CIVIL AND STRUCTURAL ENGINEERING SERVICES

CONSULTANCY BRIEF
CONDITIONS OF TENDERING

Fiji Aviation Academy
Prepared for Fiji Airways

July 23 2017

Houng Lee Kaba Jacob Limited (hlkjacob)
APPROVAL OF THE CONSULTANCY BRIEF

The following Civil and Structural Engineering Consultancy Brief will be deemed approved for implementation in the Fiji Aviation Academy Project by the following parties signing and dating this page:

............................................................................  ..................................................................... 2017

Mr. John Bent
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PART A: CONSULTANCY BRIEF & CONDITIONS OF TENDERING

1 PRINCIPAL

The Principal for the Project is Air Pacific Ltd, trading as Fiji Airways (referenced as ‘FJ’ in this document). In this document the term Principal and Customer are used interchangeably.

The Principal’s Representative is Mr. Sanjay Kaba of Houng Lee Kaba Jacob Limited or other persons as may be nominated from time to time by the Principal.

2 RELEVANT DOCUMENTS

The following documents are required to be read in conjunction with this document such that the respondent has a full understanding and appreciation of the project and the scope of services required:

- The Functional and Design Brief
- Area Schedule
- Land Site Acquisition Concept
- Project Program

These documents are dynamic and updated regularly.

3 PROJECT SCOPE FOR CIVIL AND STRUCTURAL ENGINEERING FIRMS

A short listed group of Civil and Structural Engineering firms are now invited to submit proposals to undertake the role of Civil and Structural Engineering Consultant to assist in the successful development of the Project.

The Civil and Structural Engineering Consultant role includes the provision of all Civil and Structural Engineering design services, by engagement of all necessary secondary and specialist design sub-consultants which may be included but be not limited to:

a) Structural Design of all new structures at the including:
   - Review components of existing structures where new structures are reliant upon the existing structure for support.
   - Geotechnical investigation and reporting in areas of new building
   - Structural support and designs for services infrastructure
   - Review of Temporary works submissions (as certified by a registered engineer).

b) Civil Design, including:
   - Coordination with Geotechnical Engineer
   - Site preparation: cut/fill design, etc
   - Site access design
   - Roading/carpark pavement design
   - Paths and landscape civils
   - Site stormwater drainage, including overland flow paths
3.1 The terminology “Design Team” may be used to describe the whole of the team (Principal and secondary and specialist design sub-consultants). The Principal intends to separately engage the services of the following consultants either directly or through the Contractor:

- Architectural Services
  - Planning and Assessment
  - Topographical and Site Surveying
  - Traffic Impact Assessment and Reporting
  - Environmental Impact Assessment
  - Architectural Design
  - Interior Design
  - Signage and Wayfinding
  - Furniture, Fixtures, Equipment
  - Landscape Architecture and Irrigation
  - Environmentally Sustainable Design (Building design)

- Services Engineer
  - Mechanical Engineer
  - Electrical Engineer
  - Hydraulics Engineer
  - Low Voltage Services
  - Data and Communication
  - Security and Access Control
  - Fire Services

- Geotechnical Engineer

- Quantity Surveyor

- Simulator Supplier

- Fire Safety Engineer

3.2 The Civil and Structural Engineering Consultant will be required to coordinate with the activities of the other members of the Design Team and need not include for the services provided by the other consultants detailed above.

3.3 Formal authority submissions and approvals are required. The consultant should allow for:

a) Liaison meetings and submission of formal and informal briefing documents with key Authority stakeholders; and

b) Liaison, coordination and design development of the design with the Authorities as required.

4 SPECIAL CONDITIONS AND REQUIREMENTS

The form of contract proposed to be used for the main Consultants selected for the Project will be the CCCS (2005) with specific terms and conditions as detailed in Part B Schedule 1 of this document. The standard form of contract will have necessary amendments made to better adapt it to suit the
project and consultants’ needs in the context of the Fiji Aviation Academy in Fiji. Only those Consultants shortlisted will have the opportunity to review and discuss the final form of contract. The legal agreements with all consultants selected and engaged to provide services to this project will be between the Fiji Airways’s authorised representatives and the individual consultant.

5 PROJECT PROCUREMENT METHODOLOGY

5.1 The principal intends to engage the Civil and Structural Engineering consultant to assist it in developing the design of the project to a point that it is satisfied that it adequately describes its requirements. Presently it is intended that the documentation is completed in its entirety in a contract direct with the Principal. However, the Principal may use the 30% or 50% project documents to seek bids from pre-qualified contractors. If this occurs, the principal may novate the consultant to the contractor soon after they are engaged. The principal reserves the right to postpone the novation in its absolute discretion.

5.2 The Civil and Structural Engineering consultant will continue to develop the design through the phases of concept design report, contract documentation and site services under the direction of the principal or the contractor after being novated by the principal.

6 PROJECT SITE

6.1 Fiji Airways is negotiating for the preferred site shown below which should be completed within a few weeks of this Brief. This site is within the AFL Compound in Namaka and is directly opposite the MH Supermarket as indicated in the below indicative site plan. The Architectural consultant in their initial engagement will assess the masterplanning of Stage 1 as detailed in this brief and that of the larger project as initially advised in the Fiji Airways Architectural consultant procurement.
7 EXPENSES & DISBURSEMENT

The consultant is to provide with their submission a proposed schedule of visits/inspections to Fiji Aviation Academy site, this shall include both short and extended stays. Any required inspections and the like shall also be considered. The consultant shall also advise of any periods in which they propose to maintain a full time resource on site in Fiji. Given the nature of the project a full time presence in Fiji during the design phase is strongly recommended.

The proposed schedule of inspections shall be included in pricing schedule Part B and will then be included in the Consultancy Agreement and will form the basis for their expenses and disbursements. This schedule will serve as the basis for measuring and managing the expenses & disbursements budget, and shall not be amended without prior written approval from the client.

All other expenses and disbursements, including but not limited to the cost of phone calls, facsimile messages, printing, photocopying and travel within your metropolitan area and the Suva metropolitan area shall be included in the consultants fixed lump sum price.

8 SUB-CONSULTANTS

For this Fiji-based project, Joint-venturing, sub-consulting and “Consultants in Association” arrangements are fully anticipated. If the Consultant’s proposal does include any similar version of such a consulting relationship, then the Consultant submitting the Proposal must make clear within their submission all relevant details of the proposed relationship. This would include the other Consultant’s complete corporate profile, their relevant project experience, number and qualifications of key staff as well as a clear outline of the proposed distribution of any proposed sharing of the services and responsibilities.

In the case of the successful Consultant, further details of the proposed arrangements will be required at the point of entering into the Consultant Agreement. This will likely include evidence of “back to back” agreements between the individual Consulting entities.

9 DOCUMENTATION REQUIREMENTS

Certification & Checking

9.1 The Civil and Structural Engineering Consultant shall ensure that all documents produced for the Project are checked for accuracy, completeness and compliance with the Fiji National Building Code, applicable Australian and New Zealand Standards, regulations, by-laws, engineering and drafting standards.

9.2 A suitably qualified and experienced person of the relevant discipline shall sign all Detail Design drawings as complete and correct. Appropriate system design certificates shall be provided to support certification of the building. The requirement for certification of installations, provision of as-built drawings and Operation and Maintenance manuals by the Contractor shall be included as appropriate in the Detail Design documents.

9.3 The Civil and Structural Engineering Consultant shall ensure that a co-ordination check of completed documents – both for the preliminary and detail designs, has been undertaken prior to issuing final
documents. This check shall be programmed into the Civil and Structural Engineering Consultant’s documentation schedule and shall not be grounds for delaying works.

**Documentation Compliance**

9.4 The Civil and Structural Engineering Consultant’s documentation shall comply with the following as a minimum:

(a) For the final issues of the Concept Design Report and Contract Documentation supply one bound hard copy (A4 or A3 for specifications, schedules and the like; A3 and A1 copies of drawings), one loose-leaf hard copy and an electronic copy (PDF) of all documentation. Preliminary issues of documents shall be in a format e.g. email, hard copy, appropriate to the information being provided and the urgency of response required. All correspondence will have a specific reference to that transmittal.

(b) Electronic copies of specifications, reports, manuals and similar shall be in PDF and most current version of Microsoft Office attached to emails or copied to compact disks or USB devices.

(c) Hard copies of specifications, reports, manuals and similar shall be in A4 or A3 format, as appropriate, with appropriate Project identification and issue status on each page.

(d) Electronic copies of all drawings shall be supplied in AutoCAD file format current version along with all support files including x-refs, fonts, shapes, images, plot styles, plotter configuration files and CTB files. A PDF copy of the drawing shall also be issued at the same time.

(e) Hard copies of all drawings shall be in A3 and A1 format, as appropriate, with suitable Project identification and issue status on each page.

(f) For the final issues of the Operation and Maintenance manuals three hardcopies suitably fitted in 3 or 4 ring A4 binders shall be specified. Appropriate Project identification, engineering system identification and issue status shall be provided on each page. An electronic copy of the Operation and Maintenance manuals on CD shall be provided. The use of PDF files is an acceptable format for the electronic copy of the Operations and Maintenance manuals.
10 CLIENT SUPPLIED GOODS

10.1 The project will involve the installation and connection of a number of specific client supplied items these shall be described and nominated in the Functional Requirements Brief document. The Simulator units themselves are significant items of client supplied equipment and will require structural support including vibration isolation requirements.

10.2 Separate to the above items the designers shall liaise with user representatives to identify the loose Furniture and Fixtures they wish to relocate from their existing areas and these items shall be incorporated within the FF&E Schedule. The Contractor shall then provide relocation services for these items and relocate them into the new facility.

10.3 The design and construction process shall investigate the existing systems on site to gain a full understanding of the expected interface requirements and protocols.

11 PROJECT CONSTRAINTS

11.1 Constraints on the Project include but are not limited to:

(a) Project schedule
(b) Project budget
(c) Project Site

12 PROJECT SCHEDULE

12.1 The following are the milestone dates for each of the subprojects (including scope outside the contract). The dates are those dates as advised to the Project Manager tenderers.

<table>
<thead>
<tr>
<th>Phase Details</th>
<th>Milestone Description</th>
<th>Date Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>30% Design</td>
<td>30% design completed and Concept Design Report Approved</td>
<td>6/10/17</td>
</tr>
<tr>
<td>90% Design</td>
<td>Tender documentation for Trade Packages</td>
<td>1/12/17</td>
</tr>
<tr>
<td>For Construction Documentation</td>
<td>For Construction documentation</td>
<td>25/01/18</td>
</tr>
<tr>
<td>Construction Complete</td>
<td>Practical completion of the Building</td>
<td>01/02/2019</td>
</tr>
</tbody>
</table>

12.2 In accordance with the program prepared and updated by the Project Scheduler, submit to the project manager for approval a design development program which makes allowance for the Planning Phase Design Documentation to be submitted to the project manager at each of the design review milestones as detailed and otherwise in a manner and at a rate which will give the project manager a reasonable opportunity to review the Design Documentation within the period of time within which the project manager may review it.
13 PROJECT BUDGET

13.1 The Project is estimated to have a total budget excluding simulator supply and installation costs of the following:

| Project Total Budget | $16,326,530 VEP |

Presently, the current scope is forecast to exceed the project budget. As per the below high level order of cost estimate which is approximately $700K above the current budget.

