

# Addressing Environmental Challenges

Environment and sustainability in Spain & Portugal



# About AECOM

AECOM is a global network of design, engineering, construction and management professionals partnering with clients to imagine and deliver a better world. As a premier, fully integrated infrastructure firm, we unlock opportunities, protect our environment and improve people’s lives.

For the last four years, we have been named one of Fortune’s World’s Most Admired Companies. Additionally, we have ranked as Engineering News-Record’s #1 design firm by revenue for eight consecutive years and recognized as Construction Dive’s Company of the Year for the second year in a row.

## Our global areas of expertise:

### Design and Consulting Services

We provide world-class design, architecture, engineering and consulting services as a market leader in transportation, water, environmental, energy, buildings and public spaces.

### Management Services

We work with governments around the world supporting programs of critical national importance in the areas of defense, security and intelligence, energy, infrastructure and international development, and environmental cleanup.

### Construction Services

As the builder of some of the world’s most iconic and challenging structures ever conceived, we partner with owners, developers and infrastructure providers in the building construction, civil, oil & gas and power sectors.

7  
continents

150+  
countries

87,000  
employees

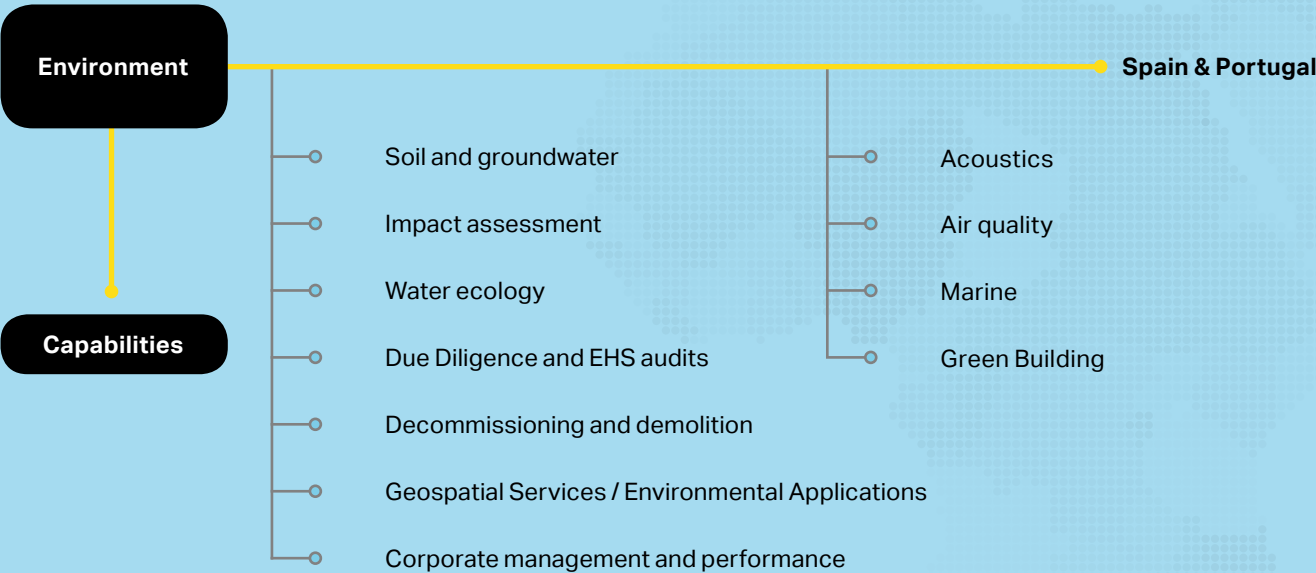
# More than 30 years in Continental Europe

Europe is a cradle of architecture; from the Pantheon to St. Basil’s Cathedral, the continent is home to some of the most impressive structures in the world. For almost half a century, AECOM has been building on this heritage by delivering innovative and diverse projects across Continental Europe.

With our blend of professional and technical services that take a project through its lifecycle, we are able to design, build, finance and operate Europe’s modern infrastructure. The proof is in the projects — from innovative skyscrapers such as Lakhta Centre in Russia to technical infrastructure such as the roads and bridges comprising the future Stockholm Bypass, AECOM takes on challenging, complex projects and delivers them on time and to budget.

Our attention to detail and to our clients has established AECOM as a leading design and construction services provider across a diverse collection of markets from transportation, environment and management services. AECOM is proud to lead Europe’s tradition of awe-inspiring architecture into a future of innovation and sustainability.

