

GGGI Rwanda: Fact Sheet

Green Certification of the New Bugesera International Airport

Background

The Government of Rwanda (GoR) through Ministry of Infrastructure (MININFRA) and Global Green Growth Institute (GGGI) have a standing Memorandum of Understanding (MoU) to advocate sustainability and provide support to the enable sustainable built environment in Rwanda. GGGI has been supporting GoR in green cities development focusing in Kigali and the six secondary cities., GGGI also provides technical support to Rwanda Green Fund (FONERWA) and other initiatives related to sustainability.

Along these lines, GGGI in collaboration with MINIFRA has embarked on Green Certification of the New Bugesera International Airport. This project is looking into several measures to demonstrate resource efficiency and the overall sustainability of the airport infrastructure when completed. Some of the focus area includes:

- Energy efficiency
- Water efficiency
- Material Efficiency & Waste management
- Environmental mitigation & Green transport
- Renewable energy

The project green design interventions are below:

- Energy system optimization including cooling and lighting
- Water optimization through various methods of harvesting and usage

- Sourcing and analysis of local construction materials
- Indoor Air Quality and health
- Other building engineering systems optimization including vertical transport and overall sustainability of the airport environment



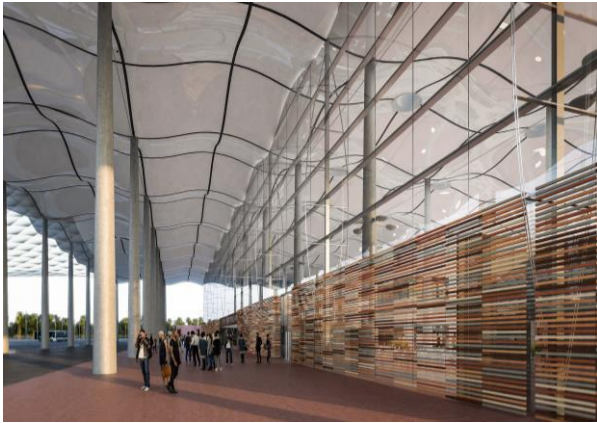
Activities

ENERGY EFFICIENCY

- External Thermal Transfer Value (ETTV) of façade computation including investigation into air and water leakage test for façade quality
- Value engineering and optimization of the base design to aim for an energy savings target of 20%
- Aligning trade off opportunities between various systems through an integrated design process approach.
- Lighting Power Density (LPD) and lux level check to ensure project achieves the correct illuminance

level and all power consumption savings has been verified.

- Further improve the existing building automation system to adopt future ease of maintenance
- Exploring source for alternative power generation



WATER EFFICIENCY

- Compute and analyze water saving potential in plumbing fixtures and systems with an aim to achieve 60% portable water savings target
- Seek possibility for incorporating rain water harvesting
- Landscape irrigation including the selection of draught tolerant planting species
- Other innovative water savings design

ENVIRONMENT: MATERIAL AND WASTE

- Source, select and present local materials that can be used for the project
- Verify all materials content and embodied carbon
- Explore environmental mitigation process of airport construction waste through recording and monitoring
- Explore the possibility of a closed loop waste mitigation process for the airport operation

INDOOR AIR QUALITY

- Analyze Material Safety Data Sheets (MSDS) for Volatile Organic Compounds (VOC) and

formaldehyde compound in coatings and adhesives

- Mitigate the amount of toxin used in the airport finishes
- Plan for an engineering flush-out during operation

The works undertaken are performance engineering driven that focus on both current and operational performance of the design.

Green Building Certification

The project has been registered for green building certification under Green Mark Rating System administered by the Building Control Authority (BCA) of Singapore, a government entity who has a standing Memorandum of Understanding with Rwanda Housing Agency (RHA) to enable sustainable built environment in Rwanda. NBIA is part of the pilot project in the implementation of Rwanda Green Building Minimum Compliance System.

In January 2019, BCA team visited the under-construction airport project to conduct preliminary assessment based on the Green Mark Rating system. The project aims to achieve Green Mark Provisional and Final Award in 2019.

NBIA seeks to see through the sustainability works till completion and operation. NBIA would be the first airport in East Africa to achieve green building certification. This achievement will demonstrate the vision of sustainability advocated by the Government of Rwanda in all its policy and practice.



Implementing Partners

- Ministry of Infrastructure
- Ministry of Environment