



**INNOVATION
EXCELLENCE
COMMITMENT**

2013 / 2014

Some Projects
2011 / 2013

37
OFFICES IN
20
COUNTRIES

120 COUNTRIES
WITH PROJECTS
in recent times

In recent years, the organisational transformation and geographical expansion of Idom has been of such magnitude that today we can say that we are truly a global firm



 TECHNOLOGICAL DEVELOPMENT

 WATER & ENVIRONMENT

 CONSULTING

 ENERGY

 TRANSPORT & INFRASTRUCTURE

 OUR OFFICES

 INDUSTRY

 ARCHITECTURE

A NEW STAGE OF GROWTH

What is the secret to Idom transforming itself into a global firm in recent years!

Today we are reaping the fruits of a process that has been maturing over a long time, whose beginning dates back to the late 1960s, when Rafael Escolá initiated contact with clients to contract projects in South America. Subsequently, our interest in working throughout the length and breadth of the world has been constant, experiencing a surge at the end of 2004, with the development of our 2005-2010 Strategy.

By then, Idom had already carried out considerable work in Spain and we felt that the development of our professionals should move in the direction of the globalization of the firm, competing in the "big league". The serene and orderly deployment of this strategy and its adoption by the entire management team has taken some time. Now is the time that we are reaping the rewards.

The economic crisis in Spain has had very little to do with the globalization of Idom; among other things because, in 2004 it was very difficult to predict. The fall of the national market simply highlighted the fact that for many years, the foundations of Idom have been underpinned by the global market.

All this has led us to a very exciting situation. More and more, we are achieving projects which are larger, more interesting, more technically complex, and of greater prestige. We are now in a position to begin a new phase of growth and the consolidation of our activity.

How far will Idom grow! As far as we set ourselves! As has already been demonstrated, reaching our goals depends on what we propose ourselves.

Fernando Querejeta
President

Luis Rodríguez Llopis
Managing Director



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DEVELOPMENT**

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**TECHNOLOGICAL
DEVELOPMENT**

01

TECHNOLOGICAL DEVELOPMENT

SOME PROJECTS

2011 / 2013



TECHNOLOGY PROJECTS OTHER PROJECTS

AMERICA

BRAZIL
Detailed engineering. Structural and seismic calculations for the project to replace the steam generators
Client: IBERINCO (NPP ANGRA)

DOMINICAN REPUBLIC
Broadband infrastructure
Client: INDOTEL

COSTA RICA
Heredia Digital Project
Client: BCIE

U.S.A.
New business model for fiber optic telecommunications
Client: ETED

CHILE
European Extremely Large Telescope - E-ELT
Client: ESO

MEXICO
Inspection of fuel tanks
Client: XCEL ENERGY (CN MONTICELLO)

MEXICO
Roll out of fiber optic
Client: TELEFÓNICA

CHILE
Test facility for wind turbines
Client: CLEMSON UNIVERSITY

MEXICO
Telecommunications & security for prison systems
Client: HOMEX

MEXICO
Advanced Technology Solar Telescope - ATST
Client: AURA

MEXICO
Life Management of Nuclear Facilities
Client: IAEA (NPP LAGUNA VERDE)

AFRICA

EGYPT
Enhancement of lighting & security of archaeological sites
Client: DEFEX

LIBYA
Telecommunications & security for Universities
Client: TELEVOX

EUROPE

GERMANY
Test facility for wind turbines DyNaLab
Client: Fraunhofer Institut IWES

FINLAND
Impact analysis of the storage racks in the spent fuel pool
Client: ENSA (NPP OLKILUOTO)

BRUSSELS
SILER Project, Seismic-Initiated events risk mitigation in LEad-cooled Reactors
Client: The EUROPEAN COMMUNITY

FRANCE
Engineering Support for the International Thermonuclear Experimental Reactor Project
Client: F4E (ITER)

SLOVAKIA
Seismic evaluation of mechanical and electrical equipment in nuclear power plants
Client: ENEL (NPP MOCHOVCE)

FRANCE
Feasibility of the Test Blanket Modules design (TBM)
Client: F4E (ITER)

SPAIN
Wave Converter
Client: Langlee Wave Power

UNITED KINGDOM
Site analysis for the construction of a new nuclear facility
Client: EDF (CN HINKLEY POINT)

SPAIN
QuiJoTe Telescope
Client: IAC

UNITED KINGDOM
Nuclear Decommissioning. Innovation in Project Management
Client: SELLAFIELD Ltd (SELLAFIELD reprocessing plant)

SPAIN
Test platform for parabolic solar collectors
Client: CTAER

UNITED KINGDOM
Test facility for wind turbines FUJIN
Client: NAREC

FRANCE

the way to new energy

THE ITER PROJECT

FIRST INTERNATIONAL
THERMONUCLEAR
EXPERIMENTAL
REACTOR

MEXICO

5,000
KILOMETERS

FIBER OPTIC
*rolled out
in the next two years*

HAWAII

*Manufacturing the world's
LARGEST SOLAR TELESCOPE DOME*

500 TONS | **26** METERS
in diameter

A movable structure able to position itself and track the sun with pinpoint accuracy



**OUR ADVANCED ENGINEERING SOLUTIONS
ARE ALWAYS LOOKING FOR THE ROBUSTNESS
OF THE DESIGN AND COST EFFICIENCY**

GAIZKA MURGA

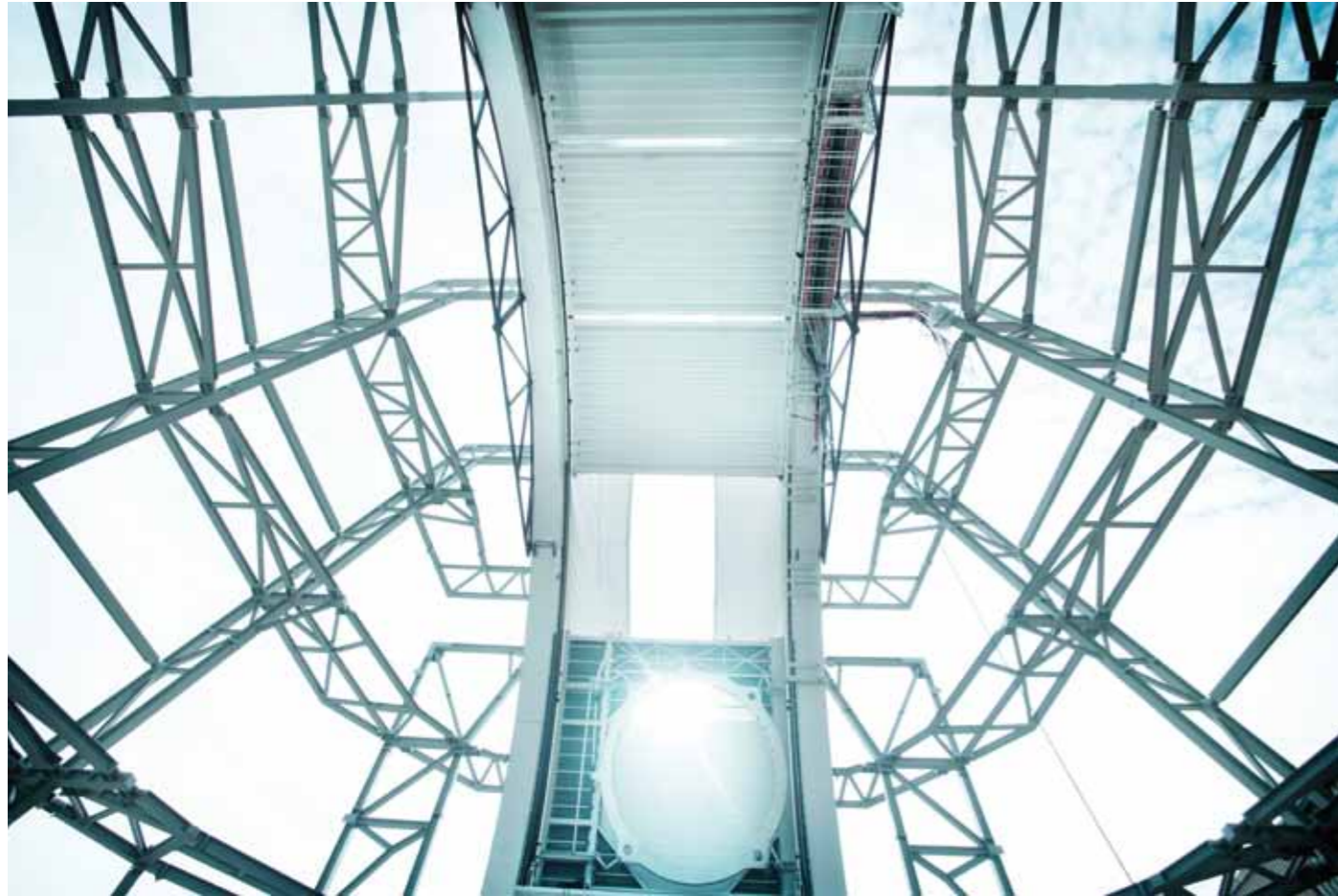
Engineer. Head of Astronomy in Idom

Photo: Gaizka Murga & Ibon Larrakoetxea with the model of the
European Extremely Large Telescope (EELT)

SOLAR TELESCOPE IN HAWAII

Located in the Haleakala Observatory on the island of Maui, this will become the largest solar telescope in the world with unprecedented capabilities for research in astronomy, plasma physics and interaction between the Sun and Earth





Idom has completed the factory assembly of the dome for the Advanced Technology Solar Telescope (ATST) prior to its shipment to Maui in Hawaii for its final installation in the Haleakala Observatory. The Advanced Technology Solar Telescope, whose primary mirror measures four metres in diameter, will be the largest solar telescope in the world and will have unprecedented capabilities for research in astronomy, plasma physics and interaction between the Sun and the Earth.

