Origin Group Brochure

Origin
Projects

Origin
SYSTEMS
INTEGRATION

Origin
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airport
in a box

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Origin GROUP

Overview from **Kevin McLoughlin**
Group CEO

"Origin is passionate about airport construction projects. We know that successful opening of new or expanded airports, to budget, on time and on specification is a complex undertaking. Some major international airports have been substantially delayed with great embarrassment and financial cost to the owners. One of the main causes has been systems integration failure. The increasing complexity of digital systems and how they communicate and exchange data needs to be carefully considered at every project stage.

In **2014** Origin Projects Limited was formed to provide digital systems integration consultancy services for airport operators, architecture firms and design engineering companies. Our goal was to reduce the risk by ensuring airport digital systems integration is well defined and managed. We are typically involved in the design of airport systems from master planning stage through detailed design to tender stage.

In **2018** Origin Systems Integration Pte was formed in Singapore providing on-site engineering resources to support the implementation of systems throughout the construction and commissioning stages.

In **2020** Origin Witness Limited was formed to provide expert witness services for airport arbitration. Our long-standing knowledge in airport construction incorporated additional disciplines beyond digital such as Architecture, Civil Engineering, Building Services and Airport Master Plans.

Finally, in **2020** Airport in A Box Limited was formed to provide design engineering, systems integration, construction, operational management and maintenance services for the future urban air mobility market which will require new vertiport infrastructure.

We have a wealth of experience to add value to your airport projects."

Origin Airport Experience

Origin has extensive international experience in such airports as

- ► King Abdulaziz International Airport (Saudi Arabia)
- ► Phnom Penh International Airport (Cambodia)
- ► New Doha International Airport (Qatar)
- ► Heathrow Airport Terminal 5 (UK)
- ► King Shaka International Airport (South Africa)
- ► Gatwick Airport (UK)
- ► Ministry of Defence (UK & Germany)
- ► Hamad International Airport Terminal Extension (Qatar)
- ► Hamad International Airport Western Development Expansion (Qatar)
- ► Hyderabad International Airport Extension (India)
- ► Confidential International Airport Extension (US)
- ► Schiphol International Airport Terminal & Pier Extension (Netherlands)
- ► Mexico International Airport (Mexico)
- ► Bugesera (Rwanda) International Airport (Africa)
- ► Red Sea International Airport (Saudi Arabia)
- ► Amaala Airport (Saudi Arabia)
- ► Hamad International Airport Cargo Terminal (Qatar)
- ► VVIP Terminal Phnom Penh International Airport 2021 (Cambodia)
- ► Bhogapuram International Airport (N.E. India)
- ► Digital Masterplan for confidential airport (Middle East)

Security Systems

Biometric Controls
Access Control
Video Surveillance System
Security Controls
Staff and Passenger Search
Physical Security Systems
Time and Attendance
Emergency and Crisis Operations
Centres

Airport Operational Systems

Terminal Operational Control Rooms
Master/Slave Clock
Electronic Video Information Display
Screens (EVIDS/FIDS)
Common Use Terminal Equipment
Common Use Self Service
Common Use Passenger Processing
Dynamic Graphics
Internet and Information Kiosks
Airport Operational DataBase
Gate Management System
Resource Management System
Advanced Visual Docking Gate System

IP Systems

SMART Airport & City Solutions
Local Area Network / Wide Area
Network
Network Management System
Internet Protocol Television
Audio Visual
Voice Over IP
Wireless LAN
Computing and Storage

Building Systems

SCADA
Building Management Systems
Centralised Management Systems
Fire Detection and Alarm
Public Address and Mass Notification

Passive Infrastructure

Communications Equipment Rooms and
Fittings
Backbone Fibre Optic and Copper Cabling
Outside and Inside Plant
Emergency Analogue Telephony
Horizontal Distribution Cabling
Data Centres
Grounding and Bonding
Communications Pathways
Communications Identification

Distributed Wireless Systems

Commercial TETRA and Private Mobile Radio
Systems
Commercial and Private Cellular (4G/5G)
Systems

Origin Management Services:

Requirements Definition & Baseline Ownership
Project Management
Design Management
Systems Integration Procurement Methodology
Testing & Commissioning Management
Construction Administration/Engineering

Origin's team have extensive experience in airport systems but also in some unique projects such as Consultancy for Heathrow Airport Sustainability & Carbon emission NetZero Programme, in scoping and definition of the programme, establishing a carbon benefit management plan and developing the concept design for carbon model data lake.

Case Study

Hamad International Airport, Qatar

Case Study: Hamad International Airport, Qatar

Origin Projects and Origin Systems Integration both have a long history with the Hamad International Airport (HIA). In 2009 they formed part of the original Systems Integration team responsible for setting the high-level strategy for the delivery of ICT, AOS and Security Systems. In 2014 Origin provided the detailed design development for the major terminal expansion.

Hamad International Airport, Qatar

In 2018 Origin provided the detailed design for the Western Development area containing 40 new aircraft stands, administration and utility buildings.

In 2019 Origin provided the scheme design for the new Cargo Terminal.

