EXPERT GROUP MEETING PROMOTING SYNERGY BETWEEN AIRPORTS AND CITIES TO ACHIEVE SUSTAINABLE DEVELOPMENT AT UN HABITAT

Provision of public basic services and management of contingency situations in Airports

BY

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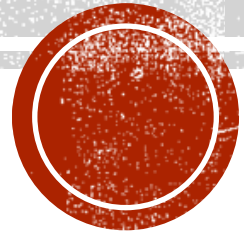

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PUBLIC SERVICES IN AIRPORTS

The presentation focuses on the following aspects ;

- Energy installations
- Water supply and storage facilities
- Drainage and Sewage installations
- Solid waste collection and disposal mechanism

- Public transport lanes and parking for;
  - ✓Taxis
  - ✓Buses
  - ✓Private vehicles
  - ✓Wheelchairs
- Hotels
- Medical facilities
- Security installations

ENERGY

- Energy is required for heating, ventilation, air conditioning and lighting
- Airports need to adopt energy policies and strategies that focus on;
  - Long term planning and forecasting
  - Consumption
  - Cost compared to other fundamentals
  - Choice of energy source
  - Environmental; audit of energy
  - Sustainability of supply
  - Long term energy supply and management plan should be in tandem with the general infrastructure development plan for the city and region

SOURCES OF ENERGY

Main sources of energy for use in the airports

1. Hydroelectricity
2. Fossil fuel
3. Geothermal energy
4. Wind energy
5. Solar energy

NON-RENEWABLE ENERGY

- Majority of airports in the Africa rely heavily on hydroelectric power and fossil fuels.
- Besides the transmission lines there is need for installation of power substation dedicated for the airport operations
- This sources are highly reliant on weather conditions and cost dependent on international oil prices
- The demand for electricity has increased in the recent past causing instability in supply

ENERGY CONT.

RENEWBLE ENERGY

Solar energy - This is an airport "friendly" source of energy especially in the tropics. Its appeal is two fold;

- **No extra space requirements-**Solar panels can be accommodated on top of buildings within the airport
- In large airports-Solar field can be established within the airport and panels covered with deeply textured glass to reduce reflections for the cabin crew.
- It is a source of energy that can provide lighting in the airports both to the airside and landside

Biofuels

Produced from biomass and can be utilized in the internal combustion engines especially trucks ferrying cargo in the airport

WATER

The planning for the supply and management of water should be based on;

- Long term demand and supply
- Sustainable city supply sources
- Discharge volumes
- Discharge of chemical pollutants in terms of toxic effects eutrophication and oxygen depletion
- Observed changes in the ecosystem
- Onsite treatment before discharge
- Water quality monitoring
- Water conservation
- Development of pollution control programme

WATER PROVISION

Source of water can be categorized into three;

Public water source – primary water

- ✓ The airport has no control over the supply
- ✓ Lack of control over scheduling of service interruptions

Manmade reservoirs

They come in three categories

1. Elevated gravity tanks providing dependable delivery of water
- ✓ need for high pressure and floor rate during fire service operations
- ✓ Their heights and location should not constitute an airport hazard

2. In or above ground water level reservoirs- can be located on and off the airport

- Wells are subject to recedence
- Requires careful studies on water table trends to be analyzed for potential recedence, contaminants and salt water intrusion

WATER PROVISION CONT.'

Natural supply sources

- There are local beyond the physical control of the airport

Disadvantages

- Affected by seasonal rain variations
- Industrial contaminants and other contaminants affect the usefulness of the water
- The cost of pumping

Water recycling

- Establishment of water recycling plants for water from restrooms and toilet facilities within the terminals, cooling towers for air conditioning, construction and maintenance facilities and vehicle washing facilities
- Harvesting of storm water runoff
- Contingency planning to ensure sustained supply from dedicated reservoirs for a minimum period of 15 days

WASTE, SEWERAGE & DRAINAGE MANAGEMENT

- The waste management at airports to focus on reduction of hazardous and non-hazardous wastes
- Need for waste management programme that focuses on the 4Rs- Reduce, reuse, recycle and recover
- Planning for waste management entails;
    a) A description of design intent, construction details, overall land fill development plan, and site closure plan;
    b) A clear description of the chain of authority, organizational structure, job descriptions and job responsibilities for all personnel
    c) A description of routine landfill operational procedures among others

WASTE MANAGEMENT PROCEDURES

waste management plan should incorporate the following procedural elements;

