AIRPORT AUTHORITY
P.O. Box 90, Rarotonga, COOK ISLANDS
Telephone: (682) 25-890 Fax: (682) 21-890

Terms of Reference

Engineer to Contract and Management Surveillance and Quality Assurance Services

About this document

Airport Authority Cook Islands (AACI) seeks expressions of interest from suitably qualified and experienced engineering consultancy firms, joint ventures and specialist teams. The assignment covers independent Engineer to Contract services and supporting Management Surveillance and Quality Assurance (MSQA) services for two concurrent projects at Rarotonga International Airport while the airport remains operational.

- **Runway End Safety Area (RESA) Extension Project** - construction of an engineered filled embankment to extend the Runway 26 RESA and achieve the required safety distance, including associated relocation and adjustment of airport, road, drainage, utility, navigation and security infrastructure; and
- **Runway Slab Replacement Programme, Phase 2** - structural replacement of 19 prioritised cracked concrete runway slabs using methods and materials that allow the runway to be safely returned to operational service within defined works periods.

These Terms of Reference describe the assignment and the information suppliers must submit at the Expression of Interest (EOI) stage. After the EOI closes, Airport Authority Cook Islands (AACI) will review all responses to assess supplier interest and capability. AACI will then determine the next steps in accordance with the Cook Islands Government's Purchase and Sale of Goods and Services Policy. This may include requesting further information from suppliers or undertaking a further procurement process to engage a supplier for this assignment.

Purpose

Background

Rarotonga International Airport and the need for investment

Rarotonga International Airport is the Cook Islands' principal international gateway and is critical to passenger movement, tourism, freight, emergency access and the wider national economy. The runway was constructed in the early 1970s and opened to international operations in 1974. Its original Portland cement concrete pavement slabs were designed for an approximate 40-year service life and are now more than 50 years old. At the same time, the Airport must maintain compliance with applicable international and Cook Islands aviation safety requirements while continuing to operate scheduled domestic and international services.

The Runway End Safety Area (RESA) Extension and Runway Slab Replacement (Phase 2) projects respond to separate but related safety and asset-condition issues at the same operational airport. They have been planned and sequenced together because both require specialist airfield engineering, strict airside controls, coordinated access to a live runway, and careful staging to avoid unacceptable disruption to aircraft operations. The projects

also have practical interfaces, including the proposed reuse of suitable material generated by the slab works as part of the RESA fill strategy.

Runway End Safety Area Extension

The existing Runway 26 RESA at the eastern end of the runway is approximately 50 metres long and does not meet the minimum 90-metre RESA requirement adopted under the Cook Islands aviation regulatory framework. The requirement was identified through aviation compliance oversight and has previously been managed through time-limited exemptions. Continued non-compliance creates a material aviation-safety and certification risk for the Airport.

Two principal options were considered. The first was to reduce the declared landing distance by approximately 40 metres and relocate associated runway threshold and navigational systems. While this could provide the required safety distance, it would reduce operational capability and may constrain aircraft payloads, passenger capacity and freight. The preferred option is therefore to extend the runway strip and end area through an engineered filled embankment, retaining the existing operational runway length while achieving the required minimum RESA.

The project has developed through land, technical, environmental and design investigations. Adjacent land parcels needed for the works have been acquired or progressed through the relevant land arrangements. Topographical survey, geotechnical investigation and environmental assessment have informed the design. An environmental investigation undertaken in 2023 identified an old uncontrolled landfill within part of the project footprint, requiring excavation, sorting, treatment or disposal of unsuitable material before embankment construction. The environmental assessment and public consultation process was completed in early 2026.

The physical works include construction of the engineered embankment, treatment or reuse of suitable on-site and imported fill, relocation and recommissioning of the Instrument Landing System antenna array, realignment of approximately 340 metres of Putua Road, stormwater drainage improvements, utility adjustments and changes to permanent and temporary airport security fencing. Fill quantity, quality and source remain important technical considerations. The project is pursuing reuse of suitable dredged, stockpiled and recovered materials where testing and design acceptance confirm compliance.