## End Market and Services:





# Environment and sustainability

By means of a wide environmental team made of Engineers and Scientists we can offer our clients unparalleled project assessment, design and engineering solutions in all environment markets both locally and internationally.

Our team has over 90 environmental specialists and is one of the top environmental consulting firms in Spain, working from offices in Madrid, Barcelona and Bilbao. We successfully carry out over 100 environmental projects every year, locally and internationally, making our public and private clients achieve environmental excellence.

The key sectors we serve include Industrial (Oil & Gas, Mining, Energy, Manufacturing, Chemical and Pharmaceutical), Real Estate and Infrastructure.

Our integrated delivery model allows us to solve the most complex environmental challenges throughout the project life cycle: planning, permitting, design and engineering, development, operation, decommissioning, remediation, restoration and reuse.

Our daily practice is fully compliant with the best quality standards (OHSAS 18001, ISO 9001, 14001, 17020 and 17025), which enable us to offer sustainable and optimal solutions to our clients.

## Soil and groundwater

With the largest remediation team in the Iberian Peninsula, we provide innovative technical solutions offering substantial savings compared to traditional approaches.

Our experts in Spain have been involved in the protection and remediation of soil and groundwater for decades. Our continuous training allows us to tackle risk analysis with the necessary technical solvency. We work on projects of all sizes, designing innovative and specific solutions for each case.

Our company is accredited as an Inspection Entity Type C by ENAC (Spanish National Accreditation Company, belonging to the European Co-operation of Accreditation), according to UNE-EN ISO/IEC 17020 norm for the execution of inspections in potentially contaminated soils and associated groundwater.



### Services

- Environmental soil and groundwater investigations
- Remediation (design and execution)
- Quantitative risk assessments for human health and ecosystems
- Brownfield redevelopment
- Technical support for legal requirements and claims
- Development of technical guidelines
- Groundwater hydrogeological surveys and modelling
- Contaminated sediments remediation
- Forensic expert reports
- Waste and landfills management
- ENAC accredited 17025 as inspection entity

### Remediation of a lindane landfill Bailin-Aragon, Spain

Subsoil characterisation and remediation of a legacy landfill to reduce the risks of contaminating the water resources, partially co-funded by the European Commission.

### Services

Characterisation , Remediation



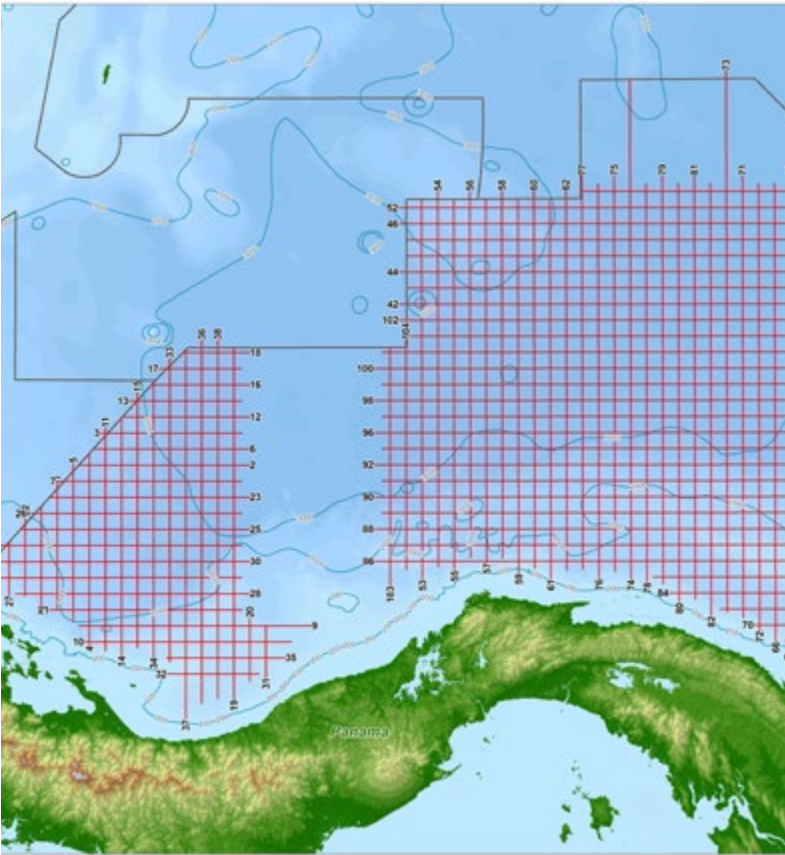
# Impact assessment

Our multi-disciplinary team in Spain has extensive experience in environmental and social impact assessments, as well as strategic environmental assessments, supporting our clients in their international new developments.

