

Eua (Kaufana) Airport Runway Upgrade to Domestic Aircrafts

KA PROJCT REFERENCE: 8239T
INDUSTRY: Civil Infrastructure- Aviation
DISCIPLINES: Airport and Civil Engineering, Surveying and Geotechnical Engineering

PROJECT SUMMARY

CLIENT

Tonga Airport Authority (TAL)

LOCATION

Eua Island, Tonga

PROJECT TYPE

Investigation

YEAR COMPLETED

2009



PROJECT DESCRIPTION

Kaufana Airport is on Eua Island some 30km from the main Island of Tonga. The upgrading report was commissioned by Tonga Airport Authority (TAL) of Tonga who required upgrading the airport to allow for improved conditions for an all weather operation for the airport.

The preparation of the proposed upgrading work and the reporting is based on using the New Zealand Civil Aviation (NZCA) and the International Civil Aviation Organisation (ICAO) Standards.

The airport needed to be upgraded to meet NZCA & ICAO standards. Pavement investigation was also done to determine bearing capacity of the existing and proposed new extensions.

The project was funded by the Government of New Zealand as a demonstration of New Zealand's commitment to assisting Tonga to develop its tourism sector

PROJECT ROLE

Kramer Ausenco provided the following Engineering Investigation and Condition Assessment services:

- Project Management
- Airport & Civil Engineer
- Geotechnical Investigations
- Surveying Services

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ASSIGNMENT NAME: Eua (Kaufana) Airport Runway Upgrade to Domestic Aircrafts	APPROX. VALUE OF THE CONTRACT: TOP\$1.5Million
LOCATION & COUNTRY: Eua Island, Tonga	DURATION OF ASSIGNMENT (MONTHS): 8 Months
NAME OF FUNDING AGENCY: Tonga Airport Authority (TAL)	TOTAL NO. OF STAFF-MONTHS OF THE ASSIGNMENT: 2 Staff – Months
ADDRESS OF AGENCY: Taufa'ahau Road Tofoa, Tonga	APPROX. VALUE OF THE SERVICES PROVIDED BY YOUR FIRM UNDER THE CONTRACT: TOP\$50,000
START DATE (MONTH/YEAR): COMPLETION DATE (MONTH/YEAR): State Date: February 2008 Completion Date: October 2008	NUMBER OF PROFESSIONAL STAFF-MONTHS PROVIDED BY ASSOCIATED CONSULTANTS: N/A
NAME OF ASSOCIATED CONSULTANTS, IF ANY: N/A	NAME OF SENIOR PROFESSIONAL STAFF OF YOUR FIRM INVOLVED AND FUNCTIONS PERFORMED: Arthur Budvietas – Team Leader & Engineer Taniela Fonua – Senior Surveyor

NARRATIVE DESCRIPTION OF PROJECT:

Kaufana Airport is on Eua Island some 30km from the main Island of Tonga. The upgrading report was commissioned by Tonga Airport Authority (TAL) of Tonga who required upgrading the airport to allow for improved conditions for an all-weather operation for the airport.

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DESCRIPTION OF ACTUAL SERVICES PROVIDED BY YOUR STAFF WITHIN THE ASSIGNMENT:

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- Geotechnical Investigations
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INCEPTION & INVESTIGATIONS

PRELIMINARY ACTIVITIES

- Team management, communication protocols, systems and controls put in place in close collaboration with the Client, Tonga Airports Limited (TAL). Project management standard was established for the condition assessments, geotechnical investigations, and survey, to ensure an effective project process and controls in place to maintain schedule and for the effective implementation of the project.
- Project critical criteria including design and regulation standards relevant such as International Civil Aviation Authority Organisation (ICAO), New Zealand Civil Aviation (NZCA), Federal Aviation Authority (FAA), Unified Facilities

Criteria (UFC) and International Air Transport Association (IATA).

- Regulatory bodies governing development consent (Physical Planning Board) and environmental impact assessment legislation (Department of Environment and Conservation) in addition to the requirements under the Tonga National Building Code were consulted early to mitigate potential permitting issues or delays in project implementation.