Runway Slab Replacement Programme

The runway pavement comprises concrete slabs constructed when the Airport opened in 1974. Over time, repeated aircraft loading has caused flexural fatigue and cracking. The introduction of heavier aircraft, including Boeing 777 and Boeing 787 operations, increased wheel-load effects on the ageing pavement. Slab cracking was first reported in 2004. From 2010 to 2018, epoxy under-slab injection was used as a holding treatment to stabilise cracked slabs and limit foreign object debris. This extended service life but did not provide a permanent structural solution. Renewed cracking observed in 2018 led to development of a staged slab replacement programme.

Initial planning identified 73 cracked slabs, of which 60 required attention and five were considered critical. Phase 1 was implemented during 2021 and 2022, including periods affected by COVID-19 travel restrictions, and replaced 39 slabs using conventional and rapid-setting concrete. The programme established specialist volumetric mixing equipment on Rarotonga and developed local contractor and Airport staff capability in concrete production, placement and return-to-service procedures. Rapid-set concrete can achieve trafficable strength within a short operating window, enabling slab replacement between aircraft movements and allowing the runway to be reopened safely.

Post-Phase 1 inspections reviewed 45 older slabs during 2022 and 2023 and prioritised 19 cracked slabs for structural replacement under Phase 2. Other affected slabs will continue to be monitored and, where appropriate, managed through interim repair treatments. Phase 2 is required to manage foreign object debris risk, maintain runway reliability and support continued certification and airline confidence.

Phase 1 also produced important delivery and technical lessons. Phase 2 documents therefore provide for a single lead construction contractor under NZS 3910:2013, clearer responsibility for defects, strengthened onsite project management and independent contract administration, additional testing of the cement-treated basecourse, revised separation-layer and dowel details, improved curing controls, trial mixes and trial slabs, and specialist technical support for the rapid-set cement and volumetric mixing equipment. Refresher training is required because of the time elapsed since Phase 1 and the risk of losing locally developed technical skills.

Purpose of the assignment

The purpose of the assignment is to provide an independent Engineer to Contract, with supporting MSQA, for both construction contracts, which will be administered under NZS 3910:2013 Conditions of Contract for Building and Civil Engineering Construction. The Engineer to Contract will:

- administer both construction contracts fairly and impartially in accordance with NZS 3910:2013;
- confirm, through MSQA, that the works are constructed in accordance with the drawings and technical specifications;
- monitor and report on cost, time, quality and aviation safety while maintaining the Engineer's impartiality in contractual decisions;
- maintain the design intent, particularly for material re-use in the RESA fill, cement blending and rapid-set concrete; and
- give AACI timely reporting and early warning of risks, non-compliances and potential claims.

Outputs

The Consultant shall deliver the outputs below for each construction contract. Deliverables shall be complete, accurate, internally quality-checked and suitable for reliance by AACI.

Output and accountable deliverable	Scope, minimum requirements and evidence	Timing and acceptance
1. Mobilisation and pre-commencement readiness **Deliverables:** mobilisation plan, agreed protocols and a readiness report for each contract.	• Confirm the Engineer to Contract/MSQA team, roles, authority, availability and escalation arrangements. • Attend four days of start-up meetings in Rarotonga with AACI, the Project Manager, Contractors, Airport operations, advisers and regulators. • Review each Contractor's programme, work methods, quality, safety, environmental, airside and procurement plans. • Agree procedures for document control, communications, RFIs, instructions, payments, variations and reporting. • Confirm hold and witness points, testing requirements, acceptance criteria, reporting templates and the initial risk register. • Issue a readiness report listing outstanding actions, key risks, responsible parties and requirements to be met before work starts.	**Due:** before commencement of the relevant contract, currently anticipated from January 2027. **Acceptance:** AACI confirms that the report provides a clear evidence-based recommendation on readiness to commence and that critical pre-start conditions are identified.
2. Engineer to Contract administration **Deliverables:** instructions, determinations,	• Perform all functions of the Engineer under NZS 3910:2013, as modified by each contract's Special Conditions, fairly and impartially. • Issue formal instructions and directions and respond within contractual timeframes to RFIs,	Due: continuously throughout construction and close-out.

