



MINISTRY OF PUBLIC WORKS
TRANSPORT SECTOR ENHANCEMENT PROJECT
Feasibility Study and Preparing Detailed Designs for the Upgrade
of the Lethem Aerodrome

PROJECT DESCRIPTION INFORMATION FOR THE E.P.A.

As of December 2020, the Feasibility Study and Preparation of Detailed Designs for the Upgrade of the Lethem Aerodrome project is still ongoing. As such, the final Airport Master Layout Plan has not yet been submitted. However, based on work completed to date, the following considerations have been made by the Consultant.

Design Aircraft: Beech 1900 (Stage 1: 2021 – 2030)

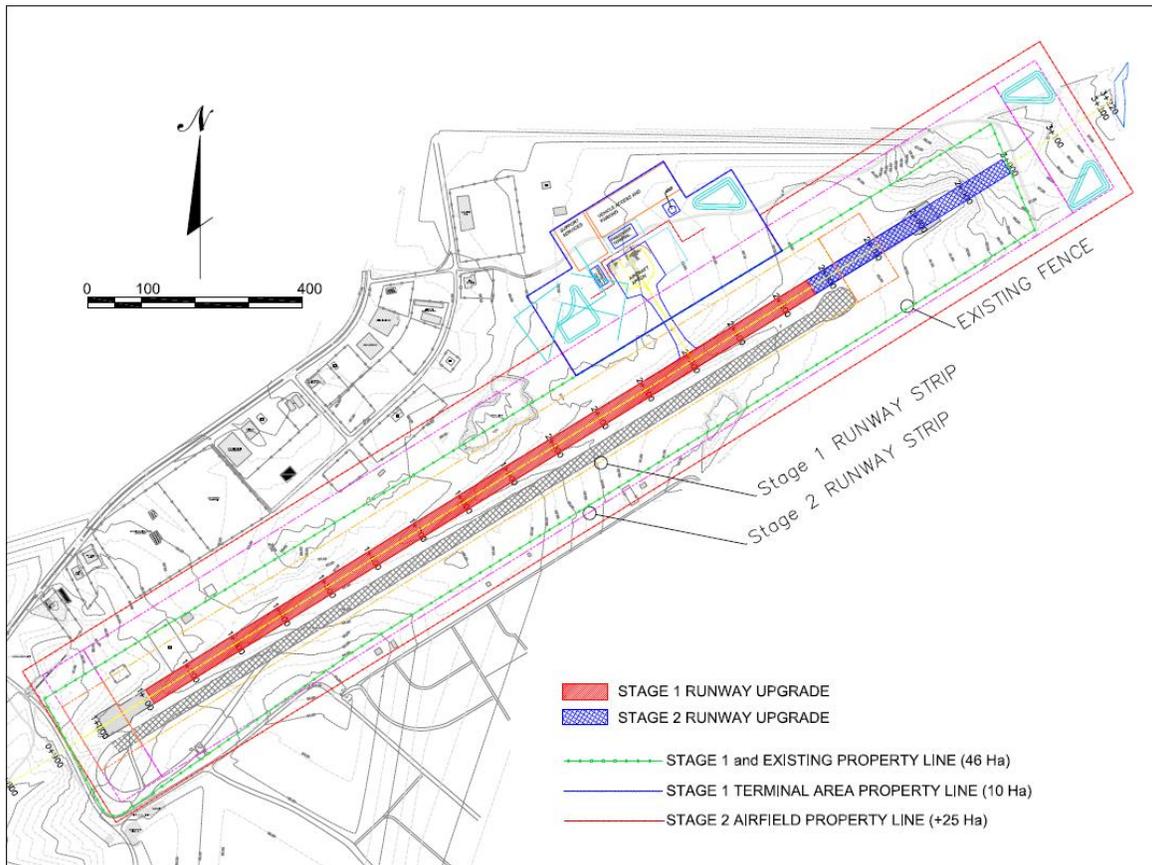
De Havilland Dash 8 Q-400 (Stage 2: 2031 – 2040)

Type of Aerodrome: ICAO 2-B (Stage 1: 2021 – 2030)

ICAO 3-C (Stage 2: 2031 – 2040)

Aerodrome Operator: To be determined

Site Plan:



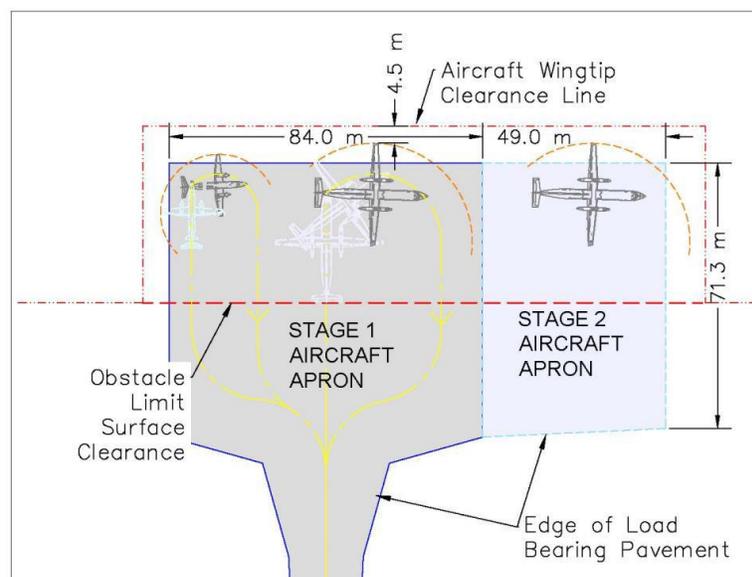
Details about: apron, visual aids, lighting system, control tower, passenger terminal, rescue and firefighting service, security system

Aircraft Apron: The aircraft parking apron is recommended to be geometrically planned to accommodate two aircraft in Stage 1 development and three in Stage 2 development. The Stage 1 configuration is planned such that two aircraft can be positioned clear of the apron edge taxiway AND with the vertical stabilizer clear of the future, Code 3 Non-Precision, Obstacle Limitation, transition slope.

The apron is planned for the Stage 1 design aircraft, Beech 1900 and larger aircraft that may choose to use the airport on occasions. Thus, one of the positions can service a Code 3 aircraft such as the ATR-72 or Dash 8.

Stage 2 apron development would add a third aircraft position which would accommodate a Code 3-C Design Aircraft.

In all apron layouts, the aircraft parking positions are configured such that the aircraft can be parked at a 45-degree, nose-in to the terminal building, or turned such as the passenger boarding stairs would be facing the terminal. In all parking positions, the aircraft can be powered into and out of the parked positions, clear of other aircraft that might be parked on the apron. All aircraft positioning assumes a nose gear angle of 45 degrees or less.



Visual Aids: The Lethem runway 07 can benefit from a Visual Approach Slope Indicator (VASI) or a Precision Approach Path Indicator (PAPI) however the fact that runway 25 is infrequently used as the approach runway renders it unbeneficial.

The visual approach systems can be powered by a solar-battery system to comply with a policy of enhanced renewable energy. The PAPI is probably more suitable for the Lethem runway operations.

Lighting System: Neither runway nor taxiway edge lights will be necessary until the GCAA considers they are warranted to allow night operations at the airfield. No night flights are currently conducted at the airport and there are a limited number of day time flights.

Should the number of daily flights increase sufficiently, and the flight operators express a need for night-time flights, then edge lights can readily be installed along the runway and taxiway. There are currently a number of manufacturers offering solar powered runway and taxiway lights that can readily be installed at the locations designated in the ICAO recommendations. The use of solar lights is recommended to be consistent with the policy of use of renewable energy.

The solar lights are costly and when needed might best be procured through the Guyana government purchasing process.

Air Traffic Control Tower: The air traffic control tower (ATCT) was evaluated using the 2040 runway configuration and the location north of runway chainage 2+300 was selected.