Potential impacts on natural and human environments of New Projects are subject to increasing scrutiny by governments and population. Rigorous assessments are essential to understand and mitigate these impacts and avoid issues with regulators and stakeholders.

The extensive experience of our team, supported by our global presence and technical groups, provides a perfect combination of a consistent high-quality approach and local knowledge.

From conception to execution, we provide mitigation solutions and key technical studies, assisting the client during approval processes and stakeholder engagement.



## Services

- Mitigation measures during design
- Environmental, Health and Social Impact Assessment
- Baseline studies / field surveys (marine & terrestrial)
- Environmental supervision monitoring and surveillance
- Acoustics (monitoring and noise assessment)
- Air emissions (monitoring, modelling)
- Waste / wastewater management plans
- Evaluation of ecosystem services
- Biodiversity action plans
- Landscape studies
- Restoration plans
- Stakeholder engagement
- Resettlement action plans

## Environmental and Social Impact Assessment for petroleum exploration project Caribbean (offshore and coastal area), Panama

A complete impact assessment was performed in a highly sensitive area, providing support through the permitting process and stakeholder engagement.

## Services

Impact assessment, Stakeholder engagement

# Water ecology

A team with over 30 years' experience providing a wide range of water ecology services, having a key role in the implementation of all phases of the European Water Framework.

Our specialized team plays a vital role in protecting water resources through a wide variety of public and private clients, including environmental studies in rivers, reservoirs, lakes, wetlands, coastal waters and offshore.

Main projects include desktop assessment, onsite monitoring, sampling and analysis of physical, chemical and biological parameters. This way we can have a holistic understanding of water ecosystems.

AECOM has an in-house physicochemical and biological laboratory located in Barcelona, which is accredited by ENAC according to UNE-EN ISO/IEC 17025.



## Services

- Ecological studies of rivers, reservoirs, lakes, lagoons and wetlands
- ENAC-accredited laboratory in accordance with standard UNE-EN ISO/IEC 17025
- Ecosystem conservation, management and restoration
- Environmental monitoring and surveillance of hydraulic infrastructures
- Wastewater discharge permitting and monitoring
- Design and implementation of monitoring networks
- Invasive species monitoring and control
- Riparian and fluvial habitat characterisation
- Fish population monitoring programs
- Inland waters bathymetry and sediment mapping
- Impact assessment

## Protecting water resources in power plants Spain

Supporting numerous power plants (specially nuclear and hydroelectric) in their management of water resources, key aspect of the sites operation.

## Services

Characterisation (biological, chemical, physical), Reservoir Management, Impact Assessment



# Due diligence and EHS audits

With environmental, health and safety professionals strategically located worldwide, we have the best resources to successfully provide country-specific regulatory, linguistic and cultural support.

Selling, investing in or re-financing an activity or property, whether a single asset or a large portfolio, involves the management and transfer of risks, some of them associated to environmental liabilities and compliance issues.

AECOM has an unparalleled track record in providing transactional support services to our clients worldwide. The European team advises on the environmental and engineering aspects of over 200 transactions annually, ranging from major multi-billion Euro corporate transactions to individual purchases. We help buyers, sellers and investors make informed business decisions that significantly reduce costs and liabilities, and add business value.



## Services

- Environmental, Health & Safety and Technical Due Diligence
- Environmental, Social and Governance (ESG) Due Diligence
- Technical support during merger and acquisition processes
- Identification of environmental liabilities and non-compliance issues
- Virtual data-room
- Risk evaluation, ranking and cost estimates
- Monte Carlo modelling for large portfolios
- Environmental liability minimisation and management (pre and post-acquisition)
- Management of legacy sites
- Phase II investigations (soil and groundwater, asbestos, etc.)

## Environmental Due Diligence and Compliance Assessment for 112 sites

Different locations, Spain and Portugal

Evaluation of environmental risks and compliance status of 112 sites (petrol stations and storage terminals).

## Services

Due Diligence, Compliance Assessments

# Decommissioning and demolition

When a site's useful life comes to an end, AECOM helps bring the project to a successful close with our decommissioning and closure services.