Output and accountable deliverable	Scope, minimum requirements and evidence	Timing and acceptance
certificates, recommendations and current contract registers.	shop drawings, submissions, temporary works, work methods, materials, substitutions and design matters. • Assess payment claims, verify quantities and evidence, and issue payment schedules and certificates within the contract timeframes. • Assess, value and determine variations, claims, extensions of time and other entitlements, recording the contractual basis, facts, cost, programme effect and supporting evidence. • Refer matters exceeding delegated authority to AACI with a clear recommendation before commitment, except where immediate action is required to protect safety or the works. • Maintain auditable registers for correspondence, RFIs, instructions, submissions, variations, claims, extensions of time, payments, non-conformances, design changes, risks and decisions. • Issue immediate written early warning of any matter likely to materially affect safety, quality, cost, programme, airport operations or regulatory compliance.	**Acceptance:** actions are timely, reasoned, contractually compliant, within delegation and supported by a complete audit trail.
3. MSQA, surveillance and progress reporting **Deliverables:** compliance matrix, site-visit records, monthly reports and exception reports.	• Review site observations, daily shift reports, photographs, survey records, inspection requests, test certificates and evidence of completed hold and witness points. • Assess work and test results against drawings, specifications, approved methodologies and Inspection and Test Plans, maintaining traceability from each requirement to the supporting evidence. • Maintain a compliance matrix for earthworks, fill, cement treatment, concrete production, pavement works, drainage, utilities, fencing, navigation infrastructure and other relevant activities. • Undertake visits of three to four days, timed where practicable for trials, high-risk activities, significant pours, hold points and commissioning. • Review non-conformances, root-cause assessments, corrective actions and close-out evidence, distinguishing accepted, conditionally accepted, rejected and unresolved work. • Submit a clearly separated monthly report for each contract covering physical and financial progress, approved baseline versus forecast programme, critical path, quality results, safety	**Due:** monthly reports within five working days after month-end; site-visit records within five working days; exception reports within two working days of identification, with immediate verbal notification for safety-critical matters. **Acceptance:** reporting is current, evidence-based, contract-specific and clearly identifies status, trends, corrective action, ownership and

Output and accountable deliverable	Scope, minimum requirements and evidence	Timing and acceptance
	and environmental matters, operational interfaces, commercial status, risks, decisions required and updated registers. • Issue an exception report for any significant failed test, unsafe condition, missing quality record, unauthorised design departure or matter that may prevent safe reopening of the runway.	decisions required.
4. Practical Completion assessment and certification **Deliverables:** inspection record, defects schedule, Practical Completion report and certificate or written reasons for withholding it.	• Review each Contractor's request and confirm completion of required inspections, tests, commissioning, quality documentation, approvals, training, warranties, operation and maintenance information and other contractual prerequisites. • Attend site for up to five days per contract for joint completion inspections with AACI, the Project Manager, Contractor and relevant technical or operational representatives. • Prepare a prioritised defects and outstanding-work schedule recording responsibility, corrective action, due date, verification method and effect on safety, operations and use. • For runway slab works, confirm that all return-to-service criteria and supporting test evidence have been met before recommending operational release. • Issue, or formally withhold with reasons, the Certificate of Practical Completion in accordance with the contract and record the Defects Liability Period start date and outstanding obligations. • Submit a Practical Completion report summarising compliance, residual defects, unresolved commercial matters, warranties, maintenance requirements and recommended DLP monitoring.	**Due:** runway slabs, anticipated August to September 2027; RESA, anticipated October 2027, subject to approved programmes. **Acceptance:** certification is supported by complete records and confirms that no outstanding matter prevents safe intended use.
5. Defects Liability Period and contract close-out **Deliverables:** defects register, final inspection record, final account recommendation, Final Completion Certificate and close-out report.	• Administer each 12-month Defects Liability Period and maintain a register recording notification, responsibility, agreed remedy, due date, inspection status and close-out evidence. • Investigate and respond to recurring failures, settlement, cracking, drainage performance and infrastructure issues affecting safety, serviceability or durability. • Verify completion of outstanding Practical Completion items and rectification of defective work. • Attend Rarotonga for up to three days per project near the end of the DLP for final inspection with AACI and the Project Manager.	**Due:** throughout each DLP, with final inspection and close-out anticipated in Q3 to Q4 2028. **Acceptance:** defects and commercial matters are reconciled, completion evidence is

Output and accountable deliverable	Scope, minimum requirements and evidence	Timing and acceptance
	• Reconcile variations, claims, provisional sums, measurements, payments, retentions and other commercial matters and provide a documented final-account recommendation. • Issue the Final Completion Certificate only when all contractual conditions are satisfied. • Submit a close-out report recording final cost and time outcomes, residual risks, warranties, unresolved obligations, lessons learned and recommended monitoring and maintenance actions.	traceable, and residual responsibilities are clearly transferred to AACI.

