

CONSTRUCTION

WE'RE CREATING

A BETTER FUTURE



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# ACCIONA: we do invest in our planet

ACCIONA is a global company with a business model based on sustainability. Its aim is to respond to society's main needs through the provision of renewable energy, infrastructure, water and services. With a presence in more than 40 countries, it carries out its business activities based on the commitment to contribute to the economic and social development of the communities in which it operates.

The sustainability strategy at ACCIONA is executed through the Sustainability Master Plan, a road map which incorporates all of the company's initiatives in this field. ACCIONA's goal is to lead the transition towards a low-carbon economy, which is why it equips all its projects with quality criteria and innovation processes intended to optimise the efficient use of resources and respect for the environment. The company has been carbon neutral since 2016, offsetting all CO<sub>2</sub> emissions generated which it could not reduce.

ACCIONA features in selective sustainability indices such as the FTSE4Good, the CDP Climate & Water A List 2017, and the STOXX Global Climate Change Leaders Index, among others.

# CONSTRUCTION

100 years of experience providing the most modern technology

As a leader in RDI and with over 100 years of experience, ACCIONA is one of the most prominent companies worldwide in public works and unique buildings.

It handles all aspects of construction, from engineering to completion of works and their subsequent maintenance.

Its Business Units manage projects on five contents in three areas of specialisation.

- **Motorways and Bridges**
- **Railways and Tunnels**
- **Special Projects**

The Construction business of ACCIONA has a highly trained professional team, employing the most advanced and innovative techniques in its operations and applying the most suitable technologies for each project. Its administrative systems provide efficient knowledge management that makes it possible to effectively exploit all the accumulated experience of the company.

The company's specialisation and global vision work together to provide the best solutions, tailored to the unique features of each project.

International scope to provide solutions for local problems, decades of experience and a solid commitment to sustainable research and development: these are the hallmarks of ACCIONA.

## ACROSS THE ENTIRE VALUE CHAIN



### INITIAL DEFINITION

Project Opportunity proposal → Master Plan

- Feasibility Analysis
- Contract models and infrastructure development
- Conceptual design
- Budget estimation
- General consultancy, etc.

### IMPLEMENTATION PHASE

Engineering and Design → Development and Monitoring → Construction

- Technical design and engineering
- Budgeting
- Installation and implementation planning
- Purchases and supplies
- Construction
- Technical support and control
- Monitoring and tracking, etc.

### OPERATIONAL PHASE

Operation and Maintenance → Improvement and efficiency

- Start-up and commissioning
- Operation
- Maintenance
- Monitoring and control
- Assistance during operation
- Proposals for improvement, application of efficiency measures, etc.

# INNOVATION, RESEARCH AND DEVELOPMENT

In a globalised competitive world where sustainable development is all-important, innovation and the use of vanguard technology in projects, processes and business activities are decisive for the added value that a company provides.

ACCIONA is totally committed to innovation, and it is the force that drives growth of the group, both in Spain and internationally.

ACCIONA construction business channels all its innovative activity through its Technology Centre in Madrid, which specialises in sustainable construction. They have a multidisciplinary team of over one hundred people, making it an inexhaustible source of creativity.

The Technology Centre has a surface area of more than 3,500 m<sup>2</sup>, 14 superbly equipped laboratories and production workshops for the manufacture of prototypes. Its areas of investigation focus on searching for new solutions based on digitalisation, the search for new materials and improving construction processes for motorways and underground and port operations, and applying the circular economy concept in our operations.

To carry out its research, the Construction business of ACCIONA collaborates with the best universities and technology centres on a global level. In Europe, it has been involved in over 100 R+D projects supported by the European

Commission through the FP7 programme (2007-2013), and its successor, the H2020 programme (2014-2020).

This commitment to innovation has made it possible for ACCIONA to develop its own technological solutions unlike those of other companies in the sector. It makes use of control systems and a highly qualified team of professionals to manage knowledge efficiently and exploit the experience of the company accumulated over decades.

Their combination of commitment and excellence has made the Construction business of ACCIONA a leader in the development of solutions and alternatives combining innovation and sustainability.



# SUSTAINABILITY

One of ACCIONA's strategic pillars

ACCIONA promotes a business model that seeks to predict and responsibly manage both the risks and challenges of sustainable development and the new opportunities that these provide.