Following the completion of the detailed design in 2011 and manufacture in 2012, in 2013, Idom carried out the factory assembly of the dome in order to verify the correct integration and proper functioning of its

mechanisms prior to shipment. Assembly was carried out at the facilities of Tallers HILFA S.A. in the town of Basauri (Spain), under the supervision of the project team of Idom.

The dome has a height of 22 meters, the equivalent of a seven storey building

The dome has a diameter of approximately 26 metres, a height of 22 metres (the equivalent of a seven storey building), and a total mass of 600 tons. The system consists of two main mechanisms that position, with pinpoint ac-

curacy, the opening through which the telescope will observe. The first, azimuth, rotates the entire structure on a vertical axis, while the second, altitude, rotates the 30 ton door structure that accommodates the opening on a horizontal axis.

In its manufacturing and assembly, many firms have collaborated such as Gometegui (Llodio), Hilfa (Basauri), Aratz (Vitoria), Mondragón Sistemas (Andoain), Kabelschlepp (Germany), Emetal (Pamplona, Navarra) and Strunor (Burgos).

Photo: Assembly of the telescope at the workshop of HILFA in Bizkaia, Spain

Photography: Alfonso Calza





THE QUIJOTE PROJECT

THE UNIVERSE WITHIN REACH

Under the direction of the Canary Islands Astrophysics Institute (IAC), the QUIJOTE (Q-U-I JOint TEnerife) CMB Experiment is a scientific collaboration between the IAC, IFCA, DICOM, the Jodrell Bank Observatory, the Cavendish Laboratory and Idom.

The project consists of two telescopes and three instruments dedicated to measure the polarization of the Cosmic Microwave Background (CMB) in the frequency range between 11 GHz and 30 GHz, and at angular scales of 1 degree. Located at the Observatorio del Teide (Tenerife, Spain), this equipment will provide the opportunity to make high-sensitivity observations of galactic or extragalactic emissions microwaves in this frequency range.

The facility located at the Observatorio del Teide on the Canary Islands will permit high-sensitivity observations of galactic and extragalactic emissions to be carried out

Idom is currently involved in Phase II of the project with the Turnkey supply of the second telescope. In Phase I, Idom was responsible for the design, manufacture and commissioning of the first telescope. This second telescope will incorporate improvements with respect to the

first, in terms of optomechanical capabilities and maintainability, and will be operative in May 2014.

Idom has performed the system integration and functional tests, of the five polarimeters incorporated in the first instrument, as well as the integrated instrument in the laboratories in the Idom offices in Bilbao.

Another of the contributions of Idom to the project has been the design and construction supervision of the building to house the telescopes, including the installation and commissioning of the opening mechanism of the dome.

On the left : Quijote Telescope at the Observatorio del Teide, the Canary Islands
Photography: Courtesy of IAC and Idom

On the right: Cryostat
Infographics: Iñigo Gutiérrez
Photography: Alfonso Calza



R&D: CRYOGENIC SYSTEMS

FOR ASTRONOMICAL INSTRUMENTATION WITH MOBILE COMPONENTS

During the commissioning of the first instrument of the QuiJote telescope project carried out by Idom, the need became apparent to investigate viable alternatives to introduce mobile components in cryogenic environments, to cover the needs demanded by the current scientific research, in particular, in the field of astronomical instrumentation.

Directed by Idom, the project was carried out in collaboration with the Canary Islands Astrophysics Institute (IAC) and funded by the Centre for Industrial Technological Development (CDTI).

To perform the experiment, Idom has designed and manufactured a laboratory cryostat to analyze the heat extraction through rotating elements by means of conduction or radiation. The thermal and mechanical behavior of special materials in cryogenic conditions (20K) has been analyzed, as well as different coatings that minimize heat loss by radiation, etc.

At present, having successfully submitted the technical justification to the CDTI, and given the interest generated by the project in the scientific community and other groups, the

continuity of the QUIJOTE CMB project in collaboration with the IAC has been planned.

The cryostat permits analysis of heat extraction through rotating elements under cryogenic conditions

GERMANY

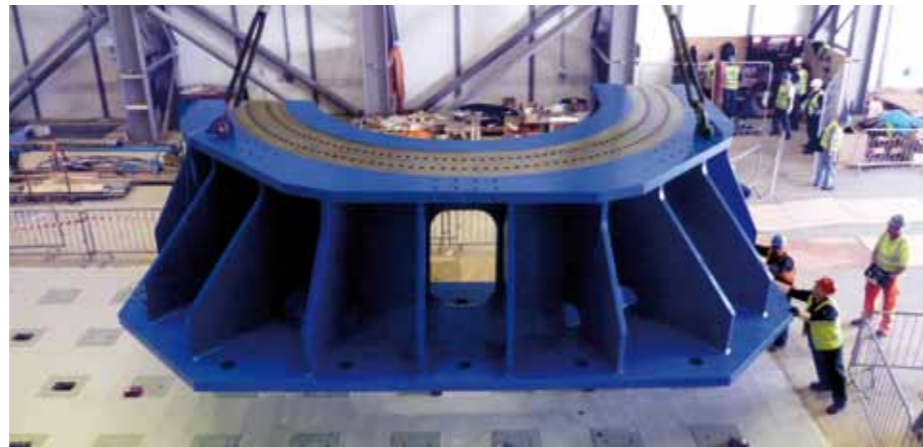
TEST STAND FOR WIND TURBINES

The Fraunhofer Institute IWES has awarded Idom the contract for the design, manufacturing, assembly and commissioning of the so-called Dynamic Nacelle Laboratory (DyNaLab), a high technology test stand for wind turbines of up to 10 MW to be built in Bremerhaven, Germany.

Among the design characteristics being developed by Idom, it is worth noting the incorporation of an innovative hydraulic load application system, as well as the drivetrain to simulate real wind conditions (the missing rotor and tower) enabling the specimen to operate in the Hardware in the Loop (HIL); both the mechanical and electrical behavior of the latest generation wind turbines can be tested, thereby, equipping the test stand with capacity in excess of those currently in existence.

In order to provide high-tech components in the field of power electronics capable of meeting the stringent specific requirements for the facility, Idom has contracted leading suppliers such as ABB and LDW.

In turn, Idom also provides engineering, architecture and planning services according to German standards for the facility that will house the DyNaLab test stand.



The scope of the contract also included the provision of technical assistance during construction works as well as the assembly and installation of these elements.

The design consisted of 4 metre deep pile foundations (43 m X 12 m) - a 1600 m³ monolithic concrete slab which was poured continuously over 18 hours - various heavy metal supports anchored to the slab with pins of 100 mm in diameter.

One of the most notable features of the design is that it should not only be able to withstand considerable dynamic loads and fatigue, but also to achieve tight assembly tolerances.

Upper photos : Foundations and metal supports for the test bench, FUJIN (NAREC)

Photography: Courtesy of NAREC & SHEPHERD CONSTRUCTION

Photos on the right: Infographic recreation & mockup of the Dynalab test bench (IWES)

Infographics: Pictura

Photography: Alfonso Calza



UNITED KINGDOM

TEST BENCH FOR OFFSHORE WIND TURBINES

The UK National Renewable Energy Centre (NAREC) has been the driving force behind the creation of an offshore wind turbine test facility at its existing facilities in Blyth. This facility has the capacity to test the latest generation nacelles up to 15 MW (The FUJIN Project).

In the framework of this project, Idom has been contracted by Shepherd Construction Ltd to take responsibility for the design of the foundations system, anchors and metal supports for the main elements of the facility.

THE UNITED STATES

THE MOST ADVANCED WIND TURBINE
DRIVETRAIN TEST FACILITY IN THE WORLD

In the framework of the energy development programs promoted by the U.S. government, the Department of Energy of the United States of America has awarded Clemson University the construction and subsequent operation of what will be the world's most advanced wind turbine drivetrain test facility.

The university entrusted Idom with the development of all the architectural and engineering activities necessary to upgrade the existing building, the design of the special concrete foundations, the task of integrating the different existing subsystems in the test facility, and support to the owners (engineering) services during the construction of this unique component.

