Section 7. Terms of Reference

Design and Supervision of the Upgrade of the Control Room and Construction of Training Room at the Aerodrome Rescue and Firefighting Services (ARFFS) located at the HIA

1. Background:

1.1. Country

St. Lucia W.I.

1.2. Client

The St. Lucia Air & Sea Ports Authority,
Project Implementation Unit
The Caribbean Air Transport Connectivity Project
(CATCOP)
Hewanorra International Airport (HIA)
Vieux Fort
St. Lucia

1.3. Country Background

The Caribbean region has seen progress towards reducing poverty but still faces significant economic challenges. In particular, the highly open economies of the member countries of the Organization of Eastern Caribbean States (OECS) rely heavily on tourism, which contributes to at least one-quarter of their total economic output, except for Grenada and St. Vincent and the Grenadines, where the contribution is a bit lower. Agricultural output in the region has declined in recent decades due to competitive pressures from larger nations and the devastating impact of frequent natural disasters on crop yields. This has resulted in a significantly increased emphasis on tourism, private educational services, and the development of niche agricultural exports for achieving economic goals, all of which are heavily dependent on-air transport infrastructure.

Saint Lucia has been challenged by relatively low levels of economic growth and high indebtedness and unemployment. Tourism in Saint Lucia, taking up 42 percent of GDP and 42 percent of the total employment in 2019, has been growing fast at around 7 percent annually. International tourist arrivals in the country have increased significantly from 278,000 in 2009 to 348,000 in 2016. Meanwhile, resilience-enhancing and tourism-related construction has been booming, including projects valued at 20 percent of GDP to be implemented in the medium term. With the global economy slowing down in recent years, the average economic growth is around 2 percent between 2016 and 2019. As one of the smallest countries located in the disaster-prone Caribbean, Saint Lucia's economy is extremely vulnerable to natural disasters and heavily reliant on a single sector—tourism, which is also deeply affected by the global environment and natural disasters.

Given their insularity and geographical location, air transport connectivity and resilience in the Caribbean must be strengthened to cope with high levels of exposure to natural hazards which are exacerbated by climate change. Past extreme weather events and other natural disasters in the Caribbean Sea (for example, hurricanes, flooding, earthquakes, and landslides) have demonstrated the region's lack of sufficiently resilient infrastructure systems that can continue to deliver essential services even when affected by natural disasters. They have further demonstrated the critical importance of climate/disaster resilient transportation systems—especially air transport—when called to provide immediate life-saving response in post-disaster situations and to contribute to a speedy economic recovery.

Currently there are two airports in Saint Lucia which are vital for the regional movement of people and goods and for the tourism sector with its increased demand. The latest disaster risk assessment of airport

infrastructure identified a high risk of river flooding at UVF as well as potential storm surge impacts at both UVF and SLU. Potential impacts from climate change, including extreme temperatures, could cause further deterioration of the airport runways, pavements, and access roads, while flooding can inundate and damage runways, parked aircraft, and terminal buildings, which can result in extended airport closures. Recognizing the strategic importance of UVF, the GoSL has planned significant investments for the airport addressing its safety and resilient.

1.4. Current situation in the sector

While overall Caribbean interregional air connectivity has improved in recent years, intra-regional connectivity has languished. Air travel in the Caribbean region is notably characterized by limited flight options as well as frequent delays and cancellations. Investments have tended to favor interregional connectivity (that is, long-haul passenger service) far more than intra-regional air connectivity (that is, short-haul service between islands). Overall, Caribbean air passenger traffic grew 50 percent between 2007 and 2017, from about 40 million to almost 60 million annually, but intra-regional passenger traffic remained flat and declined in some countries including Saint Lucia.

2. Objective(s) of the Assignment:

This contract will be a part of the overall objective of the Project to improve the operational safety and enhance the resilience of Saint Lucia's airport infrastructure to natural disasters. Also, to strengthen the reliability and oversight of Saint Lucia's air transport sector, improve disaster prevention.

The specific objective is to provide the HIA Aerodrome Rescue and Firefighting Services (ARFFS) with facilities to enhance their service delivery, provide comfort, train staff to perform at their optimum level. Resulting in increased productivity of personnel stationed at the ARFFS and improve fire rescue efficacy.