In AECOM we support our clients in the study of the different alternatives, evaluating the risks, deadlines and costs, until we reach the ideal strategy.

As part of the decontamination phase, AECOM provides support removing residual hazards from systems, surfaces, and structures. During the demolition phase, structures are removed and materials are safely disposed of or recycled.

AECOM participates in all phases of the project, from strategic planning and design to works management and implementation, looking forward to minimise environmental liabilities and risks while maximising the asset's value.



## Services

- Investigation and assessment of building fabric
- Investment recovery
- Hazardous materials survey
- Decontamination design
- Work-plan development
- Dismantle engineering
- Planning, scheduling, budgeting
- Validation and reporting
- Designer, supervisor or principal contractor
- D4 full process: Deactivation, Decommissioning, Decontamination, Demolition
- Asbestos risk minimise projects, including surveys and removals design

## Decommissioning and subsoil remediation of a former automotive factory

Barcelona, Spain

AECOM services included building assessments, contractors selection, dismantling supervision, health and safety management and subsoil remediation, as well as liaison with government agencies.

## Services

Dismantling assessments, Supervision, Subsoil remediation



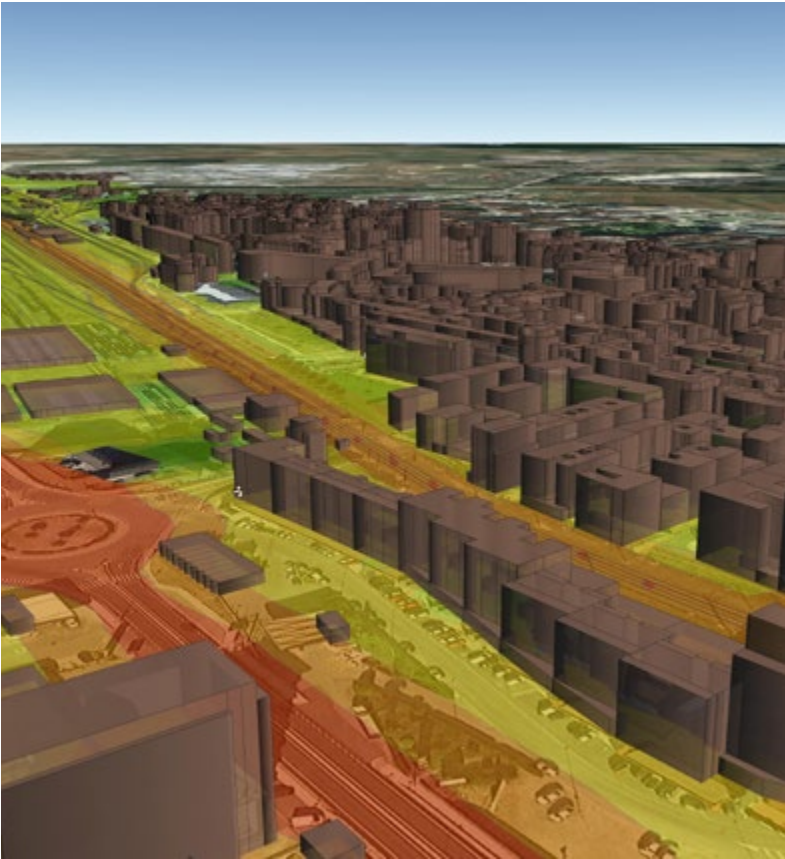
# Acoustics

AECOM provides acoustic consultancy services for a wide range of projects and activities, both in interior building acoustics and external noise impacts.

We help clients achieve their aspirations in acoustics by guiding projects from conception and planning through design, construction, testing and commissioning. We have provided acoustic services for high speed projects, roads, and development of new airports, as well as industrial activities.

By means of sophisticated modelling techniques we assess the environmental impacts and optimise acoustic performance of buildings and projects, enhancing functionality and achieving outstanding project outcomes.

Our local and global specialists are able to bring innovative and intelligent acoustic design ideas to our clients, including design and engineering solutions.



## Services

- Assessment of interior building acoustics
- Acoustic and vibration studies
- Acoustic building design and control measures
- Prediction of environmental noise emissions propagation and impact on potential receptors
- Road and rail noise mitigation
- Underwater noise assessments

### Integration of High Speed Rail in Miranda de Ebro

Miranda de Ebro, Spain

AECOM undertook noise and vibration study within the integration of a new high speed project in an urban area.