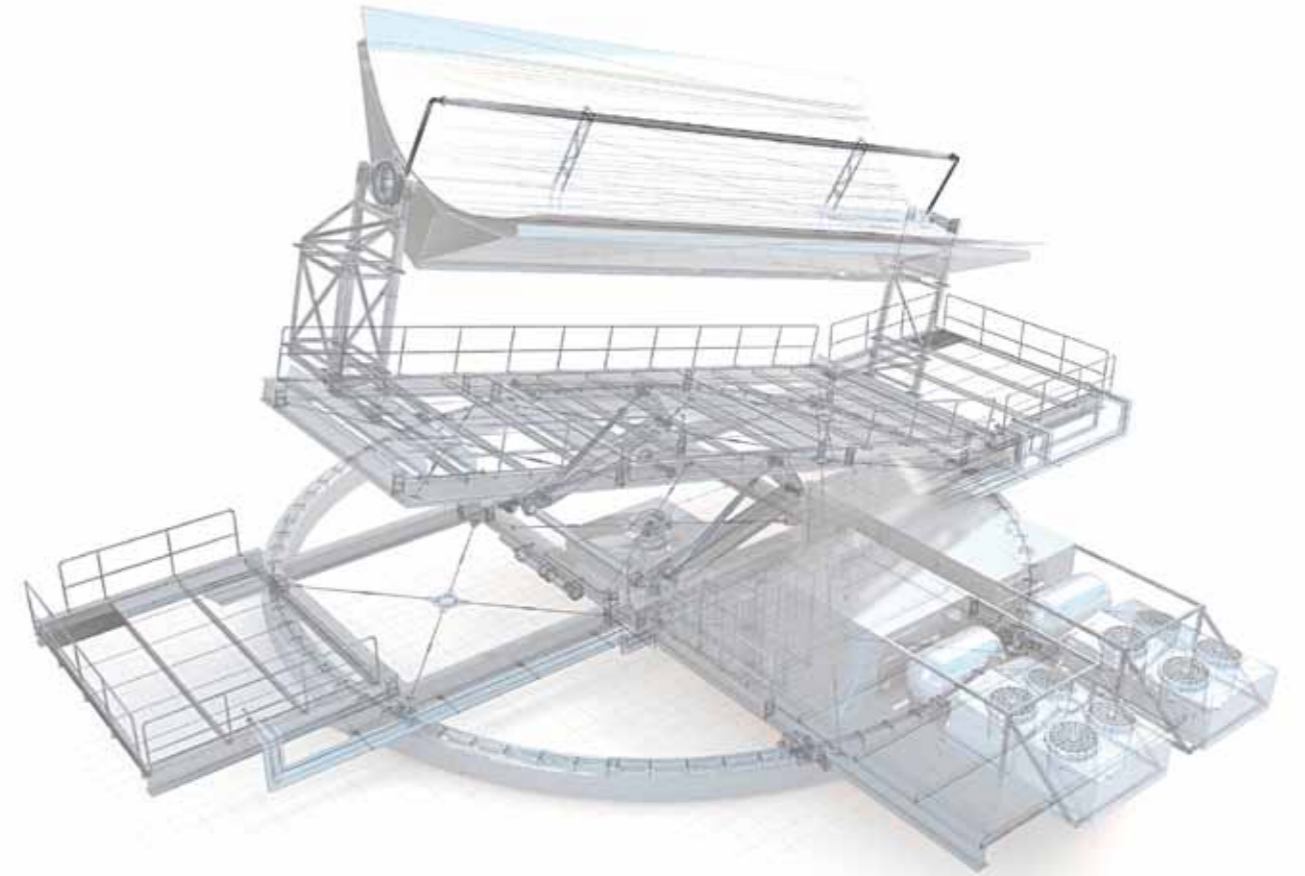
The facility consists of two test bays for testing performance endurance and highly accelerated lifetime of wind turbine drivetrains rated at 7.5 MW and 15 MW respectively. The facility is strategically located in the harbor of Charleston (South Carolina), to provide service to large companies embarking on the design of the next generation of high power and offshore wind turbines.

The facility was inaugurated in November 2013, with a ceremony attended by a large representation from academia, industry and various institutions.

Photography: Wendy Mogul



Photos: Infographic recreation of the parabolic solar collector



SOLAR COLLECTORS

TEST PLATFORM FOR PARABOLIC THROUGH COLLECTORS

The Advanced Technological Center for Renewable Energy (CTAER) which is a private foundation with several centres in Andalusia is made up of universities, technology centers, public authorities and companies from the renewable energy technologies sector, has as its objective the development of renewable energy technologies.

Through a public tender process, CTAER awarded Idom with the contract to start work on the design and construction of the testing facility for the evaluation and characterization of solar collectors of the parabolic through type. Idom has developed the concept in coordination with CTAER, and is now fabricating, assembling, and completing the installation and start-up.

This innovative approach will provide the Centre with R&D+i facilities with different capabilities to those existing in the world, for this type of CSP. This facility will be an addition to the types of central receiver types already available.

The facility allows the sun's path to be followed, optimizing the development of technologies for better use of solar energy

The concept being developed allows the apparent movement of the sun to be followed, thereby achieving greater capacity for testing, evaluation and characterization of thermal optical structural and fluid dynamics of the collectors.

The system offers significant improvements on current testing systems and will permit the experimental verification and validation of proposals for new concepts or changes to existing collector, as well as the testing and validation of standards and procedures, standards of characterization and evaluation of collectors. The new facility, whose construction began in July 2013, will be located in the town of Tabernas (Almería), on the Plain of Retamares where CTAER has 91 ha for their R&D work in the area of concentrated solar technologies, bordering the facilities of the PSA (Plataforma Solar de Almería).

Infographics: Iñigo Gutiérrez Artetxe

Photos: Infographic recreation of the wave converter farm



WAVE POWER

HARNESSING THE STRENGTH OF THE SEA TO GENERATE ELECTRIC POWER

Langlee Wave Power is a Norwegian Company developing innovative technology that harnesses the energy of the sea. The commitment of this company to marine energy is based on a semi-submersible floating installation that converts wave motion into electrical energy.

The Langlee Robusto™ unit combines state of the art knowledge of Norwegian offshore technology with standard and low maintenance materials. Precisely its original design has been thought out so that most of the components can be manufactured or assembled in Spain. The Canary Islands are a strategic location for this type of renewable energy. Idom has extensive experience in the development of renewable energy projects. The work that Idom is developing for this prototype includes the design of the Power Take-Off (PTO), responsible for converting mechanical wave energy into useful electrical energy.

Both the mechanical components, the power train, as well as all the electrical and electronic components are housed in submerged containers that must be air tight. The area of Advanced Design and Analysis of Idom is facing significant technical challenges in the design of these containers and their connections to ensure a long useful life under the conditions of low maintenance requirements and exposure to high corrosivity.

Robusto™, in its first phase, will produce 132kW. Measuring 30x50 metres, the installation will be assembled on land and then towed to the point where it will be anchored to the sea bed.

The wave converter will permit the linking of as many Robusto units as necessary to meet energy requirements. After the period of construction and installation, Langlee will go even further, with the installation of a pilot plant and

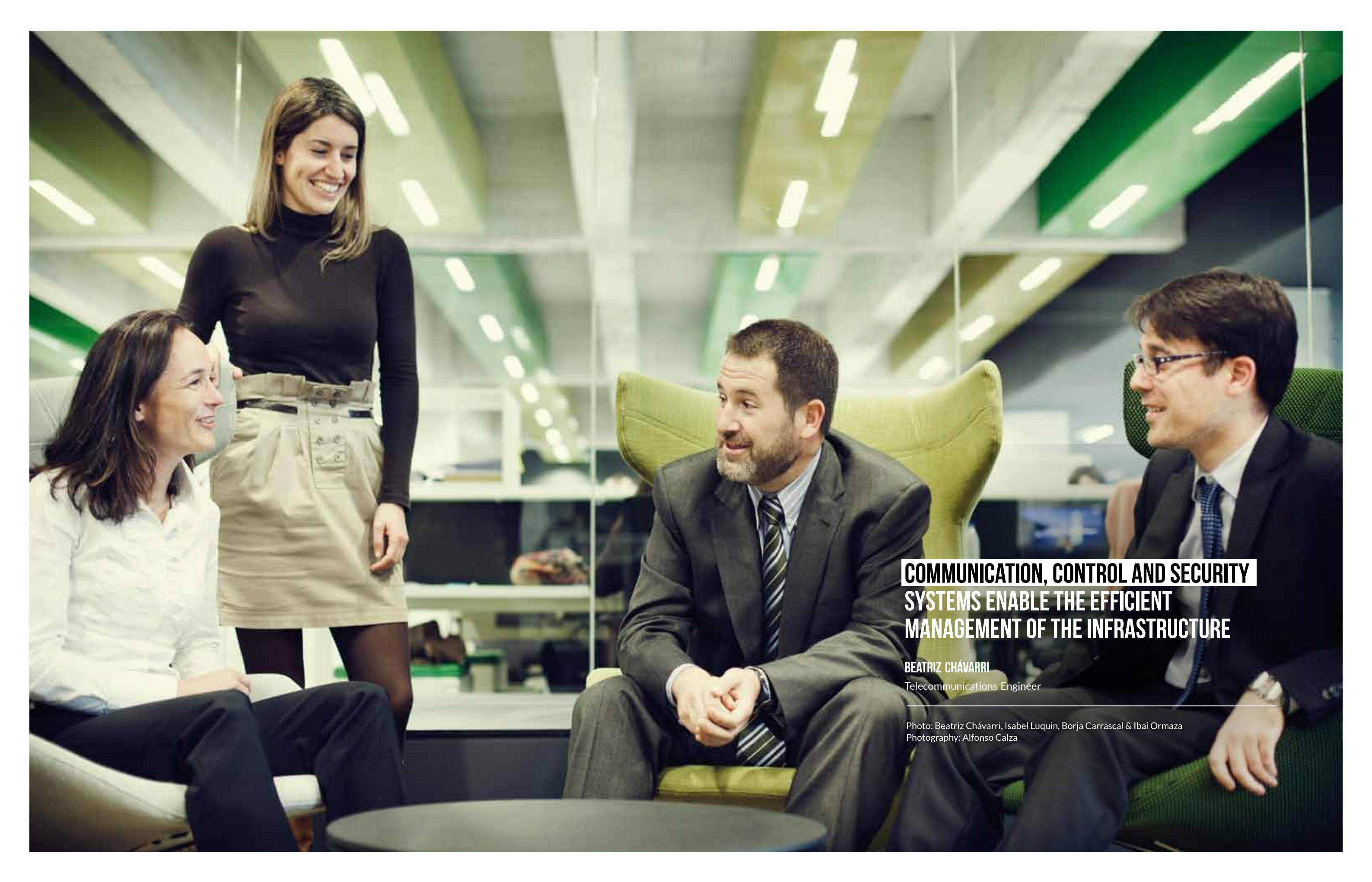
A green and sustainable prototype

different commercial wave farms. They have already begun looking for locations in Gran Canaria, Lanzarote and Tenerife.