<table>
<thead>
<tr>
<th>COST HIGH LEVEL ESTIMATE</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Cost element</td>
<td>Rate /m2</td>
<td>Estimate</td>
</tr>
<tr>
<td>Site Services</td>
<td>$</td>
<td>350,000.00</td>
</tr>
<tr>
<td>Landscaping/Civil</td>
<td></td>
<td>680,000.00</td>
</tr>
<tr>
<td>Building</td>
<td>$ 3,156.92</td>
<td>$ 13,048,392.00</td>
</tr>
<tr>
<td>FF&amp;E</td>
<td>$ 120.00</td>
<td>$ 495,992.70</td>
</tr>
<tr>
<td><strong>Total Building Cost</strong></td>
<td></td>
<td><strong>$ 14,574,384.70</strong></td>
</tr>
<tr>
<td>PM Fees</td>
<td>4.1%</td>
<td>$ 669,554.52</td>
</tr>
<tr>
<td>Design Fees</td>
<td>12%</td>
<td>$ 1,748,926.16</td>
</tr>
<tr>
<td>Authority Fees</td>
<td>0.05%</td>
<td>$ 7,287.19</td>
</tr>
<tr>
<td><strong>Total Forecast Project Cost</strong></td>
<td></td>
<td><strong>$ 17,000,152.58</strong></td>
</tr>
</tbody>
</table>

In brief, our estimate of the facility is based on the following:

- A building area of approximately 4133 m² of low rise construction (with large clear span areas to house specific areas).
- A relatively flat site near existing services infrastructure.
- Soapstone geotechnical substrates or similar with no
- An onsite sewer treatment plant.
- A relatively simple structural system comprising structural steel framing in a ‘shed-like’ structure.
- Energy efficient performance ratings on the facade and fixtures (BCA section J and similar compliance).
- Air-conditioning systems including humidity control in the simulator facility.
- Focused architectural embellishment.
- Durable and generally low presentation finishes.
- A lump sum contract delivery methodology with an early works package of works.
- Likely novation of long lead time packages into the main contract.
- Site Services including a localised small scale site sewer treatment plant.
- Approximate 20 carparks and drop area/ Zone in close proximity to existing roading.
• ICT backbone fibre to site and local CAT6 cabling
• Fixed Joinery and Fittings
• Loose Office and Student Furniture
• A nominal 5% contingency.

Given the lack of detailed design information available basis of the estimate is a m2 rate applied to the current limited understanding of the project which is summarised in the following area schedule. This area schedule is very preliminary and needs further verification and discussion with Fiji Airways with regard to the specific functional area allocations. In addition, given the current uncertainty regarding the site selection the associated site civil works costs are presently unknown.

As previously stated the cost and the areas as indicated in the above area schedule need to be verified during the Functional Return Brief phase which will test the required areas on a functional basis given the current estimate is largely derived on a cost per m2 basis. A Quantity Surveyor will be engaged as a part of the wider design team engagement to verify this cost.

The current high-level estimate is subject to significant uncertainty. As previously stated the accuracy of the estimate is relatively low based on the high-level brief provided and the developing design brief. Hence, the estimate as provided is only an order of cost estimate to assist in high level scoping decisions.

Detailed pricing will be significantly influenced by the following:

• Design development decisions by Fiji Airways. For instance, the email advice of June 27 potentially requiring sprinklers to the building will increase cost by $75/m2 excluding fire storage tanks.
• Building form and presentation.
• Site headend infrastructure allowances (eg Generator sizing for base scope or at scale of expanded facilities?)
• Site Selection and relative impacts given the different sites will elicit different design responses.
• Traffic impact assessment requirements (heavily influenced by site selection).
• Building height and positioning of facilities on upper levels.
• Structural and facade systems
• Level of finish and durability requirements
• ICT requirements
• Geotechnical feedback
• Green building initiatives.

We consider that proceeding on a high-level estimate within 5% of the target budget is a prudent scope and budget management approach. This approach ensures that the relative scope of the project is maximised during the early design phases. Pending cost input, likely scope management options in the event of a cost overrun are to reduce building areas at 30% and 50% design estimates. Potential design responses to recover any cost overrun are to:

• Reduce training room areas
• Reduce non-core functions within the building.
• Reduce level of finish.
• Reduce specification level on facade requirements
• Reduce Green Building initiatives.
14 EVALUATION CRITERIA

14.1 Evaluation Criteria

Tenders are to be assessed on the basis of best value for money consistent with the procurement policies and guidelines applicable to this Tender. In particular, Tenders will be assessed against the following evaluation criteria (in no particular order):

1. Task Appreciation and Design Methodology 30%
2. Suitable Experience 15%
3. Key Personnel 25%
4. Consulting Fee 30%

14.2 Acceptance of Proposal

Given the importance and complexity of the project, Client shall not be bound to accept the lowest fee, or any proposal. Proponents are required to follow the guidelines for preparation of proposals as listed in Section 10 below.
15 SUBMISSION REQUIREMENTS

15.1 The Respondent shall complete and provide the documentation as required by Part B of this document and return Part B with their submission. Supporting documentation is allowed where the specific documentation is referenced in the Part B submission respondent explicitly.

15.2 Submission of Proposals

Can you please submit your proposal to John Bent and David Crute by 4.00pm August 4 2017 by email and hardcopy to Fiji Airways FJAA office Level 1 of the Fiji Airways Naisoso Road Headquarters and Hanger Building

15.3 Contact

All contact, queries and the like regarding this invitation and brief shall be submitted in writing and emailed to:

Mr. David Crute
Project Manager
HLK Jacob Ltd
Mobile +679 9041174
Office + (679) 330 5638 Office fax + (679) 330 5231 Email: dc@hlkjacob.com.fj
16 APPENDIX A

SCOPE OF CIVIL AND STRUCTURAL ENGINEERING CONSULTANT SERVICES

The Civil & Structural Consultant is required to:

a. Exercise the skill, judgment and diligence expected of a competent professional and expert
b. Perform all work in accordance with recognized professional standards
c. Certify that documentation has been properly and competently prepared and checked.
d. The Civil & Structural Consultant shall carry out the Services of site inspection, investigation, reporting, design, documentation, design coordination and quality assurance of the Project structural and civil elements to ensure that the Project Objectives and requirements of the Principal are achieved.

General Scope of Services – The following is given to provide the consultant guidance as to the level of input as a minimum expected of them in providing their services:

a. Undertake the geotechnical investigations and provide a geotechnical report detailing design parameters (refer 30% design scope for further details).
b. Provide structural/civil design and documentation services for all new elements of the Project.
c. Ensure design complies with the Principal’s objectives and requirements.
d. Attend and report to various Project Control Group upon request, and Management and Design Meetings (one per fortnight, or more frequently as mutually agreed). These meetings will be held in Suva.
e. Participate in Design Coordination Meetings.
f. Coordinate with the Design Team and their deliverables and integrate the services of sub-consultants or specialist consultants to ensure the Project Objectives are achieved.
g. Advise and provide appropriate documentation of materials and finishes.
h. Ensure, in consultation with the Client’s Representative and other consultants that the design can be constructed in an effective, efficient and economical manner.
i. Consult with other specialist consultants in the preparation of their component drawings and specifications.
j. Participate in build-ability reviews with the Client’s Representative, Client’s Representative and Cost Planner.
k. Liaise and meet with Authorities if required and ensure that their requirements are incorporated into the design and documentation.
l. Assist Principal/ Client’s Representative’s with any press releases and media liaison as requested by Principal/ Client’s Representative’s.
m. Prepare in consultation with the Principal and Client’s Representative the design and documentation programmes and ensure conformance thereto, allowing sufficient time for approval and cost planning of each documentation stage.
n. Ensure, in consultation with the Principal/ Client’s Representative and other consultants that the design can be constructed in an effective, efficient and economical manner.
o. Provide design, field and other personnel to enable efficient performance and co-ordination of the Civil & Structural Consultant’s obligations and duties.
p. Provide sufficient documentation within an acceptable time to enable cost planning and cost checking of the Project.
q. Ensure that the documentation provides the Client’s Representative with complete and detailed drawings and specifications for the execution of the works under contract.
r. Prepare brief monthly progress reports to form part of the Principal/ Client’s Representative’s report.
s. If required, and by mutual agreement agree to be novated should the procurement strategy so require.
t. Assist in making for all authority submissions pertinent to the Brief and for assisting the Principal/ Client’s Representative in gaining same. All necessary authorities’ fees shall be paid by the Principal/ Client’s Representative unless agreed otherwise.
u. Implement and maintain a systematic approach to the control and assurance of the quality of the design and the Works.
v. Upgrade design, drawings and documents to reflect amendments in a timely manner (in accordance with the variations terms of the consultant agreement).

w. The Civil & Structural Consultant is responsible for obtaining Client’s Representative’s "sign off” at the end of each consultancy stage and during each design phase.

x. Conduct design reviews at 90% of the design development program. The design reviews shall serve two functions.
   1. To ensure the functionality, performance and producibility of the proposed deliverables, and
   2. To allocate resources and priorities going forward. If a design review yields nothing more than smiles and slaps on the back it has failed. The design reviews shall involve the participation of key design consultants and client representatives who will:
      - Brainstorm on possible errors and other risks for each critical subproject constraints of Cost, Schedule, Quality and Performance¹.
      - Actively test for performance overshoot

**Planning Phase: Preliminary Design = 30% Design: Functional Requirements and Concept Design Report Services**

1) Without limiting the provisions of the Brief for each of the sub-projects, the Consultant shall:
2) Establish a schematic design and design development timetable and take reasonable steps to comply with the timetable.
3) Undertake the necessary geotechnical investigation to provide an assessment of the subsurface conditions likely to be encountered for buildings, ancillary structures, roads and drains and will be utilised for design purposes and during construction. In addition to the test pits and laboratory testing, the soil tester is to record sufficient field information to enable an assessment of:
   a) Subgrade strength (e.g. CBR)
   b) Surface and subsurface drainage requirements
   c) Engineering parameters for soil and rock horizons encountered such as particle size analysis,
   d) liquid and plastic limits, consolidated undrained friction angle and hydraulic permeability
   e) Shear strength
   f) Potential areas of settlement
   g) Dispersion characteristics
   h) Rippability and workability of any naturally occurring material
   i) Recommendations on batter slopes.
4) Provide commentary and assistance to the Geotechnical Engineer who will provide a detailed geotechnical report of the investigation including the following:
   a) Site history and description.
   b) A detailed description of the method of investigation.
   c) A description of the tests taken together with their results, including material classification, and design parameters as per the requirements of item 6.0.
   d) Recommendations and comments on potential slope stability issues.
   e) A geotechnical evaluation of the sub-surface materials and ground conditions.
   f) An assessment of the soil reactivity (site classification).
   g) Ground water and / or water table observation.
   h) The depth, extent, compaction etc. of any existing fill areas, swampy or bad ground areas etc. encountered.
   i) Photographs of all test pits showing
   j) Side walls
   k) Base
   l) Spoil from excavation
   m) GPS location of boreholes/pits.
   n) Detailed log of boreholes/pits.
   o) Parameters for design (to include as a minimum)
   p) Earthquake
   q) Pavements
   r) Foundations

s) Low height retaining walls less than 1.5m

1) Comment on the probable settlement of compressible soils.

