





Alarp.. Airports



ALARP™ AIRPORTS

The 21st Century places unprecedented demand on the custodians of our precious natural and built environments.

In a world of imperfect knowledge and increased complexity managing the risks to our airports to *As Low As Reasonably Practicable* (ALARP) is the obligation upon all to act reasonably and the mandate of our company to help provide robust and practical solutions.

ALARP use only acclaimed world experts to deliver tailored pragmatic solutions with complex risk exposures.

From Heathrow to Bagdad, Sydney, Tripoli and Oman to Qatar - ALARP experts provide support to the world's major airports.

Airports reflect sovereign and corporate investments in unique and iconic infrastructure to showcase the vitality and strength of the countries they serve. ALARP protects these symbols of national importance and all those who use them by developing customised safety and security solutions in collaboration with local safety and security forces.

ALARP prides itself on upgrading entire workforces and meeting the latest challenges of new standards, changing threat conditions and major events.

ALARP'S clients are provided access to eminent, accredited subject matter experts from around the world. Our world experts are trusted by governments and corporations to investigate report and prevent future major disasters.

Airports demand robust and pragmatic management of their complex and interdependent risks. From security and safety to the international reputation of a country, airports require attention to operational detail 24 hours per day.

ALARP operations and ALARP technical solutions provide pragmatic delivery of results. Under the supervision of ALARP's world experts, clients are given the option of converting the specialist advice into solutions using ALARP's

specially trained personnel. From critical database development to field based analysis, performance audits, facilities management supervision and operational safety, ALARP delivers bespoke solutions for assessing and protecting life, property and the environment.

With trained specialists; ALARP converts technical advice into reality. Our core team includes scientists, engineers, facilities maintenance, communications, firemen, security experts, Planning and Law. ALARP's clients also have access to ALARP's trained and certified operational safety officers and its world network of ALARP™ accredited experts. ALARP's training and certification program supports its ability to deliver large numbers of reliability trained and accredited personnel.

ALARP closely liaises with local regulatory agencies Defence, Civil Aviation Authorities, International Airport Fire and Rescue Services.

ALARP Operations solutions

Operationally, we have certified and deployed more than 1,000 specialist operational safety personnel including the GCC's first tunnel safety officers. We focus on robust scientific based solutions delivered through qualified,

trained, focused, committed, and articulate specialists.

Our operational division adopts ALARP's Real Life Solution methodology. We insist on trialing our solutions before finalizing our work. For example, we recognize that effective communications are essential for safe operations. ALARP uses its innovative communications program to create special "Language Statements" which capture the essence of each client's unique operational needs. The "Language Statements" fill the gaps in the communications amongst people from different cultures and backgrounds. Our communications team also use our Paris based speech pathologists to deliver emergency language training for operational personnel.

This unique methodology minimizes operational errors. ALARP bridges time, culture and language barriers and thereby facilitates reliable results for clients. Since deployment of this approach through more than 1,000 trained personnel in some of the world's most prestigious new airport infrastructure, all fires have been detected, reported and extinguished by a multinational team trained using this methodology in under five minutes. Clients can trust our Real Life Solutions because they really work.

FROM VISIONS TO REALITY

ALARP provides the link between a clients vision and the reality of ultimate operations. By accessing the world's leading practical experts to manage the special risks of airports, we make systems work.

Our clients:

- Ministers, Ministries, Government Agencies and senior advisors
- CEOs and Board of Directors
- Institutional and private investors
- Insurers
- Regulators
- Operators

A selection of what we can do:

- Governance, standards and regulatory arrangements
- From concept, to design, construction and operation ALARP provides certainty that the clients' vision becomes a reality
- Audits, independent verification, regulatory approvals, risk evaluations including insurance and legal liability, reviews, opinions, transportation studies and safety assessments
- Challenge teams supervision and audit of works
- Specialised training, testing and accreditation of workforces; full scale trials, testing, proving and exercises
- Operational readiness, degraded mode safety operational strategies, testing and audit of systems, equipment and personnel

We also offer trusted independant counsel, investigations, peer review, operations and operational assessment services for our clients worldwide.



WHAT MAKES US DIFFERENT?

Humanistic Approach: Our approach to operational risks illustrates the value ALARP places on life and the well-being of all people. From ALARP's accredited world experts to its teams of uniquely qualified operational staff, ALARP are committed to sharing our goals, mutual respect, continual improvement, fair work conditions and a safe work environment. At ALARP we ensure our clients reputation and risks are uniquely managed by engaging only the best world experts and developing a trained, respected and loyal workforce. Our technical and operational divisions consistently deliver outstanding results for our clients.

ALARP values continuous personal development of its experts and personnel. This management approach encourages all ALARP's staff to accelerate their skills and learning enabling them to become champions in their areas of activity.

ALARP has a zero tolerance of drugs policy and holds random alcohol and drug testing of its employee, to guarantee 100% client satisfaction. We promote a safe and healthy working environment.

ALARP understands the importance of keeping its solutions real and practical. ALARP personnel volunteer their family (parents, spouses and children) to participate in full scale emergency exercises as ALARP solutions are trialed and perfected. ALARP personnel are sensitized to life, property and environmental issues ALARP is engaged to protect. ALARP supports community initiatives in emerging economies by supporting its staff to deliver social improvement within their local communities.