The idea is that these farms will serve for the self-supply of infrastructure or will supply certain areas of the island, such as the port, a desalination plant or a tourist zone.

The Langlee wave converter is eco-friendly and sustainable, will not produce visual or environmental impact and will permit marine recreation activities, something which is very important on an island whose main source of wealth is tourism.

Infographics: Iñigo Gutiérrez Artetxe



**COMMUNICATION, CONTROL AND SECURITY
SYSTEMS ENABLE THE EFFICIENT
MANAGEMENT OF THE INFRASTRUCTURE**

BEATRIZ CHÁVARRI
Telecommunications Engineer

Photo: Beatriz Chávarri, Isabel Luquín, Borja Carrascal & Ibai Ormaza
Photography: Alfonso Calza



TELECOMMUNICATIONS

EGYPT

ARCHAEOLOGICAL SITES

After the various events suffered by the country, and with the main objective of recovering tourism, in July this year, work began on the project to improve the security of the archaeological sites of Egypt. Defex, a Spanish public company, is leading the part of the project related to security with the objective of preventing terrorist attacks, vandalism and theft, as well the illumination of the monuments and road lighting, in preparation for future nocturnal visits.

The archaeological sites where work is being carried out include Giza, the West Bank (Valley of the Kings, Hatshepsut, Ramesseum, Medinet Habou and Carter House), and the Temple of Luxor. Idom is working in close collaboration with Defex in the development of the project, providing technical assistance for supplies and installation

TELECOMMUNICATIONS

THE DOMINICAN REPUBLIC

FIBER OPTIC TELECOMMUNICATIONS

Aware of the importance of the development of information technology and communication (ITC) and broadband to boost the national economy and social development of the Dominican population, the Dominican Electricity Transmission Company (Empresa de Transmisión Eléctrica Dominicana ETED) intends to add value to its infrastructure by offering fiber optic network services that will permit the communications operators of the country extend the telecommunications services they offer, as well as improving the quality and capacity of these services.

Idom is collaborating with the ETED, by providing support services for the design of a business model for the commercialization of fiber optic services, as well as the adaptation and improvement of the network infrastructure to develop this new activity.

MEXICO

TELECOMMUNICATIONS ROLLOUT

Following their expansion plan, over the next two years, Telefónica Mexico is planning to lay 5,000 kilometers of cable, thereby extending the fiber optic backbone of its existing network.

5,000 KM of fiber optic cable in the next two years

With this objective, Telefónica Mexico has contracted Idom to set up the Project Management technical office for the management of the projects related to the installation of the fibre optic cable, coordinating the different areas of Telefónica and four of the construction companies involved in the implementation of the project.



A UNIQUE SPACE

INTERNATIONAL CENTRE FOR CONTEMPORARY CULTURE

The Tabakalera center, located in the emblematic building of the old tobacco factory of San Sebastian, will be a culture center of reference in contemporary art, video, film, design and sound, bringing these disciplines together in one space. It will be a unique space for exhibitions, debates, events, films and audio-visual programs, as well as a place to work, produce and create.

Idom is developing the technological project for the audio-visual installations and the communications to be used in the running of the center.

A space for cinema, design, music and art

FIBRE OPTIC TO THE HOME

TELEPHONE, INTERNET & TELEVISION

The Telecommunications Corporation, Orange has begun the national rollout of its Fiber To The Home (FTTH) network. FTTH uses fiber optic cable and optical distribution systems adapted to this technology for the delivery of advanced services such as Triple Play (Telephony, broadband internet and television) to the homes or businesses of the subscribers.

Idom is performing the activity of Business Quality Assurance (BQA): monitoring and supervision, auditing and coordination of health and safety.

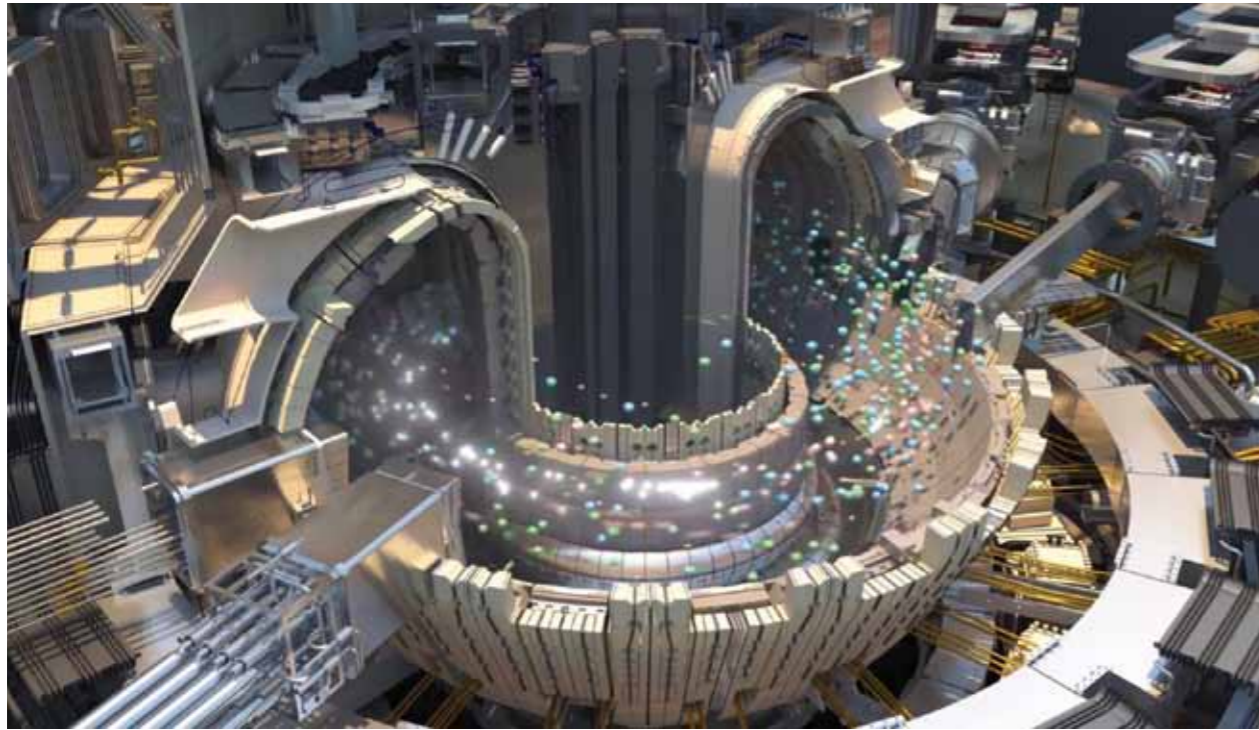
Photography: Alfonso Calza

NUCLEAR SAFETY

STRESS TESTS IN THE ASCÓ NPP

Following the accident at the Fukushima nuclear power plant in Japan, the Asociación Nuclear Ascó - Vandellòs II, A.I.E. (ANAV) has submitted its nuclear plants to tests for resistance against extreme events, including among others, flooding. Working for ANAV, Idom has carried out the analysis, design and works supervision for a project concerned with defending the site from flooding due to inundation from the Vaguada & Potxos watercourses that cross the site and flow into the river Ebro, analyzing their behavior in a situation of PMP rainfall (Probable Maximum Precipitation)

Photo: Section of Tokamak vacuum chamber.
Image courtesy of the ITER Organization



ITER THERMONUCLEAR REACTOR IN FRANCE

INTERNATIONAL FUSION EXPERIMENT

For almost three years now, a team of professionals from Idom alongside engineers from Halcrow UK and Altran France have been playing their part in providing "Support to the Owner" services with Fusion for Energy; the entity that represents the European Union in the experimental ITER nuclear fusion project being developed at Cadarache in Provence, France.

The procurement of works has been organized into 13 lots, 5 of which have been awarded to consortia composed of leading companies from the sector, and with a strong Spanish presence. The construction works for the networks and galleries and floor structure for level B-2 of Tokamak, at the heart of the nuclear complex, are advancing following the stringent control of quality and nuclear security being carried out by the Autorité de Sûreté Nucléaire (ASN).

CONTROL OF PLASMA

ADVANCED ANALYSIS & SIMULATIONS

Idom is participating in the development of the two European concepts of the "Test Blanket Modules", studying the feasibility of alternatives from a global perspective using advanced simulation tools.