2) Excavation induced ground movements.

3) Comment on excavation conditions and suitable plant/equipment.

4) Vibration affects on other structures (if any during construction).

5) Unsupported cuts.

6) Supported excavations.

5) Three bound copies and one electronic copy (PDF and Word) of the report shall be provided.

6) Coordinate with the design consultants in the preparation of the detailed Functional Requirements Brief (FRB) to reflect the requirements of the project.

7) Provide as a part of the FRB a statement of the civil and structural performance criteria including and not limited to a statement as to design assumptions and code and standard referenced, noting the critical infrastructure to be maintained and operational post a major natural disaster.

a) Wind Loading

b) Seismic Loads

c) Serviceability requirements

d) Vibration

e) Rainfall intensity

f) Return periods for structural design assumptions.

8) Coordinate the formulation of conceptual designs and finalize the Concept Design Report (CDR) that accurately reflects the requirements of the design brief and detail the following:

a) overall buildings gross floor areas with relationship plans depicting conceptual configurations, indicative proposed building form, elevations and perspectives;

b) in a site Master Plan concept assess and recommend layouts and key and pedestrian vehicular access ways within and around in an integrated and coordinated manner; and

c) Incorporate the documentation of the design team site infrastructure services comprising hydraulics and drainage, mechanical, electrical and water storage and reticulation. Assist and undertake redesign where necessary with the Project Manager and project Cost Consultant, the project cost plan to comply with the overall project budget parameters prescribed by the Principal.

9) Use best endeavors to ensure that the proposed buildings and services depicted by the Functional Requirements Brief, and subsequently the Concept Design Report, complies with the requirements of the project budget and cost plan.

10) Achieve the Principal’s approval and signoff of the Functional Requirements Brief and subsequently, the Concept Design Report prior to commencing schematic design.

11) Identify project stakeholders and coordinate stakeholder communication to ensure the requirements of the stakeholder parties are reflected in the Functional Requirements Brief and Concept Design. This will include advice on press releases etc.

12) The Concept Design Report shall be sufficiently advanced and in sufficient detail that the deliverables can be identified. All documents shall be based on the best available information of site conditions and its constraints. No assumptions will be made if these assumptions may be reasonably checked out on Site.

13) Interview Principal’s representative and their advisers to gain an understanding and appreciation of the Project objectives.

14) Finalise the Concept Design Report in consultation with Functional Requirements Briefs, Principal’s Representative, Project Manager and other nominated Consultants to establish:

a) Intent, quality and performance standards of the Project.

b) The technical brief to define:

   i) design philosophy

   ii) specific discussion on design methods and allowances given the critical nature of the academy function particularly after major disasters.

   iii) functional needs of users

   iv) design performance criteria

   v) life cycle/maintenance parameters

   vi) comparative industry benchmarks

   vii) Assessment of authority requirements.

   viii) Building cost budget (design input to Cost Planner on any specialist or proprietary structural systems as documented).
ix) Commercial viability and sustainability parameters.

15) Carry out analyses of the site conditions, infrastructure, traffic considerations, drainage and all environmental matters consistent with achieving a cost effective design solution.

16) Develop preliminary building floor plan layouts and initial site profiles including the provision of coordination and integration of the work of involved sub-consultants including input from any other geotechnical or site surveying conducted.

17) Develop and progress the Concept Design Report.

18) Particular care and attention will be required in the development of the design in relation to:
   a) Ongoing operation and function of the facility during and after natural disasters.
   b) Acoustic design and noise suppression
   c) Corrosion resistance and durability
   d) Seismic and Cyclonic design requirements
   e) Repetition and prefabrication of built elements
   f) Integration of the design elements with the process design requirements of the buildings.

19) Produce a Concept Design Report including all required drawings, typical elevations, a perspective, key typical details as required and a design commentary on materials and finishes.

20) Participate in the presentation of the Concept Design Report to the Principal if required.

21) Obtain Principal/ Project Manager’s sign-off of Concept Design Report before proceeding to the next stage.

22) Test budget and return on investment.

23) Investigate and report on design options and alternatives, such as but not limited to:

24) Capital cost of upgrade or replacement of air conditioning systems
   a) Advantages and disadvantages of each option with firm recommendations
   b) Relative operating costs
   c) Value analysis as required

25) Liaise with Authorities as necessary and report.

26) Liaise and incorporate the advice of the approval Authorities.

27) Review and adjust the design to satisfy emerging statutory requirements, key stakeholder requirements, Project objectives as required.

28) Attend Project Coordination Group meetings and attend Design Coordination Meetings.

29) Actively participate in a Value Management review.

30) Develop and finalise the design drawings in accordance with the Client’s directions, producing all necessary dimensions and details in order to allow final design rationalisation, coordinating all elements of the design.

31) Integrate industry advice in consultation with the Design Team.

**Planning Phase: Detailed Design & Contract Documentation Phase = 50% Design**

1) Provide a developed design in accordance with the design brief, budget and any Principal’s requirements for its approval before submission for PCG approval; and

2) Provide the developed design to be approved by the PCG by the date set out in the development program.

3) The format of the specification and drawings shall be agreed with Principal/ Project Manager’s prior to commencing Detailed Design. The Civil & Structural Consultant shall provide examples of documentation format for Principal/ Project Manager’s to review early in the Detail Design.

4) Trade packaging of documentation would be expected in line with the Civil & Structural Consultants normal practice. The headings below are general and the final scope of works and trade packaging requirements of the Project Manager may have an impact on groupings and number of trade packages.
   a) Early Civil Works
   b) Main Project

5) Only documents with sufficient details for accurate pricing as assessed by Principal/ Project Manager’s will be allowed for use in Tendering. Where Principal/ Project Manager’s considers that insufficient information has been provided on a specific document or set of documents the Civil & Structural Consultant shall revise and provide additional information at the Civil & Structural Consultants cost.

6) Documentation shall be provided to allow the Project Manager to issue separate trade contracts for the construction of the Project.

7) The Civil & Structural Consultant shall;
8) Prepare Detailed Design ("DD") drawings and supporting documentation to meet all statutory requirements and take necessary actions to expedite the approval process.
9) Attend Project Coordination Group Meetings if requested to be located in Ba.
10) Coordinate and minute Design Coordination Meetings (minimum fortnightly), these may be held at the consultant offices, however the Project manager or delegated representative shall be invited, and a action listing of the outcomes of the meeting shall be issued within 48 hours of the meeting.
11) Supportively participate in design and cost reviews. Where required, adjust design and documentation to suit revised cost parameters.
12) Participate in build-ability reviews with the Principal, Project Manager and Cost Planner.
13) Develop and finalise the design drawings in accordance with the Principal/ Project Manager’s instructions, producing all necessary dimensions and details in order to allow final design rationalization, coordinating all elements of the design.
14) Attend and supportively participate in two Value Management workshops in each phase.
15) Arrange for the services engineers to provide estimates and life cycle costing/value engineering advice on: Capital cost and Operating cost.
16) Establish a coordinated commissioning philosophy for all services.
17) Review drawings and documents for compliance with the Fiji National Building Code conditions and amend documents as necessary.
18) Produce final Detailed Design documentation including all required drawings, elevations, details and schedules of materials and finishes.
19) Participate in the presentation of the Detailed Design drawings to the Principal.
20) Obtain Client sign-off of Design Development before proceeding to the next phase.
21) Test budget and return on investment, iteratively until the Principal/ Project Manager’s confirms agreement.

Planning Phase: Tender Phase Milestone Services = 90% Design
1) Ensure that the consultants produce a developed design in accordance with the design brief, budget and any Principal requirements for its approval before submission for PCG approval; and
2) Ensure that the developed design is approved by the PCG by the date set out in the development program.
3) Without limiting the requirements of this section developed design documentation shall include:
   a) Detailed design drawings that are coordinated across the design disciplines.
   b) Design detailing of wall/ floor junctions, doors windows and changes in finishes and levels.
   c) Coordination of services with the built elements.
   d) Service buildings, layouts plans and elevations with construction details
   e) Joinery & Stainless steel detailing
   f) Finishes schedules (internal and external). Including submitting Colour/finishes boards for all areas.
   g) Door and Window Schedule.
   h) Door Hardware Schedule.
   i) Complete Room data sheets including Furniture Fixtures and Equipment Listed.
   j) Fixtures Schedule (Plumbing and Electrical).
   k) Colour Schedules and Colour Boards.
   l) Furniture fixtures & Fittings
   m) Submissions Schedule (detailing samples required to be submitted for approval).
   n) Trade Specifications for Services Packages including Equipment listings.
   o) Process Equipment Schedule (detailing services requirements).
4) Deliverables for the Detailed Design & Contract Documentation Phase
   a) By the completion of the Detailed Design stage, the Civil and Structural Engineering Consultant shall produce an approved Design Solution within the nominated Project Budget including but not limited to documentation as follows:
   b) Document Register
   c) Detailed design drawings for the required trade packages
   d) Detailed specifications for the required trade packages
   e) Detailed technical schedules for all specified equipment
   f) Detailed requirements for obtaining maintenance procedures and spare parts holding
Delivery Phase: For Construction Documentation