Purpose

The purpose of this contract is to provide consultancy services for the following:

- Confirmation and/or verification of the site suitability to deliver the services associated with an HIA-ARFFS.
- Utilize conceptual drawings to develop approved designs, produce Bill of Quantities (BoQ) and cost estimates.
- Construction Supervision and Contract Administration (Contingent on successful completion of Phase 1)

3. Scope of Services, Tasks (Components) and Expected Deliverables

3.1 The scope of works involves the utilization and elaboration of existing conceptual designs to rehabilitate and upgrade the existing HIA- ARFFS facility through:

a. Minor modifications and improvements to existing facility
b. The construction of a second building level to accommodate a training room and a viewing tower (entire runway and airport facilities).

Criteria for Designs

The facility will serve primarily the airport but there may be occasions when it will have to provide support to events in the surrounding community or at a national level. The facility will

need to ensure that the standards and guidelines as stipulated in the attached Annex14: Convention on the Civil Aviation Sections 2.11 and 9.2.

Additionally, the following design considerations should be incorporated

- Climate-Resilient Construction (Pre-event)
- Prudent Disaster Risk Management (During an event)
- Effective Disaster Response and Recovery (Post Event)

To that effect, the Consultant will provide, without being limited to, the following services:

Note: Throughout all stages the following agencies should be consulted, SLASPA, PIU-CATCOP, HIA, Fire Services. Approvals of all outputs will be by SLASPA/PIU-CATCOP

Phase 1: Pre- Construction

Site Location

- Verification of suitability of the Site to accommodate the ARFFS and improve/enhance the delivery of all services required
    - Drainage
    - Flooding
    - Access to the Site
    - Surrounding risks (river, trees, drainage)
    - Environment
    - The availability and adequacy of water supply to deliver the required services;
    - Adequate conditions for sanitation.
    - Adequacy for future expansion
    - Potential to and ability to include RE and telecommunications services,
    - Electricity 3-phase supply

Preliminary Designs (*Pre-Formulation)*

- Confirm criteria for the design
    - Space consideration (Sq. ft.)
    - Assessment and report of the use of the current facilities and propose minor upgrades to enhance the flow of activities, storage, safety, health and overall functionality of the HIA- ARFFS.
    - Capacity- No. of individuals, (indicate basis for criterion)
    - Agreement of type of building reinforced concrete or fabricated steel structure
    - Design considerations to enable the HIA-ARFFS to meet ICAO and national guidelines/standards
    - Design considerations to enable facility to function at its optimum level
    - Agreement on resiliency metrics- CAT-5 hurricane, earthquake (return period -2475 years, Occupancy category III or IV, ground acceleration speed 1sec and 0.2(short) sec/1.0 g -0.2s (http://uwiseismic.com/maps.aspx)), drainage, ashfall etc., wildlife
    - Specific references to ICAO standards and requirements (Annex14: Convention on the Civil Aviation Sections 2.11 and 9.2)
    - WIFI access points and communications networks (internal and external)
    - Electrical system upgrades required
    - Preliminary Designs
    - Preliminary cost estimates
    - Preliminary Design Report

- **Note consultant should receive formal acceptance to proceed to the next stage**

Final Designs (Formulation)

The Consultant shall undertake, without being limited to, the following activities in conjunction with the design phase of the Project:

- Finalize the needs (space allocation through consultation with stakeholders), in structure, fixtures and facilities, for safe/resilient ARFFS with the following characteristics:
- Built to resilient standards (National Building Codes)
  - o Safe location
  - o Safe for multiple hazards
  - o Independent/ standby water system and be able to capture and store potable water, include provision for water harvesting
    - Allow for future incorporation of renewable energy (Solar PV)
    - GenSet
    - Offices for Officers
    - Sufficient sanitary facilities (male and female and changing rooms)
  - o Storage facilities for basic supplies
  - o Independent/reliable communication system
  - o Have the capacity to withstand Category-5 winds (155mph) and seismic loadings of magnitude 6 to 7 on the Richter scale.
  - o Be energy efficient
    - Allow for future incorporation of solar-PV panels
  - o Incorporate water proofing of external surfaces
  - o Integrate into an effective storm water management system
  - o Underground utilities
  - o Separate bathroom facilities for males, females with common areas such as kitchen, dining, and
  - o A sound telecommunications system.