SITE RECONNAISSANCE AND ASSESSMENT

- Site Reconnaissance and Assessment undertaken to gauge the current site conditions and operational requirements that informed investigation team reviewing and evaluating the existing facilities and conditions.
- KA project team leader met with the Client to confirm requirements.
- Initial layouts and assessments derived from measurement and photographs of the existing facility in conjunction with discussions and information provided by Client.
- A consultation process considered comments from the Client, and the KA team queried site data available that might affect general layout issues from a construction engineering viewpoint.
- The Site Reconnaissance and Assessment provided the following:
 - a) Identify client and end-user stakeholders and establish protocols for interactions/engagements.
 - b) Coordinated collaboration and communication protocols with end users and stakeholder groups prior to commencement.
 - c) Identified safety and security issues for both project personnel and college personnel.
 - d) Identified any possible environmental issues.
 - e) Identified any hazards.
 - f) Reviewed for suitability and compliance with statutory codes and construction methodology.
 - g) Assessed possible constraints that might impact investigations or follow-on Contractor works.
- The outcomes formed the basis for the preparation of condition and geotechnical assessment reports, and survey deliverables.
- Investigation of existing facilities and site condition would be essential work for carrying out the efficient management of the project including design and construction management.
- Site Investigations include the following:
 - a) Investigation of flight movement in existing runway, parallel taxiway, and apron
 - b) Land use pattern
 - c) Investigation of flight operation condition and cycle time in apron
 - d) Main entry way of aircraft and usage of taxi way
 - e) Investigation of existing road around airport which will be used for transportation of construction material

PROJECT RISK ASSESSMENT & QUALITY MANAGEMENT

- A risk register, and risk assessment plan were produced after a risk workshop with key parties. They were revised and amended accordingly throughout the project.
- Kramer Ausenco's in-house Quality Assurance (QA)/Quality Control (QC) system has been third party certified to conform to the requirements of AZ/NZS ISO 9001. Our Quality Policy is based on the Quality Management Principles as outlined in ISO 9004:2000 'Quality Management Systems – Guidelines for Performance Improvements'. Our in-house QA/QC systems hosts all the quality management forms, registers, checklists, and other plans and sub-plans necessary for managing quality.

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY MANAGEMENT

- Personnel health, safety and security is a very critical part of everything we do at Kramer Ausenco. This safety, health and security emphasis is underpinned by one of our core company values – "Safety in all we do". Kramer Ausenco's Safety Policy has been developed to promote the safety culture we have today, and to bring "safety consciousness" to centre stage in everything we do as a company.
- Kramer Ausenco's Health & Safety Management Plan and Environment & Community Plan outlines the procedures and processes we follow on the job, both in the office and out on the field. We will review these plans with the successful DCF Contractor to make sure all parties are aware and aligned with the HSEC expectations to be adopted for this project. We will also make appropriate changes so that the plans for this Project meets health, safety, environment and community needs specific to this Project.
- Kramer Ausenco Health & Safety and Environment & Community Management Plans implemented the following:
 - a) Implemented appropriate safety and security measures prior to commencement of construction.
 - b) Reviewed the Contractor's Health, Safety, Environment and Community Plan for the Project.
 - c) Communicated the Health, Safety, Environment and Community measures to be undertaken on the Project to all stakeholders.
 - d) Ensured the Health, Safety, Environment and Community measures comply with Workplace Health and Safety Regulations.

- e) Ensured all project works are performed in a safe and secure manner, and that any activity relating to the Project does not compromise the health, safety and security of project personnel, visitors, bystanders, environment or the community in which project activities comes into contact with; and
- f) Ensured Zero (0) Lost Time Injury (LTI) is achieved on the Project.

DESKTOP ANALYSIS AND REVIEW OF PREVIOUS STUDIES

- Reviewed all previous studies to find out any problems or improvements in view of the technical and economic justification especially in connection with the existing facilities and proposed new facilities.
- Any previous Functional Brief and previous studies by others:
 - a) Review adequacy of flight demand in previous studies
 - b) Review Design Standard in previous studies
 - c) Review size of airport facilities suggested in previous studies
 - d) Review the location of rapid taxiway suggested in previous studies
 - e) Review the improvement plan of existing facilities
- Final Report & Deliverables - Kramer Ausenco completed a Report summarizing the outcome of the investigations and survey.