1) The Consultant must ensure that they produce and complete all documents required for construction in accordance with the tender phase design approved by the PCG by the date set out in the program.
2) Prepare contract drawings and documentation in accordance with the Contractor’s Trade Package requirements.
3) Provide Technical Specifications for the trades and agree trade scopes with the Project manager and provide documentation within the agreed framework.
4) Participate in a build-ability review with the project manager and Cost Planner.
5) Provide final coordinated design and tender documentation for preparation of Bills of Quantities in accordance with the design and documentation programme.
6) Issue specifications conforming to the building contract documents.
7) Assist with coordination in the preparation of coordinated landscape, Civil and Structural Engineering, structural, civil drawings and services drawings.
8) Liaise with the Project Manager’s in the preparation of contract documents, including warranties and guarantees.
9) Assist the Principal/ Contractor’s and other Consultants in the analysis of tenders.
10) Attend Project Coordination Group (PCG) meetings and other meetings as required.
11) Prepare schedules of finishes, materials, sample boards, embellishments and treatment schedules. Use best endeavours to ensure that all specified products are available to meet the construction programme. Provide duplicate sample boards covering internal and external finishes for approval.
12) Ensure that the detailed design, documentation and specifications comply with the developed design approved by the Principal and all relevant statutory, regulatory codes, standards and guidelines.
13) Conduct a coordination meeting, prior to tender issue, of all consultants and their respective documentation.
14) Be responsible for coordination and quality conformance of all design documentation.
15) Obtain Project Manager’s approval for issue of final documentation for tender, including the preparation and issue of addenda, during the tender process.
16) Assist the Project Manager’s during the tender process including answering queries from tenderers and site inspections for tender inspection.
17) Take part in the tender review process providing written advice on the various tenders including advice on cost saving proposals.
   a) Test budget and return on investment.
   b) Detail full maintenance and breakdown maintenance to be provided for a period of two years from the Date of Practical Completion as a part of the Contract Documentation.
18) Include handover training with Principal’s representatives and subcontract maintenance staff in all Construction Phase documentation. This will be a minimum of one day with manuals and documentation that can be implemented immediately.
19) All documentation shall be produced in triplicate and provided in digital format in the most current versions of Microsoft Office documents, PDF and AutoCAD drawings.
20) Certification of completed design work
Delivery Phase: Construction and Post Construction Phase

1) Manage the Design Team under the direction of the Project Manager/Contractor to ensure that the contractor's requirements with respect to documentation flow and on-site activities are satisfied.

2) Ensure that the documentation provides the Project Manager/Contractor with complete and detailed information for the execution of the works under contract.

3) Inspect the Works and report to the Project Manager/Contractor and where appropriate supply additional information to assist the Project Manager/Contractor when requested in checking claims, issuing certificates, negotiating variations and other contractual matters.

4) Review submissions by the Contractor’s including workshop details and temporary works documentation and use best endeavors to ensure that the safety, quality and intent of the design are fully complied with.

5) Provide staff to clarify details of the design as and when required by the Project Manager/Contractor (this will not be a variation to the design for this work as the Civil and Structural Engineering Consultant should have produced and checked detail in format that is clear and concise).

6) Provide during the construction phase the services set out below:
   a) The Civil and Structural Engineering Consultant shall as a minimum, visit the site fortnightly or more as is required, during construction and observe work being executed to determine that the work is in conformity with the design intent of the contract documents, in compliance with sample construction elements and that the Work is of the required quality and report in writing with photographs each time a site visit has been undertaken to the Project Manager.
   b) Prepare and furnish to the Project Manager/Contractor additional documents with respect to authorised variations.
   c) Review and examine, for compliance with the design intent of the contract documents, submissions by the Contractor of relevant shop drawings, samples and other submissions from sub-contractors, manufacturers, suppliers and fabrications.
   d) Evaluate and report on the Contractor’s alternative or substitution proposals for compliance with the design intent of the contract documents.
   e) Prepare and furnish to the Project Manager/Contractor written advice and documentation for the correction of errors or deficiencies in work executed by the Contractor(s) if required.
   f) Participate in detailed reviews of the Project with the Project Manager/Contractor for conformity of the Works to the design intent.

7) Review services penetration drawings and other detailed drawings provided by the Contractor as required for construction of the Works.

8) Prepare drawings and information associated with contract variations and assist the Project Manager/Contractor with Variation Price Requests and variations.

9) Update the documents during construction as amendments and changes are made where necessary due to change in scope brought about by the Principal’s revisions or the Contractor's rationalization so as to accurately reflect the current status of the design in a suite of As-Built project documents

10) Issue instructions as and when required by the relevant authority.

11) Attend site, Progress Control Group and other meetings as required.

12) Assist the Contractor to obtain all guarantees, warranties, etc, and issue to the Client.

13) Recommend alternative materials and finishes and provide any documentation required due to material non-availability and perform the necessary co-ordination of drawings.

14) Certification that the works as constructed are in accordance with the design and instructions as provided by the consultants.

15) Assist the Project Manager/Contractor to procure the Certificates or equivalent approvals by provision of any necessary drawings required by the relevant authority.

16) Inspect relevant drawings submitted by the Contractor showing the Works as executed.

17) Assist the Project Manager/Contractor to procure for the Principal occupancy, practical completion and final certification of the Works.

18) Assist the Project Manager/Contractor with the administration of defects liability period and warranties.

19) Review and ensure that the inspection start-up and commissioning procedures provided by the Contractors comply with the Briefs and witness the operation of all services systems with other Consultants to ensure the Brief is met.

20) Coordinate and check Operating and Maintenance Manuals prepared by the Project Manager. Check compliance with the Principal’s/Project Manager’s requirements for manuals.

21) Assist the Project Manager/Contractor in commissioning planning, including Practical Completion and Final Completion Certificates
22) At all times, respond in a timely manner to not induce delay costs.

23) Deliverables for the Construction and Post Construction Phase:
Written reports/responses provided by the Civil and Structural Engineering Consultant shall include but not be limited to:
   
   (a) Requests for Information  
   (b) Proposed Site Instructions  
   (c) Proposed Variations Pricing Reports including estimate of costs/savings  
   (d) Defect Lists  
   (e) Revised drawings and/or specifications  
   (f) Updated document registers/transmittals  
   (g) Recommendation on proposed maintenance procedures and spare part holdings  
   (h) Monthly inspection reports in a form approved by the Project Manager  
   (i) As-Built documentation in both hard copy and electronic format and drawings that accurately reflects the work undertaken including changes and variations.

**Delivery Phase: Post Construction – Defects Liability Stage**

1) Re-inspect the Works to verify outstanding matters are completed and issue or arrange for the issue of the appropriate certificates in accordance with the provisions of this Agreement and in association with the Project Manager/Contractor.

2) Arrange for the provision of all “as-built” Civil and Structural Engineering documents.

3) The “for construction” documents shall represent the Works as as-built at project completion. Contractor to mark a set of documents produced for the PDC to incorporate into “as-built” documentation. [The Civil and Structural Engineering Consultant shall be entitled to rely upon the accuracy, completeness and sufficiency of information provided by the Construction Contractor and other third parties].

4) Assist the Project Manager/Contractor in compiling an index to the project documentation.
17 APPENDIX B

DRAWING AND DOCUMENT PROTOCOLS

Drawings shall have the following typical naming convention:

Building ID - Discipline - Organization Code - drawing number

For example: E - A- ABC -004

This is an Electrical Engineering drawing of Area A facility, produced by company ABC and is a plan layout drawing.

All drawings are to be registered and subject to document transmittals.

Where not agreed otherwise the following convention will be adopted for all drawing numbering:

Computer file references shall be identically identified and include revision number.

<table>
<thead>
<tr>
<th>Building Identification</th>
<th>Discipline</th>
<th>Organisation Code (2-4 letters)</th>
<th>Type/ number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Main Building)</td>
<td>A- Architect</td>
<td></td>
<td>000- Site plans, layouts</td>
</tr>
<tr>
<td>B(Externals)</td>
<td>SV- Surveyor</td>
<td>100- Plans (1:100)</td>
<td></td>
</tr>
<tr>
<td>C (Car Park)</td>
<td>S- Structural Engineer</td>
<td>200- Elevations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M- Mechanical Engineer</td>
<td>300- Sections</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E- Electrical Engineer</td>
<td>400- Construction Details</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C- Civil Engineer</td>
<td>500- Schedules</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H- Hydraulic Engineer</td>
<td>600- Room Details</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ID- Interior Designer</td>
<td>700- Fitout Details</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L- Landscape Architect</td>
<td>800- Details</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F- Fire Engineer</td>
<td>900- Shop Drawings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AC- Acoustic Engineer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where drawings are of works associated with the existing facilities, the drawings shall be numbered to coordinate with the existing system. Discuss this with the HLKJ Project Manager to receive current drawing numbering and associated documentation.

Revisions issued during pre-working drawing phase to be numbered sequentially and revisions issued during working drawings phase to be identified with letters.

For example:

Preliminary Drawing revisions shall be numbered progressively from P1, P2, P3 etc and when ‘approved for construction’ A, B, C etc.

All changes to working drawings or to any drawing issued in any tender documentation and their subsequent revisions shall be clearly clouded with a brief comment on the changes to the drawing included in the revision column.
Approved drawings shall be numbered progressively from A in an alphabetical manner.

(a) All drawings should be clearly marked as ‘PRELIMINARY’ or ‘SKETCH’ or ‘MEASURED DRAWING’ until approval of the drawing is provided by HLKJ.

(b) All drawings are to include a clear note stating ‘NOT FOR CONSTRUCTION’ until FHL approves a drawing ‘FOR CONSTRUCTION’.

(c) All drawings are to include the FHL logos as shown in the footer and the Project Logo as applicable shown in the header of this document.

(d) Drawing file names shall be the same as the drawing number but with the revision added so the file can be uniquely identified e.g. drawing number OS-A-ABC-004, file name OS-A-ABC-004-P1.

(e) All drawings shall be numbered and revision numbers updated in line with changes. Changes to drawings to be detailed in the title bar next to the revision number and the area affected highlighted i.e. clouded.

(f) All drawings in AutoCAD are to be in readable in AutoCAD 2010 format.

(g) All working drawings are to be typically in A1 format, with drawings suitably sized for clarity and group to ensure effective sizing.

(h) Drawings are typically drawn with one drawing unit equalling one millimetre.

SOFTWARE REQUIREMENTS

The following computer software is approved for use on this project. FHL reserves the right to reject documents or drawings submitted on incompatible versions or outdated software versions.

- Microsoft Office 2010 or later (with MS Access)
- Microsoft Project 2010
- AutoCAD 2010
- Adobe Acrobat Professional 9.0
- Winzip version 7.0
- Revit Architecture/Structure/MEP 2010

All external computer files must be checked for viruses prior to being copied or transferred to the firm’s computer. Where computer files are protected by a password, the HLKJ Project Manager must be advised, in writing, the password.

