Hong Kong International Airport –
A High Performance Transportation Hub By Design

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Hong Kong International Airport (HKIA)
### Overview of HKIA

- **Opened since**: 6 July 1998
- **Total Site Area**: 1,255 hectares
- **Total No. of Aircraft Parking Bays**: 182
- **Passenger throughput (in 2016)**: 70.5 million
- **Air Cargo throughput (in 2016)**: 4.52 million tonnes

### Details

- **No. of Runways**: Two
- **Terminal Area**: > 850,000 m²
- **Passenger throughput (in 2016)**: 70.5 million
Mega Transportation Network around HKIA

Around a 2-Hour Drive reaching 60 Million Population with GDP HKD 7 Trillion
Over 100 airlines operate around 1,100 daily flights to over 190 destinations worldwide, including 42 in Mainland China.
Fast Growth of Air Traffic

- **Passenger Traffic**: 146% increase from 28.6 million passengers in 1998 to 70.5 million passengers in 2016.

- **Cargo Traffic**: 178% increase from 1.63 million tonnes in 1998 to 4.52 million tonnes in 2016.

- **Air Traffic Movement**: 152% increase from 163 thousand movements in 1998 to 412 thousand movements in 2016.

The charts illustrate the significant growth in passenger traffic, cargo traffic, and air traffic movement over the years from 1998 to 2016.
2RS Infrastructure development

- **Midfield Concourse** (GFA: 105,000m²) opened December 2015
  - No. of aircraft parking positions at Midfield Concourse = 20
  - Access by extended Automated People Mover from T1
  - Building Awards & Recognition:
    - BEAM Plus V1.1 **Final Gold** (2017)
    - **Grand Award** in New Buildings – Completed Project Category at Green Building Awards 2016
    - Winner of Engineering News Record **Global Best Projects Awards** (2016)
    - **Gold Award** in HK Awards for Environmental Excellence (2013)
Midfield Concourse
Midfield Concourse
Healthy, Comfortable, Stress-Free Environment
HKIA Projects - Green Design Strategy

- Green Airport Design Vision
- Benchmarking and KPIs
- Develop Green Airport Design Strategy
- Green measures incorporated into design
- Initial Scheme Design
- Scheme Design
- Detailed Design
- Monitor and Report Performance
- Energy Efficiency
- Water Conservation
- Air Quality
- Waste Management, etc.

Together, these benchmarks represent ‘World’s Best’

Green Performance Indicators (GPIs)
Fixed Ground Power (FGP) & Pre-Conditioned Air (PCA) eliminates use of Aircraft Auxiliary Power Unit (APU).

Midfield Concourse

Electric Vehicle Chargers

- Carbon Emissions
- Noise Emission
- Air Quality
3RS is much more than building a new runway

New runway

- 3,800m

- Building a new runway and supporting taxiway systems. The existing north runway will also be reconstructed.

Reclamation

- 650 hectares of land
- Using non-dredge methods, including deep cement mixing technique

Third Runway Passenger Building and 57 parking positions

- Floor area: 283,000 sq m
- Building a new passenger building with more than 283,000 square meters of floor area, 107 new parking positions, 34 apron areas, 22 aircraft stands, and 17 taxiways. When completed, there will be 175 passenger aircraft parking positions (55).

New Automated People Mover system

- Top speed: 80 km/h
- Building a 2.08-kilometre-long people mover system comprising 12 tracks. The new passenger building, a new IAPM system, takes 2.5 minutes to reach from T2 to the new passenger building. It can transport up to 10,000 passengers per hour.

New Baggage Handling System

- Baggage transport speed: 7-10 m/sec
- Building a new baggage handling system linking T2 with the new passenger building.

Expansion of Terminal 2

- Providing arrivals, departures and full-fledged passenger services
- The expanded T2 and new passenger building will be able to serve 30 million additional passengers annually as stipulated in the HKIA Master Plan 2030.
Comprehensive 3RS EIA Study undertaken covering 12 Environmental Aspects

- Air Quality
- Noise
- Health Impact Assessment (Air Emissions and Aircraft Noise)
- Ecology (Terrestrial and Marine Ecology, including Chinese White Dolphins)
- Fisheries
- Hazard to Human Life
- Water Quality
- Sewerage and Sewage Treatment
- Waste Management
- Land Contamination
- Landscape and Visual
- Cultural Heritage
3RS Buildings - Green Airport Design

Vision: HKIA as one of the World’s Greenest Airports
TRC Green Design

Energy Efficiency
- Solar shading & insulation
- High performance glazing
- Roof materials specified with high Solar Reflectance Index
- Photovoltaic panels energy generation
- Highly efficient Lighting design
- Local LED task lighting
- Occupant load sensing for escalators and walkways

Water Consumption
- Sea water cooling
- Sea water flushing
- Low flow fittings
- Grey water / rain water recycling for irrigation

Air Quality
- Excellent Class in Indoor Air Quality
- Charging stations for low emission electric vehicles

Waste Management
- Green construction practices
- Green Tenant Guidelines
- Material specification and modular / prefabrication construction
- Source separation enabling processing where appropriate
Passenger Experience
View at Central Concourse
Turning HKIA into a Smart Airport

- Self-service
- Efficiency
- Mobility/Personalisation
- Automation
Implement Emerging and Innovative Technologies

- Mobile Check-in Desk
- NextGen Self Check-in Kiosk (iCUSS)
- e-Marketplace
- Self Bag Drop
- RFID enabled Home-printed Bag Tag Service
- Personal FIDS
- My Flight
- Service Robot

Flowchart:
1. CHECK-IN
2. BAG DROP
3. DOCUMENT CHECK
4. SECURITY CHECKPOINT
5. IMMIGRATION
6. PASSENGER DWELL
7. BOARDING
Thank You