In relation to the ITER vacuum chamber, the cooling of irregular sectors is being optimized through the use of Monte Carlo simulation tools and computer fluid dynamics (CFD). Work is under way to upgrade the thermal-hydraulic models in ITER in order to obtain

the loads during possible risk situations, for further analysis.

In the field of cryogenics, Idom is responsible for the design of the major components for the ITER Cryo-distribution System.

Using various simulation tools, Idom is also optimizing the position of the detectors in the case of a hypothetical tritium leak in various ITER process rooms.



WITH THE ITER PROJECT, WE AIM TO DEMONSTRATE THAT NUCLEAR FUSION CAN BE A SOURCE OF COST-EFFECTIVE ENERGY

DAVID ZARAGOZA

Special projects engineer in the Nuclear Sector

PAD FOR SPENT NUCLEAR FUEL STORAGE

ENSA STORAGE TECHNOLOGY

To increase the storage capacity for spent fuel generated in the operation of the Garoña NPP, it has been proposed to construct a PAD for spent nuclear fuel storage on the site of the plant, until the fuel can be transferred to the future Centralized Temporary Storage facility in Villar de Cañas (Cuenca, Spain).

A PAD is an outdoor storage facility that basically consists of two seismic concrete slabs with capacity to support up to 16 dry storage

canisters on each (52 spent fuel elements in each canister), a 3.5 meter high perimeter wall, soil bund to an elevation of +5 m in relation to the slab level of the PAD, fences for physical security, and radiation protection. In addition, the rest of the associated installations have been designed, drainage, lighting, ground network, PCI network, among others.

Idom has drawn on the experienced gained during the construction of the PAD at the Asco NPP, the Stress Tests and Life Management projects to improve the designs of the same, minimizing possible problems during the execution of the installation.

In addition, a new technical challenge has been proposed for the design of the PAD, as the technology selected by ENRESA to store

irradiated fuel in Garoña NPP will be completely different from that used in the Ascó NPP. The containers will be Spanish technology, from the firm, ENSA, with different technical requirements to the technology used in the Asco PAD.

SPECIAL FLUIDS

RESISTANCE AGAINST EARTHQUAKES

Continuing with its strategy of continuous improvement in the aspects of safety and manufacturing, EnuSA has commissioned a project to analyze the layout of the hydrogen and propane lines at their Juzbado plant in

Salamanca, Spain, in order to mitigate hazards from pipework leaks due to external events.

Idom has developed the study and detailed design for a new section which can withstand earthquakes based on a design to reduce the length of the lines that run through the interior of the facility.

VENTILATION & FIRE DAMPERS

The heating, ventilation and air conditioning systems of the units of the Asco NPP are intended to provide a proper environment to ensure the safety and comfort of the operat-

ing personnel and the right conditions for the correct functioning of the equipment.

Idom has carried out a review of all the original calculations and prepared an updated design for the HVAC system (Heating Ventilation & Air Conditioning) to comply with current regulations.

Idom is also developing the design of new fire damper installations with a fire resistance of 180 minutes for the barriers separating different fire compartments, in compliance with the requirements under the Safety Instruction IS-30 Rev.1.

Increasing the safety margins of the NPPs using advanced calculation tools

Photo: Vandellós II
Photography: Alfonso Calza

MOTORIZED VALVES

VANDELLÓS & ASCÓ NPPs

Within the study for 'Review of the Design Hypothesis of Motorised Valves', Idom is studying all motorized valves, analyzing each one, case by case, to determine the Weak Link, an analysis of the design basis, dynamic evaluation of voltage drop and fluid dynamics modeling of the systems that house them.

The correct evaluation of these parameters will allow a more realistic determination of the performance of the valves, in order to minimize unnecessary changes in design, and the consequent economic implications.





GENERATING ENERGY

02



Photo: Escatrón Combined Cycle Plant (800 MW)

GENERATING ENERGY

SOME PROJECTS

2011 / 2013



ENERGY PROJECTS

OTHER PROJECTS

AMERICA

Wind farms of Trairi in Ceará (64 MW)
Client: SANTOS ENERGÍA

BRASIL

Power generation from biomass in British Columbia (2 x 40 MW)
Client: IBERDROLA E&C

CANADA

Cogeneration with biomass for a bioethanol plant
Client: ISOLUX CORSAN

COLOMBIA

CSP using advanced molten salt power tower technology in Nevada (110 MW)
Client: COBRA

U.S.A.

Feasibility study for the energy supply of a Mine in Alaska
Client: PEBBLE LIMITED PARTNERSHIP

Nuevo Pemex Cogeneration (300 MW)
Client: ABENGOA

MEXICO

Combined cycle plant in Morelos (640 MW)
Client: ABENGOA

Wind farm "El Porvenir" (54 MW)
Client: CETSA

Basic engineering for the wind farm "Sureste I" (102 MW)
Client: REOMEX

Simple cycle "EDC sur" (136 MW)
Client: ELECNOR

VENEZUELA

AFRICA

Gas turbine power barge (42 MW)
Client: CUETO-SOLUCIONES

ANGOLA

Hybrid CPS 150 MW in Hassi R'Mel
Client: ABENER (ABENGOA)

ALGERIA

Hybrid CSP 450 MW in Ain Beni Mathar
Client: ABENER (ABENGOA)

MOROCCO

Conceptual Engineering CSP tower with molten salts 110 MW
Client: CONFIDENTIAL

SOUTH AFRICA

ASIA

Conversion from single cycle to combined cycle PP10CC in Riyadh (3,700 MW)
Client: BEMCO

SAUDI ARABIA

Simple cycle "Al Khairat" in Karbala (1,250 MW)
Client: CALIK ENERGY

IRAQ

Combined cycle PP12CC in Riyadh (2,000 MW)
Client: BEMCO / GS

Simple cycle "Nainawa" (950 MW)
Client: CALIK ENERGY

Combined cycle "Shidirigan" (350 MW)
Client: ISOLUX

BANGLADESH

Open cycle "Tranche 3" in Atyrau (80 MW)
Client: GATE

KAZAKHSTAN

Thermosolar power plant with thermal storage (55 MW) in Andra Pradesh
Client: MEIL

INDIA

Combined cycle in Sredneurskaya (410 MW)
Client: IBERINCO

RUSSIA

Combined cycle "Eurostar" (890 MW) in Kırklareli
Client: GAMA

TURKEY

Combined cycle "Erzin" (871 MW) in Hatay
Client: GAMA

EUROPE

Combined cycle "Mittelsbüren" in Bremen (500 MW)
Client: COBRA - GE

GERMANY

Cogeneration Skopje (220 MW)
Client: GAMA

MACEDONIA

Combined cycle "Bouchain" (525 MW)
Client: GE

FRANCE

Combined cycle "Prebroke" (2,000 MW)
Client: ALSTOM

UNITED KINGDOM

New standard plant "Flex Efficiency 50" (510 MW)
Client: GE

NO. 32

OF THE LARGEST 200

international firms in the category of energy generation

OVER 18

CONCENTRATED SOLAR POWER PLANTS (CSP)

providing a total of 800 MW in solar alone

Idom has extensive experience in ThermoSolar power plants around the world

SPEARHEADING INNOVATION, we have developed detailed engineering for one of the largest thermosolar power plants in the world with CSP (Concentrating Solar Power) central tower technology and directly heated molten salt, 110 net MW

In addition, we have completed the engineering for the first hybrid solar thermal power plant using Biomass in the World

30 GW

in thermal power plants generating more than

32 countries

We are currently performing the basic and detailed engineering for various

PLANTS GENERATING OVER 2,000 MW OF POWER

**THE TECHNICAL KNOWLEDGE AND ATTITUDE
OF IDOM ENGINEERS, ARE KEY SUCCESS
FACTORS IN OUR PROJECTS**

RAFAEL MORENO

Energy Director of the Cepsa plant in La Rabida (Huelva, Spain)



PP10 COMBINED CYCLE PLANT 3,700 MW

In terms of population, Riyadh is one of the fastest growing cities in the world. On the outskirts of the city, one of the largest combined cycle power plants in history is being built. PP10 will have a nominal power of 3,700 MW.

Now that the first phase of the plant construction has been completed, works are well under way for the conversion of a simple cycle plant to a combined plant. These works are expected to be finalized in 2015.

In this second phase, Idom is developing part of the engineering which is now well advanced. At ground level, much of the civil works have already been completed and the major equipment installed (HRSG, ACC, etc.).

PP12 COMBINED CYCLE PLANT 2,000 MW

In addition to the PP10 combined cycle power plant, 100 km west of Riyadh, another combined power plant is being built. When completed, PP12 will generate around 2,000 MW of electricity.

The construction and commissioning of the plant is in the hands of the joint venture, BEMCO-GS.

The plant is divided into two blocks, each consisting of 4 gas turbines, a steam turbine, 4 recovery boilers for steam generation and an air condenser to cool the block.

The primary fuel for the operation of the plant will be natural gas; although other fuels such as distillate oil and Arabian Super Light crude (ASL) can also be used.

On this occasion, the joint venture, BEMCO-GS has contracted Idom to perform the basic and detailed engineering of the entire combined cycle.

Given the size of the plant and the planned execution timeframe (2015), it can be said that this is one of the most ambitious projects of its kind.