- Develop detailed Architectural and Engineering Designs and drawings for the internal and external layout of the ARFFS.
- Making formal presentations to all stakeholder
- Submit and receive approval of the Physical Planning Division a completed Development Application Form for Planning Permission in respect of new buildings:

  - o Survey Plan of the land to which the plans relate to be provided by Client
  - o Plans
  - o Location Plan
  - o Site Plan
  - o Floor Plan
  - o Foundation Plan
  - o Elevations
  - o Roof Plan
  - o Cross Sections
  - o Beams Framing Plan
  - o Details to be taken at all critical sections of buildings (Foundation and Retaining Walls, Floor Slab on Grade, Columns, Beams, Stiffeners, Roof, Suspended slabs, Ring Beam, and Steps),
  - o Electricity Plan
  - o Plumbing Plan
  - o Drainage Plan
  - o Engineer's Certificate
- Develop detailed Cost Estimates.
- Prepare technical specifications all fixtures, fittings and equipment required (new build)
- Prepare a Bill of Quantities/cost estimates and technical specifications for the construction of the buildings, based on the assessment of a Quantity Surveyor (SMM7)
- Preparation of full Works Tender Dossier (WB's templates- international-open)

The Consultant shall undertake, without being limited to, the following activities in conjunction with

the evaluation phase of the Project:

- Provide support to the Project Supervisor and to the Client during the tender period and evaluation of the works tender offers (responses to potential tenderers questions)
- Attend the Tender Opening Session in the capacity of observer.

- Provide bid evaluation report to Evaluation Committee

Phase 2: Construction Supervision (Contingent on Successful Completion of Phase 1)

Supervision of Works

(i) *Supervision.* During implementation of the building contract (or supply and building process, as applicable), the Consultant shall act on behalf of the Client in the capacity as Supervisor Representative to provide both general and targeted supervision to ensure that the materials and building works comply with the design specifications, building codes and guidelines, with particular focus on the construction details which are critical to resilience (such as roof ties, foundation ties, etc.), to conduct site inspections, verify quantities, at key stages for payment milestones, to issue instructions to the contractor if remedial actions are required, and to notify the PPD- Development Control Officer (DCO) when statutory inspections and approvals are required. Specific tasks shall include:

- Conduct regular site inspections, covering at least the following milestones where applicable: Site set out; excavation; reinforcing steel set out; poured concrete slab or floor completion; wall fixing and tie beam; roof connection and framework; plumbing services; and certification for occupancy;
- Interpret the drawings and specifications, consult with the Contractor as required to ensure compliance with the Contract documents, Building Code, Environmental and Social Management Plan (ESMP), Environmental, Health, and Safety (EHS) Guidelines and the construction programme, and issue instructions to the Contractor to perform remedial actions as required;
- Arrange meetings with the Contractor and PIU at least every two (2) weeks, to review progress, the programme and the resolution of any claims;
- Furnish client -specific progress reports on a monthly basis (to accompany monthly payment request); and

Conduct a thorough inspection of all aspects, including Environmental, Social, Health and Safety, of the works and require remedial actions by the Contractor as needed; and arrange for Development Control Office inspection.

(ii) *Certification of Payments.* The Consultant shall check the Contractor's invoices and valuations for payment on account against the Conditions of Contract, and endorse the verified payable amount for payment by the client or the client's banking institution.

(iii) *Completion report and As-built drawings.* The Consultant shall prepare and submit a brief completion report on the construction to the Client, noting any variations from the original design and Contract price. As-built drawings (drawn by the Contractor) are required.

