and fix 'Sunturf' translucent roofing on entry portico and canopies as detailed. Fix to manufacturer's specification and details with the necessary accessories. 'Sunturf' roofing to be similar profile.

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7. **CARPENTER & JOINERY**  
7.1 **GENERAL**

Refer to 'Preliminary and General' Clause which apply to all trades.

The whole of the carpentry and joinery work shall be properly framed together in accordance with best trades practice and be securely nailed, bolted, screwed or strapped. Select timber with care and carefully straighten and level all ceilings, walls, etc. before fixing linings.

**TIMBER GRADING**

All timber to comply with 'Natural grading rules' unless otherwise specified.

7.2 **MATERIALS**  
**TIMBER**

All timber shall be of best quality of the various kinds specified, free from defects making it unsuitable for its particular purpose and shall comply with Department of Forestry Grading Rules for Framing No.1, for Joinery No.1 Dressing grade.

All framing timber must be structurally sound, and joinery free from knots and other defects, and be thoroughly seasoned and shall be gauged to depth and /or width. All joinery timber shall be selected in straight long clear lengths free from knots or other defects and be thoroughly seasoned.

All timber shall be air or kiln dried 18% approx. maximum Equilibrium Moisture Content.

Timber for air conditioned areas shall be kiln dried to maximum 12% EMC.

All timber shall be treated against decay and insect attack, in accordance with 'Guide to the use of Preservative Treated timbers' issued by the department of Forestry, 1971 and Fiji Timber and their use Regulations

Treatment shall be by the pressure method using Tanalith process. Timber shall be F7 grade.

All timbers shall be treated and stated above except where a specified provision is made in the "Guide" for the non-treatment of hardwood. If hardwood is required to be treated, it will be treated with Immutan F or Celiure PA to 1.6kg/m<sup>3</sup>. The contractor must familiarize himself with the hazard 1-4 rating of forestry and comply with the requirements as detailed above.

Timber species shall be: (TR=treated) unless specified in drawings the following timbers shall be used exposed timbers shall be one species only)

General Roof Frame	Tr Kauvula Damanu Local Hardwood
Weatherboard External	Dakua Salusalu Tr Kauvula, Tr Dakua Makdre
Floor Framing Bearers, Joists General wall Framing	Rosarosa, Yasiyasi Sacau, Tr Kauvula Tr Kavula, Tr Kaudamu
Flooring exterior	Sacau, Vesi, Yasiyasi Damanu, Sacau, Rosarosa
Balustrades-Exterior And Interior	Dakua Makdre Dakua, Salusalu Tr Kaudamu, Tr Kauvula



Frames	Dakua, Makdre
Exterior, Joinery, Sashes and Doors	Dakua, Salusalu, Tr Kaudamu Dakua, Makdre, Mahogany Dakua, Salusalu Rosarosa, Sacau, Vesi, Yasiyasi
Stairs – Exterior And Interior	Rosa, Sacau Yasiyasi, Vesi, Mahogany
Joinery Frame	Dakua, Mahogany
Interior Door, Frames	Dakua, Mahogany, Salusalu

Pine may used subject to Architects approval and subject to "Provisional National Grading Rules for Pine" and depending on which use.

Substitution of alternate species shall be done only after obtaining the written approval of the Architect and no extra cost will be allowed for substitution.

The moisture content of the timber shall be strictly adhered to. The Architect reserves the right to submit any to a recognized testing authority for testing and report.  
The contractor shall replace at his own expense any timber which has been damaged or shrunk on finished work caused through the use of imperfectly seasoned timbers.

#### **TIMBER SIZE TOLERANCE**

Size tolerance shall conform to the "Specification for Metric Dimension for timbers in Fiji", as detailed by the Timber industry.

#### **NAILS, SCREWS, BOLTS, JOINTING, ETC**

All nails shall be galvanized and in exposed work punched 3mm past finish.  
All screws, brads, panel pins shall be brass or stainless steel except where specifically required to match hardware.

Bolts, nut, washers etc., shall be galvanized to standard pattern good quality of sizes shown and specified. Where bolts or screws for fixing concrete is poured, they shall be of approved pattern and diameter conforming with the requirements for the particular load carried. Bolts shall be of such length or give good embedment in concrete with ends ragged. Bolts must project one thread through nuts after tightening. Exposed bolts shall be cut back to leave this projection, with bare metal coated with one good coat 'Cold-Galvanized' paint.

'Ramset' fixing may be used for non-hurricane resisting fixings. Where shown as ramset bolts may be cast into concrete as above.

#### **PLYWOOD/COREBOARD/GIBRALTAR BOARD**

Plywood shall be of the thickness specified and shall conform with A.S.087 for exterior use and A.S. 088 for interior use. Exterior grade plywood shall be used for exterior surface, fascias, roof decking, etc. bench tops and elsewhere in contact with damp conditions. Seal all edges with red lead before fixing. Where possible Fiji manufactured plywood should be used of A Grade quality.

Coreboard shall be 19mm thick with laminated pine solid core bonded and sheathed with it. Dakua pycross grained veneer on both faces, sanded to give smooth finish. All exposed edges shall have 6mm. Dakua edge glued and pinned on.



Gibraltar(Gib) board shall be of Winstone or Gyprock of stated thickness and fixed to manufacturers specification. Particular emphasis on the use of paper tapes, Gib-bedding and finishing compounds. Provide and use 30mm x 30mm standard galvanized steel corner beads to all External corners.

#### **SPACING**

The distance given between timbers and to the centres of framing are to be required as maximum and where spacing works out differently, the distance between centres shall be lessened by the insertion of extra timbers.

In all cases members shall be set out sizes of materials of sheathing.

#### **7.4 TIMBER FRAMING**

Trim for roof and ceiling, walls and street awning all as shown and required.

Unless detailed otherwise, frame for walls in 100mm x 50mm with top plates studs sets, plumb and true at centres shown with nogs at 600mm crs, framing fixed to concrete or blockwork by bolting at 900mm maximum crs.

Walls forming divisions must be carried unto underside of concrete slab. Where wall are to be fire line with two layers of Gib-Board having joints staggered and flushed up.

#### **7.5 PRIMING**

The carpenter shall be responsible for priming with genuine pink primer primer or other approved before erection all surfaces of wood and all joints to interior work in contact with plaster of blockwork and painted exterior woodwork, including Joinery. Isolate with DPC to full width where appropriate.

**NOTE:** Do not prime timbers which are to be clear finished or stained.

#### **7.6 PROTECTION**

All finished and partly finished work, shall be protected from weather or damaged from other sources, paint marks, etc.

#### **7.7 ROUGH CARPENTRY**

7.7.1 Layout, cut, fit and erect and attach all items of rough carpentry in accordance with various details and as required to provide a fully acceptance completed installation. Cut framing for work of other grades, brace, and plumb, level all members, securing sufficiently to ensure rigidity and strength. Take particular note of joint and strapping details throughout. Replace defective timbers unsatisfactory for intended use including crooked, wrapped, twisted and bowed materials.

#### **7.7.2 BLOCKING**

Provide blocking nailers, nogs and stripping to maintain lines of support and finishes shown as required. Trim and block out for mechanical and electrical fitting and fixings.

#### **7.7.3 DAMP PROOF COURSE**

Separate all timber sand concrete or plaster with ply bituminous fabric strip "malthoid". All bottom wall plates shall be Fijian Hardwood.

#### **7.8 TIMBER EAVE BOARDINGS**

Refer to details and provide exterior boards in treated Kauri.

#### **7.9 JOINERY METHODS AND WORKMANSHIP**

All timber machine dressed and hand finished, sanded to perfect surface.

All joinery and cabinet work shall not be installed until roofs are on and building completely watertight. Protect surfaces from weather and damage. Frame and finish using methods of





practice with mortice, and tenon, dovetail, tongue and groove, mitre, etc. Secret fix and clear finished work from the inside, where these impractical heads of screws and bolts shall be countered bored and plugged with matching timbers.

Build in all plugs, ground etc. for adequate fixing of joinery and cabinet work. Remove all sharp arises, and rough and uneven surfaces, hammer marks and other defects before painting or staining is commenced. Site measure all works.

Skirting, mouldings, architrave, etc. shall be mitred and scribed at angles etc., Running joints shall be at a minimum and to the Architect's approval for position.

Finished work showing wrapping, twisting or shrinkage shall be replaced at Contractors expense. Fix hardware before painting. Remove for painting and re-set on completion. Unless specified otherwise, cupboard doors shall have 2 Weldon Concealed Hings magnetic catched and satin chrome 'D' pull handles.

#### 7.10 DOOR FRAMES

Frames shall be Dakua (0.43lb/m<sup>3</sup> retention) as detailed or hardwood as otherwise approved. Frames for exterior doors to be EX 150 X 50 and for internal doors to be EX 100 X 50 unless otherwise detailed.

#### 7.11 FIXTURE AND FITTINGS

Provide and install joinery fixtures as detailed on drawing, and in Schedule of Finishes. All doors shall be constructed in accordance with best trade practice in accordance with the various door Schedules.

All hinged doors unless otherwise specified will be hung on 30/100 mm butt hinges shall be constructed with best trade practice in accordance with Schedule. Use mortice and fix tenon, pin and glue and Construct all doors strictly to recognized methods of construction.

#### DOORS

Flush solid core doors shall have approved frame, core and lock, and with selected 4mm Dakua, or Kaudamu plywood glued under press to approval. Provide two 6 mm thick clashing strips and 6mm thick edge strip to top, 13mm thick edge strip to bottom, all Dakua glued and pinned on.

External doors shall be exterior ply sheeting and four clashing strips.

Unless otherwise detailed, hollow core doors shall have approved frame honeycomb core lock block, 4mm selected ply sheeting strips all as above. External doors shall have marine ply sheeting and four clashing strips. All interior doors shall be paint finished, unless otherwise specified.

No nails or pins shall have mortice and tenoned joints, and frame sizes as detailed. Provide and fix the timber doors shown on drawing complete with hardware and furniture.

#### 7.12 INTERIOR FINISHES

Provide and fix all architraves, windows boards, conice moulds, cover beads, quadrants, etc. as may be required whether specifically mentioned or not to ensure a neatly finished job.

Allow for supply and fixing of square or plain beads, stops, fillets, etc., at the junction of joinery fittings with wall and other abutments where such items are necessary or are the intent of the detailing, at no extra cost to the Contract.

#### 7.13 CEILING LININGS

See drawings. Finish at junction with all moulding.



### **SEALANT**

All sealants must be approved quality silicone rubber or as recommended non-setting compound adhesive where appropriate for each job as recommended by the manufacturer of each sealant as approved by the Architect as suitable for in all exposed situations for the joining and sealing of different materials all to provide a waterproof joint and applied strictly to manufacturer's instructions. No sealant to be used until Architect approves type and location. Contractor in each case to table support a manufacturer's recommendation/specification. All materials are to be used as per manufacturer's specification and finished accordingly.

### **MIRROR**

Unless otherwise detailed, mirror shall be 6mm thick glass double silvered and mounted, on 6mm waterproof plywood.

#### **7.14 HARDWARE**

Allow for fixing of all door hinges, cabin hooks, heavy duty catches, door pulls, locks etc. for all doors. All locks and closers to be lockwood or equivalent brand as approved by Architect.

#### **7.15 SELECTION**

See hardware schedule in drawings/specifications.

(For all hardware, alternative can be submitted but can only be used if approved by the Architect)

Allow for the supply and fittings of all hardware as shown detailed and required.

All hardware to comply with the requirements for access for the disable. Refer NZS 4121:1985 and NZ Building Code.

All locks to exterior doors to be 'lockwood'. Weiser or lane or any equivalent type approved.

#### **7.16 MASTER KEYING**

If specified, allow for a master key system serving all doors. Architect will provide Hierarchy for system prior to work being carried out.

#### **7.17 ITEMS EXCLUDED**

Supply if hinges to be included by joiner under supply of joinery. Type and number to be that accepted as good trade practice.

i.e.	Cupboards	-	1 pair
	Interior doors	-	1 ½ pair
	Exterior doors	-	1 ½ pair stainless steel

Windows latches to be supplied with aluminum window joinery and supplier to allow. Latches must be easily operational.

#### **7.18 SIGNAGE**

Allow for the supply and installation of all door and direction signs. All fire exit doors to be fixed with appropriate sign as approved by Council and NFA.





## **8 STRUCTURAL STEELWORKER**

### **8.1 GENERAL**

Refer to the 'Preliminary and General' Clause which will also apply to all trade. Also refer to Structural Notes and specification by Engineer for specific structural requirements which shall take precedence over this section

### **8.2 MATERIALS**

Structural steel shall comply with standards given by the engineer. General miscellaneous metalwork shall be of appropriate thickness and/ or gauge suitable to its use. Provide for all structural beams, columns, brackets, clean, etc., as shown on structural drawings.

### **8.3 FABRICATION & ERECTION**

Workmanship and finish shall conform to the best modern practice. Materials shall have clean surface and be free from rust, mill scale or other foreign matter before being worked in shop.

Fabrication shall comply in all respects with the relevant sections of as specified by Engineer. Columns shall be erected plumb and true to line and level. Holding down bolts shall be checked for accuracy before the steel is fabricated.

Base plates shall be leveled. Accuracy of fit of the frames shall be the responsibility of the Contractor. At all stages of the erection work the steel work shall be adequately held and braced so that the structure is stable, safe and not over stressed in anyway from erection loads or winds loads.

### **8.4 WELDING**

All welding shall be are welding by means of metal electrodes in accordance with Engineers Specification. Welding shall be done under the immediate and continuous supervision of a qualified welding supervisor.

During the welding process the work shall be securely held by bolting, clamping or tack welds such as to avoid any distortion of the work. All slabs shall be removed from welds before a run of welds in superimposed. Remove all slags at the completion of all welding work.

### **8.5 WELDING ON SITE**

All welding on site shall be adequately protected from wind and rain. If, in opinion of the Architect it is too windy or too wet for welding on site all weld operation shall cease until such time as the weather improves to the satisfaction of the Architect.

### **8.6 INSPECTION**

The Architect shall have access at all reasonable times to all places where the work is being carried out and shall be provided by the Contractor with all necessary facilities for inspection during fabrication. Notify the Architect/Engineer when and where the work will be done before any work in commenced.

### **8.7 BOLTS**

All bolts shall conform to the requirements of as specified by Engineer. Washers shall be used under all nuts. Where necessary tapered washers shall be used to obtain an even bearing. The treaded portion of each bolt shall project through the nut atleast one thread.

### **8.8 GALVANISING & PROTECTION**

All steel bolts, straps, fixing, that are exposed shall be galvanized unless shown by Engineer.





8.9 **PAINTING**

Do not paint steel work which is to be encased in concrete. All steelwork shall be power wire brushed and flame descaled after fabrication.

Remove all rust, mill scale, etc. by wire brushing, scraping and rubbing with sand paper. Wash with mineral turpentine and wipe dry with cloth. Dust down, clean off free of grease, oil, dirt, etc. and give one full coat all round of Rustguard No. 1 prior to leaving workshop. After erection clean down and touch up damaged areas including site welds and apply one coat of approved undercoat. Allow 24 hours to dry. Apply two coats of approved Gloss or Semi-Gloss enamel. The paint shall be handled and applied in accordance with the manufacturers instructions.

**FIXING GENERALLY**

Provide all necessary strappings, brackets, cleats, straps etc. as shown and required.

8.10 **DRYPACK MORTAR**

Drypack mortar shall be used beneath base plates, unless specified otherwise. The mortar shall consist of dry volume mixture 1 part cement to sand with sufficient water added to form a ball without excluding or failing apart when the hand is opened. Mortar shall be hammered under the base plate with a wooded tool and properly compacted, kept protected from direct sunlight and water cured for three (3) days.

8.11 **GALVANIZED**

Unless stated otherwise where galvanized pipe is used, it shall be Grade B.

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9. **METAL WORKS**

9.1 **GENERAL**

Refer to Preliminary & General section of this specification, all clauses of which shall apply to this section of this works. Also refer to Engineer's specification or structural Steel work.

9.2 **SCOPE**

This section of works includes:

- (i) All fastenings, fixing cleats, angles, tees, straps, hangers and the like, required to construct the building as drawn.

9.3 **MATERIALS**

Materials shall comply in every respects to standards mentioned in Engineers Specifications.

Where difficulty exists in obtaining the gauges, weight or dimensions of materials specified, the larger dimensions shall be allowed for. Obtain approval prior to ordering material.

Steel plate shall comply with Engineers specification. Structural steels weather resistant weldable grades.

Stainless steel to the interior unless otherwise specified shall be grade 304, N25

Stainless steel to the exterior unless otherwise specified shall be grade 316 and 304 N25

All materials shall be best quality clean and free from loose scale, rust, fittings and other identification, etc.

- 9.4 All metal work shall be executed by experienced tradesman neatly and accurately made to detail.

Where exposed to view all welds shall be ground and buffed off to a smooth and even surfaced.

9.5 **GALVANIZING**

All mild steel angles, bolts, straps, rectangular hollow sections, etc., shall be galvanized where specified or shown on drawings. Hot dip galvanizing is preferred where at all possible but those components that are fabricated from ungalvanized mild steel may be electro galvanized.

Prime all welded joints in galvanized work with Zinc epoxy primer applied in accordance with the manufacturers instructions.

9.6 **FABRICATION**

Cold formed work to be free from warping, buckling and fractures from bends with break press or by cold rolling.

**Note:**

Hot forming is not permitted without prior approval.

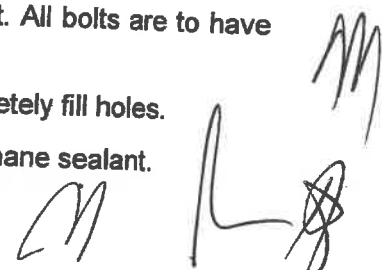
Holes : From without distortion of surrounding metal.

Sheet Metal: Is to be accurately machine – folded or rolled to shape without fracture or distortion.

Bolted Joints: A minimum of two screw threads shall pass through nut. All bolts are to have two washers unless otherwise noted.

Riveted Joints: To be drawn tightly together, with rivets closed to completely fill holes.

Seal mechanical joints exposed to exterior: with an approved polyurethane sealant.





Remove all burrs and sharp arises which would be accessible or visible after fixing.

9.7 **WELDING & BRAZING**

See Engineers specifications.

10. **PLUMBER**

10.1 **GENERAL**

Refer to the "Preliminary and General" Clauses which apply to all trades.

10.2 **STANDARDS**

All sanitary plumbing shall conform to the New Zealand Plumbing and Drainage Regulations 1959 and all subsequent amendments and revision shall be carried out by a licenced Plumber and be in strict accordance with the drawings and this specification and to the satisfaction of the respective authority inspectors and the Engineer.

10.3 **MATERIAL**

The work shall include all materials and fittings necessary for the complete execution of the plumbing works although same may not be specifically shown or specified herein.

All materials shall be best of their respective kinds and if necessary are to be submitted for approval before installation.

10.4 **WORKMANSHIP**

The plumbing work shall be commenced as the progress of the trades will permit and the Plumber shall arrange for all openings, chases, etc. for pipes and wastes to be made as the work proceeds. Fit flanges to all visible pipes where they pass through walls, floors and ceilings. Tape all pipes where they pass through concrete with densotape as deemed necessary by Architect. All piping shall be adequately secured to the building to prevent vibration. Any pipe work exposed shall be chrome plated.

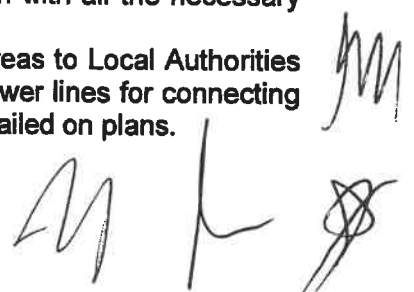
The Plumber shall allow to test the various installations from time to time and the complete installations before occupation by the employer. All pipes shall be set out in straight runs with even gradients avoiding all pipes where air locking are likely to occur. Easy bends shall be used in preference elbows. Copper piping shall be securely supported and fixed with proper copper saddles and pipe clips to entirely prevent sagging. All joints shall be formed without reduction in pipe size.

All pipe work, especially hot water service pipes shall be run to service points in the shortest and most direct manner possible. All waterpipes shall have at least one disconnecting union in their lengths at convenient accessible points. All pipes at taps, valves etc. shall be firmly secured to prevent movement when operated. All taps shall be sealed against vermin, birds and leaves including vents, down pipes, etc. with PVC vent caps. No exposed threads or other unsightly arrangements shall mark the appearance of the completed work. The Plumber shall do all that appertains to his trade which is shown on the drawings and written or implied in this specification or which is necessary for the proper completion of the building to leave it perfectly watertight.

10.5 **EXTENT OF WORK**

Carry out all plumbing work as shown or indicated on the drawings and specified herein. This shall include all flashings to windows, doors and other junctions necessary to render the building water tight, all water services, supply and fittings of all sanitary fittings, connections to wastes and vents, etc. required by Local Authorities in connection with all the necessary drainage works.

Allow for all necessary works including making good all damaged areas to Local Authorities and Engineers satisfaction, for connecting waste pipes to existing sewer lines for connecting storm lines for connecting storm water to existing road gutters, as detailed on plans.





10.6 **FLASHINGS**

Work in with the Carpenter in the installation and co-ordination of the fittings of flashings. Supply the carpenter with refinished Zinalume 0.55 flashings to all windows and doorframes as detailed on the drawings. Flashings shall be neatly folded to the profiles indicated so that a neat true edge results. All flashings shall be machine bent to ensure neat profiles.

Co-operate with the painter in the priming of the backs of all flashings with calcium plum bate or other approved prior to installation. Flashings shall be machine bent and in as long lengths as possible and fixed to ensure perfect water tightness. Flash pipe projections through roof making a weatherproof joint with proprietary rubber boot seals.

10.7 **CONCEALMENT OF PIPEWORK**

All pipes including supply pipes, waste pipes and vent pipes shall be concealed in walls of floors unless otherwise specified. Where pipes are run inside or through concrete work the Architect must give approval of the positioning before any such work is carried out.

10.8 **RESPONSIBILITY OF PIPEWORK**

The plumber shall be responsible for all pipework until the end of maintenance period. Should leakages occur the Plumber shall be responsible for making good the leaks together with repair of adjacent surfaces and finishes.

10.9 **POST CONTRACT DOCUMENTS**

Upon completion of the Contract the following documents shall be supplied to the Architect:

- a.) Copies of guarantees as called for in the specification.
- b.) Test certificates from the Local Authorities certifying plumbing works comply with their requirements.
- c.) Plan showing "as built" installation
- d.) Plan showing exact location of underground services.

10.10 **PIPE TESTING**

On completion and before concealing all pressure pipe work shall be tested at 3 times the working pressure. Waste drains shall be tested to withstand a 2 meter head of water.

Notwithstanding the above all pipework and drains shall be tested to the approval of the Local Authority and the Architect.

10.11 **TRAPS AND FITTINGS:**

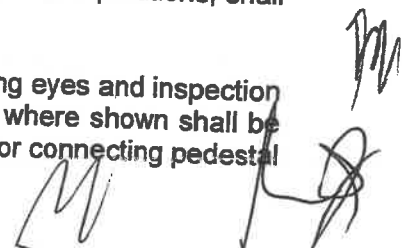
Traps and fittings not fitted with integral trap with white colour polypropylene "Dux Fast fit" or similar approved to be concealed.

10.12 Install grated trapped floor wastes to all wet areas including W.C compartments, decks and any other applicable wet areas.

10.13 **WASTES AND VENTS**

All wastes shall be in PVC in accordance with the above mentioned standards. Where pipes pass through concrete they shall be below if not shown otherwise on the drawings. Lay wastes to even falls complying with the above mentioned standards. Joining of the pipes shall be by the socket and solvent cement, junction method. Vent pipes shall be S'Lon PVC to a similar standards as the wastes. All vents pipes shall be carried up within partitions, shall be of the sizes shown and extend to 450 above finished roof level.

Supply and install all necessary bends, swan, necks, branches, cleaning eyes and inspection plates, to ensure easy clearance of blocked piping. Soil terminal vent where shown shall be carried up through roof and terminated with bird proof PVC vent cap. For connecting pedestal





WC pans to PVC piping use 100mm purpose made pan collars. Provide all necessary fittings including bends, inspection elbows, trees, inspection trees, cleaning eyes, etc, in accordance with best trade practice. Provide all necessary PVC support pipes. Provide adequate inspection and cleaning points to the satisfaction of the Architect for easy clearance of blocked pipes. Provide expansion joints as required. Wastes shall discharge where shown and as directed over gully traps, or into inspection chambers connected to soil drainage system. All wastes shall be trapped using McAlpine or other PVC approved brand patent deep seal anti-syphonage traps of appropriate diameter. Use pallazzi gulley's or PVC floor traps in toilets. Floor traps shall have removal gratings and have a.c.p finish.

#### 10.14 **SIZES OF WASTES AND VENTS:**

Unless otherwise shown waste pipes and vents shall be as listed below:

Fitting	Waste Pipe	Min. Permissible Vent Size
WC	100mm dia	50mm dia
Vanity unit	32	32
Urinal	50	50
Shower	38	38
Handbasin	32	32

Where more than 2 similar fittings are connected to one waste or vent the pipe size shall be increased accordingly. Terminal vents shall be 100 mm diameter unless approved otherwise.

#### 10.15 **COLD WATER SERVICES**

Arrange with PWD/ as detailed by Engineer to supply and install meter complete with stop valve/ or as detailed, to by boxes and lids as detailed by Engineers. Allow to pay all fees, etc. Connect with 20 mm branches to stopcocks at position of future hose reel position. To all other outlets, connect with 20mm branches. Provide isolating stopcocks to facilitate maintenance. Allow for pressure testing the whole system before plastering. Unless otherwise mentioned all taps, outlet spouts, etc shall be finished in chrome plate. Plumber to obtain Architect's approval as to position of all taps, etc, before proceedings with the work.

Unless stated otherwise in special conditions of Engineers Drawings, the water mains shall be as follows:

Single residence / 1 unit	-	12mm
2-3 Units	-	20mm
4-6 Units	-	32mm
Medium Commercial	-	37mm
Large Commercial/ Industrial	-	50mm

#### 10.16 **METAL GRATINGS:**

Provide and build in where shown heavy-duty gatic metal removable gratings to storm-water and drainage sumps.

#### 10.17 **SANITARY FITTINGS**

Supply and install sanitary fittings as marked on plan including cold water supply connections as follows: Plumber to provide all fitting etc needed to complete and finish the system.

##### a.) **WC PANS AND CISTERNS:**

Unless shown otherwise, all WC system shall be Coroma Lead with Robust seat and vitreous China P or as required complete with cisterns. Flushing valves shall be Coroma PAC connected to solid pipe and water supply. Provide and fix stop valve and cistern tap. All taps, stop valves to be good quality as selected by Architect and equivalent. WC pans shall be set into bends in 1:2 cement sand mortar and into 100mm PVC pipes approved sleeves and jointing compounds. Any other brand would have to be similar and approved by the Architect at time of Construction. Ensure chains do not rust.



b.) **HAND BASINS:**

As detailed all complete with selected vanity units. All to be complete with concealed hanger brackets, c.p wastes grate and c.p chain & plug. Where hole is not needed, contractor to provide matching plug to plug off.

c.) **TOILET ROLL HOLDERS**

Supply and fix selected wall mounted toilet roll holder as approved in all WC areas.

d.) **URINALS**

Unless shown otherwise, supply and fix urinals as detailed with flushing systems.

10.18 **COMPLETION:**

On completion, all works shall be tested for efficient working of whole drainage and plumbing system to the satisfaction of the Architect and the Local Authority.

The contractor shall provide all necessary testing apparatus together with all labour and materials, which may be required for the complete testing of drains, materials that may be required for the complete testing of drains, manholes and ventilating pipes. Any failure of any part of drainage system shall be made good at the Contractors expense to the satisfaction of the Architect and the Local Authority co11.7.4.5 nced.

10.19 **HOT WATER**

Hot water to be provided in kitchen, vanity basins as marked in drawings. The shower to have hot water supply.





**11 FLOOR, WALL, CEILING FINISHES**

- 11.1 Concrete Finishes & tolerance & Plaster – General**  
All concrete finishes shall be in accordance with NZS  
All slab finishes shall be in accordance with part III NZS  
All other finishes shall be in accordance with Part I NZS

**11.2 SLAB FINISHES**

General slabs to take plaster or tiles shall be finished to U2 ie. Floated Finish  
Slabs to take vehicle traffic shall be finished to U5 ie. Broomed Finish  
Unless shown otherwise  
Note that U2, U3 and U5 are defined in table 2, NZS 3114 – 1980  
See schedule of finishes.

Floating and any subsequent finishing shall be at the correct time and intervals to obtain the quality of compaction and finish required. No troweling in of finest and dry cement will be permitted.

The Contractor shall arrange the pouring to allow adequate time for floating and finishing. All troweling ridges shall be removed while green or by subsequent light grinding. Slabs not fulfilling the standard of finish required shall be ground smoother or otherwise treated smooth to the satisfaction of the Engineer/Architect. Care shall be taken to avoid ridges where newly poured slabs meet existing edges.

Tolerance shall conform with NZS 3114 – 1980

**11.3 FORMED SURFACES**

Classes of formed surfaces are defined in table 1, NZS 3114 – 1980

Refer to following clause for schedule of finishes required.

In general, form fairface finish surfaces with standard sheets of plywood placed in a regular pattern and tightly butted together to avoid grout loss. The joints shall be sealed with plastic sealant trips or cover sealed with not less than two coats of polyurethane varnish on the concrete face.

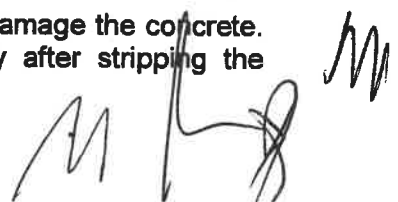
Fairface formwork shall be so constructed as to provide straight and true angles and so as to produce cast surfaces within a tolerance of plus or minus 3mm on the given dimensions and without visible offsets, bulges or misalignment of the concrete. Form clean neat arises, except where chambers are shown on the drawings, in which case the fillets shall form part of the mould side and not be loosely added.

The formwork surface in contact with the concrete shall be clean and shall be treated with a suitable form release to ensure separation from the concrete. Care shall be taken that oils is kept out of contact with the reinforcement. All rubbish, clippings, shavings and sawdust shall be removed from the formwork immediately before concrete is placed.

Formwork shall be checked for dimensional accuracy and alignment, before, during and after concreting and damaged formwork shall be replaced.

All ties and spreaders shall be of an approved type and placed so as to leave a regular and neat pattern on the surface when withdrawn and filled. Wire ties will not be permitted.

All formwork shall be removed without shock or vibration, which might damage the concrete. Concretor shall be responsible for repairing any defects immediately after stripping the formwork.





Fill honeycombing with 1:2 cement / sand mortar.

Fill honeycombing and repair defects immediately after stripping the formwork.

#### 11.4 SCHEDULE OF SURFACE FINISHES

Item	Class of Finish
Slabs to take plaster or tiles	U2
Other Slabs	U3
Concrete below ground	F1
Concrete to take plaster	F2
Beam & Slab, sides & soffits which are not visible in the completed building	F3
Beam Slab, sides and soffits which are Visible in or outside the completed building	F4
All columns / panels	F5*

\* Note that unless specified otherwise, all column poured or similar seamed formers, shall be plastered to a smooth finish.

#### 11.5 Working Finishes on Plastic Concrete Troweled and Float Finish:

##### GENERALLY:

Do not wet surface of concrete to assist surface working. Protecting surfaces from rain damage.

##### WOOD FLOATING:

In areas nominated, produce a non-slip even textured finish by means of a wood float.

##### SCREEDED FINISH FOR TILES:

In areas to be covered with ceramic tiles, finish the concrete subfloor by screeding and bull floating to produce an even surface ready for bedding mortar to be placed.

##### STEEL FLOATING:

Use a steel hand or power trowel to float. Leave surface free from trowel or float marks.

##### FLOAT FINISH FOR THIN FLOOR COVERINGS:

Surface to receive thin tile or sheet finish are to be free from any defect that may adversely affect the finish appearance.

##### NON-SLIP FINISH:

Use a sponge rubber float after steel floating to produce a fine textured non-slip surface in areas nominated.

##### SURFACE TOLERANCES:

Troweled and steel floated surfaces to be finished within the following tolerances:  
Abrupt irregularities – not permitted.

GRADUAL VARIATIONS – 5mm measured from a 600mm straight edge. Slope of surface not to exceed 1 in 120.

#### 11.6 SCORED FINISH

##### GENERALLY:

Do not wet surface of concrete to assist surface working. Protect surface from rain damage.

##### SCORING:

Scratch surface by drawing a hard bristle yard broom across the surface to give a lightly roughened, even texture.









## **REPAIRS AND CLEANING**

After all the concrete work of the building has been completed and the majority of other trades finished (except painting and floor coverings) all finished exposed concrete surfaces throughout, including precast concrete, shall be closely inspected for faults in surface finish, damage to corners or edges, dirty marks, splashes or dribbles and visible imperfections of every kind.

All such imperfection shall be removed by the Contractor to the Architect's complete satisfaction and under his directions.

### **11.7 PLASTER**

#### **11.7.1 GENERAL**

Refer to "Preliminary and General" Clauses which apply to all trades.