Methodology and approach to the assignment

The Engineer to Contract shall perform all functions of "the Engineer" under NZS 3910:2013, as modified by the Special Conditions of each construction contract. The service combines regular site visits to Rarotonga with remote support.

Site attendance

- Start-up: Engineer to Contract on site for 4 days for pre-commencement meetings covering both projects.
- Construction: monthly site visits by the Engineer to Contract of 3–4 days, timed to coincide with key activities and hold points, and combined across both projects to reduce travel cost.
- Completion: Engineer to Contract on site for 5 days for Practical Completion of each contract, and for 3 days for the final inspection at the end of each 12-month Defects Liability Period.
- In-country support beyond these visits is not included and would be agreed as an additional service.

Remote MSQA

- The Project Manager is responsible for construction observation and specification compliance checking on site, and will supply all test data, observations and daily shift reports to the Engineer to Contract by email.
- The Engineer to Contract's MSQA team will evaluate this information, assess test results against the technical specifications, maintain the compliance record and advise on any non-compliance.
- An MSQA Support engineer will act as the daily point of contact for the Project Manager.

Programme assumptions

- The RESA (about 9 months) and runway slab (about 6 months) contracts run concurrently, with no overhang of one beyond the other that would extend the engagement past an overall 9-month construction period.
- Any change to programme duration or phasing will be notified by the Engineer to Contract and fee implications agreed with AACI in advance.

Quality assurance

- All deliverables will be verified in accordance with the Engineer to Contract's ISO 9001 accredited quality system.

Exclusions

- Fees payable to third parties, including consenting authority fees.
- Technical assistance under separate offers of service, and any planning or design consultancy scope changes (design changes requested by AACI or arising from site conditions will be managed as a variation).
- Review of, input to or preparation of as-built documentation.
- Environmental, aeronautical or operational studies.
- Additional in-country MSQA services beyond those described above.

Relevant reports/documentation

- Rarotonga International Airport RESA Extension – detailed design drawings and technical specifications (AECOM).
- Runway Slab Replacement Programme Phase 2 – detailed design drawings and technical specifications (AECOM).
- Request for Tender and construction contract documents for each project (NZS 3910:2013 with Special Conditions).
- Activity Planning Document and design documentation prepared under the Tarai Vaka Process.
- Environmental approvals and consent documentation for the RESA Extension.

Expected Competencies

- Sound, impartial judgement in administering construction contracts and making determinations under NZS 3910:2013.
- Strong technical knowledge of airfield pavements, rapid-set concrete, earthworks, cement-stabilised and recycled fill materials.
- Ability to manage quality assurance remotely, using data supplied by others, and to identify non-compliance early.
- Clear, timely written reporting to a client and funding agency.
- Effective working relationships with the Principal, Project Manager, Contractors, specialist suppliers and regulators.
- Awareness of aviation safety and airside working requirements at an operational airport.
- Cultural awareness and ability to work effectively in the Cook Islands context.

Required Skills and Experience

The successful applicant(s) will have:

- Engineer to Contract (lead) – Chartered Professional Engineer (CPEng or equivalent) with at least 15 years' experience, including acting as Engineer to Contract under NZS 3910 on airfield pavement or major civil infrastructure works.
- **MSQA Lead:** Chartered engineer with at least 10 years' experience in civil infrastructure / aviation pavement quality assurance, including concrete and earthworks testing.
- **MSQA Support:** Engineer with pavement experience, able to act as the daily point of contact for the Project Manager.
- Demonstrated experience with works on operational airports, including airside safety and staging.
- Experience with rapid-set concrete pavement repair and with cement-stabilised or recycled fill materials.
- Familiarity with Rarotonga International Airport, the project designs and locally available raw materials (highly desirable).
- Experience delivering services in the Pacific region and current Cook Islands business registration with the Business Trade Investment Board (BTIB), or the ability to obtain it where required.