ACCIONA has developed a sustainability strategy through a Master Plan in order to do this.

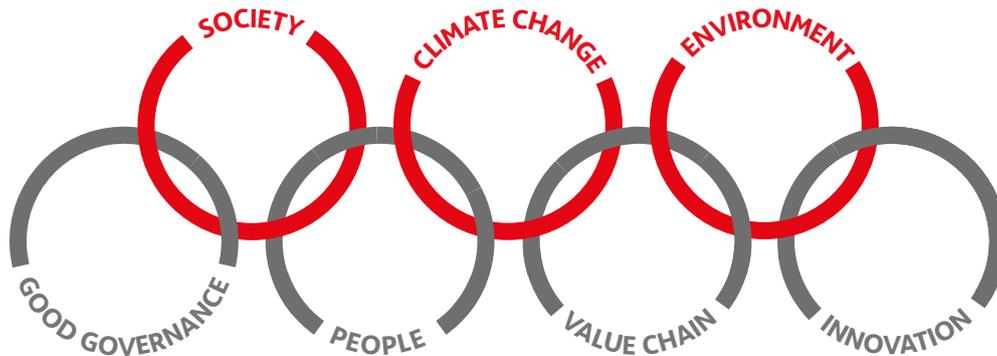
The 2020 Sustainability Master Plan combines and provides structure to the initiatives involved in this area of the Company. It is structured horizontally, with objectives in

areas of **Climate Change, the Environment, Society, People, Good Governance, Value Chain and Innovation**. Each area of business shares strategic objectives with the entire organisation, adapted to its own specifications. The goal is to incorporate the principal of sustainability into the character of each activity.

In the final analysis, ACCIONA's Sustainability Master Plan is directly linked to the vision and mission of the company, in line with strategic business strategies.

ACCIONA accepts the responsibility of mitigating new risks, but also the responsibility of successfully responding to new opportunities that arise from the challenges in our environment.

All of ACCIONA Construction's business is governed by the principle of sustainability and respect for social and economic environmental criteria.





## HEALTH AND SAFETY

ACCIONA is committed to a benchmark standard guaranteeing excellence in workplace health and safety in all its projects. Risk prevention, improvement of working conditions and guaranteeing safety and health in its centres to reduce the number of workplace accidents are distinguishing features of the company.

## QUALITY

For ACCIONA, quality is a distinguishing feature, recognisable in its works management system. Concentrating on sustainability and with a permanent view toward continuous improvement in processes, quality is an indispensable requirement for guaranteeing consistent results for the company.

## STAKEHOLDERS

ACCIONA contributes to sustainable development in the communities where it operates through evaluation and management of the social effect of its projects and through an extensive social initiative programme.



# SUPPORT TO THE WORKS CONSTRUCTION AND PLANT MANAGEMENT

## SELF PERFORMING

The Directorate of Support to the Works Construction and Plant Management provides specialised large projects with the support they need in order to develop these projects based on the knowledge of our own personnel and specialised machinery that is most suitable for every need.

- Specialised support: support and knowledge of our personnel and specialised machinery groups
- Optimised and efficient organisation: reordering and concentrating business resources
- Focusing on strategic projects for ACCIONA. From tender to completion.

### EXPERIENCE WITH TUNNELS

Completed with own resources:

- 60 completed in 8 countries
- 318.5 km of tunnels with tunnel borer
- 264 km tunnel lining.

Record performance (TBM S-1019):

- 79.5 meters in one day
- 384 meters in best week
- 1,489 meters in 30 consecutive days.

Tunnel borers used:

- 28 purchased borers
- 23 refurbished by ACCIONA.

### EXPERIENCE WITH AGGLOMERATES, ADDITIVES AND EARTH MOVEMENT

- 10,345,000 Tons agglomerates
- 3,647,000 Tons soil cement
- 6,570,000 Tons stabilised in place
- 667,000 m<sup>2</sup> concrete paving
- Equivalent of over 500 km of Motorway.

### EXPERIENCE WITH STRUCTURES:

Bridge building equipment. Work completed with own resources:

- 8,600 m/l of incrementally launched concrete viaducts
- 9,700 m/l of incrementally launched metal viaducts
- 3,600 m/l of viaducts completed with heavy load incremental launch CA 6500
- 6,250 m/l completed with beam launcher
- 4,650 m/l of viaducts completed with progressive cantilever.