Only best trade practices shall be followed. Unless instructions are given for special finish all surfaces shall be trowelled to smooth, even and true surface and left free from any blemishes, stains or joint marks. Plaster shall be used within 30 minutes after adding water. No plaster which has begun to set shall be knocked up and re-used. Any portion of the work rejected or found damaged or washed off by rain shall be removed and re-done at contractors expense. Plaster droppings on the floor must not be collected and re-used for plastering. Plaster work should only commence after all chases, holes and service pipes, electric conduits, etc are in place for the particular area to be plastered.

All plaster work shall be properly protected and cured by spraying water for at least 7 days after hardening.

#### **11.7.2 STANDARDS**

The following standards shall form part of this specification:

NZSS	2129	1967	Class A	NZSS 1844
NZS	4251	Code of Practice for Solid Plastering		
NZS	3122	Portland Cement		
NZS	3103	Sands and mortice		

#### **11.7.3 PROTECTION**

All dressed woodwork, finished surfaces, windows, glass etc, shall be effectively protected against droppings or damages caused by plaster work or mortar.

#### **11.7.4 MATERIALS**

##### **11.7.4.1 CEMENT**

All approved brand of grey cement to conform with the above standards shall be used unless otherwise specified.

##### **11.7.4.2 SAND**

Sand shall be river or pit sand, course grained sharp and free from saline, vegetable or earthy matter to pass through a 6 sieve for finishing coat and a 4.8 sieve for other coats.

##### **11.7.4.3 LIME**

Lime shall be best quality hydrated lime run 24 hours before use. Other approved plasticizer may be used.



#### **11.7.4.4 WORKMANSHIP**

The whole of the plastering shall be carried out by experienced and skilled tradesmen only and the whole of the work shall be guaranteed. Wherever possible plastering shall be done after carpentry work is complete to avoid vibration. All moulding drips, weathering; etc shall be run into detail with clear cut angle quirks. On completion work shall be left free from cracks blisters or marks, even in colour free from drumminess to the satisfaction of the Architect. Where necessary make good after other trades. Any plasterwork which has cracked or drummy shall be chipped back and replastered at the Contractors expense.

#### **11.7.4.5 PROPORTION OF MIXING**

All plaster shall be thoroughly mixed and each batch shall be used within 30 minutes of being mixed. Re-tempering or re-mixing after the initial set shall not be allowed. Where approved the proportions specified herein may be varied to suit the grading of sand available. Approved additives for waterproofing shall be used for all plaster mix in full compliance with manufacturers instructions.

#### **PREPARATIONS**

All surfaces to be plastered shall be well chipped, cleaned down, properly wet and treated as specified for various sections of the plaster work. All block joints shall be raked out 6mm and made wet.

All surfaces after wetting shall be given slurry dash coat 1:1 sand and cement and kept wet immediately before plastering.

Any dummy or weak surface shall be neatly chipped out and re-done and carefully blended into surrounding plaster work.

#### **EXTERIOR**

All exterior concrete and concrete block, unless otherwise stated, surface shall be plastered in two coats of Portland cement and sand 1:3 mix with Plaster or other approved plasticizer used strictly according to manufacturer's instructions.

First coat shall be throwing.

Second coat shall be smooth finished.

All exterior Plaster shall be brought to a smooth regular wood float finish. Cure with fine water spray for 7 days after application and total layer shall be 10-12mm.

#### **INTERIOR**

Fairface – concrete and blockwall if shown  
Plaster and painted otherwise.

#### **FLOORS** (for tile areas)

Concrete slabs shall be rough screeded for later topping, unless specified otherwise on drawings. Before applying topping well hack, brush wash off of dust. Allow to dry. Brush on to cleaned concrete 1:1 1/2 liquid mixture of Cemstik and water and allow to dry to clear at least 1 hour.

Plaster floor single coat work nominally 12-15mm thick using 1:3 cement and sand with Cemstik added to gauging water in 1:3 ration. Finish lightly with steel trowel. Avoid over trowelling.

Floors to toilets and washrooms shall fall towards floor drains.

All plaster toppings to be laid to ensure final floor finishers are at the same level.



Finish to all Office Floors: (except tiled areas)  
Office floor to be Kelly float finished.

**11.8 SHEET LININGS – GENERAL**

Refer to the Preliminary & General Section of this Specification, all clauses of which shall apply to this section of the work.

**11.8.1 SCOPE**

Refer to the drawings and schedule of finishes for location and sheet type.

**11.8.2 RESPONSIBILITY**

Ensure that any sheet applicator engaged to perform the work or any part thereof accepts without reservations the whole background to which their work will finish.

**11.8.3 WORKMANSHIP**

The fixing of all sheet linings shall be carried out by personnel experienced and proficient in the application and finishing of the particular sheet to comply with the manufacturer's specifications and as directed.

**11.8.4 SHEET TYPES (10mm)**

1. 9.5mm (10mm) Gibraltar Board
2. 12.5mm Gibraltar Board
3. 16mm Fryeline Gibraltar Board
4. 12.5 Plaster glass Fibrous Plaster Sheet

**11.8.5 SHEET MATERIALS**

Gibraltar Board

Sheet type shall be approved board consisting essentially of a gypsum core with any one or combination of admixtures of pumice, perlite, sisal or glass fibre, faced or encased with Kraft which fully bonds to the core.

**11.8.6 MATERIALS: PENETRATING FASTENINGS:**

Unless otherwise specified fastenings to timber framing etc. for all sheets shall be galvanized clout head nails as follows:

<u>LENGTH</u>	<u>GAUGE</u>	<u>SHEET THICKNESS</u>
30mm	2.5mm	9.5mm for non fire rated walls
40mm	2.5mm	9.5mm half hour FR walls. 12.5 all walls
50mm	2.5mm	14.5 mm to 19mm

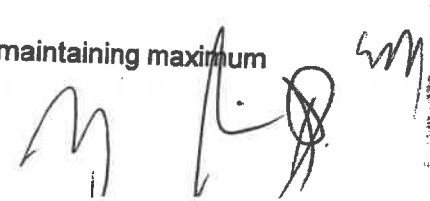
Where two layers of board are specified use fixings in accordance with the manufacturers recommendations. In no case should the fixings penetrate timber framings less than 25mm.

Where two layers of board are used stagger all joints in both directions.

- 11.8.7** Adhesives shall be of any approved synthetic rubber or elastomen composition which has satisfactory ageing properties, will not support mould or bacterial growth and will not harden or embrittle with age or at extreme ambient temperatures and will not permanently bond sheet to substrate.

Adhesives shall be formulated specially for the substrate and conditions of the type of sheet bonded.

Adhesives shall be formulated for special gap filling properties and still maintaining maximum bond strength.





Adhesives shall be used and applied in situations strictly in accordance with the advice of manufacturer's technical service and printed instructions.

**11.8.8 MATERIALS: ACCESSORIES**  
**GIBRALTAR BOARD:**

Provide for all external corners and exposed edges of sheet linings an accurately folded "gib angle" fixed as per manufacturer's specification.

Form from not less than 0.49mm thick galvanized mild steel sheet, fixing wings to be not less than 25mm. Use PVC angles where linings to be painted directly.

Where edges of sheet are required to be finished other than above, provide prefolded galvanized mild steel casing beads.

**11.8.9 WORKMANSHIP**

The fixing of all sheet linings shall be carried out by personnel experienced and proficient in the application and finishing of the particular sheet to comply with the manufacturer's specifications and as described.

Set outlining as scheduled to cover framing and extended behind fittings, with regular set of sheets and minimum number of joints.

Ensure that timber framing including any required dwanging for finishing is complete, before fixing linings.

Ensure that timber framing is at the specified installation moisture content before fixing linings.

Ensure that all framing is in the true alignment to provide even plane surfaces.

Ensure that all substrates and framing surfaces are in a condition suitable for the satisfactory performance of the bonding medium.

Store and handle on the site all sheet linings in accordance with manufacture's printed instructions. Without extra cost make good or replace as substandard sheets, or those showing physical damage or deterioration that will adversely affect the appearance performance and durability of the surface finish.

Allows for wiring and other service runs before doing the second face.

**11.8.10 FIXING**


Fix linings by the manufacturer's accredited service or as otherwise arranged and in either case in accordance with manufacturer's approved printed instructions.

Where fire ratings are specified refer to the manufacturer's relevant specification for the Fire Rating required. Do not commence fixing until framing and dwanging are compliant with the relevant specification.

Ensure that the timber framing is at the specified installation moisture content before fixing linings.

**11.8.11 FLUSH STOPPING AND FINISHING**

Except where otherwise specified all joints, finishing heads, junctions, corners, etc., and all other imperfections marring surfaces shall be flush stopped to approval, using a first quality fin gypsum finishing plaster. The only retarder permitted shall be Sisatop or equal approved.





Use Gib reinforcing tape at all vertical and horizontal joints and to all internal corners. Bed in an approved bedding compound.

The head of all penetrating fastenings shall be compressed below surfaces of all flush stopped linings sheets. Kraft surfaces shall not be punctured, where rupture has occurred provide an additional fastening.

The surface of all stopping shall be feathered out beyond joints over wide enough area to provide a straight even plane surface which will not reflect through the final finish specified in the schedule of finishes.

11.9

**SUSPENDED CEILING – GENERAL** (where applicable)

Refer to the Preliminary and General section of this specification, all clauses of which shall apply to this section of the works.

11.9.1

**STANDARDS**

Work to comply with relevant provisions and recommendations of the following:  
NZS 4203                      Design Loading for Buildings  
NZS 1900                      National Building Code of Fiji 1990

11.9.2

**SCOPE**

Supply and install suspended ceiling system within the requirements of the relative drawings and this specification.

11.9.3

**MATERIALS / TILES**

Ceiling tiles or panels to be of an approved non- hygroscopic stable material complying with the following:

**MANUFACTURERS:**

Type:	High density mineral fibre
Size:	1200mm 600mm
Thickness:	Nominal 15mm
Colour:	White
Light Reflect:	0.75 minimum
Humidity:	To withstand 80% relative humidity over temperature range 15 – 35 deg. Celsius.
STC Range:	35-45
NRC Range	0.50 – 0.75
Edge Detail:	Rebated
Pattern	To be selected.

11.9.3

**TILES – FIRE PROTECTION**

Select tiles to offer a half hour rating to panels.

- (I) Exist ways and smoke stop lobbies  
Spread of flame index 0  
Smoke developed index 3

11.9.4

**TILE INSTALLATION**

Weather Conditions – The climate conditions to be checked at the time of installation. If humidity exceeds manufacturer's specification installation to be withheld to when internal conditions are controlled and stable. Any damage incurred to tiles due to not complying with manufacturer's requirements will result in replacement of all affected tiles at the Contractors expense.

11.9.5

**TILE FINISHES**

Supply samples of patterns/ colours available for selection by the Architect.



Finish and texture to be uniform as selected, provide sample tile which is to be retained by Architect. This sample to be held as the required standard for all work upon completion.

Provide technical specifications if required, to show compliance with this specifications. Allow for expansion joints per NZ35

11.9.6

**SUSPENDED CEILING GRID**

Suspended ceiling system to be "Donn" or equal approved DX exposed grid system, precoated white, satin finish.

Allow for trimming rails wherever perimeter elements or ceiling penetrations are required.

11.9.7

**CEILING DESIGN**

Ceiling to be approved system conforming to the requirements of NZS 4203.

The ceiling system shall be designed to accommodate horizontal seismic deflection in transverse and longitudinal direction to the values listed in clause 12.18.11 for frame on a Grid 1 & 8 and frames on Grid A & C respectively.

Provide a design certificate to show structural adequacy of the ceiling system

Under no circumstances are any services to be touched, altered or used to hang any ceiling system component.

Suspended ceiling shall be designed to allow for horizontal in plane movement of  $\pm 10\text{mm}$ . Test support system after erection and fit tiles or panels to manufacturer's printed instructions.

11.9.8

**ERECT CEILINGS BY MANUFACTURER'S ACCREDITED SERVICE.**

All materials to be stored on site with packaging and labeling indicating manufacturer, type, color and batch number still intact. Protect from weather and damage.

Damage tiles are not to be used.

Check substrate and perimeter trim for imperfections before commencing work.

Services, concealed pipes, wiring and duct work not to project beyond grid face and are not to hinder and removal of tiles.

Make provision for all recessed light fittings, ducts, grille etc and special fittings as required.

Leave openings for flush fittings where indicated to accommodate recessed fittings as described.

Set out grid as shown on ceiling plans all parallel to grid and true to line.

Total induced and inherent deviation shall be within the limits which provide adequate joints clearance but retains an acceptable visual appearance.

Where dimensions vary to the extent that it affects the relationship of the ceiling grid to the perimeter and structural elements, the Architect's instruction should be sought and followed.

Generally grids to be set out symmetrically with equal cut or special tiles at margins. Where possible set out should be maximize the size of cut tiles.

Note that percussion fixings are not permitted.

Pre-stressed floor planks not to be drilled for fastenings, without Engineers prior approval.

Ceiling fire partition where required to be full depth of ceiling void in accordance with Codes.





Allow to wad all penetrations.

Test support system after erection.

Do not install tiles/panels until site conditions meet the requirements of the tile/panel manufacturer.

Fit tiles/panels in accordance with the Manufacturer's printed instructions.

11.9.9

#### **PROTECTION**

Contractor to protect suspended ceiling components as required to maintain in sound condition, free from marks and site contamination.

Any damages, or other visually unacceptable aspects, to be made good at Contractor's own expense to Architect's satisfaction.

11.11

11.11.1

#### **CARPET (where applicable and shown in plans)**

##### **GENERAL**

Refer to the Preliminary and general section of this specification all clause of which shall apply to this section.

11.11.2

##### **SCOPE**

This section of the work involves the supply and laying of new carpet with all necessary accessories, and any floor preparation necessary to the area exposed. The carpet shall be supplied and laid under PC sum. The main Contractor to note his responsibility defined in relevant sections.

11.11.3

##### **MATERIALS**

Carpets shall comply with the following specifications:

Construction:	to be advised
Pile Content:	to be advised
Pile Height:	to be advised
Pile Weight:	to be advised
Gauge:	to be advised
Width:	3.66m
Grading:	Heavy Commercial
Colour:	To be selected

Wool yarn for all 100% wool carpets and for wool blends shall be woolen spun yarn.  
Method of laying: Loose laid over underlay, smooth dege fastened after stretching.

11.11.4

##### **UNDERLAY**

Underlay to be Commercial rubber waffle underlay.

Method of Laying: Loose laid over floor, scribed to be perimeter, spot glue to secure.

11.11.5

##### **FLOOR LEVELING COMPOUNDS**

Floor leveling compound shall be proprietary product used strictly in accordance with the manufacturer's recommendations.

Use where required to maintain integrity of floor slab to allow carpet to be laid in true, visually acceptable manner.

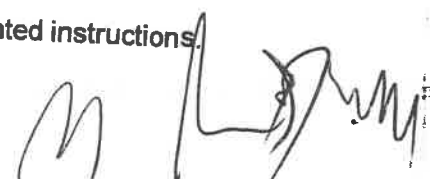
11.11.6

##### **ADHESIVES. PRIMERS**

Select types as recommended by the carpet/underlay manufacturer's printed instructions.

11.11.7

##### **ACCESSORIES**





Provide thresholds to exposed edges of carpet and at junctions with other floor finishes available for selection by Architect.

11.11.8

#### **PREPARATION**

Contractor to ensure that the wall / floor surface is finished suitably to accept the carpet.

11.11.9

#### **LAYING**

Obtain a current specification of the laying practice from the material manufacturer and ensure all requirements are carried out unless modified by this specification.

Refer to the recommendations of the NZ Wool Board for stuck – down carpet installation, and follow all directions contained therein, along with all manufacturer's instructions.

Inspect the floor slab condition before commencing laying work and report aspects of the floor slab which may affect the laying and long term performance of the carpet to the Architects for action.

Prior to precutting the carpet obtain approval from the Architect for the location of all longitudinal and any cross joints required. Cross joints shall not normally be permitted.

Carpet to any one floor shall be from the same batch, and shall be laid with the "grain" running in a constant direction.

Once laying has commenced, the carpet subcontractor assumes full responsibility for the integrity and performance of the carpet installation.

11.11.10

#### **COMPLETION**

Remove all excess material from site, and thoroughly clean. Clean of all excess adhesive from carpet/ carpet skirting.

Ensure Main Contractor is aware of method of cleaning any paint etc. from carpet.

Spare materials to be delivered back to the Owner by way of the Contractor.

11.11.11

#### **GUARANTEE**

Provide a 5 year guarantee on a material and workmanship

11.11.12

#### **FLOOR PREPARATION**

The main Contractor is to ensure the floor has been finished and cleaned and ready for the laying of carpet. He is to provide necessary drainage, power and other service to facilitate the completion of floor. He shall be responsible to have the floor completely appropriately cleaned before handover of building.



12  
12.1

**ELECTRICAL**  
**GENERAL:**

Refer to "Preliminary and General" Clauses which apply to all trades.

12.2

**EXTENT OF WORK**

For the supply and installation of all electrical services to and within the project, all mains, switches, switchboards and installation of all lighting, power and ancillary circuits as shown on the drawings and in this specification supplied by the Engineers.

The contract works includes furnishing all labour, equipment and materials in connection with the installation of the electrical services as shown and specified.

Briefly they consist of the following items and more fully described elsewhere.

1. Excavation of all trenches
2. Installation of new mains supply to the building
3. Supply and installation of underground main cables. Lay multicore underground cable and connect to the main switchboard. Cable size should be rated for at least 150 amps. Unless otherwise shown in plan.
4. Supply and installation of the main switchboard and distribution boards and of selected lighting and other fittings.
5. The complete wiring installation of the building.
6. Supply and installation of the light fitting, GPOs and all other fittings shown on the plans extractor fans, zip and other water heater units and connect solar heater.

All work shall be carried out by Licenced Electricians in accordance with FEA Regulations and SAA wiring rules. The power supply shall be taken from FEA mains supply situated in the road.

All excavation work for the underground cables is to be carried out by the Electricians. Ensure that depth of trenches are in accordance with FEA regulations with FEA regulations and backfill in 150 layers and compact to the satisfaction of FEA and the Engineer. Check and provide main cable for the required capacity for the new works.

Materials shall be best of their kind. Conduit shall be PVC and must be built in and concealed. No chasing of fair face blockwork will be permitted. Work to comply with FEA and SAA regulations and wiring rules.

Pay FEA connection fee and allow for the complete installation of underground mains supply. Provide meter and switch / fuse board, neatly recessed into wall lockable galvanized door and glass panel at meter. Board shall have main switch, circuit breakers for lights, h.w.c., power points fans, etc. Label all items on board.

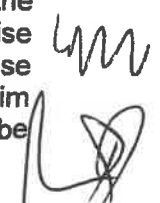

The switchboard shall be totally enclosed, metal clad, primed, painted to color red and manufactured to good standard to comply with FEA requirements and so to the SAA wiring rules. Location to be approved by the Architect.

Submit shop drawings to Engineer for approval before commencing work. Wire to and connect all fittings as shown. Provide conduits for fire alarm systems.

12.3

**ERRORS, AMBIGUITIES & OMISSIONS**

Errors, ambiguities and omissions in drawings or specifications shall be reported to the Architects for correction before any part of work involved is started. Unless otherwise expressly stipulated no additional allowance will be made in the contractor's favour because of errors, ambiguities or omissions, which should reasonably have been discovered by him during the preparation of his tender estimate or may become evident later and which shall be





directed to the attention of the engineer in timely manner. The written decision of the Architect shall be final.

**12.4 FEES**

The Electrical Sub – Contractor shall allow for all connection fees to the main supply and obtain all necessary permits and pay all fees and other charges. The owner will pay the meter deposit.

**12.5 MANUFACTURER'S INSTRUCTIONS**

Where manufacturer's apparatus issue special instructions, these shall be followed, but shall not be interpreted to permit work of a standard lower than the general purpose of this specification.

**12.6 GUARANTEES**

Any of all guarantees which the manufacturer or supplier may issue covering materials, Workmanship and performance shall be arranged by the electrician as between the Owner and such manufacturer or supplier. The electrician will be responsible to see that all necessary documents are properly completed and signed and handed to the Architect at the earliest practical opportunity. Notwithstanding such guarantee being supplied the electrician will not be absolved from his responsibility under the terms of this contract.

**12.7 PLANT**

The electrical contractor shall provide necessary tools, ladders, plant, etc. as required for the execution of this contract.

**12.8 CO- OPERATION**

The electrician shall co- operate with all trades so that work can be carried out with utmost expedition. Co-operate with the main contractor in the provision of all holes, conduits, and the like and make good after installation. It shall be the responsibility of the electrician to advise the main contractors as to the exact location of such holes required to be cut.

**12.9** The Contract shall supply to the General Contractor any item which he requires to be built in and shall be responsible for setting out where such items require to be positioned and for clearly advising the General Contractor of all requirements relevant to the building in such materials. The Contractor shall check all such materials before any operation is performed which he requires to be built in and shall be responsible for setting out where such items require to be positioned and for clearly advising the General Contractor of all requirements relevant to the building in such materials. The Contractor shall check all such materials before any operation is performed which renders the positioning of the materials permanent.

**12.10 MAINS**

Allow for and arrange with the Local Authority in the installation of the mains cable to the building and temporary builders supply. Connect to the meter and main switchboard and extend in correct size cable to all switchboards, power and lighting points.

**12.11 ACCESSORIES**

All switches, switch plugs, blank boxes to be of type stated elsewhere in this specification or on drawings.

**12.12 FITTINGS**

Fluorescents

Where supply and install approved florescent light fittings in the position indicated on plan.

Led

Where shown 'Led' supply and fit same

Solar





Where shown 'solar', supply and fit same

**Other**

Supply and fit others as shown.

**LIGHT FITTINGS**

Where shown supply and install the incandescent light fittings indicated on the drawings. Pendant light connections to be made to PDL or similar white ceiling roses. Generally the pendant light will determine the site. Generally install 60 watt bulb to all pendant lights inside and outside. Allow for supply and fixing of all other light fittings as shown on plan.

Obtain the approval to the location of all electric items from the Engineer before wiring is commenced. Detail given on the drawings and in specification are approximate only and variations from these position may be made up to a maximum of 3 meters on any directions without price variation.

The drawings give approximate positions of fittings and various items of plants and equipment only and in measuring from these drawings the tender must make due the proper allowance for necessary diversions from the straight line, rises or falls and adjustment to the position of plant and equipment as may be required for the proper execution of the works. In any case of doubt as to the interpretation of either drawings or submitting their tenders.

In any discrepancies between the drawings and the specification are detected by the Electrical contractor he shall inform the Engineer immediately and that on the course of action to be followed have been obtained.

The Electrical Contractor shall be responsible for obtaining from the site necessary dimensions to enable him to put the work in hand and he shall be responsible for checking that he has access for moving equipment into position and for installing it there.

After acceptance of the contract works and before the end of the maintenance period, the Contractor shall supply to the Architect 'as fixed' drawings and charts as specified in this specification. Final payment will not be made to contractor until such drawings and charts are received and approved by Engineer.

Where light fitting is shown as selected, unless otherwise specified, allow for \$100/ light.

**12.13 APPROVALS**

Submit samples and/ or drawings of items for approval when required. Do not enter into any commitment in respect to such items until approval is obtained.

**12.14 TELEPHONES**

Unless shown otherwise allow to supply and install JC3 Humes cable pit. Allow for diameter 75 mains conduits to MDF location.

Allow to supply and install all PVC conduits complete with draw wire as marked on plan. PVC conduits terminating to position where telephone is marked is to be installed with blank boxed complete with flush wall plates to match light switches and power outlets as outlined elsewhere in this specification. Exact position of blank boxes to be provided at site by Architect.

**12.15 LIGHT SWITCHES POWER OUTLETS**

All lights switches power outlets shall be HPM standard series in white or other approved color. External power point as marked on the drawings shall be watertight.

**12.16 AIR CONDITIONERS(when applicable)**

Unless shown otherwise, the contractor shall allow for installation of split unit Air Conditioners complete with all controls including electrical works - location, as shown on plan. Air





Conditioners to be supplied and installed by AC Contractor as per P.C Sum stated. Contractor to facilitate and make good and patch up all associated building works. Allow for switch at 1500 height.

#### **12.17 POWER POINTS AND LIGHT SWITCH LOCATIONS**

Unless shown otherwise all light switches shall be positioned at 1400 from the finished floor level. All power points shall be positioned 300 from the floor level except in the following circumstances where applicable or as otherwise shown on the drawings.

Bathroom & vanity area (1100 from floor level)

Tea room, WC area (1100 floor level)

Note: Dimensions are to the center of the switch.

It is extremely important that the Electrical contractor arrange a meeting on site with owner and Architect (when construction has reached the contract stage), and mark positions of all switches, power points, wall lights, fluorescents pendants and any other electrical fittings. This is the Electrical Contractor's responsibility and any of the above mentioned fittings installed incorrectly will have to be relocated at his own expenses if the meeting has not been arranged and all position not appropriately shown.

#### **12.18 WIRING**

All wiring shall be concealed and of the sizes as described by SAA wiring rules and in accordance with FEA regulations and Engineers designed detail.

Switch and switch plug boxes shall be cut out neatly and fixed firmly into blockwork. Where such boxes are fixed into timber partitions, they shall be danged behind. Where bracket or ceiling lights occur within concrete or blockwork, it's a round conduit box at each outlet to provide firm fixing for the light fittings.

Cable size shall be as SAA wiring rules and in accordance with FEA regulations and Engineers detail.

#### **12.19 HOLES**

The Contractor and other trades will leave holes for conduit and the like and make good after installation, but it shall be the responsibility of the electrician to advise such tradesman as to the exact location of such holes, etc, before concrete is poured or framing commenced.

Any holes requiring to be cut after such work is completed shall be carried out by the respective trade and the surface to be made good at the Electrician's expenses. Electrician shall advise block layer who shall cut holes for flush boxes. All holes shall be cut to the minimum size that will permit freedom of movement.

#### **12.20 EARTHING**



Install all earthing as required by the supply authority. Carry wire to every outlet, whether required or not at this stage.

#### **12.21 POST CONTRACT DOCUMENT**

Upon completion of the contract the following documents shall be supplied to the Architect:

- a.) Copies of guarantees as called for in the specification.
- b.) Test certificate from the supply Authority certifying electrical work complies with their requirements.
- c.) Plans showing "as built" installation.
- d.) Plans showing exact location of underground reticulation.

Supply and fix adjacent to switchboard instructions for the treatment of electric shock in accordance with the latest factory regulation.





**12.22 IDENTIFICATION**

All switchboards and fittings shall be identified to show the equipment they control. Inside each sub-board cabinet provide a neatly lettered card, firmly attached, giving the key to the individual items and the units of control.

**12.23 COMPLETION**

The contract works are to be carried out in accordance with a programme arranged by the General contractor to complete all contract works by the time set out in the General Contract.

**12.24 LIQUIDATED & ASCERTAINED DAMAGES**

The Electrical contractor shall indemnify the main Contractor against any claim for liquidated and Ascertained damages which may arise as a result of delays in completion of the work under this sub-contract. The main contract has per day including non-working, as liquidated damages for delay in completion.

**12.25 STATUTORY REGULATIONS**

The works are to comply at no extra charge with the Electricity Regulations 1986 with SAA wiring rules and with the requirements of the Fiji Electricity Authority.

**12.26 MAINTENANCE PERIOD GUARANTEES**

Provide a written Guarantee against defects in workmanship design and materials covering the complete contract works. The period of the guarantee is to start from the date of energizing and extend for the following period. (unless shown otherwise)

For tungsten lamps	-	2 months
For Florescent lamps	-	6 months
For all other Contract works	-	6 months

Ensure the lights are not 'noisy'. Any such lights will have to be replaced.

The Contractor shall at his own expenses renew any work that proves defective from faulty workmanship or material whether or not the work has been previously inspected and accepted, during a period of six calendar months from the time of taking the contract works into commercial services. Conduit work which distorts or becomes unsightly or defective during this period shall be properly refixed or replaced under the requirements of this clause.

During this period the contract work shall be under the control of the owners.

Notwithstanding the requirements of the general conditions of contract, the contractor shall attend quickly to all defects, which occur in the Contract Works.

On the occurrence of any defects, or should a defect be suspended the owner will notify the contractor's office by telephone.

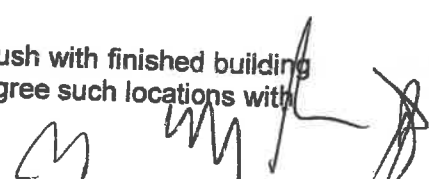
**12.27 AS BUILT DRAWINGS**

Within 4 weeks after completion of the works, the sub-contractor to submit 3 fully bound up manuals with drawings as built, Technical Literature on all fittings used and other relevant data. Obtain Architect's approval before submitting the final document.

**12.28 CONDUIT**

Provide conduit pull in boxes at all changes of direction and at distances not exceeding 10m in straight runs.

Where conduits is embedded, position conduits boxes with the lid flush with finished building surfaces and in location which is out of sight from occupied areas. Agree such locations with





the Architect before commencing installation. All steel conduit boxes are to be provided with galvanized metal covers and gaskets.

Plastic conduits of high impacts strength PVC may be used in areas within the building where it is normally not exposed to view. Its use where exposed to the weather or exterior to the building will not be accepted. Where used, plastic conduit is to be installed in accordance with the manufacturer's recommendations. Use welded joints at all connections and springs for making sets. Ensure that adequate provision is made for thermal expansion using the manufacturer's expansion joints.

Ensure all conduits systems are free draining and prevent the ingress of insects.

**12.29 COMPLETION**

On completion, test the reticulation, etc. and leave in perfect working order to entire satisfaction of the Fiji Electricity Authority and the Engineer.

The Contract shall not be deemed to be completed until the Electrician has filled his "Notice to Completion" with FEA and the installation authorized for service by its inspector.

Handwritten signatures and initials at the bottom right of the page.



13 **PAINTER**  
13.1 **GENERAL:**

Refer to the "Preliminary and General" Clauses which apply to all trades.

13.2 **STANDARDS:**

The following standards shall form part of the specifications:

NZSS 521 NZSS 1056 NZSS 2239

13.3 **MATERIALS:**

Deliver all paints in sealed tins, labeled by manufacturer, and then only on Architects approval. All paint used shall be a fungus resistant type.

The material used throughout this Contract shall be Resene, Berger, British, Taubmans or Asian as selected by the Architect who reserves the right to call for the use of any other locally or overseas manufactured paints including appropriate primers and undercoats.

All materials shall be the best of their respective kinds of the various brands specified and shall be of premium quality.

13.4 **WORKMANSHIP:**

All material shall be applied strictly in accordance with manufacturer's instructions. Any discrepancy between them and this specification shall be reported immediately to the Architect.

Where work is specified to be finished in particular material and manner it shall mean the provision of all work necessary to ensure a proper finish to minimize exposure to extremes of temperature and be thoroughly mixed before use. Paint shall not be applied to damp surfaces unless specially made for the purpose. External painting shall not be done during unsuitable weather. Where paint or varnish work of two colors meet particular care will be taken to finish a clean line. All floor, fittings and etc. shall be covered while painting and every precaution taken to keep dust down.

The Contractor shall allow access to site for any representative of the paint manufacturers who are approved by the Architect for the purpose of inspection, testing and advice concerning the use and application of his products, and the Contractor shall also allow the manufacturer's representatives at the discretion of the Architect to take sample of paint for the purpose of analysis.

At completion clean off all marks. Clean both sides of glass. Remove all debris and leave clean and tidy.

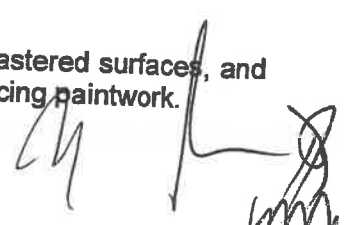
13.5 **EXTENT OF WORK:**

This section of the work includes the priming, painting, staining, varnishing, etc. as scheduled on the schedule of finished and specified herein. Include for painting, varnishing all surfaces usually painted or varnished whether specially mentioned or not. The Contractor is also called for in this section to allow to do samples of all colors and stains used on the contract.

13.6 **PREPARATION:**

All surfaces to be painted shall be prepared according to approved practices, wash and thoroughly clean wall before painting if necessary. All metal fittings and fastenings (door and window hardware, switch plates, etc) shall be removed where possible, cleaned and refixed in position on completion of paintwork.

All holes and surfaces imperfections in concrete blockwall, concrete, plastered surfaces, and Masonite surfaces shall be filled and rubbed off smooth before commencing paintwork.





The Contractor must take adequate precaution during and after painting operations to protect work from dirt, dust and disfigurement whatsoever. Wash down all plaster, concrete and blockwork with a solution recommended by manufacturer of paint and fresh water. Allow to stand for 48 hours and wash again with fresh water.

All woodwork shall be rubbed down to a smooth surface, cleaned off dirt grease, etc., before painting. All woodwork to be properly primed and stopped. All rust and scales, and oil dirt, etc, to be entirely removed from all metal work to be painted by means of steel wire brushes. All concrete must be cured for 28 days.

All surfaces shall be dry before painting is commenced.

### **13.7 PRIMING AND SEALING**

#### **13.7.1 GENERAL**

If more than four weeks elapse before the next coat of primer to external work is applied; the work shall be re-prime. All joinery shall be primed or otherwise sealed by the painter at the time of manufacture and again after installation. After priming or sealing all nail holes, cracks, shrinkages and other cavities shall be filled in and stopped where necessary with colour stopping and match the finished colour. Particular care shall be taken in matching stopping to surfaces being varnished. Any that do not match shall be removed and reputed.