ALARP represents a new culture, an extraordinary community, an innovative school of thought and exceptional work environment.



ALARP™ Solutions

ALARP™ accredited experts provides operational technical and remedial solutions for complex airport risks including life, property and environmental problems:

Example of past solutions:

- Operational fix for:
 - Large new terminal buildings
 - Large bulk cargo buildings
 - Central utilities plants (power stations and water chilling facilities)
 - Air Traffic Control buildings and towers
 - Airport tunnels (road, rail and internal services)
- Full-scale emergency exercises including full attendance and training of emergency services and personnel
- Operational training, readiness and procedures for operational fire and life safety, asset protection, disasters and emergency response
- Development, teaching, exercising and testing of custom fire and life safety and emergency services procedures
- Development of special emergency services procedures between emergency responders including “English as a second language” emergency protocols at major transportation facilities
- Development, training and assessment of optimized rescue techniques for gender specific and culturally sensitive situations
- Development of accelerated “hands on” engineering training programs for Specialist Local Safety Engineers in multiple locations including New York, Montreal, London, Helsinki Sydney, and Paris from ALARP™ accredited world experts



- Recruitment, training, deployment and operations of certified airport Tunnel Safety Officers
- Development of the GCC’s first social media based emergency communication platform
- Explosion risk solutions for a state of the art, large scale gas powered airport manufacturing facility
- Water ingress solution for nationally significant major subsurface airport facility
- Database development and maintenance for labour access control within critical airport infrastructure

ALARP TECHNICAL SOLUTIONS



Expert advice demands conversion into technical solutions. ALARP 's core team of technical experts provide clients with direct accountability between expert advice and delivery of technical solutions. Examples include:

Technical works

- Creation of databases and related information systems
- Data entry and data management
- Training and deployment of specialist technicians for complex technical tasks
- Development and optimisation of Standard Operating Procedures and Works Procedures (SOP's & WP's)

Project works

- Ground water ingress control and remediation
- fluid dynamics, ventilation, stability
- Contractual risk management
- Technical Auditing
- GIS interpretation
- Satellite image interpretation
- Micro gravity survey and interpretation
- Three dimensional laser analysis of complex structures
- Near field radar ground penetration analysis
- Groundwater flow analysis and management
- Geological survey
- Seismic survey
- Seismic risk analysis.

Facilities Maintenance

- Audit and supervision of complex technical projects
- Performance assesment and operational reviews

Operations

- Safety Audits
- Human/machine interface
- Communications
- Operational Safety Reviews
- Human Factors

Transport

- Peer review/challenge
- Construction and operational safety
- Fire life safety
- Human factors
- Risk management.
- Concept design
- Modal interfaces
- Liability management

System performance

- Black-box complex system performance optimisation
- Electro-mechanical system analysis
- Fire-fighting system analysis
- Life safety system performance.

Human safety

- Evacuation performance analysis
- Tenability analysis
- Human factors
- Security.

Environment

- Pollution risk assessment and abatement
- Toxicology
- Contamination control
- Site remediation
- Comprehensive Environmental Impact Assessment including Health Impact Assessment
- Waste Management
- Environmental Management System (EMS)
- Aquifer and groundwater management.
- Environmental assesments
- Planning and regulation

Regulatory compliance and licensing

ALARP is uniquely able to integrate technical information into project specifications, construction supervisions, audits, performance indicators, regulatory reform, regulatory compliance and criminal prosecutions in technical regulatory and engineering contexts.. ALARP experts are contributing to the standards for the world (eg. NFPA 130 and NFPA 502, Code of Practice for Subsurface Works). As authors of regulatory documents ALARP brings great depth of understanding about the use of standards and technical information in a practical way for the clients. ALARP™ engages with all local agencies and regulators to ensure that it's innovative and technically based solutions for delivering safe complex built infrastructure are acceptable and gain long term regulatory and stake holder approval.



PROFESSOR ARNOLD DIX

ALARP founder and CEO, Professor Dix is one of the world's leading experts in protecting sovereign and corporate entities from operational risk in life, complex property and environment. Professor Dix is both an accomplished lawyer and scientist, a former Professor of Engineering and currently a Professor in the disaster team of the School of Medicine, University of Western Sydney (UWS), Australia. He is the CEO and founded ALARP more than a decade ago, with ALARP companies in Europe (London), Asia (Hong Kong, China), Oceania (Melbourne) and now Qatar (2013). His legal career includes being a partner at DLA Philips Fox, a specialist consultant to DLA Piper London and a trial attorney (Barrister). He was appointed by the USA to two fire and life safety committees of the United States National Fire Protection Association "NFPA", chairs the legal group of the International Tunneling Association (United Nations Affiliated), represents a country's safety interests on the Permanent International Association of Road Congresses "PIARC", and served as a Special Expert to the European Parliamentary inquiry on tunnel fire safety. He is a member of Japan's Society for Social Management Systems "SSMS". He sits on the International Tunnel Insurance Group "ITIG" (re-insurance) for major sub surface infrastructure for the world as well as investigating disasters as a special expert worldwide. Professor Dix is also a prolific author on safety and the recipient of numerous international awards for his work.

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