Issues, risks or constraints

- **Dependence on site data:** remote MSQA relies on an uninterrupted flow of observations and test data from the Project Manager. Gaps or delays may reduce assurance.
- **Concurrent contracts:** fees assume the two contracts overlap with no overhang beyond 9 months. Delays to either contract may require fee adjustments.
- **Operational airport:** works are carried out next to a live runway; airside safety, works staging and return-to-service requirements must be met at all times.
- **Materials:** the RESA relies on re-use of on-airport and slab replacement materials, and the slab works on rapid-set concrete using local raw materials. Variability may lead to material substitutions and variations.
- **Logistics:** limited flights and accommodation in Rarotonga may affect the timing and cost of site visits.
- Taxation and registration requirements may depend on the supplier's circumstances and the time spent in the Cook Islands. State how taxes and registration costs have been treated in Annex A.

Governance and management

- **Principal:** Airport Authority Cook Islands (AACI), represented by the Chief Executive Officer.
- AACI contact officer for this EOI and day-to-day project contact – Makea Pauka, working with the Project Manager for both projects.
- **Roles:** the Project Manager is responsible for overall project delivery, on-site construction observation, compliance checking and supply of test data. The Engineer to Contract administers the construction contracts and provides MSQA.

Expression of Interest submission requirements

Submit one PDF covering each of the items below. Address both projects and identify which organisation and personnel would perform each role.

1. Cover letter and supplier details. Give your legal name, contact details and a brief profile. Confirm interest in both projects and identify an authorised contact. For a joint venture or specialist team, identify the lead organisation, each member and their responsibilities.

2. Relevant assignments. Provide examples that demonstrate the required experience. For each, give the client, dates, scope and your role. Highlight NZS 3910 contract administration, live-airport delivery and relevant pavement, concrete or earthworks quality assurance.

3. Proposed personnel and availability. Include CVs for the Engineer to Contract, MSQA Lead and MSQA Support. State each person's qualifications, professional registration where applicable, relevant project experience and availability for mobilisation, construction, site visits and defects inspections.

4. Brief delivery approach. Outline how you would resource both contracts concurrently, provide on-site and remote support, coordinate with the Project Manager and apply your quality assurance system. Flag any material availability or mobilisation constraints.

5. Conflict of interest and independence. Declare any actual, potential or perceived conflicts involving the supplier, team members or subconsultants, including prior involvement in either project. Describe proposed safeguards or state that there are no known conflicts.

6. Insurance and registration status. State the status of professional indemnity and public liability insurance and Cook Islands business registration where applicable. If any are pending, say how and when they could be obtained.

7. Schedule of Pricing. Complete Annex A for both projects and include the completed schedule in your EOI PDF. Provide indicative pricing in New Zealand dollars (NZD), including expenses and VAT where applicable.

How to submit

Email your EOI to Makea Pauka at mpauka@airportauthority.gov.ck with the subject line “EOI – Engineer to Contract and MSQA Services”. AACI must receive your EOI by 4 pm (Cook Islands time) on Thursday, 3 December 2026. Late submissions may not be considered.

Direct requests for the Terms of Reference and enquiries to the same email address or call +682 55348.

Annex A Schedule of Pricing

Engineer to Contract and MSQA services for the RESA Extension and Runway Slab Replacement Programme, Phase 2.

Supplier name _____

Contact name and email _____

Complete all rows in NZD. Enter the monthly rates below. Enter zero where there is no charge. Show shared costs once and explain where they are included. Identify any exclusions or assumptions below.

Service or expense	**Pricing basis**	**Amount (NZD)**
Mobilisation and preparation of plans	Lump sum	
RESA Extension Project construction services	Monthly rate × 9 months	
Runway Slab Replacement Project construction services	Monthly rate × 6 months	
RESA Extension Project defects liability services	Lump sum for 12 months	
Runway Slab Replacement Project defects liability services	Lump sum for 12 months	
Expenses related to the work outputs	Itemise below or attach a breakdown	
Subtotal excluding VAT		
VAT at 15% where applicable	State treatment below if not charged	
Total including applicable VAT		

Monthly rates and expense breakdown

_____

Pricing assumptions, exclusions and VAT treatment

_____

Prepared by and date

_____