### **SCHEDULE OF PAINT**

#### **13.8 INTERNAL PAINTING**

##### **13.8.1 Fair face block wall & all concrete surfaces:**

Preparation	-	as for clause 13.6
First coat	-	Concrete acrylic sealer
Second coat	-	Acrylic semi gloss
Third & fourth coat	-	Acrylic semi gloss

##### **13.8.2 HARDIFLEX / GIBRALTAR BOARD:**

Preparation	-	Clean down, dust off
First coat	-	Acrylic undercoat
Second coat	-	Semi gloss enamel
Third & fourth coat	-	Semi gloss enamel

##### **13.8.3 TIMBER (STAINED):**

Preparation	-	Sand down smooth, dust off
First coat	-	Selected stain
Second coat	-	2 pack polyurethane clear gloss
Third & fourth coat	-	2 pack polyurethane clear gloss

##### **13.8.4 TIMBER (POLISHED) seats & table and pine posts, beam etc.**

Preparation	-	Sand down smooth, dust off
First coat	-	Prep coat
Second	-	2 pack polyurethane clear
		Gloss non- skid or estapol or similar approved
Third & fourth coat	-	2 pack polyurethane clear
		Gloss non-skid or Estapol or similar approved

13.8.5 Timber	-	All other (including timber doors):
Preparation	-	Sand down smooth, dust off
First coat	-	Wood Primer
Second coat	-	Enamel undercoat
Third coat	-	Gloss or Semi-gloss as selected
Fourth coat	-	Gloss or Semi - gloss as selected

##### **13.8.5 METAL:**

Exposed	-	As per section 6.9 – Structural Steel Worker
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Unexposed

As per section 7.5 Metal Worker  
(4 coats to be allowed)

**13.9 EXTERNAL**

**13.9.1 TIMBER:**

Preparation	-	Sand down smooth, dust off
First coat	-	Pink primer
Second Coat	-	Undercoat
Third and fourth coat	-	Semi-gloss enamel – as selected

**13.9.2 CONCRETE / PLASTER:**

Preparation	-	As for internal works
First coat	-	Acrylic undercoat
Second coat	-	Gloss acrylic
Third and fourth coat	-	Gloss acrylic

**13.9.3 METAL:**

Exposed	-	As per section 6.9 – Structural Steel Worker.
Unexposed	-	As per section 7.5 – Metalworker

**13.9.4 EXPOSED GALVANIZED METAL**

(only applies to hood at front entrance and all exposed flashings to hood at front)

Preparation	-	Remove dirt, oil, etc, clean off.
First coat	-	Etch primer
Second coat	-	Epoxy primer
Third and fourth coat	-	Semi gloss

**13.9.5 HARDIFLEX BOARD:**

Preparation	-	Clean down, dust off
First Coat	-	Acrylic undercoat
Second coat	-	Acrylic gloss
Third and fourth coat	-	Acrylic gloss

'Hartitex' system finish to be as per 'Harditex' system specified by manufacturer (Hardies).

**13.9.6 TIMBER STAIR (where applicable)**

Preparation	-	Sand down smooth & dust off
First Coat	-	Selected oil – enriched stain
Second coat	-	Selected oil – polish (polyurethane)
Third and fourth coat	-	Selected coat – polish

**13.9.7 PEBBLE MARBLE (where applicable)**

Multitex 7mm pebble and granular 3mm marbled finish to be finished with approved Poly urethane or similar finish as recommended by supplier.

**13.9.8 TEXTURE PAINT (where specified or shown in drawing)**

Undercoat first coat. Texture finished 2<sup>nd</sup> coat etc. Selected exterior paint finish to manufacturer's specification (Third and fourth coat).

**13.9.9 COMPLETION**

On completion of all painting, work should be checked to ensure that all surfaces are left clean and tidy from surfaces marks during the carrying out of this section of work.

Thoroughly clean both faces of windows and doors from all paint marks and clean all floors, etc. Leave the place clean and tidy for occupation. Clear away all debris; make good all



areas of ground affected during construction and leave in good condition to Architects satisfaction.

14. **EXTERIOR JOINERY**

14.1 **GENERAL**

Refer to the Preliminary & General section of this specification all clauses of which shall apply to this section

14.2 **SCOPE**

This section of the works comprises the manufacture, supply, installation and glazing of aluminum windows and doors and is inclusive of the preparation of all testing, provision of samples and flashings to all surround surfaces. Also to provide and fix vents, doors, and any exterior joinery required to complete the exterior work to finish the building.

14.3 **ALUMINUM JOINERY**

All work carried out under this subcontract shall be totally in accordance with all the content and especially the recommended specification clauses (section 5.4) of the AAA Aluminum Window Handbook.

14.4 **STANDARD APPLICABLE**

- NZS 3503 Anodic Oxide coating on wrought aluminum for external and architectural applications
- NZS 3504 Aluminum Windows
- NZS 3211 Performance of Windows
- NZS 4223 Code of Practice for glazing in buildings.
- NZS 5802 Code of Practice for window clearing safety.

14.5 **SHOP DRAWINGS**

The contract documents indicate general building in detail with window suite profiles as indicated only for ease of explanation.

Provide full shop drawings for the approval of the architect and the contractor is to allow sufficient time for any adjustments required to be incorporated prior to fabrication commencing.

Approval of shop drawings does not signify Architect's or Contactor acceptance of responsibility for the details, dimensions and systems shown on the drawings. If the Architect or Contractor deems these drawings inadequate the window manufacturer must upgrade his drawings for approval. If required by the Architect submits as built drawings on completion.

Shop drawings to include layout, materials fixing, profit relationship, seismic provisions, seals, sealants and all other specific details for the proposed systems.

14.6 **TESTING**

Provide test reports for Architect's approval proving that the systems to be installed comply with the performance requirements of this specification.

14.7 **SAMPLES**

Submit samples for approval of complete assemblies of members for unit offered, including hardware and finishes. Include color range to which production materials will be processed.

14.8 **ASSEMBLY & INSTALLATION**

- 14.8.1 Installation is to comply with NZS 1900 Chap. 10 clauses 10.4.1, 10.5.1, 10.7.1 and 10.12.2.2 to 12.2.3



All installation work shall be carried out by specialist window fixers, duly accredited by the Aluminum Joinery manufacturer. Allow to cooperate with Main Contractor and other subcontractors in determining building-in provisions and conditions.

Design wind pressure (DWP) – to be 57m/s wind loading unless shown otherwise in the Engineering drawings. Air leakage: Grade 2 rating. Engineers specification supersedes this if their requirement is higher.

#### 14.8.2 **ASSEMBLY**

Assembly of frame and sashes shall comply with NZS 3504.

Seal all cut ends to provide a barrier between the base metal and the environment.

Fit all hardware as necessary.

Fix and seal frame peripheries by methods and with material which ensure that the installed frames meet the test requirements stated herein.

Fixing: Fix frames in opening plumb, square, in proper alignment without strain. Use fastenings recommended by the manufacturer and in accordance with the details. Alternative details may be submitted to those shown for boundary conditions, to ensure the frames proposed meet the test requirements specified.

Sealants: use those with evidence of proven ageing, ultra violet and ozone resistance characteristics having a 25% plus or minus movement factor.

Sealant Preparation: Prepare joints in accordance with the sealant manufacturer's recommendations, using recommended solvents and primers where necessary.

Sealant Preparation: Ensure that joints are dry. Remove all loose material, dust and grease.

Sealant Preparation: Mask adjoining surface to avoid contamination of excess sealant.

Sealant Backing: insert backing strips do not leave gaps and do not reduce depth of joint for sealant to less than minimum recommended by the manufacturer.

Sealant application: Tool sealant to form smooth beads or fillets as shown on the drawings.

Sealant Finish: remove excess sealant from adjoining surfaces, using cleaning materials recommended by the sealant manufacturer. Leave adjoining surfaces clean.

#### 14.9 **FLASHING**

Allow to supply and install all necessary flashings to aluminum Joinery. Where not otherwise specified fabricate all flashings required by system from 0.6mm aluminum sheet alloy designation 5251 of the same finish as joinery units.

#### 14.10 **SEALANT**

Where sealants are required, use only ELASTOMERIC sealants capable of sustaining prolonged UV exposure and reasonable building movement. Mastics and oil based sealants are unacceptable

Mask adjoining surfaces which would be difficult to clean if smeared with sealant.

BACKNIG: Insert backing strips in all joints to be pointed with sealant. Do not leave gaps and do not reduce depth of joint to less than minimum recommended by manufacturer of sealant.





**POINTING:** Fill joint cavity with sealant in accordance with manufacturer's recommendations.

**FINISHING:** Remove excess sealant from adjoining surfaces, using cleaning materials recommended by sealant manufacturer and leave clean.

**14.11 GUARANTEE**

Provide a ten (10) year guarantee for the whole of the work and materials covered under this section inclusive of all glass, glazing flashing, fixings and sealing.

**14.12 GENERAL FINISHES**

Finish all aluminum Joinery shall be anodized to NZSS  
Colours to be advised by the Architect.

Maintain adequate test records to ensure a consistent finish and quality control and produce same if required. Produce acceptable test certificates if required.

**14.13 INSTALLATION**

Fix and seal frame peripheries by methods and with material which ensure installed frames meet the test requirement stated herein.

**FIXING:** Fix in openings, plumb, square, in proper alignment without strain. Use fastenings recommended by manufacturer and in accordance with details.

Alternative details may be submitted to those shown of boundary conditions to ensure the frames proposed meet the test requirement specified.

Installation details to fully respect the profiles finish and any damage components to be replaced at Contractor's expense.

Sealant at peripheries: Use those which evidence proven ageing, ultra violet and ozone resistance characteristics having a 20% plus or minus movement factor.

**14.14 PROTECTION**

All aluminum window joinery, curtain walling system finish to be fully protected from subsequent damage, disfiguration or making to any component following its erection.

At time of practical completion, all components not being approved by the architect to be replaced at the Contractor's own expense and made good to Architect's satisfaction.

The Contractor's attention is drawn to the fact that disfiguration by concrete spillage will not be accepted, and all affected components will have to be replaced at his expense.

**14.15 WINDOW & DOORS**

Window and door section shall comply with AS1866 – Table 3.1 alloy designation 6063 or equal approved aluminum extrusion having a 1.5mm minimum wall thickness minimum.

Weather seals shall be an approved synthetic rubber having proven long life and where exposed highly resistant to ozone and ultra violet light, Polychloroprene, EPDM or equal

Retain glazing with snap-on type aluminum beads.





**14.16 WINDOW AND DOOR ACCESSORIES**

Aluminum supplier is to provide and fix all necessary hardware, fitting and fixing required to finish the joinery. This includes floor spring and automatic sliding mechanism etc. hinges shall be aluminum having brass pins and finished to match the window frames and sashes.

Fixings and fastening shall be aluminum as supplied by the manufacturer of the component being fixed.

Hardware finish shall be selected by the Architect – two latches per opening sash. Each opening sash to be lockable. Locks shall be supplied to Architect for approval. Locks to be key operated, locks to be keyed alike. Appropriate Lockwood s the specified brand.

**14.17 GLAZING  
SCOPE**

This section deals with al exterior glazing. Note that all the glazing of all aluminum joinery is carried out by the aluminum joinery contractor.

For location of glass – see accompanying drawing details.

The window subcontractor is totally responsible for the structural and weather tight performance of the glazing, including aspects of thermal safety, NZS 4223 to apply, in all respects.

**14.18 MATERIALS  
GLASS**

All glass to be accurate size with weight conforming with NZS 2258 and with clean undamaged edges and surfaces. Unless otherwise specified, all to be clear 6mm thick and shall be float glass. Keep glass dry and clean during delivery and storage. Ensure that compounds, sealants and finishes to be used together are compatible, and no reaction between compounds.

**14.19 WORKMANSHIP  
GENERAL**

Working of glass to be within the recommendations of NZS 2258

**GLASS**

To be min of 6mm thick clear, tinted or obscure as shown in plan. Where it says 6.38 laminated, provide these as required and shown in plans

**SAMPLES**

Submit samples if required

**DESIGN**

Strength requirements to meet the classification grading

Certify glazing installed within the stipulations of this specification and NZ Standards.

**FIXING**

Glazing techniques to conform with NZS 2258

Pre-glazing of components will be permitted but precautions to be taken to prevent displacement of glass or components. Panes with any displaced glass or components or with defective seals to be re-glazed property.





**PROTECTION AND CLEANING**

Replace all glass and fixing materials broken, marked, or damaged before practical completion. Contractor's attention is drawn here to concrete spillage and the subsequent disfiguration of components. All work so marked to be replaced at the Contractor's expense.

Do not use paint or stuck on indicators on high performance glass types.

Remove all smears and excess compounds, sealant etc. leave clean inside and out, and free from scratches.

**14.20 JOINT SEALANT SELECTION**

Where not shown otherwise provide sealant of the type recommended by the Manufacturer for each situation.

Sealants are to ensure there is no water leakage.

Colors of sealant are to be as seen appropriate.

Handwritten marks and signatures at the bottom right of the page.



15. **MECHANICAL WORKS**

15.1 **General**

The works to comply with clauses of the Preliminary and General

15.2 **Plan and Specification**

Follow the specification. Detail of the Engineers drawings.

15.3 **Supply and fix the required Mechanical works and commerce to completion.**

m  
m



16. **FIRE REQUIREMENTS**

16.1 **General**

The works to comply with the clause of the Preliminary and General

16.2 Supply and fix – the Fire requirements as per plans and specification supply by the Engineers.

16.3 The main contractor shall provide all the piping for the Fire Hose reels. The connection of the hose reels shall be done by Fire Hose reels supply sub Contractor.

Handwritten signature and initials.



17. **PC SUM**

PC sum is to be expanded as directed by the Architect. It is reserve fund for specific purpose and any surplus left over shall be deducted from the contract.

MS  
LH

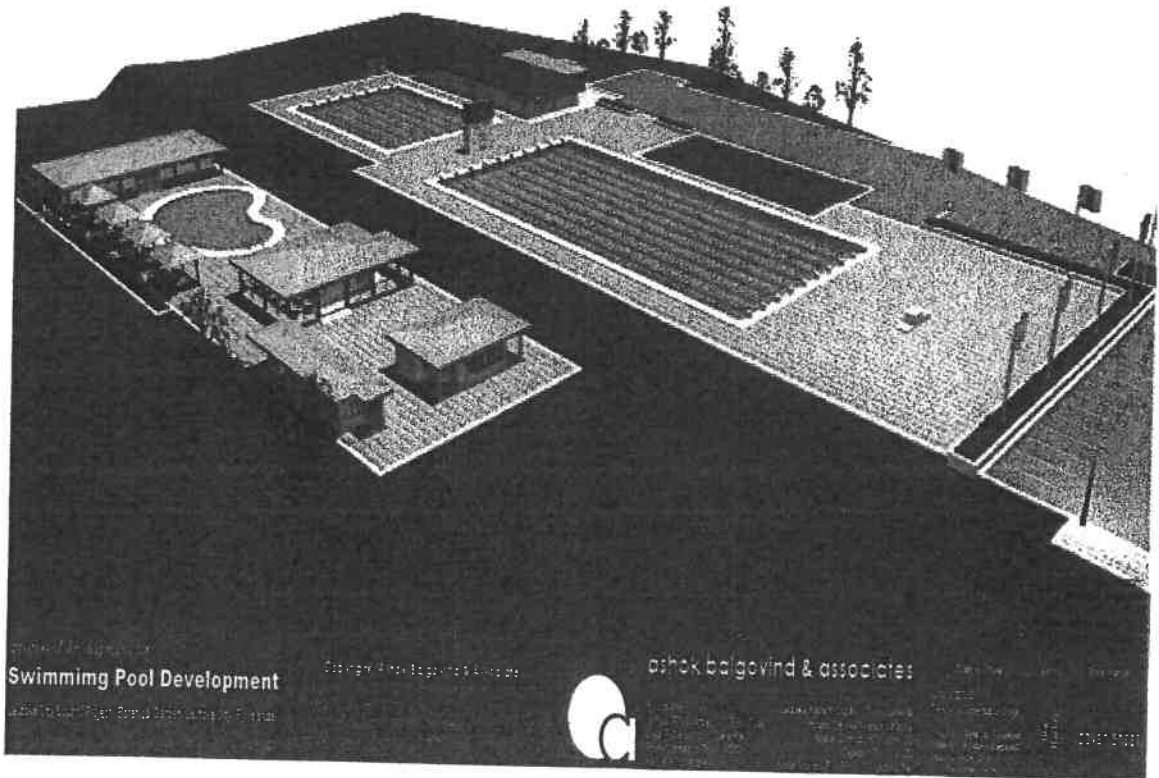


# TENDER DOCUMENT

APP - B

(v) Tender Application by Metal Works.

## AQUATIC CENTRE - LAUTOKA POOL COMPLEX

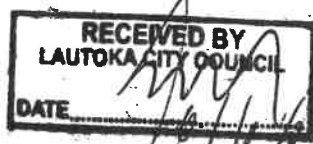


## LAUTOKA CITY COUNCIL LAUTOKA

 **ashok balgovind & associates**

Registered Architects, Engineers & Planning Consultants  
Ph: 3314883 / Fax: 3314884. 1-3 Berry Road, Suva. FTU HQ Complex  
GPO Box 15090, Suva, Fiji Islands. E-mail: abasfj@gmail.com

PR 09688 of  
07/06/17  
\$ 3000.00



Set 1



## ANNEXURE A - Revised 31/5/2017

## SUMMARY LIST

	Item Amount	Total for Part	Grand Total
<b>PART ONE</b>			
ITEM A - BUILDING A			\$ 196,000.00
ITEM B - BUILDING B			\$ 439,200.00
ITEM C - BUILDING C			\$ 288,800.00
ITEM D - BUILDING D			\$ 165,000.00
ITEM E - BUILDING E			\$ 87,000.00
ITEM F - BUILDING F			\$ 97,000.00
ITEM G - BUILDING G			\$ 84,000.00
ITEM H - TICKET BOTH			\$ 16,800.00
ITEM I - PUMP ROOM 1			\$ 36,000.00
ITEM J - PUMP ROOM 2			\$ 24,000.00
ITEM K - WATER LEVEL ROOM 1 (BALANCE			\$ 64,000.00
ITEM L - WATER LEVEL ROOM 2 (BALANCE			\$ 64,000.00
ITEM M - WATER LEVEL ROOM 3			\$ 64,000.00
ITEM N - BIG SCREEN & TIME CLOCK			\$ 11,500.00
ITEM O - CAR PARK (INCLUDING CHANNEL			\$ 697,000.00
ITEM P - DRIVEWAY			\$ 165,000.00
ITEM Q - CONTROL ROOM			\$ 18,400.00
ITEM R - DRAINAGE (STORMWATER)			\$ 295,000.00
ITEM S - SEWER MAINS INCLUDING			\$ 198,000.00
ITEM T - WATER MAINS			\$ 60,000.00
ITEM U - SITE WORKS			\$ 280,000.00
ITEM V - FENCING			\$ 146,000.00
ITEM W - APRON FORMING & TILING (			\$ 785,000.00



	ITEM X - CHEMICAL SHED			\$ 18,500.00
	TOTAL PART ONE			\$ 4,300,200.00
	PART TWO			
	ITEM MP- MAIN POOL – OLYMPIC POOL			\$ 920,000.00
	ITEM TP: TRAINING POOL (POOL NO. 2)			\$ 495,000.00
	ITEM CP: CHILDRENS POOL			\$ 396,000.00
	TOTAL PART TWO			\$ 1,811,000.00
	PART THREE			
	ITEM HD- HYDRAULIC INCLUDING P & G			\$ 695,000.00
	TOTAL PART THREE			\$ 695,000.00
	PART FOUR			
	ITEM TW- LIGHT TOWERS – FOUNDATION			\$ 22,000.00
	TOTAL PART FOUR			\$ 22,000.00
	PART FIVE			
	ITEM PC- PC SUM			
PC1.	Pool pumps and hydraulics for pool pumps &	\$ 450,000.00		
PC2.	Pool equipment, starting blocker	\$ 450,000.00		
PC3.	Flag Poles off	\$ 6,000.00		
PC4.	Podium (Portable)	\$ 5,000.00		
PC5.	Tower Lights	\$ 600,000.00		
PC6.	Street Lights	\$ 30,000.00		
PC7.	Solar Lights (6 off)	\$ 30,000.00		
PC8.	Fire Hose reel & Extinguishes & Protection System	\$ 10,000.00		
PC9.	Fitout FT1 – FT8	\$ 15,000.00		
PC10.	Air Condition supply and fit	\$ 5,000.00		
PC11.	Electric & Security Cameras	\$ 40,000.00		

AM b XX



PG12.	Telecom	\$ 10,000.00		
PC13.	Bid screen & video	\$ 400,000.00		
PC14.	Electrical	\$ 500,000.00		
	<b>TOTAL PC</b>	<b>\$ 2,551,000.00</b>		
PC14.	Contingency Sum	\$ 100,000.00		
	<b>TOTAL PART FIVE</b>		<b>\$ 2,651,000.00</b>	<b>\$ 2,651,000.00</b>
	<b>TOTAL PART 1+2+3+4+5</b>			<b>\$ 9,479,200.00</b>

NAME: Dewa Sami

COMPANY: Metalworks & Joinery Limited

SIGNATURE: 

DATE: 6th June, 2017

(STAMP)

**METAL WORKS & JOINERY LTD**  
 1 VETARI ROAD, LAUTOKA  
 P.O. BOX 7150  
 PH: 665 2813 FAX: 665 2807  
 Email: metalworks@connect.com.fj







**CONTRACT:** **ASHOK BALGOVIND & ASSOCIATES**  
**AQUATIC CENTRE - OLYMPIC POOL COMPLEX FOR**  
**LAUTOKA CITY COUNCIL, LAUTOKA**

**FORM OF TENDER I**

Having examined the drawings and the specification for the abovenamed works, we offer to construct, complete and maintain the whole of the said works in conformity with the said drawings, specification and conditions of contract for the sum of:

Nine Million Four Hundred and Seventy Nine Thousand Two  
Hundred Dollars only. (Part 1+2+3+4+5)(\$ 9,479,200-00 (VIP)

as ascertained in the schedule of prices attached hereto or such other sum as may be asserted in accordance with the specification and conditions and inclusive of contingency sum and VAT.

We undertake to complete and deliver the whole of the works comprised in the contract within a period of 10 months from the date of acceptance of this tender as per phase of work detailed. 9

Unless and until a formal agreement is prepared and executed this tender, together with your written acceptance thereof, shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any tender you may receive.

Attached is a cheque # 14384 of \$3000.00 being for tender deposit. Note tenders without the deposit will not be considered

Yours faithfully;

Signature: [Signature]

Address: 1 Vertari Road

Date: 06/06/2017



(Seal)

Tender closes at 3.00pm on Tuesday 6<sup>th</sup> June 2017 at the office of the Lautoka City Council, Lautoka in sealed envelopes and place in Tender box prior to closing time.

[Handwritten signatures and initials]



A1. P & G

**A3. Floor Fill including terrace**

**A4. Walls, Columns & beams complete**

### A5. Roof frame

A6. Roof Complete including gutter & downpipe

A7. Plumbing & Plumbing fittings works complete and connected to mains

### A8. Ceiling and Finishing

A9. Joinery woks complete

**A10. Tiling works complete for Building & Terrace**

**A11. Plaster & Painting works complete**

## A12. Miscellaneous

**Total**

**Plus VAT**

**Total A**

**B1. P & G**

## B2. Foundation

**B3. Floor Fill including terrace**

**B4. Walls, Columns & beams complete**

### B5. Roof frame

**B6. Roof Complete including gutter & downpipe**

Handwritten signature: *W. M. L. S.*



B7. Plumbing & Plumbing fittings works complete  
and connected to mains

B8. Ceiling and Finishing

B9. Joinery woks complete

B10. Tiling works complete for Building & Terrace

B11. Plaster & Painting works complete

B12. Miscellaneous

Total

Plus VAT

**Total B**

**ITEM C - BUILDING C**

C1. P & G

C2. Foundation

C3. Floor Fill including terrace

C4. Walls, Columns & beams complete

C5. Roof frame

C6. Roof Complete including gutter & downpipe

C7. Plumbing & Plumbing fittings works complete  
and connected to mains

C8. Ceiling and Finishing

C9. Joinery woks complete

C10. Tiling works complete – Building & Terrace

C11. Plaster & Painting works complete

C12. Miscellaneous

Total

Plus VAT

**Total C**



## D1. P &amp; G

D1. P &amp; G

## D2. Foundation

**D3. Floor Fill including terrace**

**D4. Walls, Columns & beams complete**

### D5. Roof frame

**D6. Roof Complete including gutter & downpipe**

D7. Plumbing & Plumbing fittings works complete and connected to mains

## D8. Ceiling and Finishing

D9. Joinery woks complete

**D10. Tiling works complete for Building & Terrace**

D11. Plaster & Painting works complete.

## D12. Miscellaneous

Total

**Plus VAT**

**Total D**

**E1. P & G**

**E1. P & G**

## E2. Foundation

**E3. Floor Fill including terrace**

**E4. Walls, Columns & beams complete**

### E5. Roof frame

**E6. Roof Complete including gutter & downpipe**

E7. Plumbing & Plumbing fittings works complete and connected to mains

### E8. Ceiling and Finishing

E9. Joinery woks complete



E10. Tiling works complete for Building & Terrace

E11. Plaster & Painting works complete

E12. Miscellaneous

Total

Plus VAT

**Total E**

**ITEM F. BUILDING F**

F1. P & G

F2. Foundation

F3. Floor Fill including terrace

F4. Walls, Columns & beams complete

F5. Roof frame

F6. Roof Complete including gutter & downpipe

F7. Plumbing & Plumbing fittings works complete  
and connected to mains

F8. Ceiling and Finishing

F9. Joinery works complete

F10. Tiling works complete for Building & Terrace

F11. Plaster & Painting works complete

F12. Miscellaneous

Total

Plus VAT

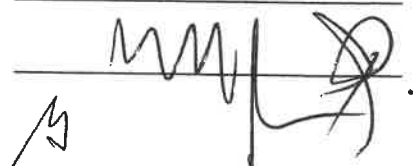
**Total F**

**ITEM G - BUILDING G**

G1. P & G

G2. Foundation

G3. Floor Fill including terrace





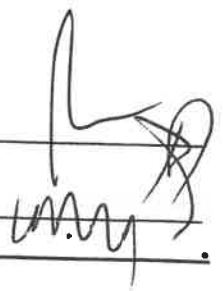
- G4. Walls, Columns & beams complete
- G5. Roof frame
- G6. Roof Complete including gutter & downpipe
- G7. Plumbing & Plumbing fittings works complete and connected to mains
- G8. Ceiling and Finishing
- G9. Joinery works complete
- G10. Tiling works complete for Building & Terrace
- G11. Plaster & Painting works complete
- G12. Miscellaneous

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Total  
 Plus VAT  
 Total G

**ITEM H - TICKET BOTH**

- H1. P & G
- H2. Foundation
- H3. Floor Fill including terrace
- H4. Walls, Columns & beams complete
- H5. Roof frame
- H6. Roof Complete including gutter & downpipe
- H7. Plumbing & Plumbing fittings works complete and connected to mains
- H8. Ceiling and Finishing
- H9. Joinery works complete
- H10. Tiling works complete for Building & Terrace
- H11. Plaster & Painting works complete
- H12. Miscellaneous

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Total  
 Plus VAT  
 Total H





**ITEM I - PUMP ROOM**

- I1. P & G
- I2. Foundation
- I3. Floor Fill Complete
- I4. Walls & Columns
- I5. Roof Complete
- I6. Plaster, Finishing & Painting
- I7. Plumbing Complete
- I8. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
Total I

**ITEM J - PUMP ROOM 2**

- J1. P & G
- J2. Foundation
- J3. Floor Fill Complete
- J4. Walls & Columns
- J5. Roof Complete
- J6. Plaster, Finishing & Painting
- J7. Plumbing Complete
- J8. Miscellaneous

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Total  
Plus VAT  
Total J





**ITEM K - WATER LEVEL ROOM 1**

K1. P & G

K2. Foundation

K3. Floor Fill Complete

K4. Walls, Columns & beams

K5. Roof Complete

K6. Plaster, Finishing & Painting & Joinery

K7. Plumbing Complete

K8. Miscellaneous

Total

Plus VAT

**Total K**

**ITEM L - WATER LEVEL ROOM 2**

L1. P & G

L2. Foundation

L3. Floor Fill Complete

L4. Walls & Columns & Beams

L5. Roof Complete

L6. Plaster & Painting & water proofing

L7. Finishing & Joinery

L8. Miscellaneous

Total

Plus VAT

**Total L**

CH L 13



**ITEM M - WATER LEVEL ROOM 3**

M1. P & G

M2. Foundation

M3. Floor Fill Complete

M4. Walls & Columns & Beams

M5. Roof Complete

M6. Plaster & Painting & water proofing

M7. Finishing & Joinery

M8. Miscellaneous

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Total

Plus VAT

Total M

**ITEM N - BIG SCREEN & TIME CLOCK STRUCTURE (NO SCREEN)**

N1. P & G

N2. Foundation

N3. Floor & Beam Fill Complete

N4. Columns & beams

N5. Steel Frame

N6. Plaster & Finishing

N7. Painting & Tiling

N7. Miscellaneous

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Total

Plus VAT

Total N

**ITEM O - CAR PARK (INCLUDING CHANNEL DRAINS)**

O1. P & G

O2. Car park & kerb O1

O3. Car park & kerb O2



04. Car park & kerb 05

05. Miscellaneous

Total

Plus VAT

Total O

**ITEM P - DRIVEWAY**

P1. P & G

P2. Driveway

P3. Kerb, Footpath and channel drain

P4. Miscellaneous

Total

Plus VAT

Total P

**ITEM Q - CONTROL ROOM**

Q1. P & G

Q2. Foundation

Q3. Floor Fill incl. terrace

Q4. Walls & Columns & beams complete

Q5. Roof frame

Q6. Roof Completed

Q7. Plumbing works including plumbing fitting complete

Q8. Ceiling and Finishing

Q9. Joinery works complete

Q10. Tiling works complete

Q11. Plaster & Painting works complete

Q12. Miscellaneous

Total

Plus VAT

Total Q



**ITEM R - DRAINAGE (STORMWATER) INCLUDING SUMP & GRATING**

R1. P & G

R2. Drain 1- V drains

R3. Drain 2 – dia 300 culvert

R4. Drain 3 – dia 600 culvert

R5. Drain 4 – 250-300 x 400-500 with grating

R6. Drain 5 – 300 C with grating

R7. Miscellaneous

Total

Plus VAT

**Total R**

**ITEM S - SEWER MAINS INCLUDING INSPECTION CHAMBERS (COMPLETE)**

S1. P & G

S2. Sewer reticulation - dia 100 upvc

S3. Sewer reticulation – dia 150 upvc

S4. Sewer reticulation – dia 200 upvc

S4. Diameter 300 upvc Sewer reticulation  
connection to WAF mains

S5. Miscellaneous

Total

Plus VAT

**Total S**

**ITEM T - WATER MAINS AND WATER RETICULATION**

T1. P & G

T2. Water mains – dia 100 with connection for  
WAF mains

T3. Diameter 50 subsidiary

T4. Diameter 25 subsidiary

T5. Diameter 20 subsidiary



	<b>PART FIVE</b>			
	<b>ITEM PC- PC SUM</b>			
PC1.	Pool pumps and hydraulics for pool pumps & Chemical etc.	450,000.00		
PC2.	Pool equipment, starting blocker	450,000.00		
PC3.	Flag Poles off	6,000.00		
PC4.	Podium (Portable)	5,000.00		
PC5.	Tower Lights	600,000.00		
PC6.	Street Lights	30,000.00		
PC7.	Solar Lights (6 off)	30,000.00		
PC8.	Fire Hose reel & Extinguishes & Protection System	10,000.00		
PC9.	Fitout FT1 – FT8	15,000.00		
PC10.	Air Condition supply and fit	5,000.00		
PC11.	Electrical & Security Cameras	40,000.00		
PC12.	Telecom	10,000.00		
PC13.	Bid screen & video	400,000.00		
	<b>TOTAL PC</b>	<b>2,051,000.00</b>		
PC14.	Contingency Sum	100,000.00		
	<b>TOTAL PART FIVE</b>		<b>2,151,000.00</b>	
	<b>TOTAL PART 1+2+3+4+5</b>			

NAME: \_\_\_\_\_

COMPANY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

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## INDEX TO SPECIFICATIONS

SECTION	TRADE	
NC1	NOTICE TO TENDERERS & SCOPE OF WORK	NC1.0-NC 62.
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## **PRELIMINARY & GENERAL**

### **1.1 GENERAL CONDITIONS**

The Contractor shall comply with the applicable Fiji Standard Form of Building Contract (Private works) 1978 (without quantities) with deletions as mentioned in Conditions of Contract and any special conditions or notices as per forgoing sections this forms part of this specification and may be viewed at the Office of the Architect. The works to comply with the National Building Code at the relevant NZS and AS where specified.