PP10, ONE OF THE WORLD'S LARGEST COMBINED CYCLE PLANTS, WITH 40 GAS TURBINES & 10 STEAM TURBINES



A GLOBAL REFERENCE IN THERMAL ENERGY SERVICES

Idom is an international engineering company and a reference in the world in terms of thermal generation (turbine gas, coal, biomass, thermo-solar), with projects in more than 32 countries, which combined exceed 30 GW. The size and diversification of the firm means that we can offer a full range of services that cover the early stages of a project (market research, concept, feasibility, environmental matters, etc.) and the development phase (basic and detailed engineering, procurement, etc.) right through to construction and hand-over (works supervision, technical assistance and commissioning). We will assist the client throughout the project by providing owners engineering or project management and the development and standardization of new applications (Floating Power Plants, hybrid plants with solar modules, etc.), as well as products (innovation applied to plants, development of a standard plant with new equipment, prefabricated modules, etc.).

The countries in which Idom has reference projects in thermal power generation include:

Angola, Saudi Arabia, Algeria, Bangladesh, Bolivia, Canada, China, Colombia, United Arab Emirates, Spain, USA, France, India, Iraq, Italy, Jordan, Kazakhstan, Latvia, Libya, Macedonia, Malaysia, Morocco, Mexico, Pakistan, Peru, Portugal, UK, Russia, Turkey and Venezuela, among others.



To achieve sustainable energy in the future, we must consider not just renewable sources, but also the efficiency of non-renewable systems



This new plant in Turkey has 871 MW of power

It also has a cooling system that operates with seawater and once operational will supply more than 2% of the total electricity needs of the country

FRANCE

COMBINED CYCLE WITH FLEX TECHNOLOGY EFFICIENCY FOR GENERAL ELECTRIC

After collaborating in the design of a standard GE plant, Idom is participating in the design of a combined cycle plant in Bouchain, 525 MW, located in northern France.

It will be the first combined cycle in the world with this technology

This new generation plant will replace the existing coal power plant, considerably reducing emissions to the atmosphere. The plant will generate enough electricity to power the equivalent of 615,000 homes. It will be the first combined cycle built using the Flex Efficiency Technology (9F 7-Series Gas Turbine, W28 Generator and D14 Steam Turbine). Its implementation is planned for 2015.

TURKEY

871 MW COMBINED CYCLE FOR GAMA-GENERAL ELECTRIC

On the coast of Hatay, southwest Turkey, the Consortium GAMA-GE is building a 871 MW combined cycle power plant.

The plant is based on a multi-shaft configuration with two General Electric 9FB Gas Turbines firing natural gas, and a SKODA MTD 60 steam turbine. The refrigeration cycle is achieved by a cooling tower operating with seawater. The project includes the construction of a new 380 kV switchyard for connection to the grid.

Once operational, the plant will cover slightly more than 2% of the electricity needs of Turkey and add around 1.6% to the installed generation capacity in the country.

Idom has completed the detailed design of the plant; however, the firm is still present on-site providing support to GAMA-GE in the construction works. The plant is expected to operate in 2014, once commissioning and start-up are completed.

Photo: Erzin Combined Cycle Plant
Photography: Luis Ángel Ripoll

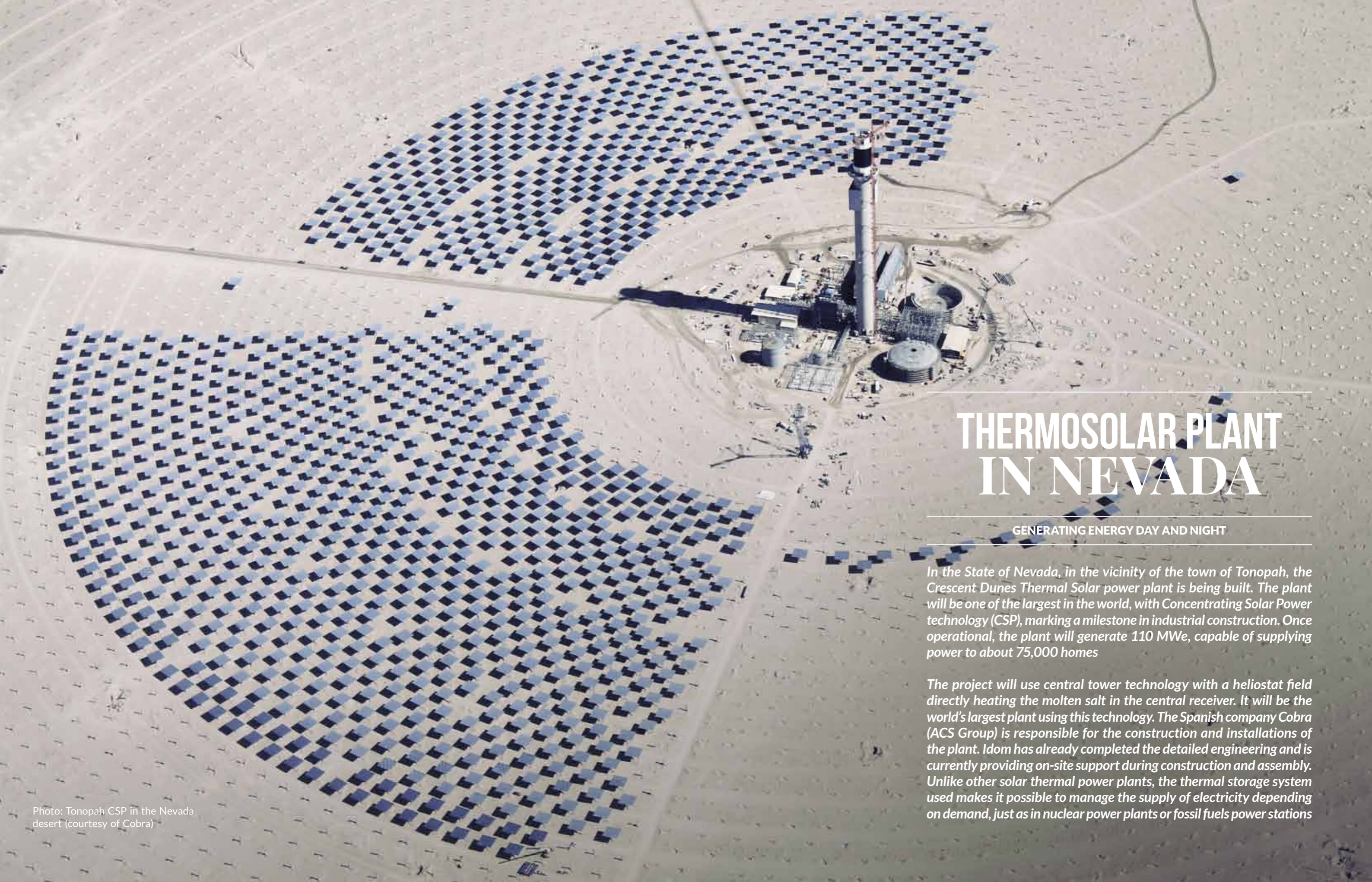


**IDOM IS WITHOUT DOUBT ONE OF THE INDEPENDENT
ENGINEERING FIRMS WITH GREATER EXPERIENCE IN
THERMOSOLAR PLANTS AROUND THE WORLD**

SUSANA MARTÍNEZ ESCRICHE

Industrial Engineer. Head of ThermoSolar Power

Photo: Ricardo Navarro, Alfonso Marquez, Oscar Bella
Hybrid Solar Thermal Plant, Borges Blanques



THERMOSOLAR PLANT IN NEVADA

GENERATING ENERGY DAY AND NIGHT

In the State of Nevada, in the vicinity of the town of Tonopah, the Crescent Dunes Thermal Solar power plant is being built. The plant will be one of the largest in the world, with Concentrating Solar Power technology (CSP), marking a milestone in industrial construction. Once operational, the plant will generate 110 MWe, capable of supplying power to about 75,000 homes

The project will use central tower technology with a heliostat field directly heating the molten salt in the central receiver. It will be the world's largest plant using this technology. The Spanish company Cobra (ACS Group) is responsible for the construction and installations of the plant. Idom has already completed the detailed engineering and is currently providing on-site support during construction and assembly. Unlike other solar thermal power plants, the thermal storage system used makes it possible to manage the supply of electricity depending on demand, just as in nuclear power plants or fossil fuels power stations

A UNIQUE PLANT IN THE WORLD

HYBRID THERMOSOLAR PLANT IN BORGES BLANQUES

In late 2012, the world's first Thermosolar Hybrid Biomass Power Plant began operation in the municipality of Les Borges Blanques (Lleida, Spain). From July to September, the plant operates in solar mode without hybridization. In the months of lower solar radiation - October to June - operation is 24 hours a day and 7 days per week, maintaining a 50% minimum load firing biomass. The plant has a nominal capacity of 25 MWe and generates 98,000 MWh annually.

It is the first Thermosolar Hybrid Biomass Power Plant in the world

The plant is divided into two sections. The largest area is the solar field, consisting of 56 parallel loops with 6 parabolic trough collectors, each of 100 m in length. The other section is the Power Block, where steam is produced through heat exchangers, the heating of thermal oil using biomass boilers and energy use of this steam in a turbine. The biomass fuel used in the boilers comes from forests and energy crops.

Photo: Gorka Martín & Pere Riba in the Borges Blanques Thermosolar Plant

Photography: Alfonso Calza



FROM DESIGN THROUGH TO OPERATION

CREATING VALUE

The Idom Group has gone a step further in positioning itself in the value chain of the client, by offering the services of operation and maintenance of those projects that have been developed, built and put into operation by the group, through the integrated services offered by its affiliate, SerIDOM.