(a) *Environment, Social, Health and Safety*. The Consultant as per WB guidelines, shall prepare a standard Contractor Environmental and Social Management Plan (C-ESMP),

including the use of the Grievance Redress Mechanism, which is appropriate for the works, as agreed with the Client/ WB and the Supervisor, and ensure that environmental, social, health and safety risks in all phases and works under these services are managed in accordance with the ESMP, including:

(i) *Environmental hazards.* The risks of flooding, erosion, landslides and other environmental hazards shall be mitigated adequately during the design and construction phases at the site under the services;

(ii) *Environmental management.* The selection, storage, processing of materials, and the disposal of waste, management of pesticides, chemicals and hazardous materials, fugitive emissions (Volatile Organic Compounds, Particulate Matter and Ozone Depleting Substances), runoff and contamination and other applicable World Bank safeguards triggered under the Project on each site shall be managed in accordance with the C-ESMP;

Inter-alia

Ensure that the Contractor delivers his ES obligations under its contract. This includes, but is not limited to the following:

1. *review the Contractor's Environment and Social Management Plan (C-ESMP), including all updates and revisions at frequencies specified in the Contractor's contract (normally not less than once every 6 months);*
2. *review all other applicable contractor's documents related to ES aspects including the health and safety manual, security management plan and SEA prevention and response action plan;*
3. *review and consider the ES risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, consent/permits and other relevant project requirements;*
4. *undertake, as required, audits, supervisions and/or inspections of any sites where the Contractor is undertaking activities under its contract, to verify the Contractor's compliance with ES requirements (including relevant requirements on SEA/SH);*
5. *undertake audits and inspections of Contractor's accident logs, community liaison records, monitoring findings and other ES related documentation, as necessary, to confirm the Contractor's compliance with ES requirements (including relevant requirements on SEA/SH);*
6. *determine remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ES obligations;*
7. *ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with ES obligations;*
8. *ensure that the Contractor's actual reporting (content and timeliness) is in accordance with the Contractor's contractual obligations;*
9. *review and critique, in a timely manner, the Contractor's ES documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;*
10. *undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ES issues;*
11. *establish and maintain a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g., of those reporting allegations of SEA and/or SH.*

(iii) *Social risk management.* The consultations, communications and any grievances or disputes with beneficiaries shall be managed in accordance with the C-ESMP; and

(iv) *Health and Safety.* The Consultant shall ensure compliance of all activities and works under these services with the health and safety provisions of the C-ESMP and Environmental, Health, and Safety (EHS) Guidelines

(b) *Accounts and Claims.* Any claim from the Contractor(s) under the construction contracts shall be evaluated by the Consultant and necessary recommendation shall be made be in accordance with the requirements of the works contract. The Consultant shall review and report on any financial claims submitted by the Contractors within two (2) weeks of receipt of such claims.

(c) *Disputes.* The Consultant shall assist in the settling of all disputes or differences, which may arise between the client and the Contractors, in a timely manner. In the case of litigation and arbitration the Consultant shall assist the client in the preparation of the documents needed by the client.

(d) *Defects Liability and Maintenance Period.* The Consultant shall continue to be responsible for the supervision and inspection of the construction and completion of the works during the Defects Liability Period as defined in the construction contracts. The level of supervision shall be appropriate to the scale of the works being carried out. These inspections and supervision shall ensure that works agreed to be carried out during the Defects Liability Period, are properly carried out and have been completed and that any failure of any part of the Works has been rectified. If any defect is discovered, during this period, the Consultant shall promptly investigate the reason for it, report to the PIU and take required actions to rectify the defect. The Consultant shall submit quarterly reports to the Client/ Supervisor summarizing all the activities of Defects Liability during the quarter.

(e) *Variations* All variations which result in a cost increase must be approved by the Client/Supervisor.

- During the design phase the Consultant shall host a minimum of two (2) stakeholder consultations/meetings - one on presentation of the Preliminary Designs the other to present the Final designs.

- During the construction phase, The Consultant shall host a minimum of two (2) stakeholder consultations/meetings - after the third and sixth quarterly progress reports, respectively (or as required by the Client) - to present a construction progress report to the Project stakeholders, including the PIU, the Fire Service, and responsible Ministries.

- The consultant will be required to set up a Management Information Systems (MIS) under which all contractual documents will be stored, including the Administrative Orders, the Request for Information from the contractors, the site meeting minutes, the consultant reports, the drawings and any other relevant documents.
- Develop an implementation Plan to allow the ARFFS to deliver services while work is proceeding

3.2 Expected Deliverables

The main results expected from the consultants are as follows:

Phase 1: Pre-Construction

• Site assessment and verification.