Cloud storage of design documentation is expected to be utilised on this project and the Consultant shall allow the necessary access fees to Dropbox or a similar platform to access and upload information to the cloud. The access fees approximately $20 per month and should be allowed within the Consultant’s Fee.
APPENDIX C

PROJECT DESIGN AND FUNCTIONAL BRIEF
SIMULATOR BAY DESIGN FOR FJAA PHASE ONE 27th June 2017

General
Approval is granted for Phase one of the Fiji Aviation Academy which will include 2 simulator bays with services, and space for Flight School Ground Training

Facility Design Specs
The CAE facility design specifications document describes motion forces, motion envelope, power requirements, and other simulator bay design parameters. This document is a user guide to design developed from research into 13 simulator training centres, design, centre management, evaluation, device migration and installation, and decades of simulator instruction. Primary experience-based recommendations are:

1. Independent simulator bays
2. Two Simulator briefing rooms, and one debriefing room per bay at mezzanine (2F) level, each room with windows to simulator and direct access the simulator bridge
3. A Ceiling hoist – 2 tons, as an engineer requirement
4. Simulator installation and removal access: directly from road
5. Simulator bay access door: plug-type; fully weather sealed
6. Natural Light, small windows into bay
7. Internal Viewing Gallery
8. Vibration and sound proofing – evaluate and mitigate
9. MEP & Fire Provisions – MEP to the latest green energy standards using solar, storage, and generator; fire as detailed in the facility design documents
10. AC & Fire Suppression

General
The overarching principle in design for any educational facility is to provide a learning-comfortable environment. The facility should have natural light where possible, a comfortable temperature and clean air flow, low noise level or vibration, and safety and security for all users. Understanding the work practices and people flow of simulator instructors, their trainee pilots and simulator engineers, is important at the earliest design stage. The same applies to the much higher volume of cabin crew that will attend safety and service training in that part of the complex (later phase)

Main simulator bay features (detail provided in the SIMCO facility design document):
Approximate internal dimensions: plan 15 x 15, height 12m with access door to the road (10m x 10m) and services and rooms attached to the opposite end. A simulator bay is usually 3 conventional stories high with the following ideal vertical profile:

1. Ground Level: Engineering, Computer rooms, workshops, stores, simulator instructor office
2. Level 1: Simulator access, briefing & debriefing rooms, multi-purpose training rooms, MFTD room
3. Level 2: Viewing gallery, canteen, multi-purpose training rooms, Flight School ground training and admins rooms, and FSTD room
4. Roof PV solar collectors (can also be located in car park area at ground level)
FIGURE 1 early concept drawings:
1. **Independent Simulator Bays**
   Benefits:
   a. **SAFETY:** Avoidance of fire spread and damage to expensive equipment – it has happened
   b. **ENERGY:** Optimised acoustics, insulation, and energy costs (an unused bay can be shut off from services to save costs)
   c. **TRAINING FIDELITY:** Elimination of loud bay noises (eg. dropped tools) which can occur in multi-simulator halls
   d. **DISRUPTION:** Zero interference to critical training schedules from the insertion and extraction of a device within the same hall
   e. **COMMERCIAL & SECURITY:** Ease of leasing empty bays (@USD 500k p.a.) to third party companies without disturbing FJ operations

2. **Pilot Simulator Briefing rooms:**
   2-Briefing/Debriefing and 1 data de-briefing room per bay at mezzanine level to the bay access bridge. Traditionally, only 2 briefing/debriefing rooms per simulator were applied when larger rooms were needed for 3 crew airliners such as B747 classic, L1011, DC10.... Today with mostly 2-crew operations, the same total bay width can comfortably accommodate three rooms (4m x 5m), with one room dedicated to electronic debriefing. The additional cost of one more internal wall is marginal.
   In an open multi-simulator hall, the traditional use of a walkway at mezzanine level along the line devices is practical, but for an autonomous bay this walkway adds cost in extra fire proof doors, and can be dispensable with (FIGURE 1). Instead the open corridor is located behind the briefing rooms, and the rooms become part of the simulator bay wall with a double-glazed window to the simulator. The value of this contemporary design:
   a. **SPACE OPTIMISATION:** Sizing against bay width
   b. **ELECTRONIC DEBREFING:** Provides a 3rd room dedicated to electronic de-briefing and data collection from simulation (SOQA)
   c. **FLEXIBILITY:** The 3rd room adds additional type-dedicated functions to each bay, and flexibility to the whole training operation
   d. **FFS UTILISATION:** Direct instructor sight to the simulator optimizes utilization. The instructor will notice the early completion of the previous session and utilise the extra time (@ a value of approx. USD 500 per hour)
   e. **CREW ACCESS:** The simulator bridge on the mezzanine floor should be aligned for easy access from the briefing rooms. In close proximity a suitable location for a PC for electronic logging of sessions by the instructor, and an internal phone (FIGURE 1)

3. **Ceiling Hoists.** A survey of SIMCOs in 2016 regarding the need for ceiling hoists in Simulator Bays generated variable feedback. But from the user perspective, simulator engineering teams mostly see this capability as necessary for on-going support and maintenance

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*As in Hong Kong Airlines FTC*
10. **Simulator Installation & removal access**  Simulators are delivered in 6M wide boxes on flatbed low loader lorries and require part craning into each simulator hall. An access road is required around the building for this, and should be wide enough (7m) to position a flatbed lorry directly in front of the bay access doors with lifting gear nearby.

11. **Simulator Bay access door & Cyclone proofing**  A global survey comprising multiple visits of major simulator centres around the world was conducted in the late 90s by a team of Operational, Training, Engineering, Architects, and Service Engineers on behalf of Cathay Pacific:\(^2\) A major concern was how to address simulator bay weather proofing, especially in Typhoon/Cyclonic locations. The final solution for the Cathay Pacific Centre (and subsequently Hong Kong Airlines) was the use of a ‘plug’ type door, (an opening of 8m square for easy install and extract) with seamless cladding re-fitted over the door when closing the bay. Removal and re-fit can take some days, but these are usually rare events, decades apart.

12. **Natural light.**  There is a design temptation to build simulator bays with large external glass windows for public display reasons (see paragraph 5), and for the users some natural light is important. However, the primary objective of a training facility is the most effective training at the lowest cost possible. Simulators are expensive and sensitive machines, which require the maintenance of a narrow range of temperature and humidity 24/7 for a life-cycle of around 20 years. Apart from the heating effects of large amounts of sunlight entering a bay (generating large energy costs), direct sunlight can also damage visual equipment. So in order to allow natural light in, the sensible design compromise is to position horizontal slit windows (low down) or vertical slit windows, carefully positioned to allow in natural light (see FIGURE 1)

![Glass walled simulator bay](image1.png) ![Energy efficient design](image2.png)

For FJAA the green building specialist will study year-round sunlight vectors in early design, and work at the outset with the architect on green solutions to building design.

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\(^2\) A Cathay Pacific Airways team (with architect, service engineer, simulator engineer, and operations trainers), visited the following simulator centres: Boeing (Seattle), NATCO (Minneapolis), Delta (Atlanta), United (Denver). Additional visits to Malaysian (KL), Singapore, Airbus (Toulouse, Miami, Beijing), SAS (Stockholm), and more recently Dragonair & Cathay (HK), ANZ (Auckland). Also direct involvement in the design of the Cathay Pacific, and recently Hong Kong Airlines simulator centres, and the management of 3 simulator centres with a total of 16 full flight simulators.
7. **Viewing Gallery**

Following on from paragraph 4, Flight Simulators are of great interest to the media and public, and a viewing gallery should be included in the design. A practical solution is to provide floor to ceiling soundproofed windows from inside the building\(^3\) to the simulator bays, wide enough for a class of schoolchildren to look through. The best viewing location is the 3\(^{rd}\) floor level (simulator bays are 3-levels), a level most free of simulator-related requirements

8. **Vibration & Sound suppression**

External: If the simulator bay is near a road (heavy traffic and trucks), or close to other vibration & sound sources, vibrations and sounds additional to those required could threaten certification

Internal: The building design must eliminate additional vibration from other FFS or sources. This must be considered worst case, where all FFS are in operation together

For a ground level simulator, vibration isolation from simulator to building\(^4\) is achieved through flooring mass with an isolation pad to which the motion pads are attached to. These are bolted directly to the isolation pad with very long bolts (FIGURE 1)

**Sound**

A crew in the simulator only needs to hear noises relevant to simulation. Most simulator companies require the maximum external noise level to be around 56db, but lower levels are always preferable for those in training, to avoid discernable extraneous noises from entering the cab. The location of FJAA near to a road and airport will require noise analysis to be conducted and additional acoustic protection may be necessary. Other parts of the training complex must also be isolated from human-perceivable vibration or noise from the simulators themselves

9. **MEP:** There is a tendency to under-estimate service provision, and early planning is necessary for incoming services including the distribution of mains power and chilled water, with main chiller locations provided, and fire suppression sprinkler systems allowed for. The SIMCOs provide full facility design criteria for the architect including power requirements. A UPS must be installed to smooth out power spikes and allow the simulator to come down off motion without damage. Each simulator requires a power supply in the order of 450KVA all of which has to ultimately be cooled. Due to power grid instability in Fiji it has been decided to include in the FJAA design the following:

- Solar PV panels, into:
- Super-UPS\(^5\) (long storage capacity)
- Generator back up to provide for some days of continuous simulator operations. The latter will require major sound insulation and fire protected fuel tankage of adequate capacity. *(Also see the SIMCO facility design documents)*

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\(^3\) as applied by Cathay Pacific and Hong Kong Airlines

\(^4\) and from any other vibration source into the simulator bay itself

\(^5\) Unlimited Power Supply (UPS) batteries are normally required for simulation to eliminate power surges during normal operations and to allow power to bring the simulator down gently from motion should the main power fail; both to avoid damage to sensitive computer equipment
Only one simulator centre is known to have achieved a solar-powered simulator off grid, IFTC:-

IFTC has added a Flight Training Center in Antalya, Turkey. The center houses a TRU Simulation + Training Boeing 737NG Full Flight Simulator and is certified by Boeing as a Boeing Flight Training Center. This center is the world’s first completely self-sustainable modular flight simulator building.

Powered by solar energy and lit by LED lighting, its temperature is controlled with energy efficient heating and cooling air pumps. Solar energy is acquired by solar panels configured as follows:

- Simulator Building: area covering 120 m² front and 120 m² rooftop. 72 panels at each location
- Flight crew and staff housing building: 120 m² front, 72 panels
- Car Park #1: 110 m², 54 panels
- Car Park #2: 110 m², 54 panels

The natural environment surrounding the facilities even consists of plants that, despite the hot climate, require very little watering and maintenance.

