

Environmental Issues

When planning a new airport, or new facilities within an existing airfield, all appropriate measures should be taken to ensure aviation can grow in a sustainable manner in partnership with users and local community stakeholders.

INTRODUCTION

The air transport industry is committed to meeting its customers' growing demands in a sustainable manner while maintaining an optimal balance between economic progress, social development and environmental responsibility. This means balancing the needs of passengers, society, the economy and the environment by making the best use of existing facilities while addressing the challenge of new developments.

Environmental Management Plan

The following are environmental considerations to be taken into account when developing a new airport or facilities:

AIRPORT DESIGN

When a new airport is planned or a major expansion envisaged, it is important to consider not only what effect the change will have within the airport boundary, but also to consider what the impact will be on the surrounding community.

Master Planning and Land Use planning to minimize environmental impacts of noise and emissions .

Achieving optimum operational efficiency through:

- Land-use planning, management and zoning, land acquisition, encroachment protection, noise protection or insulation programmes
- Runway configurations
- Use of approved noise abatement operational procedures consistent with the advice provided in ICAO PANS OPS
- Construction of 'sound walls' or 'ground profiling' to reduce noise disturbance for neighbouring communities.
- Protection of local watercourses by ensuring aircraft are washed and de-iced in enclosed specially designed areas

Efficient Airside Operations

In order to reduce aircraft fuel consumption and emissions, the following should be considered:

- Optimum positioning of rapid exit taxiways to minimize braking and use of reverse thrust
- Direct unimpeded taxiway access routes with the minimum number of 90 degree turns
- Avoidance of taxi-lane cul-de-sacs
- Operational techniques
- Facilitate power-in / power-out aircraft parking configurations on remote stands
- Centralise facilities such as de-icing adjacent to departure thresholds and Foreign Object Debris (FOD)

Fixed Gate Services

Wherever economically feasible and following a cost-benefit analysis, aircraft parking positions should be provided with the following:

- Fuel hydrant systems
- Fixed electrical ground power
- Pre-conditioned air

Surface Access Improvements

Provision for an integrated multi-modal transport interchange to promote convenient, reliable and cost-effective public transport, in order to reduce vehicle emissions and congestion:

- High speed, regional and local rail services running through / under passenger terminal complexes
- Free flowing road layout to reduce delays and congestion
- Dedicated public transport routes
- Policies and facilities to promote the use of electric vehicles such as charging stations
- Consolidation of off-airport car hire facilities and hotel shuttle services

Energy Efficiency Measures

Following a favourable cost-benefit analysis, airport operators should:

- Remove and replace older, outdated building equipment with new energy efficient technology
- Adopt low energy taxiway / apron lighting
- Employ alternative heating methods, e.g. solar power, geothermal, etc.
- Monitor electricity consumption of Baggage Handling System (BHS), passenger conveyor belts, escalators, air conditioning systems and lighting, etc
- Adopt automatic power-down systems on escalators, conveyor motors and lighting systems, etc., when these are not in use
- Use natural light sources
- Reduce water consumption through recycling and use of rain water

Landscaping can improve the quality of the environment for local communities, passengers and staff by integration of airport landscaping into the surrounding natural landscape.

Ecology and Natural Habitats should be created, maintained or restored in order to enhance and preserve biodiversity.

Local building materials should be used wherever possible to reduce the cost and impact of transportation. Hazardous materials, e.g. toxic chemicals or heavy metals, should be replaced where possible, by more responsible alternatives.

Airport waste management strategies should be developed in consultation with the airport's business partners, since many airports handle waste on behalf of airlines, retailers and tenants. An airport's strategy should support delivery of users' environmental objectives as well as meeting their own obligations.

These waste-streams are often subject to regulation and may require specialized treatment (e.g., incineration). A comprehensive review of waste management legislation and waste characteristics must be undertaken to ensure that appropriate waste management systems are implemented that encourage waste minimization and recycling.

SOCIAL & POLITICAL CONSIDERATIONS

Stakeholder Partnerships

The sustainability debate at the local level is the most important one for airports, since preserving good relations with the local resident population — in order to maintain their acceptance — directly impacts upon airport and airline development.

The partnerships that are of most importance to airports are those addressing public concerns, including, for example, those regarding emissions and noise, a desire to further reduce environmental impacts, or a better distribution of air transport's socio-economic benefits to local communities.

Shared Capacity and Resources

Airport operators and their direct business partners should work together to share airport services in an effort to ensure that airport equipment usage, space and efficiency is maximised.

Sustainable Development

Airports must plan for their future using a sustainable development strategy. Airports should not just be expanded to meet year-on-year growth forecasts. Before airports embark on increasing the size and ultimate complexity of their operation they should look to rationalise processes and common tasks. Efficiencies in the undertaking of airport processes should be refined and streamlined on an ongoing basis before the last option, to build more infrastructure, is chosen.

RELATED ICAO DOCUMENTATION

- Annex 14, Vol. 1, Aerodrome Design & Operations
- Doc. 8168, Procedures for Air Navigation Services, Aircraft Operations, Vol. 1, Part V