Preliminary Designs -formulation

- Establish criteria for the design
    - Space consideration (Sq. ft.)
    - Assessment and report of the use of the current facilities and propose minor upgrades to enhance the flow of activities, storage, safety, health and overall useability of the HIA- ARFFS.
    - Capacity- No. of individuals, (indicate basis for criterion)
    - Agreement of type of building reinforced concrete or fabricated steel structure
    - Design considerations to enable ARFFS to meet ICAO and national guidelines
    - Design considerations to enable facility to function at its optimum level
    - Agreement on resiliency metrics- CAT-5 hurricane, earthquake return period -2475 years, Occupancy category III or IV, ground acceleration speed 1sec and 0.2(short) sec/1.0 g -0.2s (http://uwiseismic.com/maps.aspx), drainage, ashfall etc., wildlife
    - Specific references to ICAO standards and requirements (Annex14: Convention on the Civil Aviation Sections 2.14 and 9.2)
    - WIFI access points and communications networks (internal and external)
    - Elaboration of Preliminary Designs
    - Preliminary cost estimates
    - Preliminary Design Report

Note consultant should receive formal acceptance of preliminary designs to proceed to the next stage

Final Designs (Formulation)

- Designs, engineering drawings and pre-construction cost estimates
- Technical Specifications for requisite fixtures, fittings, and equipment to be installed for functionality of the buildings.
- List of furniture and equipment to be provided to FCS for training room and viewing Tower
- Design Report
- Works Tender Dossier as per WB templates
- Tender Evaluation Report of the works tender

Note consultant should receive formal acceptance of the Designs to proceed to the next stage. Phase 2 is contingent on successful completion of Phase 1

Phase 2: Construction Supervision

- Construction supervision and inspection
- Contract administration
- Monthly progress Supervision reports (accompanied by Monthly Invoices)
- Quarterly Supervision Reports (inclusive on Scope, Time and Cost variations and associated projections)
- Operation and Maintenance Manual
- Project Completion Report (Final accounts, As Built Drawings, Defects List and Provisional Acceptance Certificate)

4.0 Team Composition & Qualification Requirements for the Key Experts (and any other requirements which will be used for evaluating the Key Experts under Data Sheet 21.1 of the ITC)

General: Requirements of Firms

Requirement	*Criteria*	*Proof – Source Document*
Consultant is a duly registered firm	Firm is duly incorporated under the Laws of its country of incorporation and a copy of Certification of Incorporation is included in the Proposal.	Certificate of Incorporation
Number of years providing engineering services as the firm's core business	Ten (10) years	Statement of eligibility, and list of engineering projects.
Competency	Has provided at least two services of similar nature and scope during the last 8 years	Project list with contact information for verification
Backstopping	Film's ability to provide backstopping to the consulting firm's project team	

Key experts have a crucial role in implementing the contract. These terms of reference contain the required key experts' profiles. The tenderer shall submit CVs and statements of exclusivity and availability for the following key experts:

Key expert 1: Team Leader - Engineer/Architect

Qualifications and skills

- A Degree from an accredited university Programme in Architecture\Civil Engineering or equivalent, relevant, or directly related discipline, or equivalent relevant professional experience.
- Fluency in both written and spoken English,
- Fully computer literate in MS Office and construction related software, MS Project and AutoCAD.
- Knowledge of Disaster Risk Management
- Administration and Management - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- Engineering and Technology - Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- Design - Knowledge of design techniques, tools, and principle involved in production of precision technical plans, blueprints, drawings, and models
- Should be able to:
    - o Communicate clearly and effectively to others involved in a project.
    - o Delegate tasks to those capable of completing them or assign workers to oversee areas of a project.
    - o Evaluate progression and adherence to deadlines on a routine basis. o Develop problem solving skills by considering potential problems faced in a project. Come up with solutions to problems that others have not considered.
    - o Create an environment of teamwork and willingness to help co-workers.

General professional experience

- 10 years minimum post-qualification experience in the construction sector with at least 7 years spent in supervision of construction projects.

Specific professional experience

- Minimum 3 similar experiences as Team Leader or similar position, within the last 7 years.