In 2020 Origin delivered the site-wide digital master plan for the 2035 horizon. Origin is currently on-site providing oversight of systems integration construction activity.

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Case Study: King Abdulaziz International Airport, Saudi Arabia

Origin was engaged to lead the in-house systems integration team for a major multidiscipline engineering company. The large scope for this brand-new mega airport encompassed Air Traffic Control Systems, Electronic and Physical Security Systems, ICT, Airport Operational Systems, Distributed Wireless Systems, Passive Infrastructure and Building Systems.

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📍 King Abdulaziz International Airport, Saudi Arabia

The design output was extensive containing over 16,000 drawings and 40+ detailed performance specifications. The success of the project relied heavily on in-country stakeholder engagement with the airlines, airport operators, security agencies, authorities having jurisdiction, systems suppliers, and project management client representatives.

Case Study

Phnom Penh International Airport, Cambodia

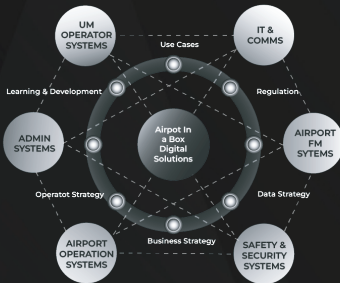# Case Study: Phnom Penh International Airport, Cambodia

Origin was engaged to design this new international airport currently under construction. The scheme design was to ensure sufficient flexibility to allow the airport to be built in multiple phases as passenger numbers and cargo traffic increased over time.
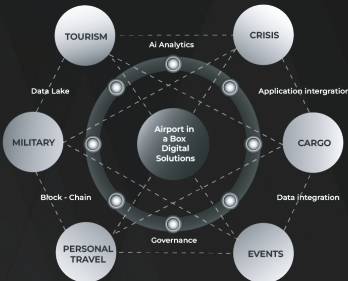
Phnom Penh International Airport, Cambodia

State of the art data centres and systems were designed. Origin also led the procurement strategy for the eventual systems integration delivery.
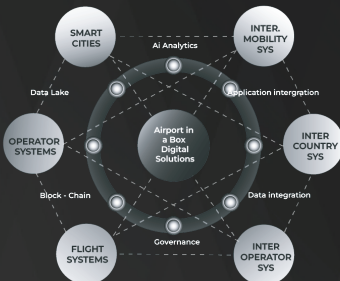
Airport In A Box

Digital Transformation Stages

Prototype & Learning

Airport In a Box Digital Solutions — Use Cases, IT & COMMS, Regulation, AIRPORT FM SYTEMS, Data Strategy, SAFETY & SECURITY SYSTEMS, Business Strategy, AIRPORT OPERATION SYSTEMS, Operatot Strategy, ADMIN SYSTEMS, Learning & Development, UM OPERATOR SYSTEMS

Digital Development

Airport in a Box Digital Solutions — Ai Analytics, CRISIS, Application intergration, CARGO, Data integration, EVENTS, Governance, PERSONAL TRAVEL, Block - Chain, MILITARY, Data Lake, TOURISM

Transport Digital Integration

Airport in a Box Digital Solutions — Ai Analytics, INTER. MOBILITY SYS, Application intergration, INTER COUNTRY SYS, Data integration, INTER OPERATOR SYS, Governance, FLIGHT SYSTEMS, Block - Chain, OPERATOR SYSTEMS, Data Lake, SMART CITIES

Airport in A Box (AIB) is our exciting new venture providing Digital Systems Integration Services for the future urban air mobility market. UAM will use electric vertical take-off and landing passenger aircraft and logistic drones. Vertiports are required, either land or water based, for these vehicles to operate from and they require the same considerations as airports to ensure end-to-end services for passengers, cargo and operators. AIB have already completed one project in the UK where they designed and constructed a vertiport control room, ICT, Security and Vertiport Operational Systems (VOS). AIB also have an exciting new partnership to be announced later in 2023 to provide their services for many more vertiport operations. The delivery of the UK's first vertiport also required software mobile application development to process passenger and cargo bookings, payment and retail services.

Origin Witness

Our expert witnesses have specialised knowledge in the aviation design and construction sector. We provide independent expert opinion in arbitration, tribunal and litigation.

Find us on expertwitness.co.uk

Expert Witness
Established 1996

Appointed as single joint experts, part appointed or shadow experts we currently cover these aviation construction areas:

- ► Specialist Airport Systems
- ► ICT Systems
- ► Security Systems
- ► Civil Engineering Infrastructure
- ► Utilities Engineering
- ► Catering Engineering
- ► Architecture
- ► Airport Master Planning
- ► Mechanical Engineering
- ► Electrical Engineering
- ► Design Management
- ► Project Management
- ► Contract Management
- ► Stakeholder Engagement

Origin Witness experts have been engaged on two high-profile multi-billion airport arbitration cases. One case, which the largest arbitration in the world, required absolute full-time dedication and attention to detail assimilating a decades worth of information. Origin have prepared first joint reports, individual expert reports, second joint reports and attended tribunals at the London and Dubai Arbitration Centres and virtually when required.

Contact Details

Call us for a chat about your requirements or email to arrange a call within the time zone to suit you best.

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