

NADZAB Airport Upgrade

KA PROJECT REFERENCE: 15450
INDUSTRY: Civil Infrastructure- Aviation
DISCIPLINES: Architecture and Full Engineering Services

PROJECT SUMMARY

CLIENT

JICA funded.
 Oriental Consultants Global (OCG)

LOCATION

Morobe Province, Papua New Guinea

PROJECT TYPE

Design and Documentation

YEAR COMPLETED

Design: June 2015 – June 2019



PROJECT DESCRIPTION

Nadzab Airport is situated in the suburban area of Lae city, the capital of Morobe province, which has the second largest population in PNG. The Nadzab Airport handles the second largest air passenger traffic and cargoes after Port Moresby's Jackson's Airport. Since its existing facilities requires large-scale improvements from capacity and safety perspectives, The Government of Papua New Guinea (PNG) formally requested The Government of Japan for assistance to rehabilitate the Airport.

This is a redevelopment project to upgrade the existing Nadzab airport to accommodate up to B767, B777 and B787 as an alternate airport for Jackson's Airport. The project includes widening and strengthening of the existing runway, taxiway and apron, construction of new taxiways and apron, improvement of aeronautical ground lights, new passenger terminal & admin building, firefighting & rescue facilities, refurbishment of the existing terminal for Cargo and the construction of utilities for a fully functioning international airport

JICA Cooperation Scheme: Yen Loan Project

Target Development Sector: Transportation (Aviation sector)

Target SDGs: (i) Goal 9: Industry, Innovation and Infrastructure, (ii) Goal 8: Decent Work and Economic Growth

Counterpart Organization: National Airports Corporation (NAC)

Duration: (i) Loan Agreement: October 2015, (ii) Ground Breaking: 30th August 2020, (iii) Completion of Construction: ~April 2023

Amount: Total Cost: PGK 692 million

(i) JICA Project Financing: PGK 578 million (JPY 26,942 million), (ii) GoPNG Counterpart funding: PGK114 million (JPY5,303 million)

PROJECT ROLE

KA was engaged for professional services including:

- Architectural, Full Engineering Design & Doc & preparation of Bid Documents for the Runway expansion & new 2 Storey Passenger Terminal Building (PTB), Fire station, Substation
- Architectural, Full Engineering Design & Doc & preparation of Bid Documents of the existing terminal to become the new Cargo Terminal, wastewater treatment
- Architectural, Full Engineering Design & Doc to refurbish the Control Tower
- Assistance with Procurement of the Constructor viz design tender queries
- Assistance in Reporting to JICA
- Technology Transfer

NADZAB Airport Upgrade

PROJECT DATASHEET

Project Reference: 15450

Industry: Civil Infrastructure - Aviation

ASSIGNMENT NAME:	APPROX. VALUE OF THE CONTRACT:
NADZAB Airport Upgrade	CAPEX: ~AUD280M (or ~USD195M) DESIGN: ~AUD5M (or ~USD3.5M)
LOCATION & COUNTRY:	DURATION OF ASSIGNMENT (MONTHS):
Morobe Province, PNG	49 Months
NAME OF FUNDING AGENCY:	TOTAL NO. OF STAFF-MONTHS OF THE ASSIGNMENT:
JICA	120. 7 Months
ADDRESS OF AGENCY:	APPROX. VALUE OF THE SERVICES PROVIDED BY YOUR FIRM UNDER THE CONTRACT:
1F–6F Ninbancho Building Center, Chiyoda, Tokyo, Japan	AUD \$ 1.4M
START DATE (MONTH/YEAR): COMPLETION DATE (MONTH/YEAR):	NUMBER OF PROFESSIONAL STAFF-MONTHS PROVIDED BY ASSOCIATED CONSULTANTS:
Design: June 2015 – June 2019 Construction: Ongoing (estimated Sept 2020 to 2024)	N/A
NAME OF ASSOCIATED CONSULTANTS, IF ANY:	NAME OF SENIOR PROFESSIONAL STAFF OF YOUR FIRM INVOLVED AND FUNCTIONS PERFORMED:
Oriental Consultants Global (OCG)	Daniel Tucker (Civil Engineer), Fred Oala (Architect), William Vagi (Structural Engineer), Bruce Nicholson (Project Director), John Gabriel (Project Manager).