10. AC & Fire Suppression

AC
A simulator requires controlled temperature and humidity (see tables below and in paragraph 9)

<table>
<thead>
<tr>
<th>Water Cool</th>
<th>CHILLED WATER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water cooler maximum flow demand</td>
<td>20 US GPM (75 l/min)</td>
</tr>
<tr>
<td>Water cooler maximum temperature</td>
<td>75 °F (24 °C)</td>
</tr>
<tr>
<td>Approximate water temperature rise</td>
<td>12 °F (6 °C)</td>
</tr>
<tr>
<td>Water supply maximum pressure (Differential)</td>
<td>25 psi (170 kPa)</td>
</tr>
<tr>
<td>Water supply maximum voltage</td>
<td>125 psi (850 kPa)</td>
</tr>
<tr>
<td>From the air conditioner</td>
<td>25 kW</td>
</tr>
</tbody>
</table>

2.9.8 Requirements for Customer Supplied Air Conditioner Unit

In case the customer supplies the cockpit air conditioning unit, the unit must be capable of providing the following requirements near the entry of the flight compartment:

Table 2.12 Customer Supplied Air Conditioner Specification

<table>
<thead>
<tr>
<th>Unit</th>
<th>1700 - 1900 B'ums (800 - 900 l/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air flow</td>
<td>2.5 – 3.2 inches of water (625 – 800 Pascals)</td>
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<tr>
<td>Air temperature</td>
<td>55 ± 3°F (11±1°C)</td>
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</tbody>
</table>

Fire Suppression

Fire suppression is in two parts, bay, and simulator cab

- **Bay**: A pre-action sprinkler with guard provides a step between fire alarm and water sprinkler activation as water directly onto the simulator electronics is not recommended. This allows time to decide if the alarm is false
- **Simulator cab**: A hand held fire extinguisher is provide in the cab, and the manufacturer can provide further cab fire suppression to be decided by the user

CAE can supply a fire suppression system for the suppression of products of combustion in the FFS flight compartment. The system is supplied with an extinguisher suppression panel to be installed on a wall in the computer room. The unit is to be powered from a customer supplied uninterrupted AC power source.

2.15.1 Fire Suppression System Installation

The fire suppression systems shown in Figure 2-13 and Figure 2-14 will be installed in the simulator hall as shown in the Similar Installation Drawing and on the Fire Suppression Installation drawing as referenced on the Top General Assembly. The Extinguisher Suppression Control Panel shall be installed in the computer room.
Summary

Most of the design considerations in this document have been proven to be practical, user friendly, and efficient at the Cathay Pacific Airways FTC, where user feedback continues to be positive after 22 years.

John Bent
Project Executive FJAA
27th June 2017
<table>
<thead>
<tr>
<th>Level</th>
<th>Function</th>
<th>Proposed Facilities</th>
<th>Function</th>
<th># Estimated m²</th>
<th>Rate</th>
<th>Cost</th>
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<th>Comments</th>
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**Level 1**

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**1 of 3**

Draft Preliminary Areas Only Subject to Verification for Fitness for Purpose by Design Team 25/06/2017
<table>
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<th>Level</th>
<th>Function</th>
<th>Proposed Facilities</th>
<th>Function</th>
<th>$/ Estimated m2</th>
<th>Rate</th>
<th>Cost</th>
<th>$/ Estimated m2</th>
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**Level 1 Total**

| | | | **1172** | **1,455,600.00** | **1388.05** | **$2,206,160.00** | **15%** | | |

| Level 2 | | | | | | | | | |
|-------|----------|---------------------|----------|----------------|-------|------|----------------|-------|------|----------|
| 2     | Simulator Bay | | Simulator Bay | 196 included | 0 | 196 included | 0 | | |
| 2     | | | Simulator Bay 1 | 196 included | 0 | 196 included | 0 | | |
| 2     | Viewing Corridor | | Viewing Corridor | 96 | $3,500.00 | 33600 | 96 | $3,500.00 | 336,000 | | |
| 2     | Crew Rest & Snack | | Crew Rest & Snack | 820 | $3,500.00 | 1,200,000 | 60 | $3,500.00 | 210,000 | | |
| 2     | Lobby Atrium | | Lobby Atrium | 360 included | 0 | 0 | - | 0 | Excluded |

**Level 2 Total**

| | | | **1168** | **1,456,000.00** | **1148.85** | **$2,618,120.00** | **15%** | | |

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Excluded

Excluded

Excluded

Excluded
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<th>Cost</th>
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</tr>
<tr>
<td>Pool Complex</td>
<td>Equipment Storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Changing Rooms &amp; Toilet Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Changing Room &amp; Toilet Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Training Pool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2</td>
<td>Fiji Tourism &amp; Call Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Costs and rates are estimated and may be subject to verification and adjustment for fitness for purpose.
<table>
<thead>
<tr>
<th>Code</th>
<th>Activity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>Project Management Programme</td>
<td>60 days</td>
</tr>
<tr>
<td>EA</td>
<td>Land Appraisal</td>
<td>5 days</td>
</tr>
<tr>
<td>MB</td>
<td>Agile Risk</td>
<td>4 days</td>
</tr>
<tr>
<td>ST</td>
<td>Get stakeholder approval</td>
<td>3 days</td>
</tr>
<tr>
<td>AB</td>
<td>Incorporate site details into brief</td>
<td>2 days</td>
</tr>
<tr>
<td>RV</td>
<td>Reduced Scope Budge Approval</td>
<td>8 days</td>
</tr>
<tr>
<td>RS</td>
<td>Devise reduced scope</td>
<td>2 days</td>
</tr>
<tr>
<td>PR</td>
<td>Price Reduced Scope</td>
<td>3 days</td>
</tr>
<tr>
<td>AR</td>
<td>Approval reduced scope</td>
<td>1 day</td>
</tr>
<tr>
<td>EA</td>
<td>Executive Approval</td>
<td>4 days</td>
</tr>
<tr>
<td>PM</td>
<td>Project Manager Engagement</td>
<td>10 days</td>
</tr>
<tr>
<td>AT</td>
<td>Annual Letter</td>
<td>0 days</td>
</tr>
<tr>
<td>CM</td>
<td>Contract Document for Project Manager</td>
<td>5 days</td>
</tr>
<tr>
<td>CM</td>
<td>Commercial - Establishment, Site Investigation &amp; Due Diligence, PMP, Master Programme</td>
<td>10 days</td>
</tr>
<tr>
<td>PM</td>
<td>Project Kick-Off Meeting with Relevant Stakeholders, Initial Briefing Meeting</td>
<td>0 days</td>
</tr>
<tr>
<td>AR</td>
<td>Architectural Engagement</td>
<td>16 days</td>
</tr>
<tr>
<td>CM</td>
<td>Updated Brief, Scope of Services &amp; Costs</td>
<td>2 days</td>
</tr>
<tr>
<td>CM</td>
<td>Updated pricing</td>
<td>2 days</td>
</tr>
<tr>
<td>CM</td>
<td>Contract agreement</td>
<td>3 days</td>
</tr>
<tr>
<td>EA</td>
<td>Executive Approval</td>
<td>2 days</td>
</tr>
<tr>
<td>CM</td>
<td>Central Assistance/Contract Administration</td>
<td>2 days</td>
</tr>
<tr>
<td>FS</td>
<td>Functional Requirements Brief</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>Prepare Project Brief with proposed Area Schedules</td>
<td>5 days</td>
</tr>
<tr>
<td>HS</td>
<td>Space Planning Layouts</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>User Group Meeting - Revise RFP</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>Revised RFP</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>Consultant Procurement</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>Topographic Surveyor</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>RFP Brief</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>FPR Arranges Endorsement of RFP</td>
<td>2 days</td>
</tr>
<tr>
<td>CM</td>
<td>Issue RFP Documents</td>
<td>0 days</td>
</tr>
<tr>
<td>CM</td>
<td>RFP Bid Process</td>
<td>1 wk</td>
</tr>
<tr>
<td>CM</td>
<td>RFP Assessment &amp; Reporting</td>
<td>1 wk</td>
</tr>
<tr>
<td>CM</td>
<td>FPR Arranges Revise &amp; Approval of Topo Services</td>
<td>1 wk</td>
</tr>
<tr>
<td>CM</td>
<td>Surveyor Appointment</td>
<td>0 days</td>
</tr>
<tr>
<td>CM</td>
<td>Geotechnical Engagement</td>
<td>5 days</td>
</tr>
<tr>
<td>CM</td>
<td>FPR Arranges Endorsement of RFP</td>
<td>2 days</td>
</tr>
<tr>
<td>CM</td>
<td>Issue RFP Documents</td>
<td>0 days</td>
</tr>
<tr>
<td>CM</td>
<td>RFP Bid Process</td>
<td>1 wk</td>
</tr>
<tr>
<td>CM</td>
<td>RFP Assessment &amp; Reporting</td>
<td>1 wk</td>
</tr>
<tr>
<td>CM</td>
<td>FPR Arranges Revise &amp; Approval of Geotech Surveyor</td>
<td>0 days</td>
</tr>
<tr>
<td>CM</td>
<td>Civil Engineering, Building Services, Geotech &amp; QS Procurement</td>
<td>35 days</td>
</tr>
<tr>
<td>CM</td>
<td>RFP Documentation - Line Consultants</td>
<td>2 wks</td>
</tr>
<tr>
<td>CM</td>
<td>FPR Arranges Endorsement of RFP</td>
<td>1 wk</td>
</tr>
<tr>
<td>CM</td>
<td>Issue RFP Documents</td>
<td>0 days</td>
</tr>
<tr>
<td>CM</td>
<td>RFP Bid Process</td>
<td>10 days</td>
</tr>
<tr>
<td>CM</td>
<td>FPR Arranges Revise &amp; Approval of Line Consultants</td>
<td>3 days</td>
</tr>
<tr>
<td>CM</td>
<td>Agreement of Line Consultants</td>
<td>0 days</td>
</tr>
<tr>
<td>CM</td>
<td>Design and Documentation</td>
<td>34 days</td>
</tr>
</tbody>
</table>

**Notes:**
- B - Business
- M - Manual
- A - Automatic
- S - Semi-Automatic
- D - Direct
- R - Regular
- C - Critical
- P - Project
- M - Manual Task
- S - Semi-Automatic Task
- A - Automatic Task
- B - Business Task
- D - Direct Task
- R - Regular Task
- C - Critical Task
- P - Project Task
- M - Manual Summary
- S - Semi-Automatic Summary
- A - Automatic Summary
- B - Business Summary
- D - Direct Summary
- R - Regular Summary
- C - Critical Summary
- P - Project Summary