### **1.2 TENDERER TO INFORM HIMSELF FULLY**

All tenderers shall inspect and examine the site, its surroundings, and shall satisfy himself before, submitting his tender, as to the nature of the ground and subsoil, the form and nature of the site, the quantities and natures of work and materials necessary for the site, the accommodation he may require, the availability conditions and rates of pay of labour and in general shall himself obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect his tender.

In particular each tenderer shall make all allowance he deems necessary to ensure the works are completed within the contract time, including all over time, double time, week-end work and other incidental allowances as required.

If a tenderer has any doubt as to the meaning of any portion of the works, he shall have this clarified prior to the submission of Tender.

### **1.3 CURRENCY**

Tender shall only be submitted in Fiji Currency and payments by the employer to the Contractor in terms of this contract will be the same.

### **1.4 BILL OF QUANTITIES**

The bill is deemed to be for the assistance of the Tenderers in making up his price and for the purpose of adjusting variations. It forms part of the Contract. Contractor shall forward the fully priced Bill of Quantities and Labour rates with his tender.

### **1.5 CONTINGENCY SUM**

Allow a contingency sum as set out in Notice, Schedule of Monetary Allowances. The expenditure of this amount being solely at the discretion of the Architect in accordance with the Fiji Standard Form of Building contract. Any unexpended balance from this sum shall be deducted from the Contract Sum.

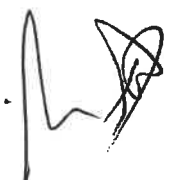


### **1.6 LIQUIDATED & ASCERTAINED DAMAGES FOR DELAY IN COMPLETION**

Liquidation and ascertained damages for delay in completion in accordance with Clause 22 of the Conditions as set out in Appendix/ Notice to Contractors.

Tenderers shall undertake to complete all works included herein before the date for completion stated in appendix to the Fiji Standard Form of Building Contract Item 21.

Extension to time may be authorized as set out in Clause 23 of the Fiji Standard Form of building Contract and as detailed in Notice to Tenderers.

Claims for extension of time in respect to additional works not covered by Clause 23, Fiji Standard Form of Building Contract, Conditions of Contract, may be claimed when pricing the variation Price request. Extensions of time not claimed at that stage will not be recognized.





1.7 **DRAWING & SPECIFICATION**

Figured dimensions take preference over scaled dimensions and large scale dimensions take preference over small.

The Drawing & Specification are considered solely as instruments of service and must be returned to the Architect at completion of the Contract.

Two sets of Contract Drawings and Specifications and of all subsequent details will be issued free of charge to the Contractor.

The Drawing and specifications supplement one another. Any part of the work mentioned in one and not represented in the other shall be done the same as if it has represented in the other.

The Contractor and/or all sub-contractors shall verify all dimensions on the job before commencement of shop drawing of his and his Sub-Contractors to the Architect for approval.

Only general arrangement dimensions and details shall be checked and approval of shop drawing shall not relieve the Contractor and/or Sub-Contractors from the responsibility of correcting at their own cost any errors, omission or rectifications which may be required later.

A full set of drawings shall be made available on the job with Specification at all times. The Engineering specification is to be taken in complement to the Architects specification and are to be complied with.

1.8 **MATERIALS WORKMANSHIP**

Material in all trades shall be new and shall be first class and the best of their respective kinds specified and where necessary complying with relevant standards mentioned herein and subject to approval or rejection by the Architect.

Supply all materials, labour, plant and tools as necessary for the works. The work shall be carried out in a first class tradesman like manner in all respect to the reasonable satisfaction of the Architect in accordance with relevant standards mentioned herein drawing as may be provided and in accordance with such instructions, directions and explanations as from time to time may be given by the Architect and subject to approval and rejection by him.

When liable to damage the materials shall be properly handled, stacked and /or stored with adequate protection. No substitute materials shall be used on the works unless approved. The Contractor shall remove at his own expense and time any substitute materials used without prior approval. All labour and workmanship throughout shall be executed in a manner consistent with first-class building practice.

Generally, all materials and workmanship shall comply with relevant Specifications and Codes as given in this present specification and Drawings and with relevant Rules and regulations of the appropriate Local Authorities have jurisdiction over the particular items of work. In the event of conflict in the above requirements, the last named shall apply.

It is the Contractors responsibility to maintain quality control, and to protect all fixed and unfixed materials from damage or disfigurement until completion and handing over of the works.



**1.9 PERMITS**

The Architect on behalf of the Employer; will arrange for the Building Permit and the owner will pay the necessary fee thereon. The Contractor shall pay all other fees and obtain other permit and give all notices required. The other fee to be paid by the owner shall be FEA consumer deposit. The Contractor to procure the Completion Certificate from the Suva City Council at completion.

**1.10 PLANT AND EQUIPMENT**

The Contractor shall allow for the supply, delivery, assembly and erection, operation, maintaining and removal at completion of all construction plant and equipment shall be of an efficient and recognized type and approved of where necessary by the relevant Inspector.

**1.11 INSURANCES**

Refer to Clause 18, 19, 20 of Conditions and Appendix for Insurances that the Contractor shall effect. Cover notes or policies shall be lodged with the Architect for approval prior to issuance of the first progress payment. Contractor must ensure he has insurance cover to damage by hurricane and 'peril'.

**1.12 HOARDING, SECURITY & DUST SCREENS**

Allow for all necessary general hoarding as required to keep the general public clear of works, and so maintain the building secure and burglar proof at all times. Contractor must allow for and construct at least 2m high fence around the site as required also around existing trees as shown.

Allow to keep all areas free from dust and debris through-out the works. Ensure that footpaths are kept clean at all times and make good of any damage. At least once a week clean-down footpaths to Local Authority satisfaction.

**1.13 PROTECTION OF THE WORK**

Loss through accident, theft or damage shall be responsibility of the Contractor. He shall take necessary steps to safeguard his interests. The Contractor shall employ a watchman at all times as required.

Each Contractor and sub-contractor shall adequately protect all preceding and existing work from damage caused by him or his works.

The Contractor shall be responsible for all damage, injury or loss sustained including all cost to make good or replace arising out of his failure or neglect to provide adequate temporary protection.

**1.14 DAMAGE TO ADJOINING PROPERTIES**

The Contractor shall be responsible for and make good any damage to adjoining properties, fences, streets, footpaths etc., and shall indemnify the owner against any claims from the Local Body, adjoining owners or other arising out of his operations.

**1.15 NIGHT LIGHTING**

The Contractor shall provide proper lighting to site, barricades, materials, etc. that may be stacked in any public place and all temporary lighting that may be required for night work as per requirements of the FEA.

**1.16 PROGRESS PAYMENT AND RETENTIONS**

1.16.1 Refer to clause 30 of the Conditions for payment

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1.16.2 A retention of 5% shall be held upon progress payment up to the issue of the practical completion Certificate. The retention will then be reduced to 2.5% to cover the Defects Liability Period. (Refer clause 15 of the Fiji Standard Form of Building Contract).

**1.17 PAYMENTS WITHHELD**

The Architect may decline to approve an application for payment and withhold his Certificate in whole or in part, or nullify the whole or any part of any certificate for payment previously issued to such an extent may be necessary in his opinion to protect the Owner from loss because of:

- a. Defective work not remedied
- b. Claims filed or reasonable evidence indicating probable filing of claim, including lien claims.
- c. Failure of the Contractor to make payments to sub-contractors, or supplier or for labour materials or equipment.
- d. Reasonable doubt that the work can be completed for the unpaid balance of the Contract Sum.
- e. Reasonable indication that the work will not be completed within the Contract time.
- f. Satisfactory executive of the work by the Contractor.

When the above grounds have been removed, payments will be made for amounts withheld because of them.

**1.18 PROGRAMME OF WORK**

The Contractor within 2 weeks of acceptance of the tender shall submit for approval by Architect four copies of a fully detailed and extended programme chart setting out his construction programme and order of work. The work of all trades including ordering of materials, plant and equipment shall be clearly shown.

One copy of the approval programme shall be kept on the site at all time and shall thereon indicate the actual progress throughout the Contract.

The programme must show the order of procedure and methods in which he proposes to carry out the works with the Critical Path, that is, those elements as being able to be affected by inclement weather, shown clearly. The submission to and approval by the Architect of such a programme or the furnishings or such further particulars as may be required shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

The Contractor shall maintain and amend the work programme as may be necessary from time to time and issue copies to the Architects and have a current copy available on the site at all times for inspection by anyone concerned.

The Programme must include all nominated Sub-Contractors work and their requirements and shall show the date for commencement and completion of all sections of the works included in the Contract. The progress of the works shall be kept on the site. The Contractor is responsible for all Nominate Subcontractors adhering strictly to the programme.

The Contractor shall submit to the Architect together with the Progress Schedule, a list of items requiring selection, detailing directions and instructions, etc., by the architects, together with the corresponding dates by which the selection, details instructions and directions etc., required. Time extensions will not be approved for lack of selection, details instructions and directions etc., by the Architect unless the content of the above paragraph is observed by the Contractor.

The programme shall clearly indicate all holidays falling within the contract period.





**1.19 REGULATIONS AND STANDARDS**

The whole of the work shall comply with the relevant Health and Buildings regulations of Nausori Town Council and Fiji Town Planning Regulations and the current National Building Code and the code referred to by the Engineers.

Standards Noted in specification may not be the latest edition or possibly even superceeded.

The reference to a Standard on the Trade infurs the latest standard information with respect to the trade. Contractor to familiars himself with these latest standards and be fully compliant.

**1.20 SUBSTITUTION**

The Contractor may make written request to the Architect for approval of the substitution of materials or construction other than those shown in the specification or drawings. Substitution shall NOT be made without approval. The Architect may accept or reject this as his prerogative.

**1.21 INSTALLATIONS BY OUTSIDE WORKMEN**

The Contractor is to permit access to the premises by outside workmen employed directly by the owner for installation of equipment and works as may be convenient, as portions of the structure become ready.

**1.22 PROJECT MANAGEMENT**

The main Contractor shall be responsible for all work, executed under the contract including the work of sub-contractors, nominated or otherwise. The main Contractor shall be responsible for the proper supervision of all works which he is responsible and shall take all necessary measures to ensure quality control and faithful workmanship.

**1.23 GENERAL FOREMAN**

The Contractor shall appoint a competent General foreman who shall be constantly on the works during the progress of same, to whom instructions may be given by the Architect.

The Architect may require the Contractor to dismiss the General Foreman or any other person employed on the site if such General Foreman or other person shall be incompetent or shall miss-conduct himself for any other good reason to be assigned by the Architect to the contractor.

**1.24 FOREMAN**

Each trade shall be under the constant and special direction of a trade foreman fully licensed, authorities and approved by all relevant authorities and the Architect for that particular trade for which he is responsible.

**1.25 NOTICES**

Give adequate notices (minimum of 2 days), list dimensions of all instructions, details and special inspections required on the job.

Give notice 24 hours minimum for inspection prior to pouring concrete.

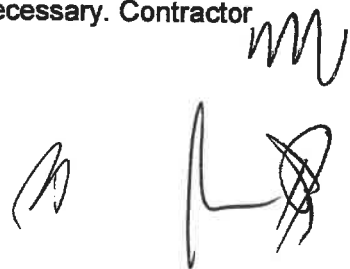
Contractor to arrange with local authority for their inspection.

**1.26 SITE OFFICES**

To be built as and when required in the Special Conditions. Telephone, fax machine and email services to be available in the site office.

**1.27 SITE MEETING**

A regular programme of site meeting shall bee established by the Architect at which the Contractor, Client, all sub-contractors and all consultants will attend as necessary. Contractor to facilitate. Frequency to be confirmed by Architect.





The Architect's or his representative shall chair such meeting and shall prepare records of the proceedings and shall provide copies to all matters discussed and confirmed at Site Meetings shall be deemed to become Architects Instruction.

**1.28 SETTING OUT**

The Contractor shall be responsible for the correct detailed setting out of the works as indicated in the Contract Documents and shall, at his own cost, amend any errors during the progress of the works arising from inaccurate setting out.

All dimensions as indicated on the drawings shall be checked on the site. Any discrepancies shall be referred to the Architect immediately for a decision. The Contractor is responsible for all correct setting out dimensions on site and shall rectify all mistakes at his own cost and time.

The Contractor shall after setting out the works, submit to the Architect a certificate obtained from a Licensed Surveyor certifying that the works have been laid out in accordance with the drawing supplied by the Architect. The Contractor shall allow for and pay the Surveyor. Surveyor to give a drawing giving setting out in the title plan including all reserves.

The Contractor shall have a Registered Surveyor to set out the vertical frame to ensure the erection of the structural framework and the accuracy in both vertical and horizontal directions, of all basic structural works and set-outs and who shall verify all boundaries.

The results of such surveys shall be made available to the Architect immediately upon request by the Architect to the Contractor.

**1.29 POSITION OF FITTING**

Before fixing in place, the Architect's direction shall be sought regarding the exact height and positioning of all sanitary fittings, hardware and electrical outlets.

**1.30 CONTRACTOR'S OFFICE & STORAGE REQUIREMENTS**

Contractor shall provide weatherproof sheds for storage of materials, tools and plant. They shall be located adjacent to the site of the works, in a location approved by the Architect.

**1.31 TOILET FACILITIES, WATER, POWER, TELEPHONE**

Contractor shall provide temporary toilet facilities connected to sewer on site for his workmen and allow for keeping these hygienic and clean. Remove on completion of works.

Contractor shall arrange to supply water, and power and site offices. Provide on site a temporary telephone/fax service for the durations of the contract.

The Contractor shall arrange for the installation of a temporary telephone service shall pay all charges, rental calls and shall make the telephone available to all persons concerned with the execution of the Contract. Mobile facility to foreman, separate toilet plus all kitchen facilities to be provided for the meeting room for use by consultants.

**1.32 INFERRED WORK**

All works necessary to be included as fundamentally necessary for the proper erection and completion of the works shall be deemed to be included and no extra will be allowed for any claim for any such items.

**1.33 SPECIFICATION SECTIONS**

This specification is written in section for convenience only, and it is not guaranteed that all works is included solely within one trade section.

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**1.34 AMBIGUITY, ERROR, DISCREPANCY**

These have to be clarified prior to closing of Tender (see previous section)

Any errors or discrepancies between Drawings and specifications that are not notified in writing by the tenderer to the Architect as required by the tenderer shall be carried out as directed by the Architect and no variation is to be paid unless approved by Architect that it is variation (Architect's) decision shall be final.

**1.35 SUB-CONTRACTORS**

No sub-contract shall be let without the approval of the Architect who shall have power to object to any sub-contractor or to any work being sub-let

Sub-Contractors either nominated by the Architect or by the main Contractor shall be the main Contractors responsibility, who must order, co-ordinate pay for and direct the works that fall under the sub-contracts and take responsibility for the quality of work and materials and time for completion unless otherwise agreed upon. The Contractor shall not hold back the Sub-Contractors payments unnecessarily once certified and paid for by the Architect. If such is brought to the notice of the Architect, he may direct alternative mode of payment provided he is satisfied with the claims.

The Contractor shall enter into a written agreement with all sub-contractors to the works. Such agreement to be to the general approval of the Architect.

**1.36 FACILITIES FOR SUB-CONTRACTORS**

Provide all facilities, attendances, and all necessary services for the proper and complete execution of all sub-contractors work in accordance with the sub-contract agreement, including allowing free use of scaffolding, plant, sheds, latrines, etc. wait upon and make good as required.

**1.37 ATTENDANCE AND MAKING GOOD**

The Contractor shall attend upon, cut away for building in etc., and make good after all trades where and when required and shall make good any damage to existing works, cables, services or other works caused by or attributable in any way to the carrying out of the works.

**1.38 ARCHITECTS SATISFACTION**

No expression of the Architect's/Supervising Officer's reasonable satisfaction or approval shall be deemed to be an acceptance of the defective materials or workmanship not complying with the terms of this Contract nor as authority for any variation unless it is authorized as provided in this contract in writing by the Architect.

**1.39 RUBBISH & CARTAGE**

The Contractor shall remove and cart away all rubbish and trade debris as it accumulates during the progress of the work.

The Contractor shall, when directed by the Architect clean any areas that are considered by the Architect to be noticeably dirtied or damaged by reason of the Contractor carrying out the works.

**1.40 STANDARD DETAILS**

Although standard details are listed in the index under the predominant trades to which they apply, all trades should be fully conversant with them.

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**1.41 TRADE NAMES/MANUFACTURERS & SUPPLIERS REFERENCE**

Trade Names or Manufacturers Reference given throughout this specification, unless specifically stated in the schedule PC and Provisional sums, is for the Contractors guidance only. If the contractor so requires he may use alternative materials of equal quality and standard, with prior written approval by the Architect. Where necessary the Contractor shall, at all time of applying to the Architect for approval of an equivalent alternative, submit samples and, specification details of the suggested items. The final approval or rejection is the Architects, and the Contractor to comply.

Suppliers Reference given, unless specifically stated as a Nominated Supplier is for the Contractors guidance only. He may obtain the specified materials from alternative suppliers.

It is the Contractors responsibility, prior to firm order, to ensure availability, delivery time etc. of any materials including those included under this section.

**1.42 AS BUILT DRAWINGS**

The Contractor shall keep 'As Built' as the work proceed, give exact dimensioned locations and inverts of all pipes, drains, conduits, service ducts, cables, etc. in and around the works (including works of sub-contractors)

On completion, provide 3 sets "as Built" drawings to the Architect. Contractor to allow for these.

**1.43 ORDERING MATERIALS**

The contractor must order all materials – local and imported –within one month of commencement of contract; and inform the manufactures/suppliers of specific date when material is required on the site, at time of order. All materials affecting the critical path of the Programme must be ordered (within 2 weeks) of commencement of contract

When ordering materials the Contractor must provide a copy of the relevant soon after specification clauses or other details, part of the documents to be manufacturer/supplier. When taking delivery the contractor must again ensure that the goods supplied are in accordance with the specification requirements enquire from manufactures and suppliers whether they provide guarantees/warranties for their materials and goods. Order form those who provide guarantees/warranties.

**1.44 SPECIAL CONDITIONS OF CONTRACT**

The following special conditions apply.

Delay for Inclement Weather (see also Clause 23(b) of the Conditions of Contract)

- 1.44.1** The Contractor shall allow for average wet weather be to anticipated during the Contract period, in accordance with the records kept by the bureau of Meteorology, Fiji, for the district in which the works are located. Unless extra-ordinary circumstances arise in the opinion of the Architect's extension of time for inclement weather, if any, shall be granted only according to the number of 'wet days' in that quarter excess of the average number of 'wet days' shall be determined from the figures recorded by the Meteorology Bureau over the last 5 years. A 'wet day' shall be 24 hours period during normal working days when rainfall exceeds 14mm as recorded by the Meteorology Bureau. The Contractor is to give the Architect in support of any claims for 'wet weather' a copy of the Meteorology Bureau records for average and actual rainfalls for the period involve. Extension under this formula shall not apply after works have been enclosed or otherwise protected in accordance with the period with the Contract not if work is behind protected.





#### **1.44.2 PRACTICAL COMPLETION OF THE WORKS**

The expression 'When in the opinion of the Architect the works are practically completed' as used in Clause 5 (1) of the agreement, it shall mean completion of the works, including structures, finishes, equipment and services in adequate working order, all allowing full and uninterrupted occupation by the Employer or his tenants.

Minor incomplete items external or internal which in the opinion of the Architect, do not conflict with the fore-going shall not prevent the issue of the Notice of Practical Completion. (see also Clause 15 of the Conditions)

#### **1.45 INFORMATION BOARD**

Within two (2) weeks of commencing operations the contractor shall provide and erect an information board as detailed below at main entrance.

The nature and extent of information will be given by the Architect and shall include the name of the building, clients, Project Managers, Architects, Consultants, Contractors names. Space shall be left on the signboard for later addition of the main sub-contractors as directed by the Architect. No other signs will be permitted.

Provide 20m marine ply 2/2400 x 1200 fixed to 100 x 100 x 5mm steel frame and secured fixed in position to be directed to the contractor stating or as other details as provided by the Architect. Contractor to light up the sign at night. A graphic of Project supplied by Architect to be painted on the Board. A detail of the signage shall be provided by the Architect.

#### **1.46 GUARANTEES**

Where required by this specification guarantees shall be submitted in accordance with the Fiji Standard Form of Building Contract and handed to the Architect before issue of the final payment.

The Contractor shall provide the Guarantees as specified under the various trades except where this is not reasonably possible and where the contractor has so notified the Architect in writing before the works proceed with or the item ordered.

The Contractor to procure such guarantees, or equivalent guarantees, to be effectively transferred to or issued directly in favor of the owner as that thereafter the Guarantor shall be directly responsible to the owner.

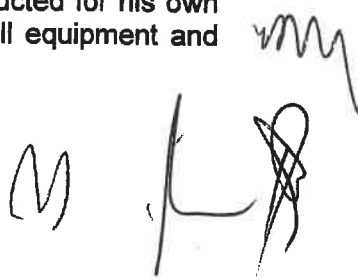
#### **1.47 COMPLETION**

##### **1.47.1 Cleaning up on completion**

The Contractor shall, throughout the duration of the Contract maintain the works in an orderly, clean and tidy manner. Materials shall be stacked and handled in an orderly manner to facilitate inspection and checking. The site and work shall be cleaned and maintained in a tidy manner as the works proceeds by the removal of all debris or condemned materials as and when required. All combustible rubbish form inside or adjacent to buildings, plants etc., shall be removed daily.

**1.47.2** At completion thoroughly clean down all windows, floors etc., free of all paint spots, dropping, etc. thoroughly broom out all areas, clean all fixtures, glass, tiles floor and easing of windows, doors and the like, the oiling of locks and other movable metalwork, the labeling and handing over of keys with tags and generally leaving the premises clean and fit for occupation.

**1.47.3** The Contractor shall remove all temporary works that he may have constructed for his own convenience while carrying out the works, including the sign-board, and all equipment and surplus materials and any remaining rubbish, which may have accumulated.





**1.48 KEYS**

Keys to be handed over with Formica name tag (40 x 50mm) or other approved for each door with all the keys for the door address to be clearly identified and placed in order.

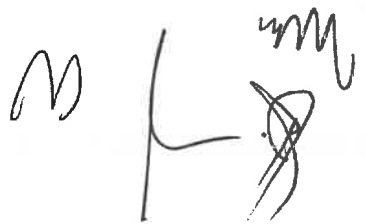
**1.49 GENERAL PROTECTION**

The Contractor shall provide protection to the neighbouring properties and the general public within the vicinity of the site against any debris, construction material, construction equipment and the like from the site.

In particular, the Contractor shall provide, at all times as the building progresses adequate screens around the perimeter of the building to safeguard against any falling debris and/ or objects and safety for workers.

**1.50 Specification**

This specification is to be read in conjunction with the Engineers specification for the specific works.

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## 2. DEMOLITION

### 2.1 OTHER DOCUMENT

This specification must be read in conjunction with Preliminary & General specification, the Conditions of Contract and the other contract documents.

### 2.2 SCOPE

This section of the work involves a variety of demolition works, which are specially noted in the drawing. Generally they are as follows:

- I) Demolition of existing fence, kerbs, paths and wall etc. as shown.
- II) Removal and termination of services within site to accept work.

Demolition is to be carried out in within the limitations of site boundaries that t apply for the main.

Demolition is to be carried out in an organized manner. Allow for the provision of all scaffolding, plant gear, labour materials and services etc., to execute the work in accordance with the requirements of the specification and drawings.

No extras will be allowed for any variation, arising form the contractors lack of knowledge of site or any adjoining structure, property or service.

### 2.3 SECURITY, SAFETY, NUISANCE, PROTECTION OF BUILDING & OCCUPANTS

The demolition Sub-contractors shall carry out his work in a planned manner agreed with the contractors/Architect and in total accordance with all the printed requirements contained in the general and special Conditions of Contract, and preliminary & General section of the Contract Documents.

Contractor to ensure Council properties are not damaged. Any gap in the wall to be sealed, restitute to ensure no thorough from outside to the pool.

The instructions of the Architect, with regard to these aspects of the demolition trade are to be strictly adhered to.

### 2.4 REGULATIONS AND PERMITS

All work covered by this contract shall be carried out strictly in accordance with the Construction Regulation and Amendments.

The Sub-contractor shall be thoroughly conversant with these regulations and shall allow for all regulations requirements with tendering.

No extras will be allowed for any variations arising from the sub-contractors lack of knowledge of any existing structure, including all services.

Where reference is made in this specification to any Act, Regulation, Statutory Instrument, Code of Practice of similar publication it shall be construed to mean the editions with all amendments current at the time of the issue of contract documents.

All work covered by this contract shall be carried out strictly in accordance with the Construction Regulation and Amendments. The contractor shall allow for all requirements when submitting his tender.

The contractor shall comply with all safety regulation.





## 2.5 SERVICES

Ensure that all service pipes or wiring by demolition operation are rendered safe before commencing work.

Where required, break out seal services in conformity with the relevant Local Authority regulations.

Cooperate with the respective Local authority concerning the removal of any service fixtures or fittings which may come under their jurisdiction.

Conform to the Acts, Regulations and by laws of the Local Authority and give all the notices required.

## 2.6 REINSTATEMENT

Reinstate any damage caused through work operations to parts of contract site or adjoining property make good with materials, finish workmanship to match in every respect the surrounding work. Such work to be totally in accordance with the instructions of the Architect.

## 2.7 OWNERSHIP OF MATERIALS

All unused materials having no salvage value and not otherwise noted will become the subcontractor's property and shall be removed from the site.

Ownership of materials does not include power or gas board meters, water meters etc. which may be removed by the Local Authority concerned when existing services are disconnected

## 2.8 EQUIPMENT

All mechanical equipment, cables shackles, hooks and like shall be in sound condition and proper working order.

Operator shall be skilled in the handling and control of all mechanical equipment employed and shall be fully conversant with the safe use and rigging of any tacking or cables used for the work.

All mechanical equipment used shall not damage adjoining buildings, roadways, or services by shock vibration, or other detrimental effect and the Contractor shall follow all direction issued by the Architect.


## 2.9 DEMOLITION PROCEDURE

The Contractor shall submit his proposed method of demolishing the floor to the Architect for his approval prior to commencing work.

The Contractor shall ensure that the Architect is given reasonable notice to inspect the demolition work. Contractor shall employ only such demolition methods as sanctioned by the Architect.

All brickwork and concrete being demolished shall be done so progressively so that no portion of a wall is left in an unstable state and in any case the sub contractor shall make allowance in his tender for shoring and supporting wall where required, in a safe and stable conditions.

The methods of lowering walls shall be arranged to avoid damage by collapse of parts of the building on to the remaining elements. All demolition shall be carried out progressively so that in no instance shall any freestanding walls project more than one storey height or 4.5 meters maximum above the remaining structure. Debris and rubble shall not accumulate or be piled against remaining walls. The Architect or his representative may direct that the work shall stop until debris is removed where in his opinion; such debris is a hazard.





**2.10 NOISE CONTROL**

Plant and equipment shall be so operated as to prevent undue generation of noise from motors, compressors and other machinery.

**2.11 NUISANCE**

Ensure minimum nuisance or inconvenience to occupants of the adjoining spaces and buildings. In the event of dispute the Architect's instruction shall be followed.

**2.12 THOROUGHFARES**

The contractor shall be responsible for any debris falling on roads or pathways from his trucks and shall keep roads and paths in the vicinity of the contract free from obstruction and at all times safe to the public.

Contractor shall be responsible for any damage to roadways or pathways during the course of the operations. Ensure public freedom of access to adjoining buildings and property at all times.

**2.13 INSURANCE**

Refer to the General special Conditions of Contract, and the Preliminary & General section of his specification for Insurance requirements.

**2.14 REMOVAL**

All demolition rubble and materials/items shall be removed from site. Salvaged materials remaining in the ownership of the Building Owners shall be removed to an agreed place of storage.

**2.15 PROTECTION**

Provide for temporary protection to all existing trees that are to be retained to be maintained.





### 3. EXCAVATOR & EARTHWORKS

#### 3.1 GENERAL

Refer to the Preliminary and General Clauses which apply to all trades.

#### 3.2 SCOPE

This section of the Contract includes the leveling of ground to levels indicated on drawings, general site trimming, excavation in soil for foundations, drains, bulk excavation, forming of road and car parking areas etc., the provision of hard fill, backfilling and ramming around foundations.

#### 3.3 WORKMANSHIP

All work to be carried out in a safe and competent manner by capable workmen and in accordance with current Labour Department Regulations.

#### 3.4 SETTING OUT

The setting out of the work shall be carried out by a registered surveyor in accordance with the architectural and civil drawings.

#### 3.5 CLEARANCE SITE

3.5.1 Excavate to remove top soil and grass from all areas to be covered by buildings, roadways and yards as well as from those areas to be grassed, if designated, on the drawings as required to be striped.

3.5.2 Stock pile selected soil for backfilling garden areas and flower boxes, if required and as directed by Architect and remove remainder from the site.

#### 3.6 EXCAVATIONS GENERALLY

Excavate as required to reduce levels, for foundations and all structures shown. Minimum depth shall be in accordance with structural drawings, into solid soapstone but should satisfactory ground is reached. All subsoil from the foundations, etc., shall be removed from the building platform area.

All excavated material surplus to requirements for backfilling shall be removed from the site. Levels in any excavations excavated too deep or where damaged material has had to be removed shall be made up with concrete or compacted gravel as the Architect may direct.

Divert as necessary all ditches, field drains and other water-ways encountered during excavations. Remove any dis-used drains, manholes or old foundations encountered during the excavations and backfill locally with approved material. Provide all necessary timbering, shoring, sheet piling, etc., necessary to keep the excavations open and safe for working at all times.

It is the Contractors responsibility to keep excavations free of water during building operations.

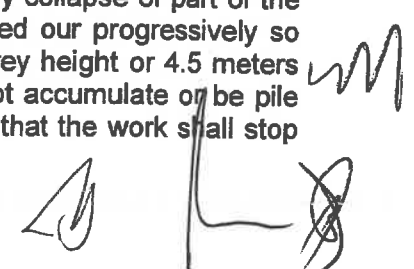
#### 3.7 BULK EXCAVATION

Contractor to carry out bulk excavation (when applicable) to form the base and driveway. He must ensure the excavations are carried out to the survey and levels required.

The surplus excavated materials to be cart Via rear route to be direct within one kilometer of site

#### FOR BASEMENT

The methods of lowering walls shall be arranged to avoid damage by collapse of part of the building on to the remaining elements. All demolition shall be carried out progressively so that in no instance shall freestanding wall project more than one storey height or 4.5 meters maximum above the remaining structure. Debris and rubble shall not accumulate or be piled against remaining walls. The architect or his representative may direct that the work shall stop until debris is removed where in his opinion; such debris is a hazard.





### 3.8 SHORING FOR EXCAVATION

Contractor to erect shoring, metal casing, timbering etc., of sufficient strength and quality to prevent materials slipping or falling or being shaken from the side of the excavations. If in the opinion of the Engineer, sufficient or proper support has not been provided at any point he may order additional support to be supplied and fixed at the Contractor's expense. Such action of the Engineer will not release the Contractor of any responsibility for the sufficiency of these, or any other supports. Care must be taken to prevent voids forming outside the sheeting. Should voids occur, they shall be backfilled with consolidation materials to the Engineer's satisfaction.

Work to proceed in a careful safe way, with all due precautions being taken against accidents.

### 3.9 EXCAVATION BEYOND CONTROL DEPTH

Obtain written instructions before excavating beyond the depths and levels in the contract. Any additional excavation shall be paid at rates in the bill or as assessed by Architect.

### 3.10 DEWATERING

The Contractor shall allow in his tender for any dewatering required to allow him to excavate the areas necessary for the construction of foundations.

### 3.11 BACKFILLING

#### 3.11.1 GENERAL

Backfilling where required shall be carried out neatly to the levels indicated. Sound granular materials shall be used for this purpose. All materials used shall not contain silt or clay and topsoil. Thoroughly compact in 100 layers using vibrating roller or other approved method.

#### 3.11.2 FOUNDATION SUPPORT

Care shall be taken when placing backfilling against foundation wall. It is the Contractor's responsibility to brace walls should this be necessary or where directed.

#### 3.11.3 RETAINING WALL

Where indicated on the drawings retaining walls shall be backfilled with sound granular graded materials after the application of a damp proof course as specified elsewhere. Behind such walls, lay where indicated "Novaflo" or similar approved field drains of the sizes and positions indicated on the drawings.

#### 3.11.4 LOWER BASE BACKFILLING



Where asphalt paved surface are required by the drawing or specified elsewhere in this specification, the Contractor shall allow to backfill all asphalt paved areas to a depth of 150mm below the finished surface with 100mm depth of second grade 62 all-in, well graded crushed metal. This sub-base course shall be thoroughly compacted with vibrating rollers and graded to the general falls required by the asphalt paved areas.

### 3.12 HARDFILL

3.12.1 Lay consolidation hardfill to a minimum depth as shown on the drawings, graded hardfill consisting of clean sizes up to 10mm, thoroughly compact with an approved compactor with particular attention being given to the outside edges.

#### 3.12.2 BLINDING

After compaction cover all hardfill with 50mm minimum sand or concrete blinding as noted. Ensure that the sand adequately covers all hardfill and that protruding rocks, etc., are removed or adequately covered with sand.





**3.13 DAMP PROOFING**

Where retaining walls are indicated coat walls as detailed or where not shown with 3 coats approved bitumastic paint DPC and protect from damages with second grade pinex softboard or similar.