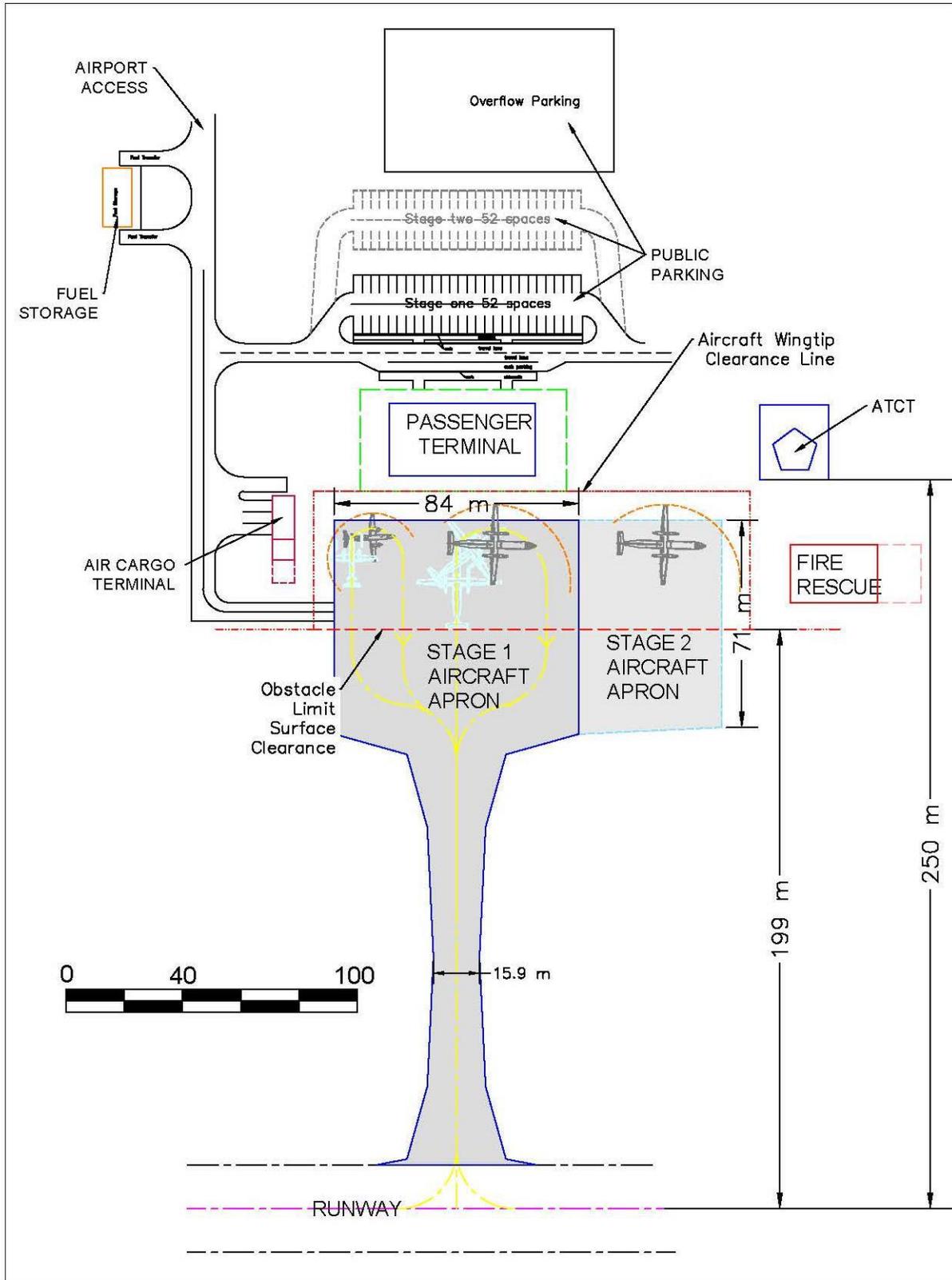
The analysis was conducted using the FAA Visibility Tool for siting control towers. It evaluates the ability of the tower personnel for (a) Object Identification, and (b) Line of Sight, Angle of Incidence. The tower was evaluated at the lowest controller eye elevation which would pass the FAA criteria of detection and angle of incidence for the line of sight.

Passenger Terminal: The terminal area is dominated by the aircraft parking apron and the passenger terminal building. The aircraft apron is positioned and configured to assure that aircraft on the apron meet clearance requirements for the runway and taxiway and do not obstruct a possible future non-precision approach, Code 3 Obstacle Limitation Transition Surface. Similarly, the Air Traffic Control Tower should remain clear of the obstacle limitation surfaces.

Other clearances involve the separation of fuel transfer pads and storage tanks from the passenger building (100m).

The aircraft apron will allow design aircraft to taxi-in, position the passenger stairs toward the terminal entrance, and taxi-out under their own power.

Shown in the following figure are the landside service facilities noted previously with adequate space for each to be constructed to meet the 2030 forecasts and expanded to meet the 2040 forecasts and beyond.



Terminal Area Layout Plan

Security: The Lethem Aerodrome property is currently, generally defined, by a perimeter fence.

The proposed airport boundary will also, generally be defined by a perimeter – security fence. To serve those functions, the fence will be approximately 2.5 m high. The planned location for the fence will encompass the area of the airport that must be protected from intrusion into the area designated for the safe operation of aircraft and security of the terminal and other facilities on the airport.

Thus, the fence will be aligned to assure that it remains outside the runway, taxiway, and apron clearances and below the obstacle limitation surfaces for the runway. This location will be established by clearance at the perimeter of the runway strip and safety area plus the distance required to clear 3 meters below the obstacle limitation or approach surface. In addition, a distance of 5 meters outside the fence should be available for vehicles to perform maintenance or security checks.

Firefighting Service: The Consultant is currently reviewing and comparing the alternatives of a stand-alone Rescue and Fire Fighting Service within the aerodrome vs. upgrading the New Lethem Fire Service to serve both the community and the aerodrome.