

## **TERMS OF REFERENCE FOR RELOCATION OF AIR FORCE ELEMENT IN PARO INTERNATIONAL AIRPORT**

### A. Background:

Paro International Airport is the only international airport in the country. It is the portal of entrance and exit for international travel. It connects Bhutan to the rest of the world, playing a vital role in the development of the nation.

Air Force Element (AFE) has been assisting Bhutan's venture into aviation ever since its commencement. The existing AFE facilities need to be relocated and a new set of infrastructures shall be constructed.

### B. Scope of services:

#### a. Design and procurement

- Topographical survey of site- The consultant shall be responsible for carrying out of topographical survey of construction site as and when required.
- Soil investigation- The consultant shall carry out soil investigation by performing relevant soil tests
- Detailed Quantity and Cost Estimating including preparation of BoQ
- Preparation of bidding document in accordance to latest Standard Bidding Document of PPPD.
- Assist the department in floating tenders, pre-bid activities, evaluation of bids, finalizing of contract and obtaining necessary approval from local authority or other related agencies as needed by the law of Bhutan.
- Site plan- The consultant shall be responsible for preparation of site plans
- Planning of road network and car parking- The consultant shall prepare road network and car parking plan.
- Sustainable architectural design concept
- Landscape design- The consultant shall be responsible for planning and designing of landscape.
- Preparation of bidding document as advised by the employer while giving necessary recommendations as and when needed. The document shall be prepared in accordance with latest standard bidding document available in the PPPD website.
- Provide all necessary assistance for procurement of contracts, including but not limited to advertising the invitation to bid, bid clarifications, addenda, pre-bid

meetings, bid openings, bid evaluation and bid evaluation report, obtaining of approvals and finalization and award of contract.

- Making timely presentation to all stakeholders as and when needed or as advised by the client.
- Organizing and proposing timely meetings or discussions among all stake holders in order to ensure that the client's requirement's is completely covered by the proposed design.

b. Supervision

- Preparation of project schedule in conjunction with Department of Air Transport to ensure minimum disruption to aircraft operation.
- Approving contractor's work program, method statements, material sources, materials and equipment schedule, and Quality assurance & safety plan.
- Approving and/or issuing working drawings, approving the setting out of the works, and giving instructions to the contractor.
- Review and monitor quality control programs of the contractors
- Inspecting materials and works to ensure compliance with specifications and giving immediate notice to the contractor in the event that such materials and works fail to comply with the specifications.
- Coordinating the quality tests of the materials procured by the Contractor(s) for the project. Any substandard materials shall be rejected. The Consultant shall ensure at all times that the contractor works in strict compliance with the contractor's quality management plan.
- The Consultant shall be responsible for inspection and supervision of day to day operations and activities of the contractor to ensure quality of workmanship and compliance with the contract. The test results of the quality tests shall be analyzed and the results shall be justified by the Consultant. In case of non-conformity of test reports, the Consultant shall prepare non-conformity report; propose rectification work or an adequate solution. Any additional test required to be carried out in order to ensure quality of work shall be recommended by the Consultant. In the event of the Contractor's inability to produce samples of items before procurement, the Consultant shall, if necessary, with the consent of the Project Manager visit the agent/supplier to verify the quality of materials specified in the contract. The cost of such visits shall be borne by the contractor.
- Monitor and report monthly work progress of the project activities.

- Accept or reject any part or parts of the completed works.
- Taking measurements and keeping records of measurements.
- The Consultant shall maintain all books of accounts at site as per the requirement of financial manual and Procurement Rules and Regulations of the Government. The Consultant shall be responsible to keep records of all project related documents, Site order book, site hindrance register, cement account register, photographs, test results and certificates, measurement books and bills for auditing and record purpose.
- The Consultant shall be responsible to answer and respond to all audit queries and observations during auditing by Royal Audit authority which shall be arranged to be carried out within defect liability period.
- The consultant shall be responsible for maintaining records, correspondence and diaries.
- Certifying work volume for making payment to the contractor.
- As soon as the quantity verification is complete, the Consultant shall cross check the rate entries in the Contractor's bill to ensure it is as per the contract bill of quantities. And if there is any admissible advance claimed by the Contractor, the Consultant shall verify as per the clauses of the Contract Document. In the event of variations to the being required, the Consultant shall prepare the necessary documents, negotiate these with contractor, determine rates of work, advice employer on alternatives and recommend these to employer as variation order for approval. The Consultant shall also actively participate in the acquiring of the approval through preparation of documents, providing and explaining necessary justifications to the authority.
- After complete verification, the Consultant shall enclose the bills of claim in appropriate format (with proportionate deduction against any advance taken) and submit the bills of claim to the Project Manager for approval and release of payment. This must be supported by the progress report and summary sheet reflecting the details of the project
- Maintaining of measurement book and making entries in the MB for payment to contractor.
- Periodically checking the remaining quantities and undertaking constant monitoring of contract's cost.