**3.14 TRENCHES**

Co-operate with various trades in the excavation of all trenches for drains, sewer/storm water electrical and telephone conduits, septic tanks, rubble drains, fire riser etc. Prior to backfilling ensure that pipes have adequate cover and protection in accordance with the regulations and that all necessary tests have been carried out by the respective authorities and the respective consultants.

**3.15 BATTERS**

All batters shall be clean of all loose or unstable material immediately prior to backfilling.

**3.16 BENCHING & SLOPE PREPARATION**

Where filling is to be placed on a slope steeper than one vertical to five horizontal, unless directed otherwise by the Architect. All benches shall be sufficiently wide to accommodate compaction equipment and in one case shall be less than 2700mm in width. Benching shall be started on the lowest areas and constructed as the filling proceeds.

Excavated materials from the higher benches may be used as filling on the lower ones. The benches shall have a longitudinal fall of not less than in fifty (1:50) towards drainage outlets. Each bench shall also have a cross-fall of approx. one in twenty (1:20) to drain towards the hillside.

Filling shall on no account be placed during heavy rain or under wet conditions following rain.

**3.17 FORMING OF FILL AREAS**

Generally the quality of fill material and the nature of frequency of tests to check and control this quality shall be determined and specified before fill placing commences.

All earthworks materials placed in or below fill areas below formation level in cut areas, or else where in the works shall be deposited and compacted as soon as practicable after excavation, in a systematic manner, with near horizontal layers, each being deposited progressively across the full area of a fill in 150mm layers, or in layers of thickness appropriate to the compaction plant used.

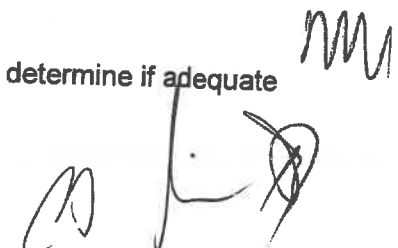
The surface shall be maintained at all times with sufficient falls and sufficiently even to enable surface water to drain readily from them.

During the construction of fill areas the Contractor shall control and direct construction traffic uniformly over the whole area of the filling. Damage to compacted layers by constructional traffic shall be made good by the Contractor.

**3.18 COMPACTION**

Separate compaction machinery shall be required. Construction traffic, by itself, will not be accepted as providing adequate compaction. A sheep's foot or tamping type of roller or mechanical equipment that produces a similar effect shall be used to penetrate loose material and compact the layer from the bottom upwards in order to produce uniformity throughout its thickness. See Compaction Schedule

The Architect will carry out the tests during the progress of the work, to determine if adequate compaction of the fill material is being achieved.





The Architect/Engineer may direct that work be suspended or methods altered, or additional machinery be brought into use if he considers that reasonable compaction is not being achieved due to weather, type of machinery, spread of earthmoving equipment across the fill, thickness of spread layers, soil type and or moisture content, or for any other reason.

No additional payment or rate adjustment shall be due by such but permission to continue or to use accepted methods will not be withheld by the Engineer.

In all cases the rate for excavation shall include the placing and compaction (or disposal) of the material to the specified standards elsewhere.

### 3.19 **CERTIFICATE**

Prior to proceeding with construction, submit to the Architect a Registered Surveyor's certificate and diagram indicating the true location of the works in relation to boundary lines and adjacent existing building

### **COMPACTION SCHEDULE**

Compaction of fill materials shall be carried out in accordance with the following schedule:

Type of Compaction Plant	Load in tones per metre	Maximum thickness of compact layer in millimeters	Minimum no of passes
Smooth Wheeled Roller	2.1-2.7	125	8
	2.7-5.4	125	6
	Over 5.4	150	4
Grid roller	2.7-5.4	150	10
Wedge foot Roller Sheepsfoot Roller	5.4-8.0	150	8
	over 8.0	150	4
Pneumatic Tyred Roller	wheel load 40-80	150	6
	80-160	188	4
	160-240	300	4
	Over 240	375	4
Vibrating Roller	Static Load		
	1.25-1.78	125	8
	1.78-2.68	150	4
	2.68-3.57	200	4
	Over 3.57	250	4

### 3.20 **CONCRETE STRUCTURE**

Unless specified otherwise the following shall be the concrete strength requirement at 28 days.

Minor Structure- 20Mpa

Multi Structure – 30Mpa or 25Mpa (as marked in Engineers Structural notes)

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#### 4. CONCERTOR/BLOCK WORK/STEEL WORK

##### 4.1 GENERAL

Refer to the 'Preliminary and General' Clauses which apply to all trades. Also refer to Structural Notes for specific structural requirements which shall take precedence over this section

##### 4.2 STANDARDS

The following Standards, together with their amendments and other related Standards form part of this specification. The following documents shall comply unless expressly modified herein:

NZS 3103	Sands for mortars for internal and external renderings
NZS 3104	Concrete production – high and special grades
NZS 3108	Concrete production – ordinary grade
NZS 3109	Concrete construction
NZS 3112	Methods for test for concrete
NZS 3114	Concrete surface finishes
NZS 3420P	Hot rolled steel bars for the reinforcement of concrete
NZS 3422	Welded fabric of drawn steel wire for concrete reinforcement
NZS 3121	Specification for water and aggregate for concrete
NAS 3122	Specification for portland and blended concrete.

##### 4.3 MATERIALS

###### 4.3.1 CEMENT

Portland cement to B.S.S or locally manufactured ((Pacific) brand cements conforming with ASTM standards. It shall be delivered to the site in the manufactures' original sealed bags, stored in dry condition in a damp proof shed and protected against deteriorated and contamination. Cement which is lumpy or has deteriorated by moisture or otherwise shall be removed immediately from site of the works.

###### 4.3.2 FINE AGGREGATE

Clean sand or fine gravel screening passing through a 3mm sieve free from salinity, clay, loam or other deleterious matter. If not clean to the satisfaction of the architect, sand shall be washed in running water.

###### 4.3.3 COARSE AGGREGATE

Crushed metal from an approved source. In all cases coarse aggregate shall be well graded. Any aggregate not clean and shown must be washed before using in concrete work the size of aggregate shall be such that it will pass through a 25mm sieve and graded evenly between these limits. Submit samples of aggregate to the engineer before commencing work. Only plain bars shall be used for stirrups unless shown otherwise. Refer to drawings for details.

###### 4.3.4 WATER

Drinking Quality water only to be used

###### 4.3.5 REINFORCEMENT

Reinforcement shall be grade 300 deformed and plain bars manufactures to NZS 3402:1989 unless shown otherwise. All reinforcement shall be clean and free from loose rust, scale, grease or paint.

###### 4.3.6 CONCRETE

###### 4.3.6.1 PROPORTIONS

The quality of cement shall be measured by weight ( at the rate of 0.33m<sup>3</sup> to 50 Kg). The quantities of fine and coarse aggregate shall be measured by the volume in approved measuring boxes. The builder shall ensure by experiment that the proportions of fine and



coarse aggregate provide a mixture of maximum density to the approval for the architect and if necessary, at his own cost, adjust these proportions as directed by the architect.

4.3.6.2 Concrete shall be manufactured at a plant and in a manner complying in all respects with the provisions of NZS 3109:1980, and supplied by a firm approved by architect.

4.3.6.3 Site mixed concrete may be used after obtaining approval from architect. Concrete mixes shall result in homogenous concrete with required strength, durability and surface finish. Normally for 20mpa the proportion shall be 3:1½:1 = Crushed gravel: Fine sand: Cement.

For all structures compaction of concrete shall be carried out principally by use of vibrators of approves size and type.

All concrete shall be handled from the mixer, or in case of ready mixed concrete, from the agitator truck to the place of final deposit as rapidly as predictable by methods which shall prevent segregation. Concrete shall be placed in approximately 30 minutes after discharge from the mixer or agitator vehicle. Under no circumstances shall concrete that has partially hardened be placed in the work.

Concreting shall be carried out in such a manner as to avoid unnecessary delays in placing a fresh layer of concrete upon preceding layer. In case of concrete compacted by hand, fresh concrete shall not be placed upon the preceding layer after an interval exceeding 45 minutes, unless other wise required by Architect.

In the case of concrete compacted by vibration a fresh layer may not be placed unless revibration of the lower layer causes the concrete to become plastic.

Where delays have been too great for the foregoing to be complied with, the surface of the concrete shall be treated as for a construction joint. The retempering of concrete which has partially hardened will not be permitted. Placing of concrete by pumping will be permitted subject to compliance of the concrete requirements.

#### 4.4 CONSTRUCTION JOINTS

The location of construction joints are as identified in plans. Any variations to these shall be approved by the Architect/ Engineer.

Where saw cuts are required by Engineer, these shall be done as soon as possible after pouring but no later than 36 hours. The pouring of concrete shall be continuous without cessation throughout any section of work between approved joints. Confirm with Engineer as to set out.

#### 4.5 CURING

The work shall be adequately protected from the direct rays of the sun, drying winds. After the concrete has set, the expose surface and all concrete and formwork shall be continuously damp for not less than seven(7) days, by the use of an approved curing compound or wet bag and hosing.

All other slabs be kept moist in accordance with above by the use of approved curing compound or by covering with 25mm of sand, kept wet for seven (7) days. Pounding of water on slabs will be permitted as an alternative, provided the complete surface is covered for the full seven (7) days.

All other concrete and formwork shall be kept moist in accordance with the above by the use of wet bags.

No repairs to hardened concrete are to take place without the knowledge of the Architect/ Engineer.





The concrete surface finishes are to be smooth and even with true, clean arises, free from voids, honeycombing or other large blemishes. Small surface blemishes caused by entrapped air or water shall be repaired while the concrete is still green. There shall be no staining or discoloration from the release agent. There shall be no staining from stacking on timber or other material while left for curing.

#### 4.6 **FORMWORK**

Formwork shall be constructed that it accurate conforms to the true concrete shape. Level and plump, with sufficient strength and supports to adequately retain its shape. All in-situ concrete shall be poured on ply or steel formwork.

Clamps, wedges and bolts shall be used where possible in preference to nails. Bolt holes within the concrete shall be filled with drypack.

The use of oil on the boxing not be permitted except with approval of the Architect. Proprietary surface renders or special form release oils require approval from the Architect. Formwork to all slabs shall be constructed as to permit removal of loose shuttering without removal of props as directed. Design of all formwork must receive the Architect's approval. It remains the responsibility of the builder to obtain the various profiles shown in the drawings and to ensure that all formwork is structurally sound and capable of carrying the imposed loads in accordance with relevant New Zealand loading and design standards.

#### **STEEL COVER**

Concrete cover over main reinforcing steel shall be as scheduled here under except where specified otherwise on the structural drawings.

COVER IN MILLIMETERS					
Member	Against Natural Ground	Below Ground level and against Approved boxing	Exposed to weather and unplastered	Exposed to weather and plastered	Not exposed to Weather
Foundation	75	50			
Beams and Column	75	50	50	40	40
Slabs	50	30	30	20	20
Walls	50	40	40	25	25

#### 4.8 **STEEL COVER**

The contractor shall take great care in setting out steel that there is sufficient space between rods to allow aggregate to pass through and to ensure that each rod is properly embedded and bonded in concrete.

#### 4.9 **CONCRETE TESTS**

4.9.1 Test shall be arranged and carried out by the builder under the direction of the Architect/Engineer. The builder shall (except where specified to the contrary) provide all apparatus and materials and labour necessary for the execution of the tests:

##### 4.9.2a) **CONSISTENCY**

The quantity of water used for each batch shall be based on the consistency of the concrete as shown be Slump Tests. The Contractor shall provide a slump cone of 22 gauge P.G Iron



300 mm high, 100mm diameter at top and 200mm diameter at base. The slump for different parts of the work shall be within the range of 70mm to 90mm,

The Builder shall arrange Permissible slump within this range shall be in accordance with the Architect's instructions but will be approximately 70 mm for slabs and footings and 80 mm for walls, beams, columns and other confined areas. Should any test disclose a slump greater than directed for that particular part of the work, the concrete in that condition shall not be used in the work, but the quantity of mixing water shall be reduced until the proper consistency is attained. Approval to use concrete of any slump does not relieve the builder from his responsibility in complying with the requirements of sub-clause 4.7.2 (b)

#### 4.9.2b) **COMPRESSION TESTS**

The builder shall cast 150 mm standard concrete test cylinders, three (3) at a time as specified below and/or upon infractions from the Architect/Engineer;

No. of Batches		No. of Tests
1	5m <sup>3</sup>	1
2-5	up to 20m <sup>3</sup>	2
6-10	up to 40m <sup>3</sup>	3
11-20	up to 80m <sup>3</sup>	4
Each extra batch	above 80m <sup>3</sup>	1 extra

The builder shall provide at least three (3) steel moulds of standards approved design for casting of cylinders. Minimum values for concrete tested to destruction shall be:

Column pads and footings	-	30 Mpa at 28 days
Column/beams and floor slab	-	30 Mpa at 28 days
Blinding Concrete	-	14 Mpa at 28 days
Ground floor slab	-	30 Mpa

Unless noted otherwise in the drawings. Refer to structural notes for concrete strengths.

Test a shall be carried out at 7 and 28 days in accordance with NZS 3112. The builder shall keep record of all results and shall submit these to the Architect as and when they become available. Should compression tests reveal values less than those set out above, the Architect may, at his discretion, require further tests to substantiate quality of concrete. All costs of these further tests, irrespective of result of tests, shall be borne by the Builder. Any concrete which does not comply with the above requirements shall be demolished.

Allow for testing cylinders only at a laboratory approved by the architect. All other costs for testing including transport of cylinders are to be included in tender.

#### 4.10 **BUILDING IN**

4.10.1 Build into concrete and blockwork as the work proceeds all plugs, anchors, bolts, pipes conduits, etc., required for the works.

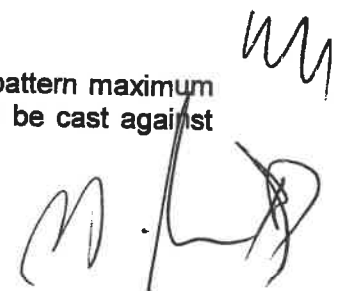
#### 4.10.2 **DRAINS & PIPES UNDER FLOORS**

Co-operate with drain layer in the construction of inspection chambers, etc., and before laying new floors and make provisions for pipes, conduits, etc., under floors for other trades. Where drains or pipes because of falls, levels, etc., are coincident with footing allow penetrations of the same.

#### 4.11 **CONCRETE SLAB**

Unless shown otherwise, slab shall be cast in panels on a chequerboard pattern maximum size of any panel not more than 25 square metres. No new concrete shall be cast against panels less than 2days old unless approved by Engineer.

#### 4.12 **FINISH TO CONCRETE FLOORS**





#### 4.12.1 PLASTER

Where specified for plastering rough screed to form a good face for later plastering.

#### 4.12.2 MONOLITHIC SLABS (if applicable)

Where as scheduled the concrete shall be treated as follows:

- (a) Concrete shall be placed vibrated and screeded with an approved steel vibrating screed.
- (b) After placing of concrete wood float surface immediately after screeding. Do not float excessively while concrete is in wet state but sufficient only to provide workable surface.
- (c) After concrete has attained an initial set and water has commenced 'bleeding' steel trowel surface. Continue steel troweling until all surface bleeding has stopped.
- (d) The use of sand or cement as drying agents applied is NOT permitted.
- (e) The above provisions will be strictly enforced. Any concrete slabs not done in accordance with above shall be rejected, be removed and redone.

All floors shall be left perfectly plane and true, showing no defects at junctions of concrete pours, and left ready for tiling as specified

- (f) Allow for construction joints as directed by Engineer.

#### 4.13 WATER PROOF MEMBRANE

Where shown on drawings, apply under floor slabs and beams, Premseal 450 or similar over 50mm concrete/sand building. Premseal be applied in accordance with the manufacturer's instructions.

It is essential that the Premseal 450 is continuous so that dampness cannot penetrate. Prior to the pouring of concrete the whole of the membrane shall be checked for any puncture which shall then be repaired. The Architect/Engineer shall be notified prior to the pouring of concrete so that it may be inspected.

#### 4.14 REINFORCING STEEL

##### 4.14.1 GENERAL

Refer to 'Preliminary & general' clauses which will also apply to this section of the work.

##### 4.14.2 STANDARDS

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

NZS 3109:		: Concrete Construction
NZS 1900:	9.3A	: Concrete-General requirements
NZS 4671:		: Hot rolled bars for reinforcement
NZS 3421:		: Hard drawn wire reinforcement
NZS 3422:		Welded reinforcing fabric.
Standard Arc Welding		(Minor works)

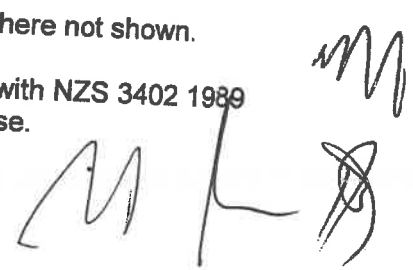
Read this section in conjunction with Section 5- Masonry and also structural notes in the drawings.

##### 4.14.3 MATERIALS

##### 4.14.3.1 GENERAL

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

Plain and deformed bars shall be min. grade 275 and comply with NZS 3402 1989  
Only plain bars shall be used for stirrups unless noted otherwise.





Welded wire fabric shall conform with NZS 3422.

**4.14.3.2 ORIGIN & 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 carefully marked for identifications with the relevant certificate.

**4.14.4 PROTECTION**

Store steel clear of ground and mesh under cover. Provide walk ways to approval if required. Brace adequately all reinforcement projecting more than 3 meters from concrete, cut out defects around bars caused by movement as directed before resuming concreting.

**4.14.5 FABRICATION**

Fit ties and stirrups tightly around main reinforcement. Bend deformed bars around rollers, not fixed pins.

Bend deformed bars only once. Re-bending is not permitted unless approved by Architect/Engineer.

**4.14.6 TOLERANCES & PROTECTIVE COVER**

Tolerances shall be as set out in Clause 32.2.1 of NZS 1900 9.3A. The concrete cover is to the surface of main reinforcement.

**4.14.7 PLACING & FASTENING**

Support top steel on high chairs or by other approved means, precast blocks are not permitted, unless otherwise detailed, support slab reinforcement at maximum 1 metre centers, except reinforcement 10mm in diameter and smaller at maximum 600 mm centers. Tie reinforcement with not less than 1.25 mm soft black iron wire sufficiently to maintain correct relative positions. Bundle bars should be tied together at 500cns with 2.65 mm min. soft wire.

**4.14.8 LAPS**

Lap steel as shown only in the main steel. Normal lapping is 40 times diameter of bar unless noted otherwise.

**4.14.9 WELDING**

Welding of reinforcement shall comply with Standard Arch Welding (Minor Works) unless otherwise specified.

Welding reinforcement is not permitted without written approval of Architect/Engineer. Identify rods or bars to be welded with tags or branding.

**4.14.10 INSPECTION**

Before concreting, reinforcement must be inspected by Supervising Officers. Arrange with Architect/Engineer suitable time for inspection before approval. Work done without his approval will be rejected. Minimum of 1 day notice is required.

Remove all formwork preventing proper inspection.





5. **BLOCKWORK**  
5.1 **GENERAL**

Refer to 'Preliminary and General' clauses which apply to all trades. Also refer to Structural Notes for specific structural requirements which shall take precedence over this section

5.2 **MATERIALS & WORKMANSHIP**

Blocks shall be standard size class A 200mm, 150, 100mm thick, and with all necessary supplementary units. All block shall be true to size, square, with clean arises and even and consistent surface texture. Blocks that have chips, cracks or other defects shall be rejected.

The Contractor shall use standard modular cement blocks of approved manufacture. Block strength shall be not less than 14 mpa over the net area of the block. Mortar shall be mixed in the proportion of one part of cement to one quarter part of lime to three parts of sand provided that the lime may be replaced by an approved Plasticizer and waterproofing agent in the proportions recommended by the manufacturer. Mortar shall have minimum compressive strength of 12.5MPa after 28 days. Mortar must be troweled to the blockwork to give a full continuous mortar bed on each face, tampered to give 10 mm even mortar joints both horizontally and vertically. Mortar must also be troweled onto the end of each block prior to laying and NOT laid and the perpends pointed after. Where blockwork so plastered joints shall be left raked suitable for plaster finish.

Block prior to laying shall be protected from rain and shall not be placed while wet. Mortar mixed more than 20 minutes shall not be used.

5.3 **SCOPE**

Generally construct all walls complete with reinforcing bond beams, lintels, grout filling openings etc. as shown on the drawings and specified herein.

5.4 **LAYING OF BLOCKS**

Units shall be wetted but free of surface water before laying. Do not raise any part of a continuous wall more than 900 mm above another at one time. Lay mortar on face shells (i.e. longitudinal surface) or exterior wall units only and not on middle or end webs. Build walls in accordance with details and best trade practice. Use full blocks throughout except where closers are required and keep well plumb straight and true throughout. Do not cut blocks.

5.5 **GROUT FILLING**

Blockwork containing reinforcement shall be filled with 17.5 mpa grout. Clean out all debris, remove projecting mortar before filling. Filling shall occur as the walls are built. Not more than 4 courses being built up before filling commences. Fill all cores of exterior block walls, walls below ground level and lift shaft and where specified, in the drawings.

Internal block walls grout fill all reinforced cells vertically and horizontally.

**REINFORCEMENT**  
**GENERAL**

To delivery of reinforcing steel from the steelworker as specified under Contractor and build in as work proceeds. Main reinforcing to blockwork shall be with deformed mild steel with plain steel for ties.

**TIES**

Use mechanical ties where bonding is not possible such as wall and junctions. Mechanical ties shall be 34 x 10 mild steel flats 675 long bended ends spaced every forth course vertically.

**PROVIDE AS SHOWN IN THE DRAWINGS**

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Where the reinforcement is not specified the following should adhere to:

- a) 200 Blockwork
  - Vertical : 12 diam every 400 mm
  - Horizontal : 16 diam every 3<sup>rd</sup> course in a bond beam
- b) 150 Blockwork:
  - Vertical : 12 diam every 600mm
  - Horizontal : 16 diam every 4<sup>th</sup> course in a bond beam or 12 diam every 3<sup>rd</sup> course in a bond beam
- c) 100 Blockwork:
  - Horizontal : 12 diam every 3<sup>rd</sup> course in a bond beam
  - Vertical : 10 diam every @ 600mm

At top of 100 blockwork provide 100 x 300 beams reinforce with 2-12 diam and 6, ties at 150 crs.

- d) Unless detailed otherwise provide 400 x 200 and 400 x 150 mm concrete beams over top of all blockwalls reinforced with 4 nos. 16 diameter bars and no. 6 diameter links at 200 mm centres unless shown otherwise on the drawings.
- e) At all window and door jambs provided one 12 mm diameter rod extending from foundations to floor to roof beam.

### **JOINTS**

Where indicated on the drawing all masonry joints are to be constructed with preformed joint filler consisting of selected impregnated fibres, such as Expedite Joint Filler. The filler is to be the same thickness as the joint width and is to extend through the full thickness of the masonry except where specified otherwise.

### **5.8 BOLTS, PLATES, ETC**

Build in all bolts, straps, ground soap holders, etc. provided by the Carpenter.

### **PIPES**

Build in pipes, conduits, electrical switch boxes, switchboards, etc., provided by others.

### **5.9 FAIRFACE BLOCKWORK (where applicable)**

All fairface blockwork shall be laid in accordance with the relevant clauses of NZS 1900 Chapter 9.2

Blockwalls shall be perfectly true and plumb. Joints shall be even thickness and shall not vary beyond the tolerance of plus or minus 2 mm but shall average out at 10 mm over walls. Any blockwall which shows more than 6 mm under part of a 800 mm long straight edge placed anywhere across the blockwork surface will be condemned, broken down the rebuilt to be within the above mentioned tolerances at the Contractor's expense.

Point up with mortar on all faces as the laying proceeds and build in all fixing required and provided by other trades.

### **5.10 CUTTING OF BLOCKWORK**

Note that where blocks are required to be cut they shall only be cut with a vebrapac or other suitable masonry saw. Holes and opening in fairface block shall be neatly cut to the required shape and size.





T6. Diameter 25 Galvanized for fire hose reels

T7. Miscellaneous

Total

Plus VAT

**Total T**

**ITEM U - SITE WORKS**

U1. P & G

U2. Bench forming – rear bench BT1 with walls

U3. Bench forming between Olympic pools BT2  
& children Pools with walls

U4. Wall formed at top of BT2

U5. Green area grassed with kerbs

U6. Miscellaneous

Total

Plus VAT

**Total U**

**ITEM V - FENCING**

V1. P & G

V2. Fence F1

V3. Fence F2

V4. Front gates 3 off with posts with signage wall

V4. Other Gates

G1 (2 off)

G2 (1 off)

G3 (1 off)

V5. Miscellaneous

Total

Plus VAT

**Total V**



**ITEM W - APRON FORMING & TILING ( WHERE SHOWN)**

W1. P & G

W2. Apron 1

W3. Apron 2

W4. Apron 3

W5. Apron 4

W6. Block wall & driveway / walkway

W7. Tile & Tiling complete.

Tile Purchase price \$40/m<sup>2</sup>

Allow for cost of laying: Labour

Glue, grout etc.

Glue to be high quality (Superfixall)

W8. Miscellaneous

Total

Plus VAT

**Total W**

**TOTAL PART ONE**

**Note:**

1. All tile purchase at the rate of \$40 sq. m VEP to be allowed
2. Use 'superfixall' or similar approved for laying tiles.

*mm*  
*CB* *LP*



## **FORM OF TENDER II – PART TWO**

**ITEM MP- MAIN POOL – OLYMPIC POOL (POOL 1)**

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**Total MP 1**

3





**ITEM TP: TRAINING POOL (POOL NO. 2)**

TP1. P & G

TP2. Excavation

TP3. Steel works for floor and walls

TP4. Floor filled work complete for pool

TP5. Walls for pool completed

TP6. Water proofing

TP7. Edge Apron Area as marked

TP8. Plaster works complete

TP9. Painting & furnishing works complete

TP10. Plumbing works complete and connect to existing  
pipes to pump room etc.

TP11. Storm water drainage complete with grating

TP12. Finishing complete

TP13. Tile & Tiling complete.

Tile Purchase price \$40/m<sup>2</sup>

Allow for cost of laying: Labour

Glue, grout etc.

Glue to be high quality (Superfixall)

TP14. Stainless Steel rails with stainless steel fixing

TP15. Miscellaneous:

Total

Plus VAT

**Total TP**

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**FORM OF TENDER II - PART FOUR**

**ITEM TW- LIGHT TOWERS - FOUNDATION ONLY (TOWERS IN PC)**

TW0. P & G

TW1. Light towers Type TW 1 (4 off)

TW2. Light towers Type TW 2 (2 off)

TW3. Light Towers Type TW 3 (4 off)

TW4. Miscellaneous

Total

Plus VAT

**Total TW**

**TOTAL PART FOUR**

mm  
N L



**FORM OF TENDER II – PART FIVE**  
**ITEM PC- PC SUM**

PC1. Pool pumps and hydraulics for pool pumps & Chemical etc.	450,000.00	
PC2. Pool equipment, starting blocks etc.	450,000.00	
PC3. Flag Poles (3 off)	6,000.00	
PC4. Podium (Portable)	5,000.00	
PC5. Tower Lights	600,000.00	
PC6. Street Lights	30,000.00	
PC7. Solar Lights (6 off)	30,000.00	
PC8. Fire Hose reel & Extinguishes & Protection System	10,000.00	
PC9. Fitout	15,000.00	
PC10. Air Condition supply and fit	5,000.00	
PC11. Electronic & Security Cameras	40,000.00	
PC12. Telecom	10,000.00	
PC13. Big screen & video	400,000.00	2,051,000.00
PC14. <u>Contingency Sum</u>		<u>100,000.00</u>
<b><u>TOTAL PC</u></b>		
<b><u>TOTAL PART FIVE</u></b>		
<b><u>TOTAL PART 1+2+3+4+5</u></b>	<b>\$</b>	

**Contractors on cost on PC Sum**

**NAME:** \_\_\_\_\_

**COMPANY:** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_





**CONTRACT:**

**ASHOK BALGOVIND & ASSOCIATES**  
**AQUATIC CENTRE - OLYMPIC POOL COMPLEX FOR**  
**LAUTOKA CITY COUNCIL, LAUTOKA**

**NOTICE TO CONTRACTORS NO 1**

This notice shall be read in conjunction with and shall form part of the specification for this contract. Where conflict exists between the requirements stated in this notice and in the specification, the requirements herein shall take precedence.

1. **SITE**

- a. The site is at Botanical Garden, Lautoka. Refer to drawings.
- b. Water supply is available on the road. Allow for connection and pay for usage. Provide protection to meters. .
- c. Electricity is available in the area. Allow for connection.
- d. All Tenderers shall inspect and examine the site; it's surrounding, and shall satisfy himself before submitting his tender. This is being leveled to the required platforms by Lautoka City Council

2. **COMPLETION TIME**

Time of completion for building and site works shall be **10 months** from the date of acceptance of the tender. The Contractor shall complete the work within the time. Works to be in phases as shown in the work schedule.

3. **CONTINGENCY SUM**

Allow the contingency sum of **ONE HUNDRED THOUSAND DOLLARS (\$100,000.00)** to be used only as the Architect may direct in writing. The whole or any unexpended portion shall be deducted from the contract sum at completion.

4. **PROJECT ARCHITECT AND ARCHITECT'S ASSISTANTS AND OTHER CONSULTANTS**

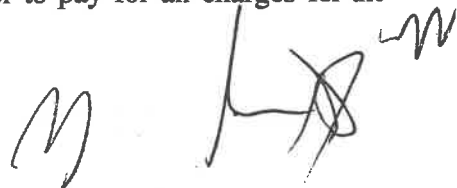
- a. The Project Architect for this contract will be Mr. Ashok Balgovind and Assisted by Rohitash Balgovind. The Architect may send his Representatives on the site for inspection / supervision who shall be given reasonable access and assistance by the Contractor.
- b. The Engineer for the project shall be Vijay Krishnan of Engineered Designs.
- c. The Quantity Surveyor shall be Quantech Pacific
- d. Hydraulic Consultant shall be Garry Wenck of Leisure Engineering Pty Ltd

5. **PROPERTY PROTECTION**

The contractor's attention is drawn to the relevant clause of the specification. Ensure that damage is not done to existing structure and services especially water, electricity.

6. **WATER SUPPLY**

The contractor is to make his own arrangement for the supply of water connection for the purpose of carrying out construction work during contract period from existing water supply on site. Water mains of dia 100 is to be procured from the mains. Piping for fire hose reel to be dia. 25 galv. pipe as per FNA requirements and pipes to be installed by main Contractor to fit hose supplied and fixed by equipment supplier. Contractor to pay for all charges for the mains supply and connection (except meter deposits)





7. **DAMAGES FOR LATE COMPLETION AND FOLLOWS**

A sum of \$500.00 (FIVE HUNDRED DOLLARS) per working day in the event of works / completion exceeds the completion time or any extended completion date. Refer to clause 2. (6 days a week)

8. **CONDITIONS OF CONTRACT**

"The Fiji Standard Form of Building Contract - without quantities, private" shall apply over this contract except for:

- a. All items that are specially detailed and required under all the "Notices to Contractors" and "Tender Forms" and "Specification" for the above contract shall be preferred and shall override.
- b. The payment shall be monthly per measure of work by the Architect.
- c. The "fluctuations" Clause shall not apply here as the contract is "lump sum".
- d. A "Quantity Surveyor" shall be called in as seen necessary by the Architect and if agreed upon and shall be paid by the owner.
- e. The following clauses of the Fiji Standard Form of Building Contract are to be deleted and shall not be applicable. Clause 27, 28, 30, 31 where it refers to discounts.

9. **EXCAVATED MATERIALS**

While doing excavation if the Contractor finds any residuous material like trees, timber etc in the ground then these shall be removed and back filled with approved fill to required level. Any excavated materials when digging pools shall be carted to Nadovi Park by contractor.

10. **CONTRACT SUM**

The main contract shall be "lump sum" and no fluctuation shall be allowed in the rates. Only regulatory changes shall be allowed.

11. **PAYMENT**

Shall be monthly per measure of work by the Architect and certified by the Architect. It is to be noted that once contractor has mobilized and started work on site he is eligible to claim 10% of Project Cost as 1<sup>st</sup> Payment which is to be deducted in your four consequent payments.

12. **RETENTION**

- a. A sum of 5% to be retained from each progress payment up to the stage where the job is given "Provisional completion".
- b. At this stage, the retention shall be kept at 2.5% as "Maintenance Retention" for the maintenance period or until such time as the Architect gives the Final Certificate.

13. **MAINTENANCE PERIOD**

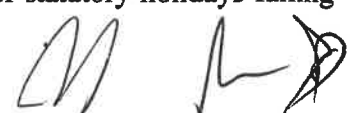
Maintenance period shall be 6 months from the date of Architect's "Provisional completion" Certificate.

14. **INSURANCE & WORKMEN'S COMPENSATION**

The contractor shall take out all the necessary Insurance and to allow for these in his tender. Insurance for damage by hurricane is a must.

15. **EXTENTION OF TIME**

Extension of time may only be granted in accordance to Conditions of Contract and notice to Contractors' hereby. No extension of time due to existing local or statutory holidays falling within the Contract period shall be entertained.





16. **TENDER DEPOSIT**

Tender deposit shall be forfeited if the contractor, who is awarded the contract, fails to realize the contract.