Given the multidisciplinary nature of the firm, this new step is being taken with the support of highly qualified and dedicated teams to cover not just the project phases: engineering, procurement, construction and commissioning, but also the work of operation and maintenance.

Integrated solutions and highly skilled teams

Real knowledge of the management of the plants allows us to improve the design of future projects by contrasting simulation models of the

engineering phase with data from real operation models. Thus, we offer our client the service of optimizing both plant design and the operation and management methods of the same, in order to maximize the production capacity of the facility.

Currently, SerIDOM is carrying out the operation and maintenance (O&M) of four thermosolar plants: two for the Iberólica Group in Morón de la Frontera (Sevilla) and Olivenza (Badajoz) in joint venture with the Acciona Group, a third for FCC power in Palma del Río (Córdoba) in joint venture with FCC Industrial and Abantia, and a fourth for FCC power in Villena (Alicante) in joint venture with Grupo FCC Industrial.





VILLENA PLANT (ALICANTE, SPAIN)

In late 2013, the Villena (Alicante, Spain) CSP began to operate commercially. This is the sixth turnkey plant in which SerIDOM has participated. Included among the pre-assigned plants of phase 4 in the registry of the Special Regime, the Solar Thermal power plant of Villena is being developed by the company ENERSTAR Villena S. A. To date, it is the first solar thermal plant to be implanted in the Autonomous Community of Valencia.

The plant uses parabolic trough technology equipped with three 15 MWt gas boilers for hybridization. SerIDOM has executed the entire plant in a joint venture with FCC Industrial. In addition to participating in the EPC of the plant, SerIDOM will also participate in the operation and maintenance of the plant for the three years following the provisional acceptance of the plant.

The plant consists of 105 parabolic trough collector (PTC) loops spread over an area of approximately 140 acres (340,000 m² of mirrors). What differentiates this plant from other CSP plants designed by Idom is that the solar field is set on 4 different levels, with a difference of about 20 metres between the highest and lowest point of the solar fields and with the loops laid out in a Zig Zag formation.

With an output of 49.9 MWe, this plant will be capable of producing approximately 104 GWh/year (Hybridized with gas), equivalent to supplying electricity to 25,000 homes



NETWORK ENGINEERING

THE PLANNING AND DESIGN OF POWER NETWORKS OF THE FUTURE MUST CONSIDER NEW STANDARDS OF SAFETY, RELIABILITY & EFFICIENCY TO RESPOND TO A NEW SCENARIO OF GENERATION & ACTIVE DEMAND MANAGEMENT

ALMUDENA GARCÍA

Agricultural Engineer. Project Manager

Photo: Faustino Guillen & Sergio Lastra, responsible for Transport and Distribution, Almudena García & Ana Belén Cristóbal, Engineers
Location: Transformer substation in Madrid

WIND POWER

BRAZIL

Santos Energía, a company owned by Banco Santander (Brazil) and Abengoa, has contracted Idom to develop the engineering detailed design of the foundations for three wind farms in the state of Ceará, Brazil, near the town of Trairi. These wind farms will generate a total of 64 MW and will enter into service in 2014.

MEXICO

In the state of Tamaulipas, Mexico, CETSA is developing the construction of a wind farm consisting of 30 wind turbines of 1.8 MW each. Idom has undertaken the construction project for the foundations and the works supervision of the wind farm.

FRANCE

In collaboration with ALSTOM Wind, Idom has provided support for the design of their Industrial Plan. The development of the industrial plan involves the definition of the productive capacities of the industrial plants, dimensioning of the operational resources and equipment, as well as the specialized logistics for the transportation of components to the offshore facility. The industrial plan developed for the French "Round I" is in the execution phase for the implementation of the initial plants in the port areas of St. Nazaire and Cherbourg. Likewise, Idom has accompanied ALSTOM in the prospecting of industrial zones in Morocco for the implementation of the firm in the country.

Photography: Alfonso Calza

ALASKA

Located 300 km southwest of Anchorage, the Pebble Mine is one of the largest deposits of copper, molybdenum and gold in the world. In order to design, build and operate a mine to exploit existing resources, Pebble Limited Partnership was created. One of biggest challenges they face right now is the development of a project design to obtain the environmental permits. Idom conducted a feasibility study on energy supply from the mine using a wind-hydro plant capable of continuously supplying 450 MW. The study concluded that it was not feasible to build a renewable energy complex that would provide the energy required by the mine. However, it could be possible to install a wind farm of 150 MW, which would reduce the fuel consumption and emissions of greenhouse gases of the future power plant to be built.

SOUTH AFRICA

In the coming years, massive growth in wind energy is expected in South Africa. Gestamp Eólica has entrusted Idom to provide the services of technical assistance for the implementation of field and laboratory work and subsequent monitoring of the geotechnical study developed for the Noblesfontein wind farm, in the interior of South Africa. The wind farm consists of 41 wind turbines of 1.8 MW each. After validation of the technical study, Idom was contracted to design the foundations.



BIOMASS

In the central region of Colombia, the Department of Meta, an industrial complex for the production of bioethanol from sugar cane is being built. This complex will be the largest of its kind in the country



COLOMBIA

COGENERATION IN A BIOETHANOL PLANT

This cogeneration project, developed in the Department of Meta in Colombia has an important social impact, as it involves the conversion of land which is currently uncultivated into large tracts of arable land, as well as the creation of job opportunities in a region which is critical to the country's political stability.

The complex, owned by Bioenery, a company which is 85% shared by the Colombian state oil company Ecopetrol, includes a bioethanol plant, a cogeneration plant and facilities for the treatment of waste from sugar cane.

The milling of sugar cane, carried out to extract the juice from which ethanol is obtained, also

produces a solid residue (bagasse) which is used as fuel in the biomass boiler to produce steam.

The complex also includes a system for the treatment of vinasse, a liquid by-product of the distillation of ethanol, which is then mixed with ash from the combustion of bagasse to produce fertilizer. The construction project of the plant,

under an EPC contract was awarded to Isolux Corsan, who subcontracted Idom to develop the cogeneration plant project.

Infographics: Iñigo Gutiérrez Artetxe

The electricity generated will be more than sufficient to meet the supply needs of the industrial complex and export remaining power to the Colombian grid

INDUSTRIAL DEVELOPMENT

03

INDUSTRIAL DEVELOPMENT

SOME PROJECTS

2011 / 2013



AMERICA

BRAZIL
Glass manufacturing plant
Client: AGC

Extension of a nacelles factory
Client: GAMESA

Basic Engineering of a new Steel Mill
Client: GERDAU RIOGRANDENSE

New billet continuous casting line
Client: GERDAU PINDA

Green™ Polyethylene production plant
Client: BRASKEM

COLOMBIA
Cogeneration system "Barrancabermeja Refinery"
Client: ECOPETROL

U.S.A.
Plastic packaging factory
Client: CTL Packaging USA

MEXICO
New plant in Guanajuato for the automotive sector
Client: CIKAUTXO

PERU
Expansion and modernization of the Talara refinery
Client: PETRO PERU

VENEZUELA
Pequiven 1-butene plant
Client: PROSERNAT

AFRICA

ALGERIA
Steel rolling mill 0.6 Mt/y
Client: BASCOTECNIA STEEL

MOROCCO
Lime Plant, Ben Ahmed quarry
Client: LAFARGE CALCINOR MAROC SAS

ASIA

SAUDI ARABIA
Rolling mill supplying the automotive industry
Client: SMS SIEMAG

Aluminium Rolling Plant
Client: SAMSUNG ENGINEERING

BAHRAIN
Steel rolling mill for heavy sections
Client: SMS CONCAST

INDIA
New Integral Complex. Optimization Study
Client: JINDAL

MALAYSIA
Cold Rolling Stainless Steel Mill
Client: ACERINOX BAHRU ST

OMAN
New Electric Steel Mill
Client: JINDAL SHADEED IRON & STEEL

RUSSIA
Extension and modernization of the Slavyansk refinery
Client: SLAVYANSK EKO LTD

EUROPE

SPAIN
Upgrading of the factory
Client: MERCEDES BENZ

Engineering services for plant upgrade
Client: MICHELIN

Manufacturing line for the production of instant coffee
Client: NESTLE

Factory producing boiled and packaged products
Client: ELPOZO

Modernization of movement management systems in the Puertollano refinery storage tanks
Client: REPSOL

SPAIN
Balboa Refinery
Client: REFINERIA BALBOA S.A.

VOPAK Storage terminal
Client: VOPAK

POLAND
Cold Rolling Mill 0.15 MT/y
Client: ACERINOX

Steel mill rolling bars and small and medium sections
Client: CELSA

UNITED KINGDOM
Steel Mill 1.3 MT / y
Client: CELSA UK

Extension of the paper reels warehouse facility of SAICA in Partington
Client: SAICA

173,000
BARRELS (BBL)

Increased capacity in refineries resulting from projects in which Idom has provided professional services

620,000 M³
is the storage capacity of the 3 oil storage terminals designed by Idom in 2013

35

MILLION TONS/YEAR

of steel and aluminum can be produced in more than 30 plants in which Idom has participated in the development of basic and detailed design over the last 15 years; including steel meltshops, hot and cold rolling mills, and stainless steel and aluminum mills

A photograph of three people standing in a large industrial facility. On the left, a man in a dark suit and striped tie looks towards the right. In the center, a woman in a grey blazer and patterned scarf smiles. On the right, another woman in a green top and black cardigan looks forward. The background is filled with large, textured, light blue-green glass sheets and industrial structures, including a prominent yellow vertical pipe.