NARRATIVE DESCRIPTION OF PROJECT:

This is a redevelopment project to upgrade the existing Nadzab airport to accommodate up to B767, B777 and B787 as an alternate airport for Jackson's Airport. The project includes widening and strengthening of the existing runway, taxiway and apron, construction of new taxiways and apron, improvement of aeronautical ground lights, new passenger terminal & admin building, firefighting & rescue facilities, refurbishment of the existing terminal for Cargo and the construction of utilities for a fully functioning international airport

Project purpose: The project aims to meet the future demands of air transportation at Nadzab Airport and to establish as an alternate international airport for Port Moresby (Jackson) International Airport by accommodating large wide body jet aircrafts, constructing an international and domestic new passenger terminal building, and upgrading associated facilities. This will improve facilitation of air transportation and contribute to economic growth in Papua New Guinea.

Overall goal

- (i) Air Transport demand at Nadazab Airport is met
- (ii) Alternate International Airport for Port Moresby Airport International achieved.
- (iii) Contribution to gradual economic growth in the country is achieved

Outputs

- (i) Widening and/or strengthening of the exiting runway, taxi way and apron
- (ii) Construction of new taxiways and apron
- (iii) Improvement of aeronautical ground lights
- (iv) Construction of new passenger terminal building, administration building, and fire station
- (v) Refurbishment of the existing passenger terminal building for future cargo handling
- (vi) Refurbishment of the existing control tower
- (vii) Construction of utilities, substation, pump houses, and waste treatment facility
- (viii) Miscellaneous works (new car parking, perimeter fence, and gates, etc.)
- (ix) Procurement of Rescue and Fire Fighting Vehicles.

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Part I: Scope of Works of the Services

Chapter 1. Background

The Government of the Independent State of Papua New Guinea (hereinafter referred to as "GoPNG") has received a loan from the Japan International Cooperation Agency (JICA) to finance the Nadzab Airport Redevelopment Project (the Project), which is to upgrade the existing Nadzab Airport to accommodate scheduled operations of B737 class aircraft for both domestic and international services as well as to handle diverted aircraft such as B767, B777 and B787 as an alternate airport of Port Moresby (Jacksons) International Airport.

The Project comprises the following components:

Construction Works with Japanese ODA financing

- a) Widening and/or strengthening of the existing runway, taxiways and apron;
- b) Construction of new taxiways and apron;
- c) Improvement of aeronautical ground lights;
- d) Construction of new passenger terminal building, administration building as well as rescue and fire-fighting station;
- e) Refurbishment of the existing passenger terminal building for future cargo handling; and,
- f) Refurbishment of the existing control tower
- g) Construction of utilities and substation.

Construction Works with the GoPNG Budget

- h) Embankment for protection from Erap river flooding

GoPNG intends to use part of the proceeds of the loan for eligible payments for the Services.

Location of the Project is Nadzab Airport, approximately 35km to the northwest of Lae City in Morobe

Province. Executing agency of the Project is the National Airports Corporation (the Client).

PNG Air Services Limited will carry out CNS/ATM upgrading works at Nadzab Airport separately from this Project.

Chapter 2. Objectives of the Services

The Services shall be provided by the Consultant in compliance with Guidelines for the Employment of Consultants under Japanese ODA Loans, April 20 12. The objective of the Services is to achieve the efficient and proper preparation and implementation of the Project through the following works:

- a) Detailed design and Preparation of bidding documents
- b) Assistance in bidding
- c) Construction supervision
- d) Maintenance supervision (Defects Notification Period)
- e) Facilitation of implementation of Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP)
- f) Assistance in Reporting to JICA
- g) Technology transfer

Chapter 3. Scope of the Services

The scope of the Services is composed of i) Detailed Design, ii) Preparation of Bidding Documents and Assistance in Bidding Procedure, iii) Construction Supervision, iv) Facilitation of Implementation of Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP), and v) Technical Transfer. The Services shall cover all facilities to be constructed with Japanese ODA loan and detailed design of facilities to be constructed with the GoPNG budget.