**Date:** 26/06/17
## APPENDIX D  DRAFT MOHMS CONTRACT

### SCHEDULE 1 - PRINCIPAL CONTRACT DETAILS

<table>
<thead>
<tr>
<th>Customer</th>
<th>The Principal is Fiji Airways</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>The Term of the Principal Contract</strong></td>
<td>The Term of the Principal Contract is as detailed in the draft program included in Appendix C</td>
</tr>
<tr>
<td>2. <strong>Contract Term Expiry Date</strong>&lt;br&gt;<strong>Supply of Services</strong></td>
<td>The Term will commence on the Contract Commencement Date and will expire when the Services have been supplied in accordance with Appendix A Scope of Services</td>
</tr>
<tr>
<td>3. <strong>Contract Commencement Date</strong></td>
<td>The Principal will notify the successful Respondent of the Contract Commencement Date. The Contract Commencement Date is TBA</td>
</tr>
<tr>
<td>4. <strong>Notice of Extension</strong></td>
<td>Clause 3.4 of the General Conditions applies</td>
</tr>
<tr>
<td>5. <strong>Price Variation</strong></td>
<td>The Contract Price is fixed for the Contract Term and shall be in the form a fixed lump sum</td>
</tr>
<tr>
<td>6. <strong>Public and Product Liability</strong></td>
<td>Public and products liability insurance covering the legal liability of the Consultant/Respondent and the Consultant/Respondent’s Personnel arising out of the Products and/or Services for an amount of: &lt;br&gt;1. not less than <strong>[$1 million]</strong> for any one occurrence; &lt;br&gt;2. unlimited in the aggregate in respect of public liability; and &lt;br&gt;3. Limited in the annual aggregate to <strong>[$1 million]</strong> in respect of products liability.</td>
</tr>
<tr>
<td>7. <strong>Public Liability</strong></td>
<td>Public liability insurance covering the legal liability of the Consultant/Respondent and the Consultant/Respondent’s Personnel arising out of the Services for an amount of not less than <strong>[$5 million]</strong> for any one occurrence and unlimited in the aggregate;</td>
</tr>
<tr>
<td>8. <strong>Professional Indemnity (N/A)</strong></td>
<td>Professional indemnity insurance covering the legal liability of the Consultant/Respondent and the Consultant/Respondent’s Personnel under the Principal Contract, if awarded, arising out of any act, negligence, error or omission made or done by or on behalf of the Consultant/Respondent, or any subcontractor/sub consultant in connection with the Contract for a sum of <strong>[$5 million]</strong> for any one claim and in the annual aggregate, with a provision of one automatic reinstatement of the full sum insured in any one period of insurance.</td>
</tr>
<tr>
<td>9. <strong>Extended (N/A) professional Indemnity inclusions</strong></td>
<td>Professional indemnity insurance required under this clause must be extended to include: &lt;br&gt;a) fraud, dishonesty, defamation, breach of confidentiality, infringement of patent, copyright, design, trade mark or circuit layout rights; &lt;br&gt;b) loss of or damage to documents and data;</td>
</tr>
<tr>
<td>10. <strong>Workers’ Compensation</strong></td>
<td>Workers’ compensation insurance as required under any statute relating to staff and employees of the Consultant/Respondent’s employees, agents and contractors and for not less than <strong>FJ $ 250,000</strong>.</td>
</tr>
<tr>
<td>11. <strong>Motor vehicle third party</strong></td>
<td><strong>Motor vehicle third party</strong> insurance covering legal liability against property damage and bodily injury to, or death of, persons (including bodily injury gap protection) caused by motor vehicles used as required under any statute relating to motor vehicles used in connection with the Products and/or Services.</td>
</tr>
<tr>
<td>12. <strong>Compulsory third party</strong></td>
<td><strong>Compulsory third party</strong> insurance as required under any statute relating to motor vehicles used in connection with the Products and/or Services.</td>
</tr>
</tbody>
</table>
### 13. Contract Management Requirements

- **Reporting**
  A pre-start meeting shall be held on site, at least 7 days prior to the project start date.

- **Meetings**
  A progress meeting may be scheduled weekly, and shall be held on site between the Consultant/Respondent, project manager and Principal. The meetings shall cover the programme of works, any operational issues, health, safety and the environment issues and any other items deemed relevant to the project.

- **Key Performance Indicators**
  To be determined

- **Principal’s Representative**
  Houng Lee Kaba Jacob

### 14. Confidential Information

For the purposes of paragraph (b) of the definition of “Confidential Information” in clause 2.1 of the General Conditions, there is no information that is specified by the Principal as confidential.

### 15. Police Clearance

All Consultant staff will be required to provide a police clearance given the consultant will be operating in and around an operating office including minors.

### 16. Warranties

The successful Respondent must give, or ensure the Contract Authority and the Principal has the benefit of the following warranties:

- 12 month defect liability period.
- Warranties for products as defined by the materials warranties to be defined in the Functional Requirements Brief.

### 17. Intellectual Property Owner

IMPORTANT NOTE: The owner of Intellectual Property Rights in New Material is the Fiji Airways, unless otherwise specified.

### 18. Publicity

IMPORTANT NOTE: The Consultant/Respondent may not use the name or logo of the Principal or any other Public Authority without the requisite prior written consent. If there is "any other Public Authority", specify in this Special Condition.

### 19. Fiji Airways Policies

The Consultant shall ensure that the Fiji Airways procurement policies are followed in any procurement undertaken by the Consultant on the Principal’s behalf.
PART B RESPONDENT’S OFFER

PART B SHOULD BE COMPLETED BY THE RESPONDENT AND RETURNED TO PRINCIPAL (REFER ‘SUBMISSION OF PROPOSALS’ REQUIREMENTS OF SECTION 15 PART A and PART C).

1. NOTE TO RESPONDENT

In preparing its Offer, the Respondent must:

a) address each requirement in the form set out in this Part B;
b) take into account the Principal Contract requirements, as explained in Schedule 1. The Respondent must read these in conjunction with the General Conditions;
c) in respect of the Qualitative Requirements, provide full details of any claims, statements or examples; and
d) assume that the Principal has no knowledge of the Respondent, its activities, experience or any previous work undertaken by the Respondent for the Principal or any other Public Authority.

2. IDENTITY OF RESPONDENT

The Respondent must provide the following details:

<table>
<thead>
<tr>
<th>RESPONDENT TO COMPLETE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Name of Legal Entity: ..........................................................</td>
</tr>
<tr>
<td>(b) Business Name: ............................................................................</td>
</tr>
<tr>
<td>(c) Contact Person: ...........................................................................</td>
</tr>
<tr>
<td>(d) Contact Person Position Title: ......................................................</td>
</tr>
<tr>
<td>(e) TIN: ...............................................................................................</td>
</tr>
<tr>
<td>(f) Registered address or address of principal place of business: ..................................................</td>
</tr>
<tr>
<td>(g) Email: ............................................................................................</td>
</tr>
<tr>
<td>(h) Telephone: ....................................................................................</td>
</tr>
<tr>
<td>(i) Facsimile: .....................................................................................</td>
</tr>
</tbody>
</table>

NB: The Offer does not require the Respondent’s signature.
3. **PRE-QUALIFICATION REQUIREMENTS**

The Principal will not consider any Offer that does not meet all of the following Pre-Qualification Requirements:

a) Provision of the following compliance documentation **must** be provided with the Respondent’s Submission
   1) Provision of a current Fiji Revenue and Customs Authority Tax Compliance Letter
   2) Provision of a current Business License
   3) FNPF Compliance Letter dated less than 2 months prior to close of tender.

b) Attendance at the Site Briefing

The Respondent must disclose whether it, or its representative, attended the site briefing.

**RESPONDENT TO COMPLETE:**

Did the Respondent attend the site briefing?

(Yes / No)

If yes, please provide details of the person(s) who attended the briefing and the company they represented:

---

4. **COMPLIANCE AND DISCLOSURE REQUIREMENTS**

The Principal will, in its Value for Money assessment, consider the extent to which the Offer satisfies the following Compliance and Disclosure Requirements. The Principal reserves the right to reject any Offer that does not properly address any of the Compliance and Disclosure Requirements.

a) **Compliance**
   
   (i) **Principal Contract**

   The Respondent must confirm whether it will comply with the Principal Contract. If the Respondent will not comply with any clause of the Principal Contract, the Respondent must set out:

   (A) the clause it will not comply with;
   (B) the extent of non-compliance – including the alternative clause, if any, or a description of any changes it requires to the Principal Contract; and
   (C) the reason for non-compliance.

**RESPONDENT TO COMPLETE:**

Does the Respondent agree to the Principal Contract?

(Yes / No)

If no, provide details.

---
b) **DISCLOSURES**

(i) **Participants (including subcontractors)**

**RESPONDENT TO COMPLETE:**

Is the Respondent acting as an agent or trustee for another person or persons?

(Yes / No)

If yes, provide details.

AND

Is the Respondent acting jointly or in association with another person or persons?

(Yes / No)

If yes, provide details.

AND

Has the Respondent engaged, or does the Respondent intend to engage, another person or persons as a subcontractor in connection with the supply of the Products and/or Services.

(Yes / No)

If yes, provide details.

(ii) **Criminal Convictions**

The Respondent must confirm that neither the Respondent nor any person included in the Specified Personnel has been convicted of a criminal offence that is punishable by imprisonment or detention.

**RESPONDENT TO COMPLETE:**

Has the Respondent or any person included in the Specified Personnel been convicted of a criminal offence that is punishable by imprisonment or detention?

(Yes / No)

If yes, provide details.
(iii) **Conflict of Interest**

The Respondent must declare and provide details of any actual, potential or perceived conflict of interest.

**RESPONDENT TO COMPLETE:**

Does the Respondent have any actual, potential or perceived conflict of interest in relation to the performance of the Principal Contract (if awarded)?

(Yes / No)

If yes, the reasons why.

---

5. **QUALITATIVE REQUIREMENTS**

The Principal will, in its Value for Money assessment, consider the extent to which the Offer satisfies the following Qualitative Requirements. The Principal reserves the right to reject any Offer that does not properly address and satisfy any of the Qualitative Requirements.

**a) TASK APPRECIATION & DESIGN METHODOLOGY (30% WEIGHTING)**

i. Detail your understanding of the task and the particular issues and constraints associated with the project. Provide particular comments regarding the project programme and cost constraints.

ii. Outline your proposed design methodology to address any issues or constraints. The Respondent must provide a comprehensive timeframe for the delivery of the proposed Services, identifying key dates and milestones and outlining how any timing requirements set out in Section 11 Part A may be met.

iii. Indicate in this section any value adding that your firm might bring to the project.

iv. Given the time constraints for the preparation of submissions, bullet points will suffice, together with key examples of cost and time control tools used on similar projects. The Respondent must demonstrate that it has the organisational capacity to perform the Contract.

**RESPONDENT TO COMPLETE:**

**b) DEMONSTRATED EXPERIENCE (15% WEIGHTING)**

(i) The Respondent must provide details of contracts for similar services provided for other clients. The Respondent must provide:

- (A) a detailed description of the Services provided;
- (B) similarities between the previous contract and this Quotation;
- (C) when the previous contract was performed; and
- (D) the outcome of the previous contract.

(ii) The Respondent must also provide a minimum of [2] referees in respect of the contracts detailed above. Referee details must include:

- (A) the referee’s name and position;
- (B) company name;
(C) the contact telephone number; and
(D) the contract or project title.

**RESPONDENT TO COMPLETE:**

Respondent to provide the demonstrated experience information required under this clause.