### MARITIME WORKS:

- Floating dock "Kugira"
- Floating dock "Kugira 2"
- Floating dock "Balea"
- Maximum caisson dimensions: 66.85 m x 32 m. 34 m
- 174 caissons completed
- 1,025,000 m<sup>3</sup> of concrete.



Malaga-Granada  
HST Antequera-Peña  
Enamorados stretch,  
Spain

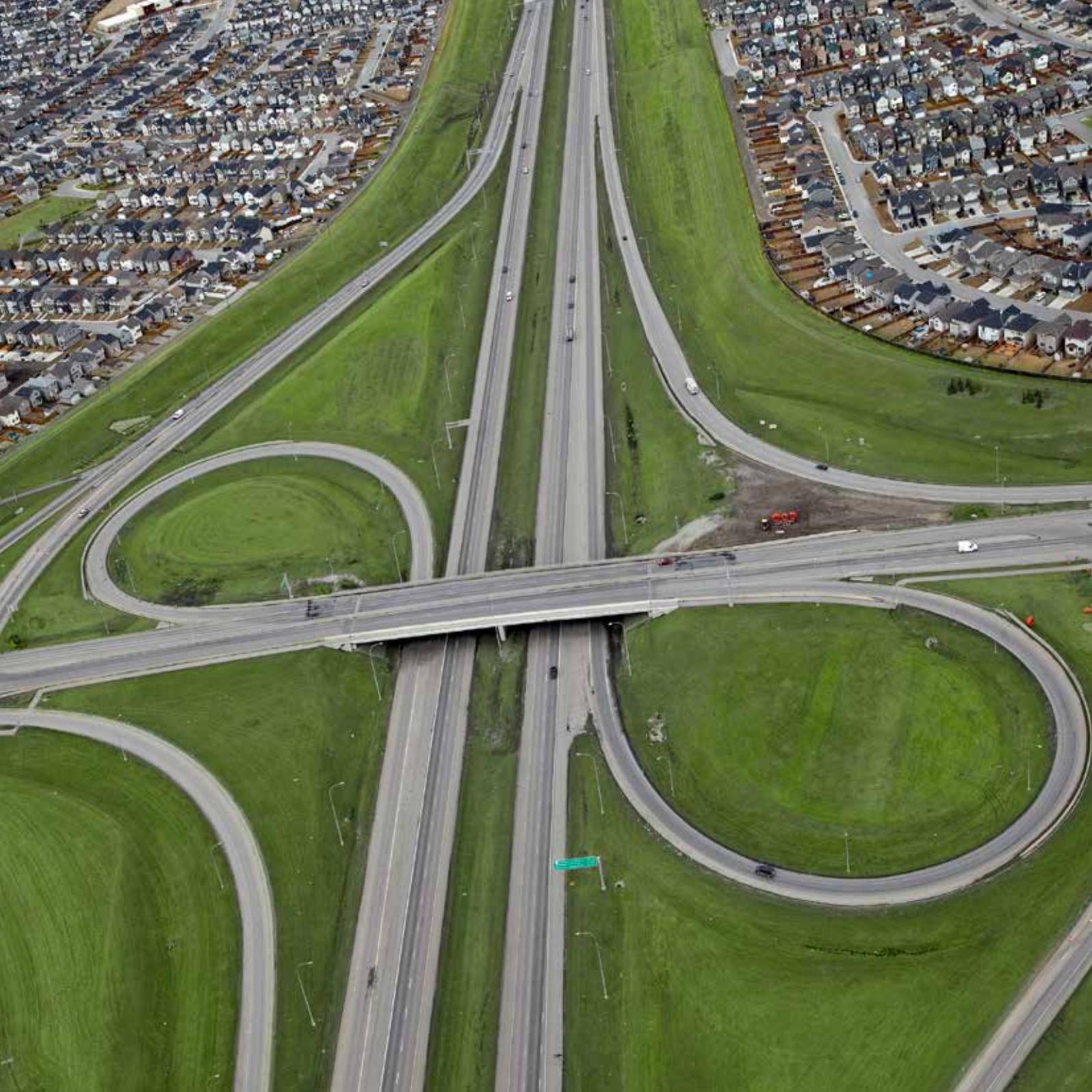
# MOTORWAYS AND BRIDGES

Over 1,700 km of roads in the last 10 years and more than 600 bridges

The Motorway and Bridge Specialised Business Unit has combined its almost one hundred years of experience with all its specialised technical and human resources. Its goal is to offer specific technical solutions for each Project and Client all over the world, participating in all phases of a project: proposal, design, construction and infrastructure maintenance.