- Specific experience in building design in tropical countries.
- Preferred: Training/Experience in sustainable building techniques or climate-resilient building construction. At a minimum, expert should be knowledgeable of sustainable building techniques or climate-resilient shelter construction.
- Must be well-versed in local building codes and safety regulations.
- Have demonstrated capacity to manage up to three (3) infrastructure projects, simultaneously
- Have no previous record of default on a government contract
- Ability to provide Project Management Plans for each sub- Project anticipated under this Programme.
- Demonstrate extensive knowledge of the St. Lucia Building Codes and Building Guidelines; all laws and regulations concerning the construction sector; and general construction practices, standards and regulations regarding resiliency

Key Expert 2: Quantity Surveyor/Costing Manager

Qualifications and skills

Graduate qualifications in quantity surveying or similar

Fluency in both written and spoken English

General Professional Experience

A minimum of seven (7) years' professional experience in quantity surveying, including measurement and certification of civil works for payment

Key Expert 3: Site Technician/ Engineering

Qualifications and skills

Diploma or higher in Civil Engineering, able to interpret drawings, provide construction-quality assurance and control (testing etc.)

Specific Experience: Must have at least 7 years construction-related experience.

Experience of Non-Key expert to be provided: HVAC/Mechanical Engineer/Electrical Engineer

All experts must be independent and free from conflicts of interest in the responsibilities they take on.

Other experts, support staff & backstopping

CVs for experts other than the key experts should not be submitted in the tender but the tenderer will have to demonstrate in their offer that they have access to experts with the required profiles. The Consultant shall select and hire other experts as required according to the needs. The selection procedures used by the contractor to select these other experts shall be transparent, and shall be based on pre-defined criteria, including professional qualifications, language skills and work experience.

The costs for backstopping and support staff, as needed, are included in the tenderer's financial offer.

5.0 Reporting Requirements and Time Schedule for Deliverables

Three (3) originals and electronic versions of the reports referred to above must be submitted to the project manager PIU-CATCOP identified in the contract. The reports must be written in English. The project manager is responsible for approving the reports.

Costs for statutory approvals, copies of plans, printing are deemed to be included in the Consultants

contract. The following reports are required:

1. Inception Report

2. Site verification report

3. Design Reports:

    a. Draft Preliminary Design report with drawings, cost estimates and Draft tender documents – Four weeks after commencement date. Formal presentation of draft final designs to client (Outlining Design considerations)

    b. Final Design report with drawings & finalized Tender Documents,

    Note: Reports should highlight resilience and sustainability considerations, and should reflect but not be limited to considerations/criterion as indicated above

4. Tender Evaluation Report:

    - The Tender Evaluation Report is an advisory report the Client's Evaluation Committee.

5. Construction Reports

    a. Monthly reports

    b. Quarterly reports

    c. Completion report

    d. Operation and maintenance manual (by Contractor)

    e. As Buit Drawings

Monthly Progress Reports shall include:

- Planned and actual progress of works
- Status of incomplete works
- Material, labour, availability
- Revised schedules
- Design changes/ variations
- Financial particulars
- Progress photographs
- ESHS supervision/monitoring
- Factors adversely affecting progress of the Project
- Decisions yet to be taken
- Weather conditions
- Accidents on site and any other relevant details

Quarterly Financial Reports shall include:

- Contract particulars
- Contractor's claims
- Projected final costs of projects (Revised Bills of Quantity), if required
- Expenditure to date
- Cash-flow projections
-

The Consultant shall also submit other reports following the agreed deliverables timeline or on an as-needed basis including but not limited to non-conformity reports, inform the Client of any material

inconsistencies in the execution of the works, as well as ESHS issues and suggesting appropriate corrective measures to be applied.