---

(c) **PROPOSED PERSONNEL (25% WEIGHTING)**

Proposed Personnel

Provide relevant details of (and attach CVs for):

i. Proposed dedicated Engineers.
ii. Proposed Director in active charge.
iii. Proposed Technical support personnel.
iv. Proposed support personnel.
v. Direct involvement % and employment location and time allocated in Fiji.

Details should include relevant experience, proposed role statements and an organisational chart for your team showing links to the Client via the Project Manager and to the Design Consultants and Contractors. Please concentrate on relevancy of information and be succinct.

**RESPONDENT TO COMPLETE**

Respondent to provide evidence to support the information required under this clause.

---

The respondent is to detail the sub-consultants that are incorporated within the offer and to detail their applicable experience to the associated scope of services.
RESPONDENT TO COMPLETE

Respondent to provide evidence to support the information required under this clause.
6. **PRINCIPAL CONTRACT INSURANCE REQUIREMENTS**

The Respondent must demonstrate that it has the insurances required under Appendix D - Principal Contract Details.

**RESPONDENT TO COMPLETE**

Does the Respondent have the insurance requirements set out in Schedule 1 - Principal Contract Details?

(Yes / No)

If yes, the Respondent must complete the following table:

<table>
<thead>
<tr>
<th>Insurer</th>
<th>TIN</th>
<th>Policy No</th>
<th>Insured Amount</th>
<th>Expiry Date</th>
<th>Exclusions, if any</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Liability Insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public and Product Liability Insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workers’ Compensation including common law liability of $50 million</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OR

If no, does the Respondent confirm that if it is awarded a contract, then it will obtain the insurance policies set out in Schedule 1 - Principal Contract Details prior to the Contract Commencement Date?

(Yes / No)

If no, the reasons why.
SCHEDULE 1 PRICING

The Principal will, in its Value for Money assessment, consider the extent to which the Offer satisfies the following Offered Price and Pricing Requirements. The Principal reserves the right to reject any Offer that does not properly address and satisfy any of the Offered Price and Pricing Requirements.

a) OFFERED PRICE AND PRICE SCHEDULE

(i) The Respondent must include in the Offer this completed Schedule 3 - Pricing.

(ii) The Respondent must state the basis of its Offered Price in Fiji Dollars and any price variation provision, arrangement or mechanism applicable to the Offered Price.

(iii) The Offered Price will be deemed to include the cost of complying with the full scope as described and inferred by this complete document including the relevant documents as referenced under section 2 Part A, (including the Principal Contract Details) and the General Conditions and the cost of complying with all matters and things necessary or relevant for the due and proper performance of the Principal Contract. Any charge not stated as being additional to the Offered Price will not be payable by the Principal. The Offered Price is for a taxable supply under current taxation legislation, the Offered Price will be deemed to be inclusive of all VAT and withholding Taxes as applicable to the taxable supply at the rate in force for the time being.

<table>
<thead>
<tr>
<th>RESPONDENT TO COMPLETE</th>
<th>VAT and Other Taxes as Applicable Inclusive $FJD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope of Services Civil and Structural Engineering Consultancy</td>
<td></td>
</tr>
<tr>
<td>Due Diligence / Site Investigations/ User Groups</td>
<td></td>
</tr>
<tr>
<td>Functional Requirement’s Brief</td>
<td></td>
</tr>
<tr>
<td>Concept Design (30% Design)</td>
<td></td>
</tr>
<tr>
<td>Design development (50% Design)</td>
<td></td>
</tr>
<tr>
<td>Design documentation (90% Design)</td>
<td></td>
</tr>
<tr>
<td>Tender documentation</td>
<td></td>
</tr>
<tr>
<td>For Construction documentation</td>
<td></td>
</tr>
<tr>
<td>Construction Administration (including assessment of Civil and Structural variations and claims).</td>
<td></td>
</tr>
<tr>
<td>Defects Liability Period</td>
<td></td>
</tr>
<tr>
<td>Disbursements and Expenses</td>
<td></td>
</tr>
<tr>
<td><strong>Total Fixed Lump Sum Priced Offer</strong></td>
<td></td>
</tr>
</tbody>
</table>
**RESPONDENT TO COMPLETE**

Fixed Lump Sum to carry out the works as specified within this request.

$________________ (Inclusive of VAT)

(Amount in words)__________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

All out of hours working should be allowed within this sum

b) **VARIATIONS PRICE SCHEDULE**

In addition to the above fixed lump sum fee, the consultant shall all confirm hourly rate[s] applicable for specifically requested additional works.

<table>
<thead>
<tr>
<th>RESPONDENT TO COMPLETE</th>
<th>VAT and Other Taxes as Applicable Inclusive FJD Per Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly rate for Personnel</strong></td>
<td></td>
</tr>
<tr>
<td>Senior Engineer</td>
<td></td>
</tr>
<tr>
<td>Junior Engineer</td>
<td></td>
</tr>
<tr>
<td>Draftsman</td>
<td></td>
</tr>
<tr>
<td>Office Administration</td>
<td></td>
</tr>
</tbody>
</table>
c) DISBURSEMENTS SCHEDULE

The Respondent shall detail below the site visits included in the fixed lump sum for disbursements as required by section 6 of Part A of the Contract to enable the Respondent to complete the required scope of services.

<table>
<thead>
<tr>
<th>No.</th>
<th>Personnel</th>
<th>Days onsite including return airfares and accommodation</th>
</tr>
</thead>
<tbody>
<tr>
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*Include rows as required*

The Respondent should include all planned and required visits in the above schedule.

Disbursements incurred outside the above will be reimbursed at cost shall be charged at cost plus 5%.
PART C TERMS AND CONDITIONS FOR THIS RFT

1. INFORMATION NECESSARY FOR SUBMISSIONS

a) Before completing the submission response respondents must carefully read and comply with the Terms and Conditions for the RFT (this document).

b) Lodgement of a submission shall be taken to mean that the respondent has obtained all information necessary for its accurate preparation. The information contained in or attached to this document or subsequently provided, is provided in good faith. However it is provided for guidance only and no guarantee is given as to its accuracy, completeness, validity or applicability. No claim may be made against The Principal or its agents for costs or losses which may arise from anything contained in or omitted from this document or provided subsequently.

c) Claims by the successful respondent(s) for extra remuneration on the grounds of not being furnished with sufficient, or accurate information, or any unforeseen terms will not be considered by the Principal.

d) This document is not an offer and is to obtain information only.

2. CONFIDENTIALITY

a) Confidential information includes all information and documentation obtained by or provided to you during this RFT process, including, without limitation, this document but excluding all information which is in the public domain; is required to be disclosed by law or was already known by you and is in the public domain (“Confidential Information”). Respondents may only use Confidential Information for the purposes of this RFT process.

b) By accepting this document, recipients agree to keep Confidential Information confidential and will only use it for the purposes of this RFT. No information contained in this document is to be shared or revealed to anyone not approved by The Principal or its agents in writing.

c) The Recipient must:

i. Hold the Confidential Information in strict confidence and not disclose, or cause or permit the disclosure of, the Confidential Information.

ii. Keep the Confidential Information including without limitation any documents secure and protected from any use, disclosure or access by any other party.

iii. Promptly notify The Principal or its agents if it suspects, or becomes aware of, any unauthorised use, storage, copying or disclosure of the Confidential Information.

3. COST OF PREPARATION OF SUBMISSIONS

a) Respondents are responsible for their own cost of preparing and lodging submissions and all other costs, including site visits, arising out of the process. For the avoidance of doubt, no claim can be brought against The Principal or its agents if this process is aborted or if there is otherwise a departure from the processes set out in this document at any time.

4. FORMAT OF SUBMISSION RESPONSE

a) The response must contain all the documents and information requested, and all questions must be answered.
Part C: TERMS AND CONDITIONS FOR THIS RFT

b) Submissions must include a complete response as per instructions in the document and these conditions. Failure to observe these instructions may cause a response to be considered non-compliant, however The Principal or its agents reserves the right to include same in its evaluation.

5. CLARIFICATION

a) Enquiries regarding aspects of this document should be referred to the Principal’s Representative to the contact name that appears in the document.
b) The Principal or its agents reserves the right to inform all other respondents on any question or matter raised and the clarification given.

6. DECISION PROCESS

a) Respondents are to submit their best proposal for all of the requirements listed. The decision process is not solely dependent on price and issues in the RFT; design, service and quality levels are also extremely important. Respondents’ offers may be accepted in part or in full at the sole discretion of Principal. The Principal or its agents may select more than one respondent to provide the requirements stated in this document.

7. LODGING THE SUBMISSION

a) Submissions must be lodged by the date specified in the document. Late submissions may be considered invalid and excluded from the evaluation, however The Principal or its agents reserves the right to accept late submissions if in Principal’s reasonable opinion the late submission was due to factors beyond the control of the recipient and The Principal or its agents does not consider that acceptance is unfair to other respondents.
b) Upon delivery of the responses in accordance with this document, the submissions become the property of Principal, however the Principal or its agents agrees to keep all Confidential Information, confidential and only use such information for the purposes of this RFT.

8. ADDITIONAL INFORMATION

a) The respondent may be called upon to supply information additional to that shown in its submission in respect of the services to be provided.
b) The respondent may be required to authenticate and, or provide evidence of claims made in its submissions.
c) False or misleading claims or claims that cannot subsequently be authenticated may disqualify a respondent from further consideration and render their submission invalid.
d) Respondents can include in their submission any other information that may enhance the competitiveness of their submission.

9. PRICES

a) The submission shall include price or rate details as required in Part B of this document.
10. ACCEPTANCE

a) The Principal or its agents shall not be bound to accept the lowest offer of any submission and no submission shall be deemed to have been accepted until a formal written agreement is executed by the parties.

b) An invitation to negotiate further with a respondent will not constitute an acceptance of the submission by the Principal.

c) An acceptance of a submission or any invitation to negotiate or make an offer will not constitute a contract to supply services to the Principal.

11. RESERVATION OF RIGHTS

The Principal or its agents reserves the right to:

a) Extend the submission closing date.

b) Amend the requirements at any time prior to the submission closing date, provided that the amendment is notified to all respondents.

c) Include non-compliant responses in any evaluation.

d) Seek information from or negotiate with one or more of the respondents on any issue at any time and to continue to negotiate with one or more of the respondents.

e) Discontinue negotiations at any time with any respondent.

f) Abandon this process whether before or after the receipt of submissions.

g) Make inquiries of any person, company or organisation to ascertain information regarding the respondent and its submission.

h) Take any other action it considers appropriate;

And if The Principal or its agents chooses to exercise any of these rights, no claim may be made against The Principal or its agents for any resulting costs or losses.

12. RESPONDENT’S EXPECTATIONS

Respondents may expect that:

a) The Principal or its agents will preserve the confidentiality of respondents’ confidential information.

b) The Principal or its agents will afford invited respondents the opportunity to compete fairly for the business.

c) The Principal or its agents will provide advice to respondents on the outcomes of their offer.