- Description of waste reduction, reuse and recycling plans (i.e. reduce or eliminate operations/processes that generate solid waste, redesign processes to reduce waste, and substitute products for waste reduction);
- Choice of green products and services;
- Provision of training for proper material handling to reduce waste and spills, and equip waste transport vehicles with anti-spill equipment;
- Central responsibility for waste management and establish written procedures
- Isolation of hazardous wastes by containment and prevent mixing of hazardous and non-hazardous wastes;
- Isolation of liquid waste from solid waste;
- Separation of biomedical wastes with infection potential for special treatment and disposal; and
- Segregation incompatible materials/wastes to avoid dangerous reactions in the event of a spill.

SPECIAL PROVISIONS

Special provisions for management of hazardous wastes

- Perimeter security fence;
- Security alarms on the gate and security fence;
- Designated vehicle wash-off area;
- Provision of a dedicated building or storage sheds for materials storage;
- Safety control devices such as fire and gas alarms;
- Installation of ventilation systems, non-spark electrical controls and fire extinguishers; and
- Implementation of a bird and mammal control programme.

TRANSPORTATION

- The city region road network, on-airport circulation networks and parking facilities are the principal components of the ground access system to airport.
- The capacity and reliability of the system determines the levels of service and convenience provided to air travelers during the ground access segment of their trips.
- **Public Transportation** – Coordination with local transportation planning authorities should adequate provision of public transport e.g. BRT, cabs and the train
- **Public Parking Facilities** – Public parking facilities at commercial service airports range from surface lots next to the passenger terminal to a combination of structured parking facilities and surface lots for short-term hourly, daily, and long-term parkers.
- Access to shuttles, buses, trains and frequency of service relative to aircraft arrival and departure times should be efficient.

TRANSPORTATION CONT.

- Passenger pathways, vertical transitions, clarity of signage and wayfinding, space and queue lengths at check-in and security, space and waiting times at baggage claim, access to airport information and airline schedules and convenience of restrooms, services and departure lounges
- **Employee Parking** – At small commercial service airports, parking for employees whose worksite is inside the commercial passenger terminal building can usually be accommodated in small surface lots near the terminal.
- **Bicycle Lanes and Racks/Storage** – Planners should evaluate the extent of bicycle use by passengers and employees within the airport complex to determine requirements for bicycle lanes and bicycle storage (racks and storage lockers).
- Airport facilities should be planned and designed to meet the building code requirements for those with disabilities to improve accessibility and convenience for all passengers while meeting the special needs of disabled passengers.

HOTELS, MEDICAL FACILITIES& SECURITY

Hotels

- Hotels are convenient for passengers waiting for connecting flight
- Allow visitors to rest incase of delayed flights
- Venues of choice for conference facilities

Medical facilities

- To cater for emergency services, curatives services to passengers and airport staff and for disease screening .
- These facilities should be accessible and at walking distance from the passenger area

Security Installations

- Security installations should situated near airports. These include police and military barracks for easy deployment when threats occur at the airports land or airside.

ICT

ICT is very important for airport communications and it is enabled by internet connectivity.

- Internet plugin points for earth net (LAN, WAN etc)
- Wifi connections
- Device charging pods

Significance of ICT at airports

- ✓Information screens for flight information
- ✓Quicker check-ins
- ✓Self service check-in to avoid long queues
- ✓Electronic passport readers

FIRE AND RESCUE

Fundamentals of fire and rescue planning include;

- Provision of equipment and services that aim at saving lives in case of accidents
- Creation and maintenance of serviceable conditions
- Provision of escape routes
- Rescue of those who can’t escape without assistance
- Establishment of systems for detection and fight of fire outbreaks
- Fire and rescue installations including fire stations
- Standby and well coordinated disaster response and management structures
- Dedicated communication systems
- Link with and coordination with ambulance provided services, medical institutions, traffic control authorities office at the airport

FIRE AND RESCUE CONT.

Capacity building that focusses on;

- Fire dynamics, toxicity and basic first aid;
- Extinguishing agents and firefighting techniques;
- Handling of vehicles, vessels and equipment;
- Airfield layout and aircraft construction;
- Operational tactics and manoeuvres;
- Emergency communication;
- Leadership performance;
- Physical fitness; and
- Auxiliary modules (e.g. rescue in difficult terrain, response to biological/chemical threats, etc.).

Thank You