17. **ELECTRICAL WORKS**

Electrical Tender will be called separately and he will be taken on as nominated sub-contractor. The sub-contractor shall carry out the electrical works as detailed. He shall allow for underground inlet of required size. The main contractor is still held responsible for the works of his Sub-Contractor (s). The work done shall conform to the FEA wiring rules. All electrical gadgets used shall be of standard quality and approved by the Architect. Electrical contractor to allow for placing of sleeves in beams where needed prior to pouring.

18. **BOND**

Bond is 10% of Contract sum.

19. **PHASING OF WORK** (where applicable)

Contractor is to phase out work in consultation with owner and Architect as shown in Tender documents

20. **AMBIGUITY**

Any ambiguity should be resolved prior to tendering to ensure these are adjusted in the contract sum.

Ambiguity or clarification resolved after the Contract signing shall be as decided upon by the Architect and no variation shall be paid for any work that is deemed to be necessary to complete the work in the contract.

21. **ALCOHOL OR OTHER DRINKS**

No Alcohol or grog and drinking of alcohol will be allowed to be consumed on the site on the job site during the working hours or any extended working hours. .

22. **PRICES**

The prices are valid for 3 months plus the contract period and the extended contract period.

23. **SITE CARE**

The contractor is responsible of taking care of the site from the date of starting of contract to the end of his contract.

24. **WORK PRESCRIPTION**

The following are to be noted:

24.1 **SETTING OUT BY SURVEYOR**

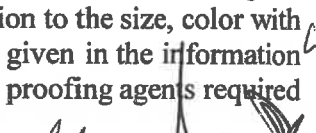
The contractor is required to have the buildings and the swimming pools setting and dimensions checked, certified by a registered Surveyor in relation to the boundary. He shall also provide the levels for setting out from the DATUM provided on survey plans. The contractor may procure the services of Surveyors who have pegged out the site.

24.2 **CONCRETE FOOTPATH**

The contractor is to keep clear the footpath and driveway for neighboring property at all times. They are to fence off the whole site to ensure safety requirements.

24.3 **TILE**

Tiles are to be laid as of the size, quality, color pattern mentioned in the contract drawings or to detail supplied by the Architect, Contractor to pay particular attention to the size, color with of tile for pools to ensure they are as required by the pool design as given in the information sheets. Particular attention is to be given to necessary additives water proofing agents required to need for pool apron tiling





24.4 **JOINERY AND PARTITIONING**

**General**

The whole of this work shall be done in accordance with the best trade practice. The nature of works demands a high level of proficiency.

24.5 **TIMBER**

All framing timbers shall be structurally sound and free from knots or other defects where exposed. All timbers used shall be dried of required strength.

24.6 **NAIL AND SCREWS**

All nails in exposed work shall be punched past flush and the holes filled with putty and painted nails.

24.7 **JOINERY FINISHING**

All joinery and finishing shall be made, framed and finished in strict accordance with the drawings and general specification:

- surfaces must be sanded and approved by the architect before painting is commenced.
- if any joinery showing warping, splitting or shrinkage before the end of the maintenance period, such joinery shall be taken down, refitted and redecorate or new joinery put in place. All work disturbed shall be made good.

25. **NOMINATED SUBCONTRACTORS**

Shall be nominated by the Architect and are declared to be employed by the Contractor. The contractor shall provide them with their necessary requirements in order to smooth completion of the project.

The main contractor shall be responsible for works, which are not completed by the sub-contractor, and in case the delay exceeds the completion time then the relevant clauses of the contract shall apply to both (subcontractor and contractor).

The contractor or his sub contractors shall read and understand the details and drawings before commencing or any work, and in case of any faults or misplaced details, the architect shall confirm these in writing before further work is carried out. The main contractor shall execute the contract approved by the Architect, with their sub-contractors.

26. **ADDITIONAL COPIES**

Three copies will be provided to contractor. Additional copies of the documents may be procured after payment of the charges at to be prescribed by the Architect.

27. **LATE TENDER**

Any tender arriving after closing date and time shall not be accepted.

28. **LIENS**

The contractor must note that the suppliers and sub-contractors are to be appropriately paid.

If a supplier or a sub-contractor presents to the Architect a 'liens' claim on the project and he (Architect) is convinced or satisfied of the supplier, subcontractors claim, to ensure smooth flow and completion of the project, this payment may be made direct and deductions made from the payment to contractor.

29. **CASH DISCOUNT**

Delete all aspects of cash discounts.

29.1 Clause 27 Delete all 2.5% cash discount to nominated sub-contractors.

29.2 Clause 28 Delete all 5% cash discount to nominated suppliers.

29.3 Clause 30 Delete all cash discounts to nominated Sub-Contractors and Nominated suppliers.



30. **TREE PRESERVATION (where Applicable)**  
Contractor to protect and preserve existing trees shown and remove only those that come directly in the way of construction. Where it say "trim" this is to be done as directed to ensure the tree remains at no more than 3m in height or "diameter".
31. **HEALTH & SAFETY ACT**  
The contractor is to ensure complete compliance with Health & Safety Act and shall take full responsibility of non-compliance. The contractor shall also ensure that all workers on site are safely equipped with suitable footwear & hard-hat. A competent foreman to be on site at all times. He shall exonerate the owner and the Architect from any responsibility for any misdoings on site.
32. **HURRICANE INSURANCE CERTIFICATE**  
The contractor to carry out all works required for Hurricane Certificate by Engineers. He is to procure the certificate from the Engineers
33. **SIGNAGE**  
Contractor to provide 4.8m x 1.2m signboard to detail provided by Architect. It shall be on screen paste with clear graphics.
34. **SITE OFFICE**  
The Contractor to provide a 5m x 3.6m x 3m site office with toilet and HB and sink and Air condition and appropriate windows with view to site.
35. **PENETRATION FOR PIPING, VALVES ETC.**  
The main contractor to allow for forming of penetration, placing of pipes and valves etc. in the structure by hydraulics suppliers etc. He is to ensure water sealing of the fitting.
36. **FULL OR PART TENDER**  
You may tender for full or part of the tender. You have to specify which part you are tendering by filling all details for that part in the schedule in Annexure A.

**Note:** PC Sum to be included in your tender.

M  
H. 



**ANNEXURE A**  
**SUMMARY LIST**

	Item Amount	Total for Part	Grand Total
<b>PART ONE</b>			
ITEM A - BUILDING A			
ITEM B - BUILDING B			
ITEM C - BUILDING C			
ITEM D - BUILDING D			
ITEM E - BUILDING E			
ITEM F - BUILDING F			
ITEM G - BUILDING G			
ITEM H - TICKET BOTH			
ITEM I - PUMP ROOM			
ITEM J - PUMP ROOM 2			
ITEM K - WATER LEVEL ROOM 1			
ITEM L - WATER LEVEL ROOM 2			
ITEM M - WATER LEVEL ROOM 3			
ITEM N - BIG SCREEN & TIME CLOCK STRUCTURE (NO SCREEN)			
ITEM O - CAR PARK (INCLUDING CHANNEL DRAINS)			
ITEM P - DRIVEWAY			
ITEM Q - CONTROL ROOM			
ITEM R - DRAINAGE (STORMWATER) INCLUDING SUMP & GRATING			
ITEM S - SEWER MAINS INCLUDING INSPECTION CHAMBER (COMPLEX)			
ITEM T - WATER MAINS			
ITEM U - SITE WORKS			
ITEM V - FENCING			
ITEM W - APRON FORMING & TILING (WHERE SHOWN)			
<b>TOTAL PART ONE</b>			
<b>PART TWO</b>			
ITEM MP- MAIN POOL - OLYMPIC POOL (POOL 1)			
ITEM TP: TRAINING POOL (POOL NO. 2)			
ITEM CP: CHILDRENS POOL			
<b>TOTAL PART TWO</b>			
<b>PART THREE</b>			
ITEM HD- HYDRAULIC INCLUDING P & G			
<b>TOTAL PART THREE</b>			
<b>PART FOUR</b>			
ITEM TW- LIGHT TOWERS - FOUNDATION ONLY (TOWERS IN PC)			
<b>TOTAL PART FOUR</b>			

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11



5.11 **CONCEALED PIPEWORK**

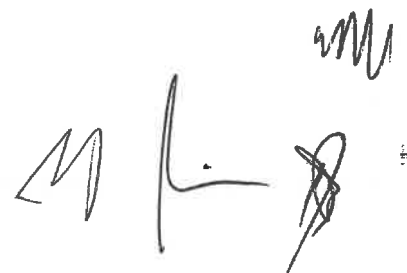
It is most important that the provisions of pipework, wastes and vents which are required to be concealed in the Concrete Blockwork. No allowance will be made for any pipes not treated as specified and the usual required to be concealed at the Contractors expense.

5.12 **DEFECTS**

Before decorative finishes are applied to a face blockwork all surfaces shall be properly cleaned down; the work will then be inspected and the Architect will direct what attention is required if any defects exist. Generally minor defects may be carefully patched but faulty block or badly damaged blocks will be condemned and must be cut out and replaced. Where blockwork is to receive paint or other decorative treatment, minor defects may be patched provided that such patching will be completely concealed by the paint, etc. allow to make good where pipes, etc., penetrate the blockwalls.

5.13 **CLEANING DOWN**

On completion clean down walls remove all mortar projections and irregularities. Make good damaged corners, arises, on surface or fairface blockwork. Patch and make good around pipes, etc., penetrating blockwork. Leave walls to be plastered suitable for the application of plaster.

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6. **ROOFING**  
6.1 **GENERAL**

Refer to Preliminary & General section of this specification all clauses of which affect this section of the works.

6.2 **SCOPE**

This scope includes the supply and fixing of proprietary overlap jointed profiled sheet metal roofing and trim of like materials needed to make the building watertight, and includes all flashing work associated with the roof and all rainwater heads and downpipes.

Supply and installation of roofing underlay and building paper.

Supply and installation of all materials necessary to clad the roof complete with all ridges, barge, gutters, penetrations, flashings and accessories.

Supply and fix gutter etc. as detailed and specified.

Supply and fix 'Sunturf' roof as detailed to manufacturer's specification. (where applicable)

6.3 **STANDARDS**

All roofing shall be applied strictly in accordance with the manufactures' instruction if need be by specialist firms approved by the Architect. Any discrepancy between the manufacturer's instructions and the specification shall be referred to the Architect for decision.

6.4 **METAL ROOF MATERIALS**

Unless otherwise shown, the roofing etc. shall be:

i. **Roofing/Sheathing (as shown)**

Kliplok / Trimdeck Zincalume (ZAG) 0.48mm BMT colorbond or as detailed. Roofing Cladding – single lengths where possible

ii. **Flashings**

Unless specified otherwise, .55 Zincalume sheet steel with 1.5 oz Zinc coating or similar approved to match main roof colour.

iii. **Finishings**

Fix to purlins with Buildex type 17 self drillings screws or similar as per details and manufacturer's specification and same colour head and capping.

All screws to be fixed with cyclone washers and neoprene sealing washers and fix in accordance with the manufacturers specifications to withstand a design wind velocity of 57 meters per second/ or as required by the Engineer drawings. Joints shall be made with mechanical fasteners and sealant.

iv. **Sealants**

As recommended by manufacturer.

v. **Roofing Underlay**

Unifoil sisalation –(2 way Aluminum Foil) complying with the Fire Spread regulation.

vi. **Pipe outlet flashing: matching colorbond.**

Aquaseal pipe flashing installed to all pipes and vents to manufacturers instructions.

vii. **Gutter**

0.6TCT Zincalume sheet steel with 1.5oz Coating – to match rain roof colour.





All materials shall be the best of their respective kinds free from defects and suitable for the job they have to perform. Allow to store materials in such manner as to prevent damage. Leave the roof surface completely water tight at completion of the work. Supplier of material shall be Lysaght or other approved by Architect.

6.5 **CO-OPERATION**

Allow to co-operate with the Plumber in the installation of the flashings, location of pipes, downpipes, over flows, spoutings, vents, etc.

6.6 **WORKMANSHIP**

Workmanship shall be of the highest standard and in accordance with manufacturer's recommendation to the satisfaction of the manufacturer and the Architect.

6.7 **CONDITION & PROTECTION**

Sheathing materials are not to be deformed or damaged, zinc coating to be clean without sign of corrosive action of any description. Ensure to use 'magnetic' attachments or other means to drill to prevent 'hot' drilling scrap falling onto roofing.

Defective materials even if fixed shall be removed from the site forthwith and replaced to Architects satisfaction at no extra cost.

Take measures to accessories shall be installed so as to resist wind loadings generated by wind expected at this particular site. Note that the area is within a highly exposed wind zone.

Confirm fixing details prior to commencing on site.

Ensure that all preparatory support work, flashings, underlay etc. have been completed satisfactorily.

6.8 **SETTING OUT**

Set out the planned layout before fixing commences to ensure true line, proper relationship to modules, grids and roof features.

6.9 **DAMAGE**

Do not use products, profiles, components that are damaged.

6.10 **MARKING OUT**

Do not use scribes.

6.11 **FORMING**

Roll form or machine bend or press all profiles off site. Only small scale local forming is allowed on site.

6.12 **UNDERLAY**

All foil and building paper to be laid at right angles to roofing material.

6.13 **CLEANDOWN**

Remove all strains, nails, debris and scrapes of any kind from the surfaces covered by the work of this section, regularly and at the completion of the work.

Remove all fillings/drilling swarf each day to prevent rust action – upon completion thoroughly clean the total roof surface prior to inspections. Prevent hot drilling swarf falling onto the roof while hot. Use cardboard or other protective spread during drilling.

6.14 **FIXERS**

Use only fixers approved by the manufacturer.





6.15 **FIXING SHEETS**

Fix sheets to structure in accordance with manufacture's recommendations using approved leadhead or springhead nails. Allow for four rows of screw/sliding washer fixings to all lower ends of sheets. Washer to be color matched to roof color.

6.16 **FLASHINGS**

Provide slip/movement joints equally spaced where indicated on the drawings and otherwise recommended by the material manufacturer. Generally flashing to be fixed with the roofing materials using the same types of fixings. Use of rivets should be minimized.

6.17 **SOLDERING WILL NOT BE PERMITTED**

Make provision for expansion joints at 900mm centres.

Flashings set into concrete or blockwork shall be painted one coat bituminous paint. Elsewhere prime flashings all round before fixing with one full coat of approved galvanized iron zinc rich primer to manufacturers specifications.

Provide flashing etc. to parapets, down side of walls at junction with roofs, etc., and wherever required to leave building fully waterlight whether specifically mentioned or not.

6.18 **PRIMING** (Where Applicable)

Clean down and prime with approved quality primer where required.

Fix flashing so that they move with the cladding. Paint nail/screw heads of all wall sheathing/flashing fixings to colour match roof. Painting to be in accordance with roof/paint manufacture's recommendations.

6.19 **COMPLETION**

At completion leave all roofs free of debris, clean all gutters downpipes, ensure all flashings are securely fixed and leave the works all waterproof and in perfect condition.

6.20 **GUARANTEE**

Guarantee the work in this section against faulty material or workmanship which may result in the lack of water lightness of the roof system. This is deemed to be accepted by the Contractor when signing the contract.

The guarantee to be for a minimum period of 10years from the completion of the work and to cover materials and labour for making good. Make out in the name of the Owner and supply to the Architect. No payments shall be due until this has been done.

**GUARANTEE THE ZINCALUME** or similar finish for a minimum period of 10years.

6.21 **'SUNTURF'** (where applicable and shown in drawings)

Provide and fix 'Sunturf' translucent roofing on entry portico and canopies as detailed. Fix to manufacturer's specification and details with the necessary accessories. 'Suntrurf' roofing to be similar profile.

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7. **CARPENTER & JOINERY**  
7.1 **GENERAL**

Refer to 'Preliminary and General' Clause which apply to all trades.

The whole of the carpentry and joinery work shall be properly framed together in accordance with best trades practice and be securely nailed, bolted, screwed or strapped. Select timber with care and carefully straighten and level all ceilings, walls, etc. before fixing linings.

**TIMBER GRADING**

All timber to comply with 'Natural grading rules' unless otherwise specified.

7.2 **MATERIALS**  
**TIMBER**

All timber shall be of best quality of the various kinds specified, free from defects making it unsuitable for its particular purpose and shall comply with Department of Forestry Grading Rules for Framing No.1, for Joinery No.1 Dressing grade.

All framing timber must be structurally sound, and joinery free from knots and other defects, and be thoroughly seasoned and shall be gauged to depth and /or width. All joinery timber shall be selected in straight long clear lengths free from knots or other defects and be thoroughly seasoned.

All timber shall be air or kiln dried 18% approx. maximum Equilibrium Moisture Content.

Timber for air conditioned areas shall be kiln dried to maximum 12% EMC.

All timber shall be treated against decay and insect attack, in accordance with 'Guide to the use of Preservative Treated timbers' issued by the department of Forestry, 1971 and Fiji Timber and their use Regulations

Treatment shall be by the pressure method using Tanalith process. Timber shall be F7 grade.

All timbers shall be treated and stated above except where a specified provision is made in the "Guide" for the non-treatment of hardwood. If hardwood is required to be treated, it will be treated with Immutan F or Celiure PA to 1.6kg/m<sup>3</sup>. The contractor must familiarize himself with the hazard 1-4 rating of forestry and comply with the requirements as detailed above. Timber specifies shall be: (TR=treated) unless specified in drawings the following timbers shall be used exposed timbers shall be one species only)

General Roof Frame	Tr Kauvula Damanu Local Hardwood
Weatherboard External	Dakua Salusalu Tr Kauvula, Tr Dakua Makdre
Floor Framing Bearers, Joists General wall Framing	Rosarosa, Yasiyasi Sacau, Tr Kauvula Tr Kavula, Tr Kaudamu
Flooring exterior	Sacau, Vesi, Yasiyasi Damanu, Sacau, Rosarosa
Balustrades-Exterior And Interior	Dakua Makdre Dakua, Salusalu Tr Kaudamu, Tr Kauvula





Frames	Dakua, Makdre Dakua, Salusalu, Tr Kaudamu
Exterior, Joinery, Sashes and Doors	Dakua, Makdre, Mahogany Dakua, Salusalu Rosarosa, Sacau, Vesi, Yasiyasi
Stairs – Exterior And Interior	Rosa, Sacau Yasiyasi, Vesi, Mahogany
Joinery Frame	Dakua, Mahogany
Interior Door, Frames	Dakua, Mahogany, Salusalu

Pine may used subject to Architects approval and subject to "Provisional National Grading Rules for Pine" and depending on which use.

Substitution of alternate species shall be done only after obtaining the written approval of the Architect and no extra cost will be allowed for substitution.

The moisture content of the timber shall be strictly adhered to. The Architect reserves the right to submit any to a recognized testing authority for testing and report.

The contractor shall replace at his own expense any timber which has been damaged or shrunk on finished work caused through the use of imperfectly seasoned timbers.

#### **TIMBER SIZE TOLERANCE**

Size tolerance shall conform to the "Specification for Metric Dimension for timbers in Fiji", as detailed by the Timber industry.

#### **NAILS, SCREWS, BOLTS, JOINTING, ETC**

All nails shall be galvanized and in exposed work punched 3mm past finish.

All screws, brads, panel pins shall be brass or stainless steel except where specifically required to match hardware.

Bolts, nut, washers etc., shall be galvanized to standard pattern good quality of sizes shown and specified. Where bolts or screws for fixing concrete is poured, they shall be of approved pattern and diameter conforming with the requirements for the particular load carried. Bolts shall be of such length or give good embedment in concrete with ends ragged. Bolts must project one thread through nuts after tightening. Exposed bolts shall be cut back to leave this projection, with bare metal coated with one good coat 'Cold-Galvanized' paint.

'Ramset' fixing may be used for non-hurricane resisting fixings. Where shown as ramset bolts may be cast into concrete as above.

#### **PLYWOOD/COREBOARD/GIBRALTAR BOARD**

Plywood shall be of the thickness specified and shall conform with A.S.087 for exterior use and A.S. 088 for interior use. Exterior grade plywood shall be used for exterior surface, fascias, roof decking, etc. bench tops and elsewhere in contact with damp conditions. Seal all edges with red lead before fixing. Where possible Fiji manufactured plywood should be used of A Grade quality.

Coreboard shall be 19mm thick with laminated pine solid core bonded and sheathed with it. Dakua pycross grained veneer on both faces, sanded to give smooth finish. All exposed edges shall have 6mm. Dakua edge glued and pinned on.



### **SEALANT**

All sealants must be approved quality silicone rubber or as recommended non-setting compound adhesive where appropriate for each job as recommended by the manufacturer of each sealant as approved by the Architect as suitable for in all exposed situations for the joining and sealing of different materials all to provide a waterproof joint and applied strictly to manufacturer's instructions. No sealant to be used until Architect approves type and location. Contractor in each case to table support a manufacturer's recommendation/specification. All materials are to be used as per manufacturer's specification and finished accordingly.

### **MIRROR**

Unless otherwise detailed, mirror shall be 6mm thick glass double silvered and mounted, on 6mm waterproof plywood.

#### **7.14 HARDWARE**

Allow for fixing of all door hinges, cabin hooks, heavy duty catches, door pulls, locks etc. for all doors. All locks and closers to be lockwood or equivalent brand as approved by Architect.

#### **7.15 SELECTION**

See hardware schedule in drawings/specifications.

(For all hardware, alternative can be submitted but can only be used if approved by the Architect)

Allow for the supply and fittings of all hardware as shown detailed and required.

All hardware to comply with the requirements for access for the disable. Refer NZS 4121:1985 and NZ Building Code.

All locks to exterior doors to be 'lockwood'. Weiser or lane or any equivalent type approved.

#### **7.16 MASTER KEYING**

If specified, allow for a master key system serving all doors. Architect will provide Hierarchy for system prior to work being carried out.

#### **7.17 ITEMS EXCLUDED**

Supply if hinges to be included by joiner under supply of joinery. Type and number to be that accepted as good trade practice.

i.e.	Cupboards	-	1pair
	Interior doors	-	1 ½ pair
	Exterior doors	-	1 ½ pair stainless steel

Windows latches to be supplied with aluminum window joinery and supplier to allow. Latches must be easily operational.

#### **7.18 SIGNAGE**

Allow for the supply and installation of all door and direction signs. All fire exit doors to be fixed with appropriate sign as approved by Council and NFA.

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8 **STRUCTURAL STEELWORKER**

8.1 **GENERAL**

Refer to the 'Preliminary and General' Clause which will also apply to all trade. Also refer to Structural Notes and specification by Engineer for specific structural requirements which shall take precedence over this section

8.2 **MATERIALS**

Structural steel shall comply with standards given by the engineer. General miscellaneous metalwork shall be of appropriate thickness and/ or gauge suitable to its use. Provide for all structural beams, columns, brackets, clean, etc., as shown on structural drawings.

8.3 **FABRICATION & ERECTION**

Workmanship and finish shall conform to the best modern practice. Materials shall have clean surface and be free from rust, mill scale or other foreign matter before being worked in shop.

Fabrication shall comply in all respects with the relevant sections of as specified by Engineer. Columns shall be erected plumb and true to line and level. Holding down bolts shall be checked for accuracy before the steel is fabricated.

Base plates shall be leveled. Accuracy of fit of the frames shall be the responsibility of the Contractor. At all stages of the erection work the steel work shall be adequately held and braced so that the structure is stable, safe and not over stressed in anyway from erection loads or winds loads.

8.4 **WELDING**

All welding shall be by means of metal electrodes in accordance with Engineers Specification. Welding shall be done under the immediate and continuous supervision of a qualified welding supervisor.

During the welding process the work shall be securely held by bolting, clamping or tack welds such as to avoid any distortion of the work. All slabs shall be removed from welds before a run of welds in superimposed. Remove all slags at the completion of all welding work.

8.5 **WELDING ON SITE**

All welding on site shall be adequately protected from wind and rain. If, in opinion of the Architect it is too windy or too wet for welding on site all weld operation shall cease until such time as the weather improves to the satisfaction of the Architect.

8.6 **INSPECTION**

The Architect shall have access at all reasonable times to all places where the work is being carried out and shall be provided by the Contractor with all necessary facilities for inspection during fabrication. Notify the Architect/Engineer when and where the work will be done before any work is commenced.

8.7 **BOLTS**

All bolts shall conform to the requirements of as specified by Engineer. Washers shall be used under all nuts. Where necessary tapered washers shall be used to obtain an even bearing. The threaded portion of each bolt shall project through the nut at least one thread.

8.8 **GALVANISING & PROTECTION**

All steel bolts, straps, fixing, that are exposed shall be galvanized unless shown by Engineer.





8.9 **PAINTING**

Do not paint steel work which is to be encased in concrete. All steelwork shall be power wire brushed and flame descaled after fabrication.

Remove all rust, mill scale, etc. by wire brushing, scraping and rubbing with sand paper. Wash with mineral turpentine and wipe dry with cloth. Dust down, clean off free of grease, oil, dirt, etc. and give one full coat all round of Rustguard No. 1 prior to leaving workshop. After erection clean down and touch up damaged areas including site welds and apply one coat of approved undercoat. Allow 24 hours to dry. Apply two coats of approved Gloss or Semi-Gloss enamel. The paint shall be handled and applied in accordance with the manufacturers instructions.

**FIXING GENERALLY**

Provide all necessary strappings, brackets, cleats, straps etc. as shown and required.

8.10 **DRYPACK MORTAR**

Drypack mortar shall be used beneath base plates, unless specified otherwise. The mortar shall consist of dry volume mixture 1 part cement to sand with sufficient water added to form a ball without excluding or failing apart when the hand is opened. Mortar shall be hammered under the base plate with a wooded tool and properly compacted, kept protected from direct sunlight and water cured for three (3) days.

8.11 **GALVANIZED**

Unless stated otherwise where galvanized pipe is used, it shall be Grade B.

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9. **METAL WORKS**

9.1 **GENERAL**

Refer to Preliminary & General section of this specification, all clauses of which shall apply to this section of this works. Also refer to Engineer's specification or structural Steel work.

9.2 **SCOPE**

This section of works includes:

- (i) All fastenings, fixing cleats, angles, tees, straps, hangers and the like, required to construct the building as drawn.

9.3 **MATERIALS**

Materials shall comply in every respects to standards mentioned in Engineers Specifications.

Where difficulty exists in obtaining the gauges, weight or dimensions of materials specified, the larger dimensions shall be allowed for. Obtain approval prior to ordering material.

Steel plate shall comply with Engineers specification. Structural steels weather resistant weldable grades.

Stainless steel to the interior unless otherwise specified shall be grade 304, N25

Stainless steel to the exterior unless otherwise specified shall be grade 316 and 304 N25

All materials shall be best quality clean and free from loose scale, rust, fittings and other identification, etc.

- 9.4 All metal work shall be executed by experienced tradesman neatly and accurately made to detail.

Where exposed to view all welds shall be ground and buffed off to a smooth and even surfaced.

9.5 **GALVANIZING**

All mild steel angles, bolts, straps, rectangular hollow sections, etc., shall be galvanized where specified or shown on drawings. Hot dip galvanizing is preferred where at all possible but those components that are fabricated from ungalvanized mild steel may be electro galvanized.

Prime all welded joints in galvanized work with Zinc epoxy primer applied in accordance with the manufacturers instructions.

9.6 **FABRICATION**

Cold formed work to be free from warping, buckling and fractures from bends with break press or by cold rolling.

**Note:**

Hot forming is not permitted without prior approval.

Holes : From without distortion of surrounding metal.

Sheet Metal: Is to be accurately machine – folded or rolled to shape without fracture or distortion.

Bolted Joints: A minimum of two screw threads shall pass through nut. All bolts are to have two washers unless otherwise noted.

Riveted Joints: To be drawn tightly together, with rivets closed to completely fill holes.

Seal mechanical joints exposed to exterior: with an approved polyurethane sealant.





WC pans to PVC piping use 100mm purpose made pan collars. Provide all necessary fittings including bends, inspection elbows, trees, inspection trees, cleaning eyes, etc, in accordance with best trade practice. Provide all necessary PVC support pipes. Provide adequate inspection and cleaning points to the satisfaction of the Architect for easy clearance of blocked pipes. Provide expansion joints as required. Wastes shall discharge where shown and as directed over gully traps, or into inspection chambers connected to soil drainage system. All wastes shall be trapped using McAlpine or other PVC approved brand patent deep seal anti-syphonage traps of appropriate diameter. Use pallazzi gulley's or PVC floor traps in toilets. Floor traps shall have removal gratings and have a.c.p finish.

#### 10.14 **SIZES OF WASTES AND VENTS:**

Unless otherwise shown waste pipes and vents shall be as listed below:

Fitting	Waste Pipe	Min. Permissible Vent Size
WC	100mm dia	50mm dia
Vanity unit	32	32
Urinal	50	50
Shower	38	38
Handbasin	32	32

Where more than 2 similar fittings are connected to one waste or vent the pipe size shall be increased accordingly. Terminal vents shall be 100 mm diameter unless approved otherwise.

#### 10.15 **COLD WATER SERVICES**

Arrange with PWD/ as detailed by Engineer to supply and install meter complete with stop valve/ or as detailed, to by boxes and lids as detailed by Engineers. Allow to pay all fees, etc. Connect with 20 mm branches to stopcocks at position of future hose reel position. To all other outlets, connect with 20mm branches. Provide isolating stopcocks to facilitate maintenance. Allow for pressure testing the whole system before plastering. Unless otherwise mentioned all taps, outlet spouts, etc shall be finished in chrome plate. Plumber to obtain Architect's approval as to position of all taps, etc, before proceedings with the work.

Unless stated otherwise in special conditions of Engineers Drawings, the water mains shall be as follows:

Single residence / 1 unit	-	12mm
2-3 Units	-	20mm
4-6 Units	-	32mm
Medium Commercial	-	37mm
Large Commercial/ Industrial	-	50mm

#### 10.16 **METAL GRATINGS:**

Provide and build in where shown heavy-duty gatic metal removable gratings to storm-water and drainage sumps.

#### 10.17 **SANITARY FITTINGS**

Supply and install sanitary fittings as marked on plan including cold water supply connections as follows: Plumber to provide all fitting etc needed to complete and finish the system.

##### a.) **WC PANS AND CISTERNS:**

Unless shown otherwise, all WC system shall be Coroma Lead with Robust seat and vitreous China P or as required complete with cisterns. Flushing valves shall be Coroma PAC connected to solid pipe and water supply. Provide and fix stop valve and cistern tap. All taps, stop valves to be good quality as selected by Architect and equivalent. WC pans shall be set into bends in 1:2 cement sand mortar and into 100mm PVC pipes approved sleeves and jointing compounds. Any other brand would have to be similar and approved by the Architect at time of Construction. Ensure chains do not rust.



b.) **HAND BASINS:**

As detailed all complete with selected vanity units. All to be complete with concealed hanger brackets, c.p wastes grate and c.p chain & plug. Where hole is not needed, contractor to provide matching plug to plug off.

c.) **TOILET ROLL HOLDERS**

Supply and fix selected wall mounted toilet roll holder as approved in all WC areas.

d.) **URINALS**

Unless shown otherwise, supply and fix urinals as detailed with flushing systems.

10.18 **COMPLETION:**

On completion, all works shall be tested for efficient working of whole drainage and plumbing system to the satisfaction of the Architect and the Local Authority.

The contractor shall provide all necessary testing apparatus together with all labour and materials, which may be required for the complete testing of drains, materials that may be required for the complete testing of drains, manholes and ventilating pipes. Any failure of any part of drainage system shall be made good at the Contractors expense to the satisfaction of the Architect and the Local Authority co11.7.4.5  
ncerned.

10.19 **HOT WATER**

Hot water to be provided in kitchen, vanity basins as marked in drawings. The shower to have hot water supply.

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11 **FLOOR, WALL, CEILING FINISHES**

- 11.1 Concrete Finishes & tolerance & Plaster – General  
All concrete finishes shall be in accordance with NZS  
All slab finishes shall be in accordance with part IIINZS  
All other finishes shall be in accordance with Part I NZS

11.2 **SLAB FINISHES**

General slabs to take plaster or tiles shall be finished to U2 ie. Floated Finish  
Slabs to take vehicle traffic shall be finished to U5 ie. Broomed Finish  
Unless shown otherwise  
Note that U2, U3 and U5 are defined in table 2, NZS 3114 – 1980  
See schedule of finishes.

Floating and any subsequent finishing shall be at the correct time and intervals to obtain the quality of compaction and finish required. No troweling in of finest and dry cement will be permitted.

The Contractor shall arrange the pouring to allow adequate time for floating and finishing. All troweling ridges shall be removed while green or by subsequent light grinding. Slabs not fulfilling the standard of finish required shall be ground smoother or otherwise treated smooth to the satisfaction of the Engineer/Architect. Care shall be taken to avoid ridges where newly poured slabs meet existing edges.  
Tolerance shall conform with NZS 3114 – 1980

11.3 **FORMED SURFACES**

Classes of formed surfaces are defined in table 1, NZS 3114 – 1980  
Refer to following clause for schedule of finishes required.

In general, form fairface finish surfaces with standard sheets of plywood placed in a regular pattern and tightly butted together to avoid grout loss. The joints shall be sealed with plastic sealant trips or cover sealed with not less than two coats of polyurethane varnish on the concrete face.