## Services

Noise and vibration study

# Air quality

As air quality regulatory requirements become more restrictive, in AECOM we work hand in hand with our clients to implement strategic solutions using innovative approaches and advanced technology.

After decades of experience developing air quality projects, in AECOM we provide a wide range of services focused on our client needs considering site-specific conditions and regulatory requirements.

Our air quality team in Spain has more than 15 years of experience developing projects in the Iberian Peninsula and internationally and it is supported by a large full-service global air quality practice, with more than 400 professionals on four continents.

Our scientists assist in the development and validation of air quality models and our engineers design and implement cutting-edge emissions control strategies.



## Services

- Air emissions modelling
- Leak Detection and Repair (LDAR) using Method 21
- Hybrid Leak Detection and Repair (HLDAR) using an infrared camera
- Air emissions audits
- Ambient air monitoring and baseline studies
- Human health risk assessments related to air quality
- Permitting and compliance of current and future regulatory requirements
- Emission inventories
- GHG services (inventories, CDM, corporate assurance, ISO 14.064, reduction measures)
- Odour studies (sampling survey and olfactometric analysis)

### Health risk assessment associated to emissions from cement plants

Spain

Assessment performed at six cement plants, though modelling of emissions from combustion sources and considering both inhalation and ingestion exposure routes.

## Services

Air Quality, Modelling, Health Risk Assessment

# Marine

AECOM in Spain has extensive experience developing marine surveys for coastal and offshore projects, providing a wide range of technical expertise to respond to each project’s needs.

AECOM has performed many marine surveys for different projects and activities such as oil and gas, energy and telecommunications. Our services include field surveys for biological, chemical, and physical oceanographic data collection (water, sediments, and biota), sensitivity mapping, impact assessment, modelling, mitigation plans, etc.

Our cost-effective approach adapted to each project provides our clients with objective data collected in the field and through desktop-based scientific research while maintaining an appreciation for the environmental and regulators sensitivities frequently associated with controversial marine and coastal projects.



## Services

- Water and sediments sampling
- Marine fauna observation (mammals, turtles, birds, etc.)
- Modeling studies: sediments dynamics, coastal hydrodynamics, underwater noise, sediment dispersion, oil spills, discharges to sea, etc.)
- Subaquatic noise monitoring
- Sea bottom characterisation and mapping (Remote Operated Vehicle, diving, etc.)
- Fishing activities surveys
- Compliance with marine strategies
- Ecological sensitivity characterisation
- Oil spill contingency plans

### Marine mammals observation program during oil and gas offshore exploration Canary Islands, Spain

AECOM implemented the marine mammals monitoring program during the offshore drilling operations, involving a team of experienced and certified observers and the use of passive acoustic equipment.

## Services

Marine survey

# Green building

Our multidisciplinary team of environmental specialists, designers, and engineers, is fully prepared to provide the best solutions to develop sustainable buildings.

AECOM has actively collaborated with organisations involved in the development of sustainability standards and is one of the leading companies in sustainability assessments in Europe, with an extensive experience in LEED and BREEAM projects (Spain, UK, Germany, France, Belgium, Czech Republic, Austria, etc.). Our experience covers a wide variety of buildings (airports, industrial buildings, retail, offices, residential, etc.).

AECOM in Spain has supported numerous clients in sustainable developments, providing an integral approach throughout the design, construction and post-construction stages. Our commitment to sustainability drives innovation, resiliency, reduces risk and provides attractive project life cycle returns on investment.



## Services

- Technical Assistance on green building design, construction and operation
- Certification process on BREEAM, LEED, VERDE, GSAS, EDGE, WELL
- Assessment for Level(s) tool
- Energy efficiency studies
- Life cycle assessment for buildings and products
- Bioclimatic assessment
- Landscape and xeriscaping
- Assessment for products and materials
- Drafting of new frameworks and white papers on building sustainability
- Sustainable travel plans
- Green guides for building users

### Breem certification of a new leisure center for Unibail Rodamco Badajoz, Spain

Technical assistance throughout the design, construction and post-construction stages of the development of a new leisure centre (40,000 square metres).