- Reviewing and recommending to the employer variation orders, time extensions, claims, and other matters that may arise during the course of the project.
- Carrying out rate analysis for any unscheduled items of work that may arise, negotiating with the contractor the rates of unscheduled items and making recommendations to the employer.
- Advising the employer on all matters relating to the execution of works; and assisting with processing of contractor's possible claims.
- Preparation of project completion report as per the requirement of the employer on completion of contract.
- Inspecting the works at appropriate intervals during defect liability period and certifying the defects liability certificate for issuance by the employer.
- Providing the employer with complete records, and inception, monthly and completion reports.
- The Consultant shall supervise the contractor in all matters concerning safety and care regarding civil works including provision of necessary lights, guardrails, safety barriers fencing and security. As the site is in the airport, the Consultant shall be responsible to ensure that the safety is not compromised.
- In the event of disputes with the contractor or other relevant agencies, the Consultant shall be answerable. The Consultant shall be responsible for justification from the employer's side.
- On contractor's submission of completion report, the Consultant shall be responsible for issuing of completion certificate. The as-built drawings submitted by the contractor shall be checked and certified by the Consultant.
- During the defect liability period the Consultant shall be responsible for periodic visit of the site to check for any required rectification work. In case of required rectification, the Consultant shall carry out the estimated value of the rectification work and submit to the employer.
- The consultant shall prepare a project completion report in the format as required by the employer. As per the requirement of CDB, the Consultant shall assess the contractor's timely completion and quality of work as per the marking criteria set by CDB and submit the report to the employer.

1. Key Personnel: The consultancy team shall have following key personnel with the minimum qualifications and experiences outlined for the services.

Sl.no	Position	Qty	Qualification
	Design and procurement stage		
1	Structural Engineer	1	Bachelors Degree in Civil Engineering with 10 years' experience in building design works
2	Architect	1	Bachelors Degree in Architecture with 10 years' experience in design & construction
3	Electrical Engineer	1	Bachelors Degree in Electrical Engineering with 10 years' experience in similar works
4	Surveyor	1	Diploma/degree in survey engineering with Minimum five years of surveying work experience.
	Construction and supervision phase		
1	Project Engineer	1	Bachelors degree in civil engineering/project management with 10 years total experience and minimum 5 years' experience in managing similar projects
2	Site Engineer	1	Bachelors degree in civil engineering with 5 years' experience in similar works
3	Electrical Engineer	1	Bachelors Degree in electrical engineering with 5 years' experience in similar works

**Note:**

- All work experiences of key personnel shall be supported by documents such as degree certificates and experience certificates issued by authorized agency.
- The Consultant may propose any additional support staff required to accomplish the Services under this proposal

**1. Outputs/Reporting requirement & Time Schedule:**

The consultant shall prepare and submit the following reports in English language within the time limits provided against each report:

Report	Description/ technical accomplishments	Time in months	Cumulative
Planning and design stage			
Inception report	Initial findings and Recommendations, Overall assignment objectives & strategies Work plan outlining main activities and sub-activities, methodology and timeline and schedule of activities. List of key and supporting staff, their qualifications and experiences, tasks assigned and time allocations. Detail topographical survey report Soil investigation data and report of the site Detailed Site plan 3D Conceptual drawings Preliminary Architectural design Overall plan of the airport Consultant shall make a detailed presentation to all the stakeholders on the conceptual plans and drawings.	1	1
Bidding document for	Standard bidding document for preliminary review including	2	3

preliminary review	preliminary drawings and specifications for review by the client. (excluding BoQ)		
Final bidding document	Final bidding document after incorporating employers comments on Bidding Document including final construction drawings, BoQ, specifications and design report.	2	5 months
<b>Construction supervision stage</b>			
Monthly progress report	Brief details of the work carried out during the previous month, problems encountered or anticipated, along with the steps taken or recommendations for their correction and financial and physical progress to date.	By 10 <sup>th</sup> day of each month following commencement of project.	
Project completion report	In accordance with the requirement of the employer.	Within 3 months from the completion of the project.	

2. Mode of payment is as follows:

Stages	Description/ technical accomplishments	Payment percentage
Inception report	Initial findings and Recommendations, Overall assignment objectives & strategies Work plan outlining main activities and sub-activities, methodology and timeline and schedule of activities. List of key and supporting staff, their qualifications and experiences, tasks assigned and time allocations. Detail topographical survey report	10% of design fees

	<p>Soil investigation data and report of the site</p> <p>Detailed Site plan</p> <p>3D Conceptual drawings</p> <p>Preliminary Architectural design</p> <p>Overall plan of the airport</p> <p>Consultant shall make a detailed presentation to all the stakeholders on the conceptual plans and drawings</p>	
Preliminary review	Standard bidding document for preliminary review including preliminary drawings and specifications for review by the client. (excluding BoQ)	40% of design fees
Final bidding document	Final bidding document after incorporating employers comments on Bidding Document including drawings, BoQ, specifications and design.	40% of design fees
Completion	<p>The consultant shall visit the site and clarify any issues pertaining to design, drawing, BoQ as and when needed during the execution of the project. The consultant shall issue revised drawings or supplementary drawings and technical details as needed during the execution.</p> <p>The final 10% of design fees shall be released on successful completion of execution of the project.</p>	10% design fees
Construction supervision stage		
Monthly progress report	Brief details of the work carried out during the previous month, problems encountered or anticipated, along with	Monthly payment of supervision charge



	the steps taken or recommendations for their correction and financial and physical progress to date.	
Project completion report	In accordance with the requirement of the employer.	Supervision charge of final month of the project shall be released on submission of project completion report