Since its founding in the beginning of the twentieth century, ACCIONA has participated in the development of the Spain's extensive motorway network. It started its international expansion in 1972, and the Motorway and Bridge Specialised Business Unit is involved in the largest projects worldwide at the international level in Australia, New Zealand, Panama, Denmark, Brazil, the UAE, the Philippines and Canada, along with others.

Due to advances in engineering, the use of the most modern construction techniques, respect for the environment and ecology and willingness to contribute to the development of the communities where it operates, ACCIONA has become a benchmark worldwide for the design and construction of communication routes, bridges and viaducts of all sorts.







## INFRASTRUCTURE MAINTENANCE

With over 25 years of experience, the Infrastructure Management area of activity offers comprehensive world-class maintenance and infrastructure conservation solutions, improving and respecting the environment.

# RAILWAYS AND TUNNELS

Over 1,200 km of high-speed lines and more than 600 km of tunnels

The Railway and Tunnel Specialised Business Unit works on all phases of an operation, from feasibility studies and design right through to construction, supervision of works and maintenance.

It provides innovative solutions and advanced materials adapted to each project, applying the principle of

sustainability in all its construction processes. It has a proprietary technology for the installation of ballastless track systems for high speed lines and trams.

ACCIONA railway undertakings over the last 25 years include high speed, conventional railway, metros and tram lines in Australia, Brazil, Chile,

Colombia, Ecuador, Puerto Rico, Norway, Germany, Italy, the UAE and Spain (currently the second longest high speed train in the world, with 3,000 km in service).







ACCIONA has achieved important advances in excavation technology with improvements in geotechnical research, modernisation of ventilation systems and optimisation of working conditions inside tunnels, making it possible to provide better performance in completing underground work resulting in new records in tunnelling speed.

Its continuous striving for technical excellence driven by its innovation efforts have turned the Construction business of ACCIONA into an international hallmark in the development of railways and underground work, capable of handling an extensive range of projects for all sorts of clients and needs.