(1) Detailed Design

The Consultant shall;

- a) Review and verify all available primary and secondary data collected during the JICA's preparatory survey for the Project;
- b) Carry out all the required engineering surveys and investigations such as topographical survey, hydrological survey, hydrographical survey, geotechnical survey, material availability survey, etc., as applicable to the concerned project components.
- c) Prepare detailed work plan, progress reports and implementation schedule for the Project to ensure effective monitoring and timely project outputs, and regularly update the same; and
- d) Prepare the detailed design of the Project in sufficient detail to ensure clarity and understanding by the Client, the Contractor and other relevant stakeholders. Designs should be in conformity with Standards and Recommended Practices of the International Civil Aviation Organization (ICAO) and other internationally accepted standards. The detailed design will, as a minimum, include construction drawings, detailed cost estimates, necessary calculations to determine and justify the engineering details for the Project, associated contract documentation to include detailed specifications, bill of quantities (BOQ) and implementation schedule for the Project. Such detailed specifications will contain those in relation to i) quality control of plant materials and workmanship, ii) safety, and iii) protection of the environment. The detailed design shall be prepared in close consultation with, and to meet the requirements of the Client and will be incorporated into the detailed design report to be submitted for approval of the Client. The Consultant shall verify that structure of existing control tower and passenger terminal building conforms to the design code for relevant seismic zone, and apply adequate reinforcing measures to the design, if necessary. The Consultants shall make appropriate consideration of gender in the design and construction of the Project Facilities

(2) Preparation of Bidding Documents and Assistance in Bidding Procedures

The Consultant shall;

- a) Prepare bidding documents in accordance with the latest version of Standard Bidding Documents under Japanese ODA Loans for Procurement of Works (October 2012) together with all relevant specifications, drawings and other documents;
- b) Prepare bidding documents which includes i) clauses stating that the Contractor is to comply with the requirement of the Environmental Management Plan (EMP) and "JICA Guidelines for Environmental and Social Considerations" (April 2010) (JJCA Environmental Guidelines), ii) the specification clearly stipulating the safety requirements in accordance with the laws and regulations in PNG, relevant international standards (including guidelines of international organization), if any, and also in consideration of "the Guidance for the Management of Safety for Construction Works in Japanese ODA Projects" (September 2014), iii) the requirement to furnish a safety plan to meet the safety

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- requirements, iv) the requirement for the personnel for key positions to include an accident prevention officer, and v) the requirement to submit method statements of safety to the Client and the consultant at the construction stage.
- c) Define technical and financial requirements, capacity and/or experience for PQ criteria taking into consideration technical feature of the Project;
 - d) Prepare PQ documents in accordance with the latest version of Standard Prequalification Documents under Japanese ODA Loans;
 - e) Assist the Client in *PQ* announcement, addendum/corrigendum, and clarifications to the applicants' queries;
 - f) Evaluate PQ applications in accordance with the criteria set forth in *PQ* documents; and
 - g) Prepare a PQ evaluation report for approval of the PQ evaluation committee.
 - h) Assist the Client in issuing bid invitation, conducting pre-bid conferences, issuing addendum/corrigendum, and clarifications to bidders' queries.
 - i) Assist the Client in evaluating bids in accordance with the criteria set forth in the bidding documents. In such evaluation, the Consultant shall carefully confirm that bidders' submissions in their technical proposal including, but not limited to, site organization, mobilization schedule, method statement, construction schedule, safety plan, and EMP have been prepared in consistent with each other and meet requirements set forth in applicable laws and regulations, specifications and other parts of the bidding documents;
 - j) Prepare a technical bid evaluation report and price bid evaluation report for approval of the Client;
 - k) Assist the Client in contract negotiation by preparing agenda and facilitating negotiations including preparation of minutes of negotiation meeting; and
 - 1) Prepare a draft and final construction works contract agreement.
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