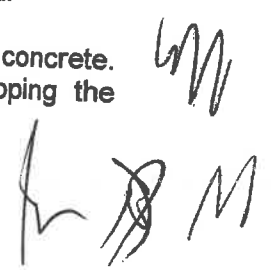
Fairface formwork shall be so constructed as to provide straight and true angles and so as to produce cast surfaces within a tolerance of plus or minus 3mm on the given dimensions and without visible offsets, bulges or misalignment of the concrete. Form clean neat arises, except where chambers are shown on the drawings, in which case the fillets shall form part of the mould side and not be loosely added.

The formwork surface in contact with the concrete shall be clean and shall be treated with a suitable form release to ensure separation from the concrete. Care shall be taken that oils is kept out of contact with the reinforcement. All rubbish, clippings, shavings and sawdust shall be removed from the formwork immediately before concrete is placed.

Formwork shall be checked for dimensional accuracy and alignment, before, during and after concreting and damaged formwork shall be replaced.

All ties and spreaders shall be of an approved type and placed so as to leave a regular and neat pattern on the surface when withdrawn and filled. Wire ties will not be permitted.

All formwork shall be removed without shock or vibration, which might damage the concrete. Concretor shall be responsible for repairing any defects immediately after stripping the formwork.





Fill honeycombing with 1:2 cement / sand mortar.

Fill honeycombing and repair defects immediately after stripping the formwork.

#### 11.4 **SCHEDULE OF SURFACE FINISHES**

Item	Class of Finish
Slabs to take plaster or tiles	U2
Other Slabs	U3
Concrete below ground	F1
Concrete to take plaster	F2
Beam & Slab, sides & soffits which are not visible in the completed building	F3
Beam Slab, sides and soffits which are visible in or outside the completed building	F4
All columns / panels	F5*

\* Note that unless specified otherwise, all column poured or similar seamed formers, shall be plastered to a smooth finish.

#### 11.5 Working Finishes on Plastic Concrete Troweled and Float Finish:

##### **GENERALLY:**

Do not wet surface of concrete to assist surface working. Protecting surfaces from rain damage.

##### **WOOD FLOATING:**

In areas nominated, produce a non-slip even textured finish by means of a wood float.

##### **SCREEDED FINISH FOR TILES:**

In areas to be covered with ceramic tiles, finish the concrete subfloor by screeding and bull floating to produce an even surface ready for bedding mortar to be placed.

##### **STEEL FLOATING:**

Use a steel hand or power trowel to float. Leave surface free from trowel or float marks.

##### **FLOAT FINISH FOR THIN FLOOR COVERINGS:**

Surface to receive thin tile or sheet finish are to be free from any defect that may adversely affect the finish appearance.

##### **NON-SLIP FINISH:**

Use a sponge rubber float after steel floating to produce a fine textured non-slip surface in areas nominated.

##### **SURFACE TOLERANCES:**

Troweled and steel floated surfaces to be finished within the following tolerances:  
Abrupt irregularities – not permitted.

**GRADUAL VARIATIONS** – 5mm measured from a 600mm straight edge. Slope of surface not to exceed 1 in 120.

#### 11.6 **SCORED FINISH**

##### **GENERALLY:**

Do not wet surface of concrete to assist surface working. Protect surface from rain damage.

##### **SCORING:**

Scratch surface by drawing a hard bristle yard broom across the surface to give a lightly roughened, even texture.





## REPAIRS AND CLEANING

After all the concrete work of the building has been completed and the majority of other trades finished (except painting and floor coverings) all finished exposed concrete surfaces throughout, including precast concrete, shall be closely inspected for faults in surface finish, damage to corners or edges, dirty marks, splashes or dribbles and visible imperfections of every kind.

All such imperfection shall be removed by the Contractor to the Architect's complete satisfaction and under his directions.

## 11.7 PLASTER

### 11.7.1 GENERAL

**Refer to "Preliminary and General" Clauses which apply to all trades.**

Only best trade practices shall be followed. Unless instructions are given for special finish all surfaces shall be trowelled to smooth, even and true surface and left free from any blemishes, stains or joint marks. Plaster shall be used within 30 minutes after adding water. No plaster which has begun to set shall be knocked up and re-used. Any portion of the work rejected or found damaged or washed off by rain shall be removed and re-done at contractors expense. Plaster droppings on the floor must not be collected and re-used for plastering. Plaster work should only commence after all chases, holes and service pipes, electric conduits, etc are in place for the particular area to be plastered.

**All plaster work shall be properly protected and cured by spraying water for at least 7 days after hardening.**

### 11.7.2 STANDARDS

**The following standards shall form part of this specification:**

NZSS	2129	1967	Class A	NZSS 1844
NZS	4251	Code of Practice for Solid Plastering		
NZS	3122	Portland Cement		
NZS	3103	Sands and mortice		

### 11.7.3 PROTECTION

**All dressed woodwork, finished surfaces, windows, glass etc, shall be effectively protected against droppings or damages caused by plaster work or mortar.**

#### 11.7.4 MATERIALS

#### 11.7.4.1 CEMENT

**All approved brand of grey cement to conform with the above standards shall be used unless otherwise specified.**

#### 11.7.4.2 SAND

Sand shall be river or pit sand, course grained sharp and free from saline, vegetable or earthy matter to pass through a 6 sieve for finishing coat and a 4.8 sieve for other coats.

### 11.7.4.3 LIME

**Lime shall be best quality hydrated lime run 24 hours before use. Other approved plasticizer may be used.**

coats.

plasticizer



#### **11.7.4.4 WORKMANSHIP**

The whole of the plastering shall be carried out by experienced and skilled tradesmen only and the whole of the work shall be guaranteed. Wherever possible plastering shall be done after carpentry work is complete to avoid vibration. All moulding drips, weathering; etc shall be run into detail with clear cut angle quirks. On completion work shall be left free from cracks blisters or marks, even in colour free from drumminess to the satisfaction of the Architect. Where necessary make good after other trades. Any plasterwork which has cracked or drummy shall be chipped back and replastered at the Contractors expense.

#### **11.7.4.5 PROPORTION OF MIXING**

All plaster shall be thoroughly mixed and each batch shall be used within 30minutes of being mixed. Re – tempering or re-mixing after the initial set shall not be allowed. Where approved the proportions specified herein may be varied to suit the grading of sand available. Approved additives for waterproofing shall be used for all plaster mix in full compliance with manufacturers instructions.

#### **PREPARATIONS**

All surfaces to be plastered shall be well chipped, cleaned down, properly wet and treated as specified for various sections of the plaster work. All block joints shall be raked out 6mm and made wet.

All surfaces after wetting shall be given slurry dash coat 1:1 sand and cement and kept wet immediately before plastering.

Any dummy or weak surface shall be neatly chipped out and re-done and carefully blended into surrounding plaster work.

#### **EXTERIOR**

All exterior concrete and concrete block, unless otherwise stated, surface shall be plastered in two coats of Portland cement and sand 1:3 mix with Plaster or other approved plasticizer used strictly according to manufacturer's instructions.

First coat shall be throwing.

Second coat shall be smooth finished.

All exterior Plaster shall be brought to a smooth regular wood float finish. Cure with fine water spray for 7 days after application and total layer shall be 10-12mm

#### **INTERIOR**

Fairface – concrete and blockwall if shown  
Plaster and painted otherwise.

#### **FLOORS** (for tile areas)

Concrete slabs shall be rough screeded for later topping, unless specified otherwise on drawings. Before applying topping well hack, brush wash off of dust. Allow to dry.

Brush on to cleaned concrete 1:1 1/2 liquid mixture of Cemstik and water and allow to dry to clear at least 1 hour.

Plaster floor single coat work nominally 12-15mm thick using 1:3 cement and sand with Cemstik added to gauging water in 1:3 ration. Finish lightly with steel trowel. Avoid over trowelling.

Floors to toilets and washrooms shall fall towards floor drains.

All plaster toppings to be laid to ensure final floor finishers are at the same level.



Finish to all Office Floors: (except tiled areas)  
Office floor to be Kelly float finished.

11.8 **SHEET LININGS – GENERAL**

Refer to the Preliminary & General Section of this Specification, all clauses of which shall apply to this section of the work.

11.8.1 **SCOPE**

Refer to the drawings and schedule of finishes for location and sheet type.

11.8.2 **RESPONSIBILITY**

Ensure that any sheet applicator engaged to perform the work or any part thereof accepts without reservations the whole background to which their work will finish.

11.8.3 **WORKMANSHIP**

The fixing of all sheet linings shall be carried out by personnel experienced and proficient in the application and finishing of the particular sheet to comply with the manufacturer's specifications and as directed.

11.8.4 **SHEET TYPES (10mm)**

1. 9.5mm (10mm) Gibraltar Board
2. 12.5mm Gibraltar Board
3. 16mm Fryline Gibraltar Board
4. 12.5 Plaster glass Fibrous Plaster Sheet

11.8.5 **SHEET MATERIALS**

Gibraltar Board

Sheet type shall be approved board consisting essentially of a gypsum core with any one or combination of admixtures of pumice, perlite, sisal or glass fibre, faced or encased with Kraft which fully bonds to the core.

11.8.6 **MATERIALS: PENETRATING FASTENINGS:**

Unless otherwise specified fastenings to timber framing etc. for all sheets shall be galvanized clout head nails as follows:

<u>LENGTH</u>	<u>GAUGE</u>	<u>SHEET THICKNESS</u>
30mm	2.5mm	9.5mm for non fire rated walls
40mm	2.5mm	9.5mm half hour FR walls. 12.5 all walls
50mm	2.5mm	14.5 mm to 19mm

Where two layers of board are specified use fixings in accordance with the manufacturers recommendations. In no case should the fixings penetrate timber framings less than 25mm.

Where two layers of board are used stagger all joints in both directions.

- 11.8.7 Adhesives shall be of any approved synthetic rubber or elastomen composition which has satisfactory ageing properties, will not support mould or bacterial growth and will not harden or embrittle with age or at extreme ambient temperatures and will not permanently bond sheet to substrate.

Adhesives shall be formulated specially for the substrate and conditions of the type of sheet bonded.

Adhesives shall be formulated for special gap filling properties and still maintaining maximum bond strength.





Adhesives shall be used and applied in situations strictly in accordance with the advice of manufacturer's technical service and printed instructions.

**11.8.8 MATERIALS: ACCESSORIES**

**GIBRALTAR BOARD:**

Provide for all external corners and exposed edges of sheet linings an accurately folded "gib angle" fixed as per manufacturer's specification.

Form from not less than 0.49mm thick galvanized mild steel sheet, fixing wings to be not less than 25mm. Use PVC angles where linings to be painted directly.

Where edges of sheet are required to be finished other than above, provide prefolded galvanized mild steel casing beads.

**11.8.9 WORKMANSHIP**

The fixing of all sheet linings shall be carried out by personnel experienced and proficient in the application and finishing of the particular sheet to comply with the manufacturer's specifications and as described.

Set outlining as scheduled to cover framing and extended behind fittings, with regular set of sheets and minimum number of joints.

Ensure that timber framing including any required dwanging for finishing is complete, before fixing linings.

Ensure that timber framing is at the specified installation moisture content before fixing linings.

Ensure that all framing is in the true alignment to provide even plane surfaces.

Ensure that all substrates and framing surfaces are in a condition suitable for the satisfactory performance of the bonding medium.

Store and handle on the site all sheet linings in accordance with manufacture's printed instructions. Without extra cost make good or replace as substandard sheets, or those showing physical damage or deterioration that will adversely affect the appearance performance and durability of the surface finish.

Allows for wiring and other service runs before doing the second face.

**11.8.10 FIXING**

Fix linings by the manufacturer's accredited service or as otherwise arranged and in either case in accordance with manufacturer's approved printed instructions.

Where fire ratings are specified refer to the manufacturer's relevant specification for the Fire Rating required. Do not commence fixing until framing and dwanging are compliant with the relevant specification.

Ensure that the timber framing is at the specified installation moisture content before fixing linings.

**11.8.11 FLUSH STOPPING AND FINISHING**

Except where otherwise specified all joints, finishing heads, junctions, corners, etc., and all other imperfections marring surfaces shall be flush stopped to approval, using a first quality fin gypsum finishing plaster. The only retarder permitted shall be Sisatop or equal approved.

M  
4m



Use Gib reinforcing tape at all vertical and horizontal joints and to all internal corners. Bed in an approved bedding compound.

The head of all penetrating fastenings shall be compressed below surfaces of all flush stopped linings sheets. Kraft surfaces shall not be punctured, where rupture has occurred provide an additional fastening.

The surface of all stopping shall be feathered out beyond joints over wide enough area to provide a straight even plane surface which will not reflect through the final finish specified in the schedule of finishes.

- 11.9 **SUSPENDED CEILING – GENERAL** (where applicable)  
Refer to the Preliminary and General section of this specification, all clauses of which shall apply to this section of the works.

- 11.9.1 **STANDARDS**  
Work to comply with relevant provisions and recommendations of the following:  
NZS 4203 Design Loading for Buildings  
NZS 1900 National Building Code of Fiji 1990

- 11.9.2 **SCOPE**  
Supply and install suspended ceiling system within the requirements of the relative drawings and this specification.

- 11.9.3 **MATERIALS / TILES**  
Ceiling tiles or panels to be of an approved non- hygroscopic stable material complying with the following:

**MANUFACTURERS:**

Type:	High density mineral fibre
Size:	1200mm 600mm
Thickness:	Nominal 15mm
Colour:	White
Light Reflect:	0.75 minimum
Humidity:	To withstand 80% relative humidity over temperature range 15 – 35 deg. Celsius.
STC Range:	35-45
NRC Range:	0.50 – 0.75
Edge Detail:	Rebated
Pattern	To be selected.

- 11.9.3 **TILES – FIRE PROTECTION**  
Select tiles to offer a half hour rating to panels.  
(I) Exist ways and smoke stop lobbies  
Spread of flame index 0  
Smoke developed index 3

- 11.9.4 **TILE INSTALLATION**  
Weather Conditions – The climate conditions to be checked at the time of installation. If humidity exceeds manufacturer's specification installation to be withheld to when internal conditions are controlled and stable. Any damage incurred to tiles due to not complying with manufacturer's requirements will result in replacement of all affected tiles at the Contractors expense.

- 1.9.5 **TILE FINISHES**  
Supply samples of patterns/ colours available for selection by the Architect.
- 



Finish and texture to be uniform as selected, provide sample tile which is to be retained by Architect. This sample to be held as the required standard for all work upon completion.

Provide technical specifications if required, to show compliance with this specifications. Allow for expansion joints per NZ35

11.9.6

**SUSPENDED CEILING GRID**

Suspended ceiling system to be "Donn" or equal approved DX exposed grid system, precoated white, satin finish.

Allow for trimming rails wherever perimeter elements or ceiling penetrations are required.

11.9.7

**CEILING DESIGN**

Ceiling to be approved system conforming to the requirements of NZS 4203.

The ceiling system shall be designed to accommodate horizontal seismic deflection in transverse and longitudinal direction to the values listed in clause 12.18.11 for frame on a Grid 1 & 8 and frames on Grid A & C respectively.

Provide a design certificate to show structural adequacy of the ceiling system

Under no circumstances are any services to be touched, altered or used to hang any ceiling system component.

Suspended ceiling shall be designed to allow for horizontal in plane movement of + - 10mm. Test support system after erection and fit tiles or panels to manufacturer's printed instructions.

11.9.8

**ERECT CEILINGS BY MANUFACTURER'S ACCREDITED SERVICE.**

All materials to be stored on site with packaging and labeling indicating manufacturer, type, color and batch number still intact. Protect from weather and damage.

Damage tiles are not to be used.

Check substrate and perimeter trim for imperfections before commencing work.

Services, concealed pipes, wiring and duct work not to project beyond grid face and are not to hinder and removal of tiles.

Make provision for all recessed light fittings, ducts, grille etc and special fittings as required.

Leave openings for flush fittings where indicated to accommodate recessed fittings as described.

Set out grid as shown on ceiling plans all parallel to grid and true to line.

Total induced and inherent deviation shall be within the limits which provide adequate joints clearance but retains an acceptable visual appearance.

Where dimensions vary to the extent that it affects the relationship of the ceiling grid to the perimeter and structural elements, the Architect's instruction should be sought and followed.

Generally grids to be set out symmetrically with equal cut or special tiles at margins. Where possible set out should be maximize the size of cut tiles.

Note that percussion fixings are not permitted.

Pre- stressed floor planks not to be drilled for fastenings, without Engineers prior approval.

Ceiling fire partition where required to be full depth of ceiling void in accordance with Codes.





Allow to wad all penetrations.

Test support system after erection.

Do not install tiles/panels until site conditions meet the requirements of the tile/panel manufacturer.

Fit tiles/panels in accordance with the Manufacturer's printed instructions.

11.9.9

#### **PROTECTION**

Contractor to protect suspended ceiling components as required to maintain in sound condition, free from marks and site contamination.

Any damages, or other visually unacceptable aspects, to be made good at Contractor's own expense to Architect's satisfaction.

11.11

#### **CARPET (where applicable and shown in plans)**

11.11.1

##### **GENERAL**

Refer to the Preliminary and general section of this specification all clause of which shall apply to this section.

11.11.2

##### **SCOPE**

This section of the work involves the supply and laying of new carpet with all necessary accessories, and any floor preparation necessary to the area exposed. The carpet shall be supplied and laid under PC sum. The main Contractor to note his responsibility defined in relevant sections.

11.11.3

##### **MATERIALS**

Carpets shall comply with the following specifications:

Construction:	to be advised
Pile Content:	to be advised
Pile Height:	to be advised
Pile Weight:	to be advised
Gauge:	to be advised
Width:	3.66m
Grading:	Heavy Commercial
Colour:	To be selected

Wool yarn for all 100% wool carpets and for wool blends shall be woolen spun yarn.  
Method of laying: Loose laid over underlay, smooth dege fastened after stretching.

11.11.4

##### **UNDERLAY**

Underlay to be Commercial rubber waffle underlay.

Method of Laying: Loose laid over floor, scribed to be perimeter, spot glue to secure.

11.11.5

##### **FLOOR LEVELING COMPOUNDS**

Floor leveling compound shall be proprietary product used strictly in accordance with the manufacturer's recommendations.

Use where required to maintain integrity of floor slab to allow carpet to be laid in true, visually acceptable manner.

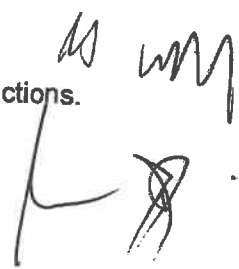
1.11.6

##### **ADHESIVES, PRIMERS**

Select types as recommended by the carpet/underlay manufacturer's printed instructions.

1.11.7

##### **ACCESSORIES**





Provide thresholds to exposed edges of carpet and at junctions with other floor finishes available for selection by Architect.

11.11.8 **PREPARATION**

Contractor to ensure that the wall / floor surface is finished suitably to accept the carpet.

11.11.9 **LAYING**

Obtain a current specification of the laying practice from the material manufacturer and ensure all requirements are carried out unless modified by this specification.

Refer to the recommendations of the NZ Wool Board for stuck – down carpet installation, and follow all directions contained therein, along with all manufacturer's instructions.

Inspect the floor slab condition before commencing laying work and report aspects of the floor slab which may affect the laying and long term performance of the carpet to the Architects for action.

Prior to precutting the carpet obtain approval from the Architect for the location of all longitudinal and any cross joints required. Cross joints shall not normally be permitted.

Carpet to any one floor shall be from the same batch, and shall be laid with the "grain" running in a constant direction.

Once laying has commenced, the carpet subcontractor assumes full responsibility for the integrity and performance of the carpet installation.

11.11.10 **COMPLETION**

Remove all excess material from site, and thoroughly clean. Clean of all excess adhesive from carpet/ carpet skirting.

Ensure Main Contractor is aware of method of cleaning any paint etc. from carpet.

Spare materials to be delivered back to the Owner by way of the Contractor.

11.11.11 **GUARANTEE**

Provide a 5 year guarantee on a material and workmanship

11.11.12 **FLOOR PREPARATION**

The main Contractor is to ensure the floor has been finished and cleaned and ready for the laying of carpet. He is to provide necessary drainage, power and other service to facilitate the completion of floor. He shall be responsible to have the floor completely appropriately cleaned before handover of building.

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12  
12.1

**ELECTRICAL  
GENERAL:**

Refer to "Preliminary and General" Clauses which apply to all trades.

12.2

**EXTENT OF WORK**

For the supply and installation of all electrical services to and within the project, all mains, switches, switchboards and installation of all lighting, power and ancillary circuits as shown on the drawings and in this specification supplied by the Engineers.

The contract works includes furnishing all labour, equipment and materials in connection with the installation of the electrical services as shown and specified.

Briefly they consist of the following items and more fully described elsewhere.

1. Excavation of all trenches
2. Installation of new mains supply to the building
3. Supply and installation of underground main cables. Lay multicore underground cable and connect to the main switchboard. Cable size should be rated for at least 150 amps. Unless otherwise shown in plan.
4. Supply and installation of the main switchboard and distribution boards and of selected lighting and other fittings.
5. The complete wiring installation of the building.
6. Supply and installation of the light fitting, GPOs and all other fittings shown on the plans extractor fans, zip and other water heater units and connect solar heater.

All work shall be carried out by Licenced Electricians in accordance with FEA Regulations and SAA wiring rules. The power supply shall be taken from FEA mains supply situated in the road.

All excavation work for the underground cables is to be carried out by the Electricians. Ensure that depth of trenches are in accordance with FEA regulations with FEA regulations and backfill in 150 layers and compact to the satisfaction of FEA and the Engineer. Check and provide main cable for the required capacity for the new works.

Materials shall be best of their kind. Conduit shall be PVC and must be built in and concealed. No chasing of fair face blockwork will be permitted. Work to comply with FEA and SAA regulations and wiring rules.

Pay FEA connection fee and allow for the complete installation of underground mains supply. Provide meter and switch / fuse board, neatly recessed into wall lockable galvanized door and glass panel at meter. Board shall have main switch, circuit breakers for lights, h.w.c., power points fans, etc. Label all items on board.

The switchboard shall be totally enclosed, metal clad, primed, painted to color red and manufactured to good standard to comply with FEA requirements and so to the SAA wiring rules. Location to be approved by the Architect.

Submit shop drawings to Engineer for approval before commencing work. Wire to and connect all fittings as shown. Provide conduits for fire alarm systems.

12.3

**ERRORS, AMBIGUITIES & OMISSIONS**

Errors, ambiguities and omissions in drawings or specifications shall be reported to the Architects for correction before any part of work involved is started. Unless otherwise expressly stipulated no additional allowance will be made in the contractor's favour because of errors, ambiguities or omissions, which should reasonably have been discovered by him during the preparation of his tender estimate or may become evident later and which shall be

NO  
mm LP



directed to the attention of the engineer in timely manner. The written decision of the Architect shall be final.

**12.4 FEES**

The Electrical Sub – Contractor shall allow for all connection fees to the main supply and obtain all necessary permits and pay all fees and other charges. The owner will pay the meter deposit.

**12.5 MANUFACTURER'S INSTRUCTIONS**

Where manufacturer's apparatus issue special instructions, these shall be followed, but shall not be interpreted to permit work of a standard lower than the general purpose of this specification.

**12.6 GUARANTEES**

Any of all guarantees which the manufacturer or supplier may issue covering materials, Workmanship and performance shall be arranged by the electrician as between the Owner and such manufacturer or supplier. The electrician will be responsible to see that all necessary documents are properly completed and signed and handed to the Architect at the earliest practical opportunity. Notwithstanding such guarantee being supplied the electrician will not be absolved from his responsibility under the terms of this contract.

**12.7 PLANT**

The electrical contractor shall provide necessary tools, ladders, plant, etc. as required for the execution of this contract.

**12.8 CO- OPERATION**

The electrician shall co- operate with all trades so that work can be carried out with utmost expedition. Co-operate with the main contractor in the provision of all holes, conduits, and the like and make good after installation. It shall be the responsibility of the electrician to advise the main contractors as to the exact location of such holes required to be cut.

**12.9** The Contract shall supply to the General Contractor any item which he requires to be built in and shall be responsible for setting out where such items require to be positioned and for clearly advising the General Contractor of all requirements relevant to the building in such materials. The Contractor shall check all such materials before any operation is performed which he requires to be built in and shall be responsible for setting out where such items require to be positioned and for clearly advising the General Contractor of all requirements relevant to the building in such materials. The Contractor shall check all such materials before any operation is performed which renders the positioning of the materials permanent.

**12.10 MAINS**

Allow for and arrange with the Local Authority in the installation of the mains cable to the building and temporary builders supply. Connect to the meter and main switchboard and extend in correct size cable to all switchboards, power and lighting points.

**12.11 ACCESSORIES**

All switches, switch plugs, blank boxes to be of type stated elsewhere in this specification or on drawings.

**12.12 FITTINGS**

Fluorescents

Where supply and install approved florescent light fittings in the position indicated on plan.

Led

Where shown 'Led' supply and fit same

Solar

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Where shown 'solar', supply and fit same

**Other**

Supply and fit others as shown.

**LIGHT FITTINGS**

Where shown supply and install the incandescent light fittings indicated on the drawings. Pendent light connections to be made to PDL or similar white ceiling roses. Generally the pendent light will determine the site. Generally install 60 watt bulb to all pendent lights inside and outside. Allow for supply and fixing of all other light fittings as shown on plan.

Obtain the approval to the location of all electric items from the Engineer before wiring is commenced. Detail given on the drawings and in specification are approximate only and variations from these position may be made up to a maximum of 3 meters on any directions without price variation.

The drawings give approximate positions of fittings and various items of plants and equipment only and in measuring from these drawings the tender must make due the proper allowance for necessary diversions from the straight line, rises or falls and adjustment to the position of plant and equipment as may be required for the proper execution of the works. In any case of doubt as to the interpretation of either drawings or submitting their tenders.

In any discrepancies between the drawings and the specification are detected by the Electrical contractor he shall inform the Engineer immediately and that on the course of action to be followed have been obtained.

The Electrical Contractor shall be responsible for obtaining from the site necessary dimensions to enable him to put the work in hand and he shall be responsible for checking that he has access for moving equipment into position and for installing it there.

After acceptance of the contract works and before the end of the maintenance period, the Contractor shall supply to the Architect 'as fixed' drawings and charts as specified in this specification. Final payment will not be made to contractor until such drawings and charts are received and approved by Engineer.

Where light fitting is shown as selected, unless otherwise specified, allow for \$100/ light.

**12.13 APPROVALS**

Submit samples and/ or drawings of items for approval when required. Do not enter into any commitment in respect to such items until approval is obtained.

**12.14 TELEPHONES**

Unless shown otherwise allow to supply and install JC3 Humes cable pit. Allow for diameter 75 mains conduits to MDF location.

Allow to supply and install all PVC conduits complete with draw wire as marked on plan. PVC conduits terminating to position where telephone is marked is to be installed with blank boxed complete with flush wall plates to match light switches and power outlets as outlined elsewhere in this specification. Exact position of blank boxes to be provided at site by Architect.

**12.15 LIGHT SWITCHES POWER OUTLETS**

All lights switches power outlets shall be HPM standard series in white or other approved color. External power point as marked on the drawings shall be watertight.

**12.16 AIR CONDITIONERS(when applicable)**

Unless shown otherwise, the contractor shall allow for installation of split unit Air Conditioners complete with all controls including electrical works - location, as shown on plan. Air



Conditioners to be supplied and installed by AC Contractor as per P.C Sum stated. Contractor to facilitate and make good and patch up all associated building works. Allow for switch at 1500 height.

#### **12.17 POWER POINTS AND LIGHT SWITCH LOCATIONS**

Unless shown otherwise all light switches shall be positioned at 1400 from the finished floor level. All power points shall be positioned 300 from the floor level except in the following circumstances where applicable or as otherwise shown on the drawings.

Bathroom & vanity area (1100 from floor level)

Tea room, WC area (1100 floor level)

Note: Dimensions are to the center of the switch.

It is extremely important that the Electrical contractor arrange a meeting on site with owner and Architect (when construction has reached the contract stage), and mark positions of all switches, power points, wall lights, fluorescents pendants and any other electrical fittings. This is the Electrical Contractor's responsibility and any of the above mentioned fittings installed incorrectly will have to be relocated at his own expenses if the meeting has not been arranged and all position not appropriately shown.

#### **12.18 WIRING**

All wiring shall be concealed and of the sizes as described by SAA wiring rules and in accordance with FEA regulations and Engineers designed detail.

Switch and switch plug boxes shall be cut out neatly and fixed firmly into blockwork. Where such boxes are fixed into timber partitions, they shall be danged behind. Where bracket or ceiling lights occur within concrete or blockwork, it's a round conduit box at each outlet to provide firm fixing for the light fittings.

Cable size shall be as SAA wiring rules and in accordance with FEA regulations and Engineers detail.

#### **12.19 HOLES**

The Contractor and other trades will leave holes for conduit and the like and make good after installation, but it shall be the responsibility of the electrician to advise such tradesman as to the exact location of such holes, etc, before concrete is poured or framing commenced.

Any holes requiring to be cut after such work is completed shall be carried out by the respective trade and the surface to be made good at the Electrician's expenses. Electrician shall advise block layer who shall cut holes for flush boxes. All holes shall be cut to the minimum size that will permit freedom of movement.

#### **12.20 EARTHING**


Install all earthing as required by the supply authority. Carry wire to every outlet, whether required or not at this stage.

#### **12.21 POST CONTRACT DOCUMENT**

Upon completion of the contract the following documents shall be supplied to the Architect:

- a.) Copies of guarantees as called for in the specification.
- b.) Test certificate from the supply Authority certifying electrical work complies with their requirements.
- c.) Plans showing "as built" installation.
- d.) Plans showing exact location of underground reticulation.

Supply and fix adjacent to switchboard instructions for the treatment of electric shock in accordance with the latest factory regulation.





**12.22 IDENTIFICATION**

All switchboards and fittings shall be identified to show the equipment they control. Inside each sub-board cabinet provide a neatly lettered card, firmly attached, giving the key to the individual items and the units of control.

**12.23 COMPLETION**

The contract works are to be carried out in accordance with a programme arranged by the General contractor to complete all contract works by the time set out in the General Contract.

**12.24 LIQUIDATED & ASCERTAINED DAMAGES**

The Electrical contractor shall indemnify the main Contractor against any claim for liquidated and Ascertained damages which may arise as a result of delays in completion of the work under this sub-contract. The main contract has per day including non-working, as liquidated damages for delay in completion.

**12.25 STATUTORY REGULATIONS**

The works are to comply at no extra charge with the Electricity Regulations 1986 with SAA wiring rules and with the requirements of the Fiji Electricity Authority.

**12.26 MAINTENANCE PERIOD GUARANTEES**

Provide a written Guarantee against defects in workmanship design and materials covering the complete contract works. The period of the guarantee is to start from the date of energizing and extend for the following period. (unless shown otherwise)

For tungsten lamps	-	2 months
For Florescent lamps	-	6 months
For all other Contract works	-	6 months

Ensure the lights are not 'noisy'. Any such lights will have to be replaced.

The Contractor shall at his own expenses renew any work that proves defective from faulty workmanship or material whether or not the work has been previously inspected and accepted, during a period of six calendar months from the time of taking the contract works into commercial services. Conduit work which distorts or becomes unsightly or defective during this period shall be properly refixed or replaced under the requirements of this clause.

During this period the contract work shall be under the control of the owners.

Notwithstanding the requirements of the general conditions of contract, the contractor shall attend quickly to all defects, which occur in the Contract Works. On the occurrence of any defects, or should a defect be suspended the owner will notify the contractor's office by telephone.

**12.27 AS BUILT DRAWINGS**

Within 4 weeks after completion of the works, the sub-contractor to submit 3 fully bound up manuals with drawings as built, Technical Literature on all fittings used and other relevant data. Obtain Architect's approval before submitting the final document.

**12.28 CONDUIT**

Provide conduit pull in boxes at all changes of direction and at distances not exceeding 10m in straight runs.

Where conduits is embedded, position conduits boxes with the lid flush with finished building surfaces and in location which is out of sight from occupied areas. Agree such locations with



the Architect before commencing installation. All steel conduit boxes are to be provided with galvanized metal covers and gaskets.

Plastic conduits of high impacts strength PVC may be used in areas within the building where it is normally not exposed to view. Its use where exposed to the weather or exterior to the building will not be accepted. Where used, plastic conduit is to be installed in accordance with the manufacturer's recommendations. Use welded joints at all connections and springs for making sets. Ensure that adequate provision is made for thermal expansion using the manufacturer's expansion joints.

Ensure all conduits systems are free draining and prevent the ingress of insects.

**12.29 COMPLETION**

On completion, test the reticulation, etc. and leave in perfect working order to entire satisfaction of the Fiji Electricity Authority and the Engineer.

The Contract shall not be deemed to be completed until the Electrician has filled his "Notice to Completion" with FEA and the installation authorized for service by its inspector.

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13  
13.1 **PAINTER  
GENERAL:**

Refer to the "Preliminary and General" Clauses which apply to all trades.

13.2 **STANDARDS:**

The following standards shall form part of the specifications:

NZSS 521 NZSS 1056 NZSS 2239

13.3 **MATERIALS:**

Deliver all paints in sealed tins, labeled by manufacturer, and then only on Architects approval. All paint used shall be a fungus resistant type.

The material used throughout this Contract shall be Resene, Berger, British, Taubmans or Asian as selected by the Architect who reserves the right to call for the use of any other locally or overseas manufactured paints including appropriate primers and undercoats.

All materials shall be the best of their respective kinds of the various brands specified and shall be of premium quality.

