Airport Construction and Expansion Project Management Training Course



14 - 18 Dec 2026

Cape town

4600 € (Per Person)

Ref: #AIR4615_270084

Course Introduction / Overview:

The development of airport infrastructure is one of the most complex and high-stakes undertakings in modern engineering and project management. Airport construction and expansion projects are not merely large-scale construction jobs; they are intricate systems integrations involving massive capital investment, stringent regulatory compliance, and the coordination of countless stakeholders, all while often maintaining ongoing airport operations. This specialized field demands a unique blend of technical knowledge, strategic planning, and leadership. As noted by the esteemed academic Dr. Richard de Neufville in his seminal work "Airport Systems: Planning, Design, and Management", successful airport development hinges on a holistic understanding of the entire system, from initial master planning to final commissioning. This intensive program offered by BIG BEN Training Center is meticulously designed to equip participants with the comprehensive skills required to navigate this challenging environment. The course provides a complete A to Z roadmap, covering everything from feasibility studies and financial modeling to construction phasing, risk management, and the critical Operational Readiness and Airport Transfer (ORAT) process, ensuring projects are delivered on time, within budget, and to the highest standards of safety and operational efficiency.

Target Audience / This training course is suitable for:

- Airport Project Managers and Directors.
- Civil Engineers and Architects.
- Construction and Site Managers.
- Aviation Consultants and Planners.
- Government Officials in Aviation and Transportation Authorities.
- Airport Operations Managers.
- Procurement and Contract Managers in the aviation sector.
- Capital Project Coordinators.
- Regulatory Compliance Officers.

Target Sectors and Industries:

- Aviation and Aerospace.
- Heavy Civil Engineering and Construction.
- Project Management Consultancy.
- Architectural and Design Firms.
- Governmental bodies and regulatory agencies.
- Transportation and Infrastructure Development.
- Logistics and Supply Chain Management.

Target Organizations Departments:

- Project Management Office (PMO).
- Capital Projects and Infrastructure Development.
- Engineering and Technical Services.
- Planning and Strategy.
- Operations and Maintenance.
- Procurement and Contracts.
- Finance and Budgeting.
- Health, Safety, and Environment (HSE).

Course Offerings:

By the end of this course, the participants will have able to:

- Develop a comprehensive airport master plan and project feasibility study.
- Navigate the complex regulatory frameworks of ICAO and national aviation authorities.
- Implement effective procurement and contracting strategies for large-scale projects.
- Master advanced techniques for project scheduling, phasing, and logistics in a live airport environment.
- Apply robust risk identification and mitigation strategies specific to airport construction.
- Manage diverse stakeholder interests, including airlines, government agencies, and local communities.
- Oversee the integration of complex airport systems like baggage handling and air traffic control.
- Lead the Operational Readiness and Airport Transfer (ORAT) process for a seamless transition.
- Implement sustainable design and construction practices in airport development.
- Conduct thorough post-project evaluations to capture lessons learned for future initiatives.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, practical, and highly interactive, moving beyond theoretical lectures to foster real-world problem-solving skills. This course utilizes a blended learning approach that combines expert-led presentations with collaborative workshops and in-depth case study analysis of major international airport expansion projects. Participants will engage in group exercises that simulate critical project phases, such as developing a construction phasing plan to minimize operational disruption or conducting a risk assessment workshop for a new terminal project. Interactive sessions encourage open dialogue and peer-to-peer learning, allowing attendees to share experiences and benchmark their practices against industry best standards. A significant emphasis is placed on practical application, where participants will work on a simulated airport project from conception to commissioning, applying the tools and techniques learned each day. Our experienced instructors provide continuous feedback and facilitate discussions that connect course content directly to the challenges participants face in their professional roles, ensuring they leave with actionable strategies and a heightened capacity to lead complex airport projects successfully.

Course Agenda (Course Units):

Unit One: Foundations of Airport Project Management

- Introduction to Airport Infrastructure Projects.
- The Airport Project Lifecycle from Concept to Closure.
- Key Stakeholders in Airport Construction and Expansion.
- Global and Regional Aviation Regulatory Frameworks (ICAO, FAA, EASA).
- The Role of the Airport Master Plan.
- Principles of Project Governance in the Aviation Sector.
- Understanding the Unique Challenges of Working in a Live Airport Environment.

Unit Two: Strategic Planning and Design Phase

- Conducting Feasibility Studies and Business Case Development.
- Environmental Impact Assessments and Sustainability in Airport Design.
- Airfield Design Principles: Runways, Taxiways, and Aprons.
- Terminal Building Design and Passenger Flow Analysis.
- Integration of Landside and Airside Facilities.
- Advanced Site Selection and Analysis Techniques.
- Developing the Project Management Plan (PMP) for Airport Projects.

Unit Three: Procurement, Contracts, and Financial Management

- Airport Project Funding and Financing Models.
- Developing a Detailed Project Budget and Cost Control System.
- Procurement Strategies and Contractor Selection.
- Types of Construction Contracts and Their Application.
- Contract Administration and Management.
- Value Engineering in Airport Construction.
- Managing Project Cash Flow and Financial Reporting.

Unit Four: Construction Execution and Project Controls

- Managing Construction Phasing and Logistics.
- Airport Operational Safety on Construction Sites (AOS).
- Quality Assurance and Quality Control (QA/QC) implementation.
- Advanced Project Scheduling and Progress Monitoring.
- Integrating Special Airport Systems (BHS, IT, Security).
- Health, Safety, and Environmental (HSE) Management on Site.
- Change Management and Claims Resolution.

Unit Five: Commissioning, Handover, and Operational Readiness

- The Operational Readiness and Airport Transfer (ORAT) Framework.
- Systems Testing, Commissioning, and Integration.
- Stakeholder Training and Familiarization Programs.
- Managing the Transition from Construction to Live Operations.
- Project Handover, Documentation, and As-Built Drawings.
- Post-Project Evaluation and Lessons Learned.
- Future Trends in Airport Design and Construction Technology.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can project managers balance the immediate demands of airport construction with the long-term goals of sustainability and technological adaptability in an ever-evolving aviation industry?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by offering a holistic, lifecycle-based perspective on airport project management that is deeply rooted in real-world application. Unlike programs that focus narrowly on general construction management, this training is specifically tailored to the unique, high-complexity environment of airports. A key differentiator is the in-depth focus on the non-construction elements that determine project success, such as navigating intricate regulatory landscapes, managing a diverse web of stakeholders from airlines to security agencies, and executing a flawless Operational Readiness and Airport Transfer (ORAT) process. The curriculum moves beyond theory by integrating detailed case studies of both successful and challenged international airport projects, allowing participants to analyze actual decisions and their consequences. Furthermore, the course places significant emphasis on managing projects within a live operational airport, a critical skill set that involves complex phasing, logistics, and uncompromising safety protocols. It is this blend of strategic planning, regulatory insight, stakeholder management, and operational transition expertise that provides participants with a comprehensive and immediately applicable toolkit for leading airport construction and expansion projects.