Site Verification and Designs – Phase1		
Name of Report	**Content**	**Time of submission**
Inception Report	Demonstrate an appreciation of the project, review implementation, identify any gaps, risks, signal quality assurance and quality control systems.	Within one week of the start of the contract
Site Verification and Design Criteria Report	As detailed in Item 2.0 above under Site confirmation and verification	Within two weeks of the start of the contract
Preliminary Designs	As detailed in Item 2.0 above under Preliminary Designs	Within six weeks of the start of the contract
Final Design report and Drawings	As detailed in Item 2.0 above under Final Designs	Within eleven weeks of the start of the contract
Supervision – Conditional -Phase 2		
Name of report	**Content**	**Time of submission**
Monthly Progress Report (During supervision)	• Description of progress (technical and financial) and performance of the contractor including work output, in terms of manpower and equipment utilization, of the Contractor and • The safety record to date, • Problems encountered; • Progress review and forecast • Expenditure review including variations issued, pending and expenditure forecast, • Any problems or potential problems in connection with the Works contracts and recommendations for possible solutions • Contractor's ES metrics, as required of the Contractor as part of the Progress Reports. *Every three months the monthly report shall be replaced by the 3-month Progress Report (Interim Report)*	No later than **1** week after the end of each month of implementation.

3-month Progress Report (Interim Report)	Description of progress (technical and financial) and performance of the contractor including work output, in terms of manpower and equipment utilization, of the Contractor and • The safety record to date, • Problems encountered; • Progress review and forecasts • Expenditure review including variations issued, pending and expenditure forecast, • Any problems or potential problems in connection with the Works contracts and recommendations to for possible solutions. The 3-monthly report shall also include a financial report including the followings: • Updated BoQ showing quantity increase and/or decrease • Contract Particular • Contractor's claims • Projected final costs of projects • Cash-flow projections	No later than 1 week after the end of each 3-month implementation period.
Final Project Report	The Consultant shall prepare a report which shall include (without being limited to) the following: 1. Project Description (purpose, scope and dimensions), 2. Project Data (historical data on Contract, financial sources, etc.), 3. Monthly Certificates, 4. Safety record, 5. Manpower utilization, 6. Equipment utilization, 7. Claims, Variation Orders and Addenda, 8. Project Organization 9. List of Minutes of Site Meetings, 10. Quality and Time Evaluation, 11. Major problems arisen and measures taken, 12. Construction Photographs, 13. List of As-Built Drawings provided by the Contractors,	No later than 30 days after Provisional Acceptance.

	14. The Final account, and 15. Conclusion	
Project Completion Report	This report shall provide an appropriate update to the Final Report to take into account any event and contractors‟ activities which took place during the Defect Liability Period. It shall also include the final project accounts.	Within 30 days of issuing the Final Acceptance Certificate.

All reports and documents relevant to the Consultant's services, maps, field survey notes, computer programmers, etc. shall become the property of the SLASPA/PIU-CATCOP.

4. Client's Input and Counterpart Personnel

(a) Services, facilities and property to be made available to the Consultant by the Client: During the Design Phase-None,

(b) During the Supervision Phase construction) by the Contractor

(b) Professional and support counterpart personnel to be assigned by the Client to the Consultant's team: None

5. Additional Considerations

Some of the design and construction considerations aside from the obvious ones of the ARFFS tenders are:

- Designs need to include safety and comfort features, such as windows to the workout area to ensure firefighters are safe.
- Apparatus bay support functions include cleaning and maintenance areas for the firefighter's self-contained breathing apparatus (SCBA), protective clothing, fire extinguishers, and other equipment.
- It also includes storage areas for firefighting gear and equipment and secure storage for medical supplies.

The following key points should be noted:

- The Aerodrome Rescue and Firefighting Services (ARFFS) cannot be looked at in isolation; any response must consider the HIA redevelopment Master plan or the environ of the facility.
- Preferred ARFFS solutions must be designed and engineered based on context- specific structural and performance requirements.
- Consideration should be given to protracted staff displacement.
- Design criteria should address site-specific and national hazard risks and safety, timeliness and construction speed, lifespan, size and shape, privacy, security and cultural appropriateness, ventilation and thermal comfort, environmental considerations, cost, standards and building codes.
- Operational and maintenance costs (life-cycle costs) should be a key design criterion
- Involve HIA stakeholders from an early stage.

- The development of an appropriate ARFFS is a process and not simply the delivery of a product social aspects and needs are also design drivers.
- Reference should be made to ICAO's standards and guidelines

Annex: The International Civil Aviation Organization (ICAO) defines the requirements for aerodrome Rescue and Fire Fighting Service (ARFFS) in Annex 14, Volume 1 - Aerodrome Design and Operations. (https://store.icao.int/en/annex-14-aerodromes