## Services

Sustainable building



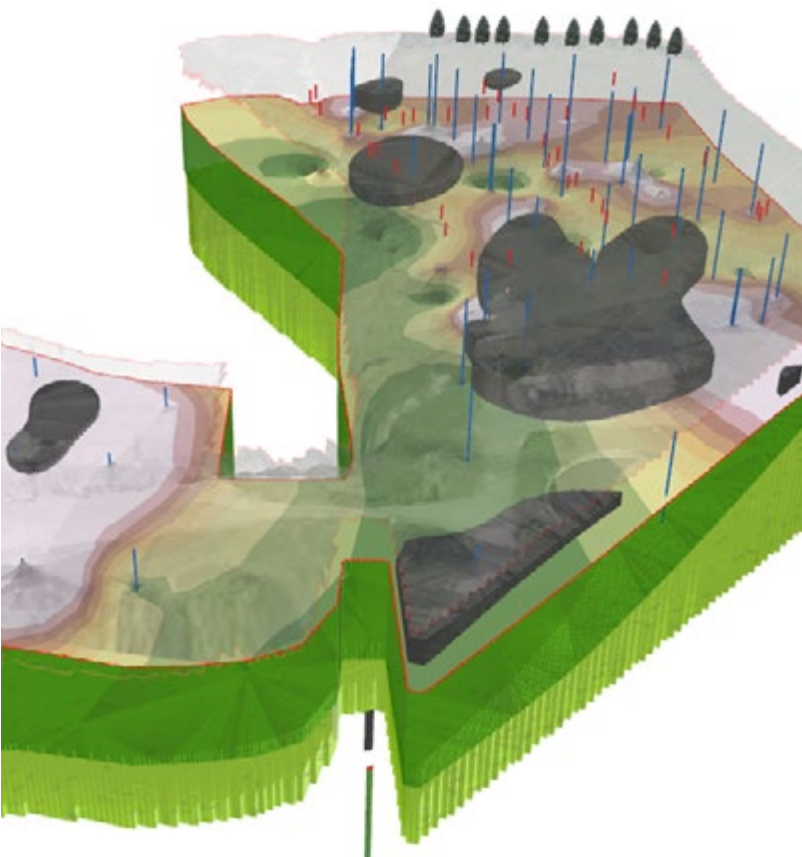
# Geospatial Services

## Environmental applications

In a world of ever-changing technology, our experts are driven to deliver the full benefits of geospatial solutions to our clients.

Knowing that results are critical on each project, we strive to help our clients achieve several goals: be better informed, manage assets more wisely, visualize change, predict the future, plan a better community, be more resilient, make it safer today and tomorrow, or simply be more certain of their actions.

Our team in Spain offers a strong combination of environmental and GIS experience to develop environmental geospatial solutions for our clients, having the ability to assemble multi-disciplinary teams to tackle the most challenging international.



### Services

- Data Management & Processing
- GIS Solutions for surveying
- GIS model design, Spatial analysis, Site Selection using Multi-criteria evaluation
- Digital Elevation models generation (including the use of LiDAR data)
- Photogrammetric analysis for aerial imagery
- 3D visualisation
- Specific studies: impact assessments, flood mapping, noise, air quality, soil and groundwater, etc.
- Preparation of panels, workshops and web-based applications

### GIS: Remediation of soil contamination in a former industrial site

Basque Country, Spain

AECOM provided technical assistance in defining and implementing a remediation strategy of a complex contaminated soil project, using GIS-based assessment & 3D visualization.

### Services

Data management, GIS model design, 3D visualization

# Corporate management and performance

Our clients face complex business challenges. In AECOM we provide a wide range of services aimed to help our client to improve performance whilst driving for innovation and excellence.

Integrating new companies, entering emerging geographies, developing new projects or products, bring new opportunities for our clients but also present new challenges. Environment and sustainability factors are playing an increasing role in successful corporate management and strategies, and need to be embedded in decision-making processes and ongoing operations.

AECOM provides a wide range of services oriented to support our client needs, taking advantage of opportunities and helping to minimize risks. Our collaborative Technical Practice Network enables our global community of 9,000 environmental professionals to share expertise and best practices to solve our client challenges.



### Services

- Corporate Social Responsibility (risk assessments, strategy, stakeholder engagement, reporting)
- IFC/ Equator Principles / Green Bonds
- Management systems (Environment, Health & Safety, Energy, Greenhouse Gases, biodiversity, etc.)
- Implementation of management and reporting tools

### Implementation and follow-up of Wildlife Risk management at 23 airports

Spain

Assessment of wildlife hazards on, and in the vicinity of, the airports and development of plans to manage risks from wildlife on the airports' operations.

### Services

Management of wildlife