13.4 **WORKMANSHIP:**

All material shall be applied strictly in accordance with manufacturer's instructions. Any discrepancy between them and this specification shall be reported immediately to the Architect.

Where work is specified to be finished in particular material and manner it shall mean the provision of all work necessary to ensure a proper finish to minimize exposure to extremes of temperature and be thoroughly mixed before use. Paint shall not be applied to damp surfaces unless specially made for the purpose. External painting shall not be done during unsuitable weather. Where paint or varnish work of two colors meet particular care will be taken to finish a clean line. All floor, fittings and etc. shall be covered while painting and every precaution taken to keep dust down.

The Contractor shall allow access to site for any representative of the paint manufacturers who are approved by the Architect for the purpose of inspection, testing and advice concerning the use and application of his products, and the Contractor shall also allow the manufacturer's representatives at the discretion of the Architect to take sample of paint for the purpose of analysis.

At completion clean off all marks. Clean both sides of glass. Remove all debris and leave clean and tidy.

13.5 **EXTENT OF WORK:**

This section of the work includes the priming, painting, staining, varnishing, etc. as scheduled on the schedule of finished and specified herein. Include for painting, varnishing all surfaces usually painted or varnished whether specially mentioned or not. The Contractor is also called for in this section to allow to do samples of all colors and stains used on the contract.

13.6 **PREPARATION:**

All surfaces to be painted shall be prepared according to approved practices, wash and thoroughly clean wall before painting if necessary. All metal fittings and fastenings (door and window hardware, switch plates, etc) shall be removed where possible, cleaned and refixed in position on completion of paintwork.

All holes and surfaces imperfections in concrete blockwall, concrete, plastered surfaces, and Masonite surfaces shall be filled and rubbed off smooth before commencing paintwork.





The Contractor must take adequate precaution during and after painting operations to protect work from dirt, dust and disfigurement whatsoever. Wash down all plaster, concrete and blockwork with a solution recommended by manufacturer of paint and fresh water. Allow to stand for 48 hours and wash again with fresh water.

All woodwork shall be rubbed down to a smooth surface, cleaned off dirt grease, etc., before painting. All woodwork to be properly primed and stopped. All rust and scales, and oil dirt, etc, to be entirely removed from all metal work to be painted by means of steel wire brushes. All concrete must be cured for 28 days.

All surfaces shall be dry before painting is commenced.

### **13.7 PRIMING AND SEALING**

#### **13.7.1 GENERAL**

If more than four weeks elapse before the next coat of primer to external work is applied, the work shall be re-prime. All joinery shall be primed or otherwise sealed by the painter at the time of manufacture and again after installation. After priming or sealing all nail holes, cracks, shrinkages and other cavities shall be filled in and stopped where necessary with colour stopping and match the finished colour. Particular care shall be taken in matching stopping to surfaces being varnished. Any that do not match shall be removed and reputed.

#### **SCHEDULE OF PAINT**

#### **13.8 INTERNAL PAINTING**

##### **13.8.1 Fair face block wall & all concrete surfaces:**

Preparation	-	as for clause 13.6
First coat	-	Concrete acrylic sealer
Second coat	-	Acrylic semi gloss
Third & fourth coat	-	Acrylic semi gloss

##### **13.8.2 HARDIFLEX / GIBRALTAR BOARD:**

Preparation	-	Clean down, dust off
First coat	-	Acrylic undercoat
Second coat	-	Semi gloss enamel
Third & fourth coat	-	Semi gloss enamel

##### **13.8.3 TIMBER (STAINED):**

Preparation	-	Sand down smooth, dust off
First coat	-	Selected stain
Second coat	-	2 pack polyurethane clear gloss
Third & fourth coat	-	2 pack polyurethane clear gloss

##### **13.8.4 TIMBER (POLISHED) seats & table and pine posts, beam etc.**

Preparation	-	Sand down smooth, dust off
First coat	-	Prep coat
Second	-	2 pack polyurethane clear
		Gloss non- skid or estapol or similar approved
Third & fourth coat	-	2 pack polyurethane clear
		Gloss non-skid or Estapol or similar approved

13.8.5 Timber	-	All other (including timber doors):
Preparation	-	Sand down smooth, dust off
First coat	-	Wood Primer
Second coat	-	Enamel undercoat
Third coat	-	Gloss or Semi-gloss as selected
Fourth coat	-	Gloss or Semi – gloss as selected

##### **13.8.5 METAL:**

Exposed	-	As per section 6.9 – Structural Steel Worker
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Unexposed - As per section 7.5 Metal Worker  
(4 coats to be allowed)

**13.9 EXTERNAL**

**13.9.1 TIMBER:**

Preparation - Sand down smooth, dust off  
First coat - Pink primer  
Second Coat - Undercoat  
Third and fourth coat - Semi-gloss enamel – as selected

**13.9.2 CONCRETE / PLASTER:**

Preparation - As for internal works  
First coat - Acrylic undercoat  
Second coat - Gloss acrylic  
Third and fourth coat - Gloss acrylic

**13.9.3 METAL:**

Exposed - As per section 6.9 – Structural Steel Worker.  
Unexposed - As per section 7.5 – Metalworker

**13.9.4 EXPOSED GALVANIZED METAL**

(only applies to hood at front entrance and all exposed flashings to hood at front)

Preparation - Remove dirt, oil, etc, clean off.  
First coat - Etch primer  
Second coat - Epoxy primer  
Third and fourth coat - Semi gloss

**13.9.5 HARDIFLEX BOARD:**

Preparation - Clean down, dust off  
First Coat - Acrylic undercoat  
  
Second coat - Acrylic gloss  
Third and fourth coat - Acrylic gloss

'Hartitex' system finish to be as per 'Harditex' system specified by manufacturer (Hardies).

**13.9.6 TIMBER STAIR (where applicable)**

Preparation - Sand down smooth & dust off  
First Coat - Selected oil – enriched stain  
Second coat - Selected oil – polish (polyurethane)  
Third and fourth coat - Selected coat – polish

**13.9.7 PEBBLE MARBLE (where applicable)**

Multitex 7mm pebble and granular 3mm marbled finish to be finished with approved Poly urethane or similar finish as recommended by supplier.

**13.9.8 TEXTURE PAINT (where specified or shown in drawing)**

Undercoat first coat. Texture finished 2<sup>nd</sup> coat etc. Selected exterior paint finish to manufacturer's specification (Third and fourth coat).

**13.9.9 COMPLETION**

On completion of all painting, work should be checked to ensure that all surfaces are left clean and tidy from surfaces marks during the carrying out of this section of work.

Thoroughly clean both faces of windows and doors from all paint marks and clean all floors, etc. Leave the place clean and tidy for occupation. Clear away all debris; make good all

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areas of ground affected during construction and leave in good condition to Architects satisfaction.

14. **EXTERIOR JOINERY**

14.1 **GENERAL**

Refer to the Preliminary & General section of this specification all clauses of which shall apply to this section

14.2 **SCOPE**

This section of the works comprises the manufacture, supply, installation and glazing of aluminum windows and doors and is inclusive of the preparation of all testing, provision of samples and flashings to all surround surfaces. Also to provide and fix vents, doors, and any exterior joinery required to complete the exterior work to finish the building.

14.3 **ALUMINUM JOINERY**

All work carried out under this subcontract shall be totally in accordance with all the content and especially the recommended specification clauses (section 5.4) of the AAA Aluminum Window Handbook.

14.4 **STANDARD APPLICABLE**

- NZS 3503 Anodic Oxide coating on wrought aluminum for external and architectural applications
- NZS 3504 Aluminum Windows
- NZS 3211 Performance of Windows
- NZS 4223 Code of Practice for glazing in buildings.
- NZS 5802 Code of Practice for window clearing safety.

14.5 **SHOP DRAWINGS**

The contract documents indicate general building in detail with window suite profiles as indicated only for ease of explanation.

Provide full shop drawings for the approval of the architect and the contractor is to allow sufficient time for any adjustments required to be incorporated prior to fabrication commencing.

Approval of shop drawings does not signify Architect's or Contractor acceptance of responsibility for the details, dimensions and systems shown on the drawings. If the Architect or Contractor deems these drawings inadequate the window manufacturer must upgrade his drawings for approval. If required by the Architect submits as built drawings on completion.

Shop drawings to include layout, materials fixing, profit relationship, seismic provisions, seals, sealants and all other specific details for the proposed systems.

14.6 **TESTING**

Provide test reports for Architect's approval proving that the systems to be installed comply with the performance requirements of this specification.

14.7 **SAMPLES**

Submit samples for approval of complete assemblies of members for unit offered, including hardware and finishes. Include color range to which production materials will be processed.

14.8 **ASSEMBLY & INSTALLATION**

- 14.8.1 Installation is to comply with NZS 1900 Chap. 10 clauses 10.4.1, 10.5.1, 10.7.1 and 10.12.2.2 to 12.2.3



All installation work shall be carried out by specialist window fixers, duly accredited by the Aluminum Joinery manufacturer. Allow to cooperate with Main Contractor and other subcontractors in determining building-in provisions and conditions.

Design wind pressure (DWP) – to be 57m/s wind loading unless shown otherwise in the Engineering drawings. Air leakage: Grade 2 rating. Engineers specification supersedes this if their requirement is higher.

#### 14.8.2 **ASSEMBLY**

Assembly of frame and sashes shall comply with NZS 3504.

Seal all cut ends to provide a barrier between the base metal and the environment.

Fit all hardware as necessary.

Fix and seal frame peripheries by methods and with material which ensure that the installed frames meet the test requirements stated herein.

Fixing: Fix frames in opening plumb, square, in proper alignment without strain. Use fastenings recommended by the manufacturer and in accordance with the details. Alternative details may be submitted to those shown for boundary conditions, to ensure the frames proposed meet the test requirements specified.

Sealants: use those with evidence of proven ageing, ultra violet and ozone resistance characteristics having a 25% plus or minus movement factor.

Sealant Preparation: Prepare joints in accordance with the sealant manufacturer's recommendations, using recommended solvents and primers where necessary.

Sealant Preparation: Ensure that joints are dry. Remove all loose material, dust and grease.

Sealant Preparation: Mask adjoining surface to avoid contamination of excess sealant.

Sealant Backing: insert backing strips do not leave gaps and do not reduce depth of joint for sealant to less than minimum recommended by the manufacturer.

Sealant application: Tool sealant to form smooth beads or fillets as shown on the drawings.

Sealant Finish: remove excess sealant from adjoining surfaces, using cleaning materials recommended by the sealant manufacturer. Leave adjoining surfaces clean.

#### 14.9 **FLASHING**

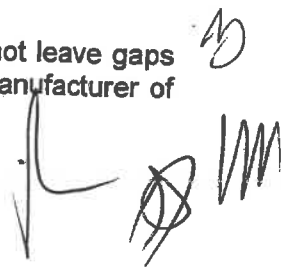
Allow to supply and install all necessary flashings to aluminum Joinery. Where not otherwise specified fabricate all flashings required by system from 0.6mm aluminum sheet alloy designation 5251 of the same finish as joinery units.

#### 14.10 **SEALANT**

Where sealants are required, use only ELASTOMERIC sealants capable of sustaining prolonged UV exposure and reasonable building movement. Mastics and oil based sealants are unacceptable

Mask adjoining surfaces which would be difficult to clean if smeared with sealant.

**BACKNIG:** Insert backing strips in all joints to be pointed with sealant. Do not leave gaps and do not reduce depth of joint to less than minimum recommended by manufacturer of sealant.





**POINTING:** Fill joint cavity with sealant in accordance with manufacturer's recommendations.

**FINISHING:** Remove excess sealant from adjoining surfaces, using cleaning materials recommended by sealant manufacturer and leave clean.

**14.11 GUARANTEE**

Provide a ten (10) year guarantee for the whole of the work and materials covered under this section inclusive of all glass, glazing flashing, fixings and sealing.

**14.12 GENERAL FINISHES**

Finish all aluminum Joinery shall be anodized to NZSS  
Colours to be advised by the Architect.

Maintain adequate test records to ensure a consistent finish and quality control and produce same if required. Produce acceptable test certificates if required.

**14.13 INSTALLATION**

Fix and seal frame peripheries by methods and with material which ensure installed frames meet the test requirement stated herein.

**FIXING:** Fix in openings, plumb, square, in proper alignment without strain. Use fastenings recommended by manufacturer and in accordance with details.

Alternative details may be submitted to those shown of boundary conditions to ensure the frames proposed meet the test requirement specified.

Installation details to fully respect the profiles finish and any damage components to be replaced at Contractor's expense.

Sealant at peripheries: Use those which evidence proven ageing, ultra violet and ozone resistance characteristics having a 20% plus or minus movement factor.

**14.14 PROTECTION**

All aluminum window joinery, curtain walling system finish to be fully protected from subsequent damage, disfiguration or making to any component following its erection.

At time of practical completion, all components not being approved by the architect to be replaced at the Contractor's own expense and made good to Architect's satisfaction.

The Contractor's attention is drawn to the fact that disfiguration by concrete spillage will not be accepted, and all affected components will have to be replaced at his expense.

**14.15 WINDOW & DOORS**

Window and door section shall comply with AS1866 – Table 3.1 alloy designation 6063 or equal approved aluminum alloy extrusion having a 1.5mm minimum wall thickness minimum.

Weather seals shall be an approved synthetic rubber having proven long life and where exposed highly resistant to ozone and ultra violet light, Polychloroprene, EPDM or equal

Retain glazing with snap-on type aluminum beads.



#### 14.16 WINDOW AND DOOR ACCESSORIES

Aluminum supplier is to provide and fix all necessary hardware, fitting and fixing required to finish the joinery. This includes floor spring and automatic sliding mechanism etc. hinges shall be aluminum having brass pins and finished to match the window frames and sashes.

Fixings and fastening shall be aluminum as supplied by the manufacturer of the component being fixed.

Hardware finish shall be selected by the Architect – two latches per opening sash. Each opening sash to be lockable. Locks shall be supplied to Architect for approval. Locks to be key operated, locks to be keyed alike. Appropriate Lockwood s the specified brand.

#### 14.17 GLAZING SCOPE

This section deals with al exterior glazing. Note that all the glazing of all aluminum joinery is carried out by the aluminum joinery contractor.

For location of glass – see accompanying drawing details.

The window subcontractor is totally responsible for the structural and weather tight performance of the glazing, including aspects of thermal safety, NZS 4223 to apply, in all respects.

#### 14.18 MATERIALS GLASS

All glass to be accurate size with weight conforming with NZS 2258 and with clean undamaged edges and surfaces. Unless otherwise specified, all to be clear 6mm thick and shall be float glass. Keep glass dry and clean during delivery and storage. Ensure that compounds, sealants and finishes to be used together are compatible, and no reaction between compounds.

#### 14.19 WORKMANSHIP GENERAL

Working of glass to be within the recommendations of NZS 2258

##### GLASS

To be min of 6mm thick clear, tinted or obscure as shown in plan. Where it says 6.38 laminated, provide these as required and shown in plans

##### SAMPLES

Submit samples if required

##### DESIGN

Strength requirements to meet the classification grading

Certify glazing installed within the stipulations of this specification and NZ Standards.

##### FIXING

Glazing techniques to conform with NZS 2258

Pre-glazing of components will be permitted but precautions to be taken to prevent displacement of glass or components. Panes with any displaced glass or components or with defective seals to be re-glazed property.

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### **PROTECTION AND CLEANING**

Replace all glass and fixing materials broken, marked, or damaged before practical completion. Contractor's attention is drawn here to concrete spillage and the subsequent disfiguration of components. All work so marked to be replaced at the Contractor's expense.

Do not use paint or stuck on indicators on high performance glass types.

Remove all smears and excess compounds, sealant etc. leave clean inside and out, and free from scratches.

### **14.20 JOINT SEALANT SELECTION**

Where not shown otherwise provide sealant of the type recommended by the Manufacturer for each situation.

Sealants are to ensure there is no water leakage.

Colors of sealant are to be as seen appropriate.

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15. **MECHANICAL WORKS**

15.1 **General**

The works to comply with clauses of the Preliminary and General

15.2 **Plan and Specification**

Follow the specification. Detail of the Engineers drawings.

15.3 **Supply and fix the required Mechanical works and commerce to completion.**

Handwritten signature and initials in the bottom right corner.



16. **FIRE REQUIREMENTS**

16.1 **General**

The works to comply with the clause of the Preliminary and General

16.2 Supply and fix – the Fire requirements as per plans and specification supply by the Engineers.

16.3 The main contractor shall provide all the piping for the Fire Hose reels. The connection of the hose reels shall be done by Fire Hose reels supply sub Contractor.

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17. **PC SUM**

PC sum is to be expanded as directed by the Architect. It is reserve fund for specific purpose and any surplus left over shall be deducted from the contract.

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**LAUTOKA CITY COUNCIL**

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**MINUTES OF MANAGEMENT MEETING OF LAUTOKA CITY COUNCIL  
HELD IN COUNCIL CHAMBERS ON WEDNESDAY, OCTOBER 25, 2017 AT  
4PM**

**PRESENT:** Chief Executive Officer, Mr. Jone Nakauvadra, [Chairman]  
Director Health Services, Mr. Gyneshwar Rao  
Acting Director Building/Engineering Services, Mr. Shalendra Dass  
Manager Finance & Administration Services, Mr. Prabin Lal  
Works Manager, Mr. Sachin Kumaran  
Horticulturist, Mr. Shri Charan  
Market Master, Mr. Gordon Wong  
Town Ranger, Mr. Charley Saukuru  
Parking Meter Supervisor, Mr. Sundressan Reddy  
Rates Clerk, Mr. Irinale Nabalarua  
Acting Prosecutor, Mrs. Swastika Kamoe  
Accounts Clerk, Mr. Abdul Israaz Khan  
Administration Officer, Mr. Esika Qorovarua  
Secretary, Mrs. Talei Ledua

**ENGINEERING MATTERS**

**Lautoka City Council – Proposed Olympic Standard Swimming Pool with  
Associated Facilities at Botanical Garden, Tender for Contractors, Metal  
Works & Joinery Ltd, File: 8/7/260, [Res: 217/02/17, 458/03/17, 504/03/17,  
568/04/17, 637/04/17, 641/04/17, 737/05/17, 812/05/17, 872/05/17, 993/06/17,  
998/06/17, 1230/07/17, 1390/08/17, 1391/08/17, 1433/08/17, 1434/08/17,  
1508/09/17, 1683/09/17]**

The council management committee considered the report of Acting Director  
Building Services, Mr. Shalendra Dass dated October 25, 2017 in the above matter.

It noted that vide council's resolution 1508/09/17 & 1683/09/17, the Tender for  
Construction of Pools as "Contract A" of Luxury Pools was approved at the tender  
sum of \$4,864,125.00 V.I.P and for "Contract B", Metal Works & Joinery Ltd, Asho  
Balgovind & Associates was asked to re-evaluate the Tender after removing the items

the PC Sum and Contingency Sum from the tendered sum to compute the actual contract  
sum.

It noted that the tendered sum of Metal Works & Joinery Ltd was \$5,966,200.00  
V.I.P.





9  
LAUTOKA CITY COUNCIL

Page 147

It was noted that Ashok Balgovind & Associates reviewed the Tender on the above conditions and furnished the Schedule for Tender and Contract Details with tender sum "Contract B" amounting to \$3,965,200.00 V.I.P. The "Contract B" sum was derived by adding the costs for restaurant, PC Sum and Contingency Sum.

The management further noted that the Ministry of Economy had advised council meeting that for government funded projects, tender with contingency and PC Sum is restricted and not acceptable.

The management was informed that Ashok Balgovind & Associates has submitted a progress claim which was referred to Quantech Pacific for certification. In order to settle the claim Quantech had asked for total project cost as the fee for Ashok Balgovind & Associates is 6.8% based on project cost.

**RESOLVED:**

The Tender of Metal Works & Joinery Ltd at the tendered sum of \$3,965,200.00 V.I.P for construction of other associated facilities be "Approved in Principle" and recommendation to be submitted to the line ministry together with contract agreement for vetting and approval prior to the award of tender. Quantech Pacific be advised of the project cost on Luxury Pools tendered sum of \$4,864,125.00 V.I.P plus Metal Works & Joinery's tendered sum of \$3,965,200.00 V.I.P.

The meeting ended at 5.23 pm.

ADOPTED this.....20TH.....day of.....NOVEMBER.....

  
[CHIEF EXECUTIVE OFFICER/CHAIRMAN]





2. Contract B - That for the tender of Metal Works and Joinery Ltd, a decision could not be reached due to PC Sums and Contingency sum and Ashok Balgovind & Associates be asked to re-evaluate the said tender of Metal Works & Joinery Ltd after removing the items in the PC Sum and Contingency Sum from the tendered sum to compute the actual value of works and furnish a report to the council for further consideration.

The Consultant, Ashok Balgovind & Associates be instructed to call tenders for items listed in the PC Sums.

The meeting ended at 7.28pm.

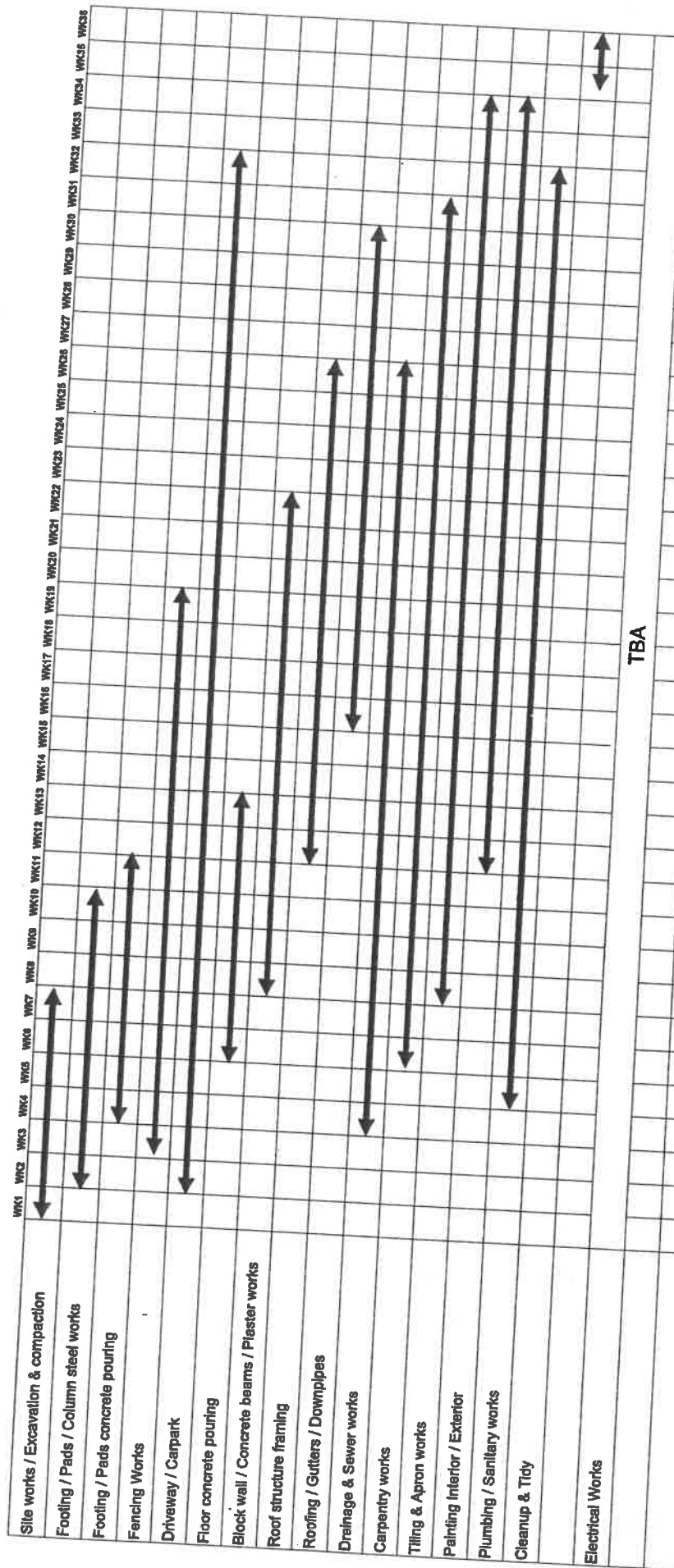
ADOPTED this 2ND ..... day of OCTOBER .....

  
[ACTING CHIEF EXECUTIVE OFFICER/CHAIRMAN]



# LAUTOKA CITY COUNCIL AQUATIC CENTRE WORK PROGRAM



TBA

METALWORKS & JOINERY LTD

APP - C  
work Plan

*[Handwritten signatures and initials]*



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## Schedule 2 - Tender and Contract Details

### Aquatic Centre - Olympic Pool Complex Lautoka City Council

LCC AQUATIC CENTRE - TENDER Summary and site works		Building	Metal Works & Joinery :
<b>PART ONE (BUILDING, CARPARK AND DRAINAGE)</b>			
ITEM A - BUILDING A	PUBLIC TOILET BLOCK		196,000.00
ITEM B - BUILDING B	TEAM CHANGE ROOM AND TOILET		439,200.00
ITEM C - BUILDING C	CHILDRENS CHANGE ROOM AND TOILET		288,800.00
ITEM D - BUILDING D	RESTAURANT		
ITEM E - BUILDING E	OFFICE AND MEDICAL ROOM		87,000.00
ITEM F - BUILDING F	PUBLIC TOILET NEXT TO CHILDREN POOL		97,000.00
ITEM G - BUILDING G	ENTRY GATES AND TICKET BOOTHS		84,000.00
ITEM H - BUILDING H	ENTRY GATES AND TICKET BOOTHS		16,800.00
ITEM I - PUMP ROOM 1	PUMP HOUSE		36,000.00
ITEM J - PUMP ROOM 2	PUMP HOUSE		24,000.00
ITEM K - WATER LEVE ROOM 1			
ITEM L - WATER LEVEL ROOM 2			
ITEM M - WATER LEVEL ROOM 3			
ITEM N - BIG SCREEN & TIME CLOCK STRUCTURE (NO SCREEN)			11,500.00
ITEM O - CARPARK (INCLUDING CHANNEL DRAINS)			697,000.00
ITEM P - DRIVEWAY			165,000.00
ITEM Q - BUILDING Q	TECHNICAL ROOM		18,400.00
ITEM R - DRAINAGE (STORMWATER) INCLUDING SUMP & GRATING			295,000.00
ITEM S - SEWER MAINS INCLUDING INSPECTION CHAMBERS (COMPLETE)			198,000.00
ITEM T - WATER MAINS AND WATER RETICULATION			60,000.00
ITEM U - SITE WORKS			280,000.00
ITEM V - FENCING			146,000.00
ITEM W - APRON FORMING & TILING (WHERE SHOWN) (NEXT TO POOLS)			785,000.00
X1 CHEMICAL STORE SHED			18,500.00
<b>TOTAL PART ONE</b>			<b>3,943,200.00</b>
<b>PART FOUR</b>			
ITEM TW - LIGHT TOWERS - FOUNDATION ONLY (TOWERS IN PC)			22,000.00
<b>TOTAL PART FOUR</b>			<b>22,000.00</b>
<b>TOTAL PARTS 1+4</b>			<b>3,965,200.00</b>
<b>TENDER SUM</b>			<b>3,965,200.00</b>

*M*  
*H* *mm*



App - E

- Recommendation  
letter to Ministry  
- Ministries Approval

23/4/27

SD/

November 9, 2017

The Permanent Secretary  
Ministry of Local Government, Housing & Environment  
P.O. Box 2131  
Government Buildings  
SUVA

Dear Sir

**Re: Proposed Olympic Standard Swimming Pool with Associated Facilities at Botanical Garden, Lautoka – Tender for Contractors**

This is further to council's letter dated September 4, 2017 in the above matter.

The construction of the said project was divided into two (2) contracts i.e. Contract 'A' & Contract 'B'.

The construction of the three (3) Swimming Pools (Main Pool, Warm up Pool & Kids/Learners Pool) as Contract 'A' has been awarded to Luxury Pools at contract sum of \$4,864,125.00 VIP.

The tender price of Metal Works & Joinery Ltd after excluding the pools and only for the Associated Facilities such as buildings, yards, apron, fencing, etc. is \$5,966,200.00VIP.

The consultant, Ashok Balgovind & Associates was asked to revisit the tendered price of Metal Works & Joinery Ltd with further instructions to delete the cost for Restaurant and as directed by the Ministry, the PC Sums and Contingency Sum.

After deleting the above items, the tender of Metal Works & Joinery Ltd is \$3,965,200.00 VIP being for Contract 'B'.

The council considered Contract 'B' for Metal Works & Joinery Ltd at the sum of \$3,965,200.00 VIP for construction of the Associated Facilities in the project and was 'Approved in Principle'.

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SM



2.

Enclosed herewith is the above mentioned council's letter dated September 4, 2017, Tender Submission of Metal Works & Joinery Ltd, Schedule 2 – Tender and Contract Details which forms part of the Contract Agreement, minutes of council's meeting and draft Contract Agreement for Ministry's vetting and approval prior to the council's approval of Contract 'B' for Metal Works & Joinery Ltd.

Yours faithfully

**Sgd. J. Nakauvadra**

**[JONE NAKAUVADRA]**  
**CHIEF EXECUTIVE OFFICER**

Encl.

cc. Acting Director Finance & Admin. Services  
Horticulturist

The Director Local Government  
Ministry of Local Government, Housing & Environment  
P.O. Box 2131  
Government Buildings  
**SUVA**

The Director Corporate  
Ministry of Local Government, Housing & Environment  
P.O. Box 2131  
Government Buildings  
**SUVA**

*[Handwritten initials and signature]*





## Ministry of Local Government, Housing and Environment

Level 3, FFA House  
4 Gladstone Road  
Box 2131, Government Buildings, Suva, Fiji

Telephone: (679) 3303-364  
Facsimile : (679) 3304-007



07.06. 2018

The Chief Executive Officer  
Lautoka City Council  
P.O Box 124  
Lautoka

Dear Sir,

**Re: Approval for Contract B, Lautoka Pool Project**

This is to inform your office that the approval has been granted by the Ministry to the Council to award the tender for Contract B on the associated facility for the swimming pool to Metal Works & Joinery Ltd.

For your facilitation, please

Vinaka

Yours faithfully

Usala Korodrau

for: **Permanent Secretary for Local Government, Housing and Environment**

*All correspondence to be addressed to the Permanent Secretary*





# LAUTOKA CITY COUNCIL

P.O. Box 124, Lautoka, Fiji

All communications to be addressed to the CEO



*City of Lautoka*

*"Our City Our Pride"*

Civic Centre, Shirley Park.

169 Vitogo Parade, Lautoka.

Telephone No (679) 666 0433

Fax (679) 666 3288

Email: [lcc@connect.com.fj](mailto:lcc@connect.com.fj)

Website: [www.lautokacity.org](http://www.lautokacity.org)

Your Ref. 8/7/260

SD/rb

Our Ref. June 8, 2018

The Director  
Metalworks & Joinery Ltd.  
P O Box 7150  
**LAUTOKA**

Attention: Mr. Dewa Sami

**Re: – Tender for Construction of Associated Facilities for Proposed Olympic Standard Swimming Pool at Botanical Garden, Thomson Crescent, Lautoka.**

Reference is made to the above.

The council hereby informs you that your Tender for Construction of Associated Facilities Botanical for the Proposed Olympic Standard Swimming Pool at Botanical Garden has been approved at the tendered sum of \$3,965,200.00 VIP.

A Contract Agreement has been prepared between Lautoka City Council and Metal Works & Joinery Ltd which is ready for signing at the council office upon your acceptance of this offer.

Please signify your acceptance or otherwise.

Yours faithfully

**Sgd. J. Nakauvadra**

**[JONE NAKAUVADRA]  
CHIEF EXECUTIVE OFFICER**

cc. Manager Finance & Administration Services  
Horticulturist  
Works Manager

Mr. Ashok Balgovind  
Ashok Balgovind & Associates  
P O Box 15090  
**SUVA**

The Permanent Secretary  
Ministry of Local Government, Housing & Environment  
P. O. Box 2131  
Government Building  
**SUVA**

Director Local Government  
Ministry of Local Government, Housing & Environment  
**Email: [azam.khan@govnet.gov.fj](mailto:azam.khan@govnet.gov.fj)**

The Capital Projects Officer  
Ministry of Local Government, Housing & Environment  
**Usaia.korodrau@govnet.gov.fj**

I hereby accept/decline the above offer.

.....  
Signature

8/6/18.  
.....  
Date

*[Handwritten initials]*



Appendix E

Company  
Registrar



CO. NO. 15105

## CERTIFICATE

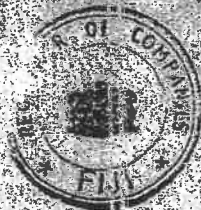
IN THE MATTER OF THE COMPANIES ACT, 1983

ABHI RAM CHARAN, Acting Registrar of  
Companies of Fiji, DO HEREBY CERTIFY  
that:

META WORKS & JOINERY LTD

formerly called META WORKS  
ENGINEERING LIMITED which name was  
changed by Special Resolution and with the  
approval of the Registrar of Companies on  
the 30th day of November, 2004, was  
incorporated under the Companies Act as a  
Limited Company on the 27th day of March,  
2002.

GIVEN under my hand and seal this 30th day  
of November, 2004.



ACTG. REGISTRAR OF COMPANIES

*[Handwritten signatures and initials]*