Madrid-Galicia high speed line, Santiago-Oroso stretch. Spain

# SPECIAL PROJECTS

More than 30 ports and almost 70 dams in 12 countries

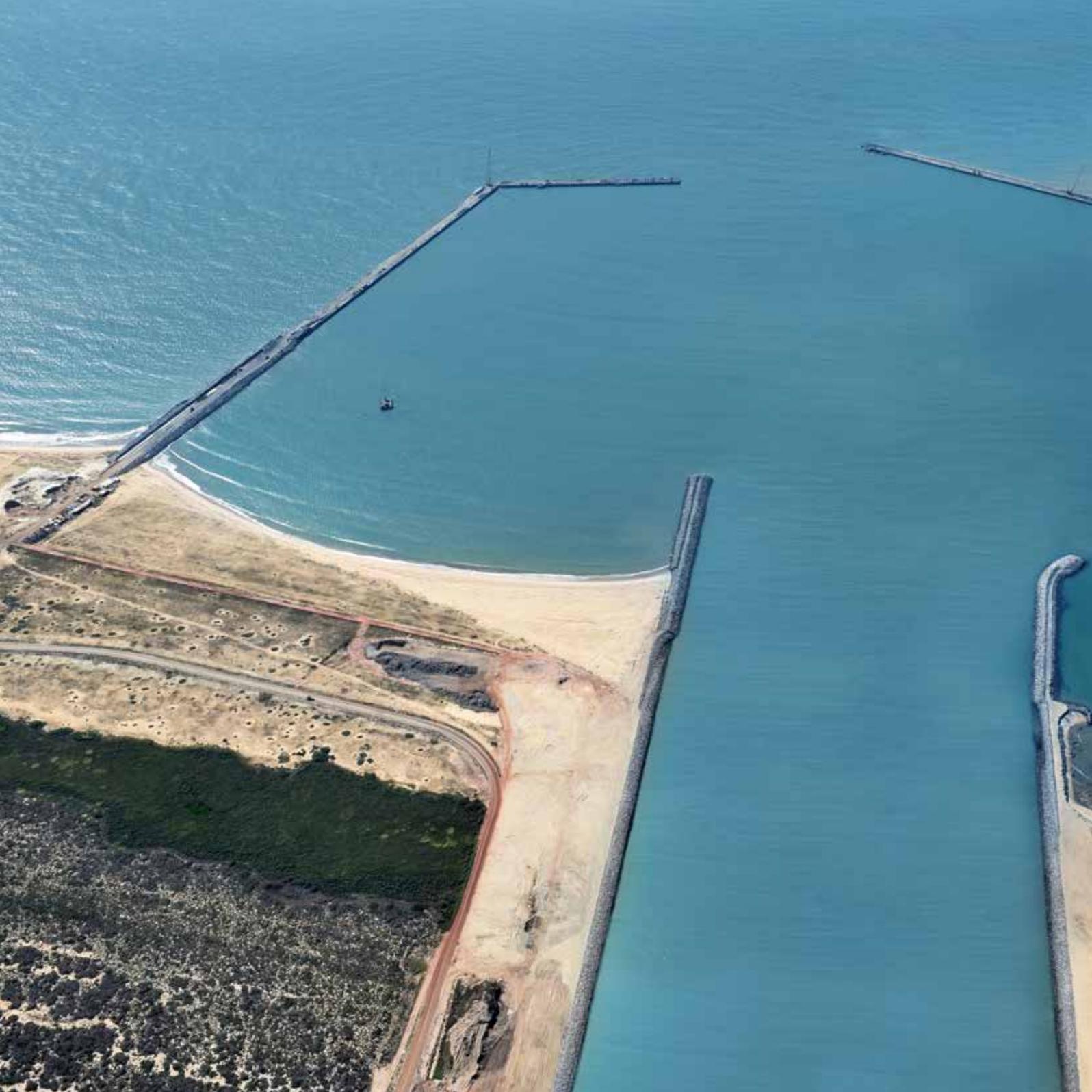
Through its Special Projects Specialised Business Unit, ACCIONA addresses all manner of design and construction projects for ports, dry docks, shipyards, wharfs, marinas, dams, hydroelectric stations, navigation and irrigation canals, pipelines and manifolds. Its international prestige is based on its

century of experience in complex operations and its capability to incorporate new materials and new construction techniques.

The Construction business of ACCIONA has been involved in the construction of some of the most important dams in Europe, Africa

and South America, and is currently involved in the construction of Site C in Canada, one of the largest hydroelectric projects in North America.







ACCIONA is a leader worldwide in large port operations with caisson technology, with a fleet of its own caissons capable of building concrete caissons up to 67 meters long, 32 meters wide and 34 meters high within ten days.





ACCIONA has frequently had to deal with building highly complex structures. It has the experience, the personnel and the most accurate means for the construction and installation of special structures in this regard.

It has developed its own applied technologies for mechanisation of facilities, special manoeuvres and large structure projects.

ACCIONA responds efficiently to the constantly cogent demands of the market.

# ENGINEERING

The Engineering area has over 50 years of experience in leading civil, industrial, environmental and architectural engineering projects in over forty countries on five continents.

Born after the merger of the engineering companies AEPO SA and Ibérica de Estudios e Ingeniería SA (IBERINSA), the Engineering area has

solid experience in the development of highly technical projects in area of industrial and civil engineering.

It has laid over 60 kilometres of tram and metro track, over 3600 kilometres of roadways and over 1700 kilometres of high speed rail lines. It has worked on 150 km of tunnels, 250 stations and 1,140 viaducts all over the world.

These figures are testimony to ACCIONA's position as a leading company in design and construction projects, using its own resources and offering global service.





AGJV  
Austrian Geological Institute



It has a team of highly qualified professionals specialising in different areas, enabling it to deal with highly technical projects and offer solutions adapted to the specific needs of each client.

In this, technology and innovation play a central role in the development of all projects, and guarantee the highest quality, efficiency and compliance with deadlines.



BUSINESS AS UNUSUAL

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