**THE AGC GLASS PRODUCTION PLANT IN
BRAZIL WILL BE ONE OF THE LARGEST
OF ITS KIND IN THE WORLD**

ÁFRICA CORTÉS

Industrial Engineer, Project Manager

Photo: Igor Ortuoste, África Cortés & Amparo Vázquez, ingenieros
Cullet Warehouse (broken glass) in the AGC plant in Sagunto

BRAZIL

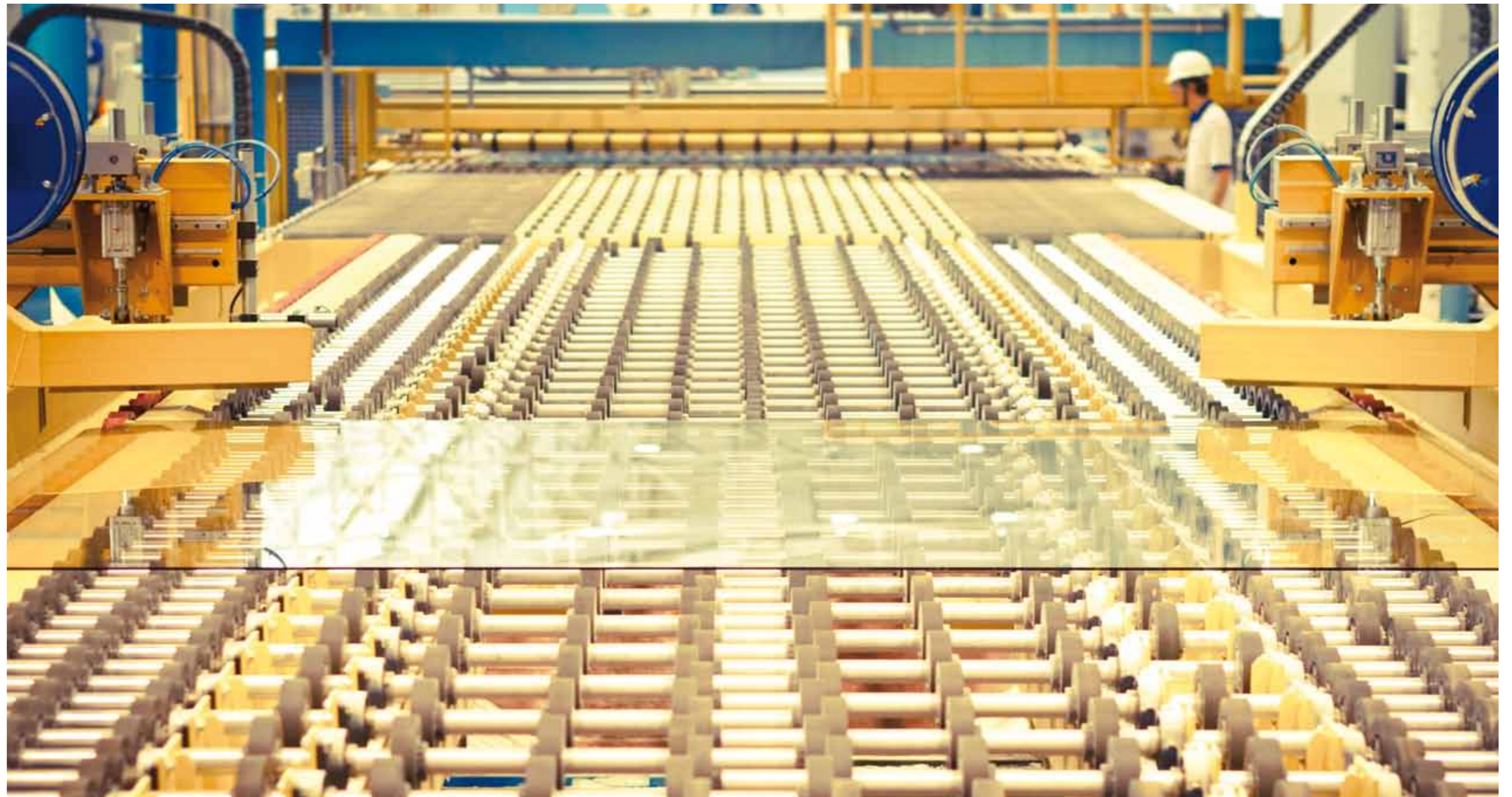
AGC INTEGRAL GLASS PLANT

To meet the increasing demand of the Brazilian market, in late 2011, the Japanese multinational AGC, a World leader in glass manufacturing, began with the construction of an integral flat and processed glass manufacturing plant in Guaratingueta, in the State of Sao Paulo. The plant has been built using an EPCM (Engineering, Procurement, Construction, and Management) contracting arrangement, and is the first of its kind undertaken by AGC in South America. The scope of services of Idom includes engineering for the civil works, building and utilities, in addition to procurement, works supervision and commissioning.

The production line for float glass on a molten tin bath has been built on a site of 750,000 m². The site also accommodates other production lines that feed from the flat glass production plant: automotive glass, mirror glass, and coater glass for building façades.

The plant has the capacity to produce 220,000 tons of float glass per year

The plant is now fully operational and the important milestone of successfully meeting all the deadlines for commissioning and operation (heat-up and start-up) has been achieved. The plant is now producing 220,000 tons of flat glass which is used in the annual production of 500,000 cars, 1,300,000 m² of mirror glass, and in the future, 15,000 tons of coated glass. The complex uses the best available technologies in terms of atmospheric pollution control systems.



BRAZIL

WIND TURBINE PLANT

Gamesa currently has a wind turbine manufacturing plant located in the industrial hub of Camaçari, the State of Bahia in Brazil. Given the significant growth Gamesa is experiencing in the Brazilian wind energy market, the firm has decided to expand the plant to increase production capacity and begin manufacturing new wind turbine models.

Idom has been working with Gamesa for many years now in its international expansion, providing technical assistance in the construction of its plants around the world. For this project, Gamesa has once again put their trust in our firm to perform comprehensive engineering services, taking advantage of the stable presence of Idom in Brazil where we have had a permanent office for several years.

Idom has been working with Gamesa for many years in their international expansion

NORTH CAROLINA

A FLEXIBLE PLANT FOR A FLEXIBLE PRODUCT

The CTL-TH Packaging Group is well known in Europe as a manufacturer of plastic and laminated plastic tubes for cosmetic and pharmaceutical use. Founded in Vitoria in 1964 under the name Tuboplast, the company has maintained a consistent pace of expansion over the course of its history, setting up a production facility in France in 1989 and more recently, another in the United States.

The new plant, located close to Charlotte (North Carolina) will be dedicated to the production of propylene tubes through the use of the innovative technology of flexographic printing and injection molding which will allow designs to be produced around the entire 360 degree circumference of the tube.

The building which has been designed by Idom has been constructed using a prefabricated concrete structure that provides for the possibility of successive enlargements, increasing the existing 8 production lines to a maximum of 60.

CTL-TH Packaging entrusted Idom with the development of detail design, procurement management and supervision of construction works.

One environmental detail of the project which is worthy of mention, is the channelling of storm-water to a series of small artificial lakes that serve as storage for the subsequent controlled filtering into the ground, thereby, preserving the existing natural water channels.

A SPECIAL ROLE

PLANT EXPANSION

The machinery used for the production of paper is of great dimensions, modular and articulated. The quality of the final product and the optimal performance and lifecycle of the machinery depends on its correct positioning, foundations and alignment. Therefore, detailed engineering processes are required.

The firm, Torraspapel, has decided to increase the production capacity of its Montañana plant (Zaragoza, Spain) with the installation of a new machine for the production of special grade paper; an investment of 30 million euros. This initiative will increase the efficiency of the production of specialty papers.

Given its dimensions, the new machinery will require the facilities of Montañana to be extended. The project is highly complex, not only because the machinery has to be disassembled, moved from its present location and reassembled while retaining all its components and incorporating the structural elements, but also because the industrial activity is not to be interrupted at any time. All this requires excellent coordination between engineering, technologists and the owner.

Throughout the whole process, Idom has been performing a very special role: the basic and detailed engineering of civil works and procurement management corresponding to the works to be carried out, as well as construction management, and the modification of the integrated environmental authorization.

Photo: Mercedes plant in Vitoria, Spain
Photography: Cesar San Millán

MERCEDES-BENZ

NEW MODEL OF VAN

Mercedes-Benz, a world leader in the manufacture of vehicles, has decided to up their game in terms of quality in the commercial vehicle segment, with the manufacture of a new model of V-Class van, the new VS-20. For 2014 onwards, this new model will be produced at the production facilities that Mercedes-Benz has in Vitoria-Gasteiz, and will replace the current Viano model.

For this purpose, it is necessary to reinforce and extend the existing production buildings. Mercedes-Benz has entrusted Idom with the drafting of the construction projects for the civil works and installations, procurement management and works supervision.

Since 1991, Idom has been working with Mercedes Benz on the various actions required to adapt their facilities to the requirements of the different models of van and growing production needs.

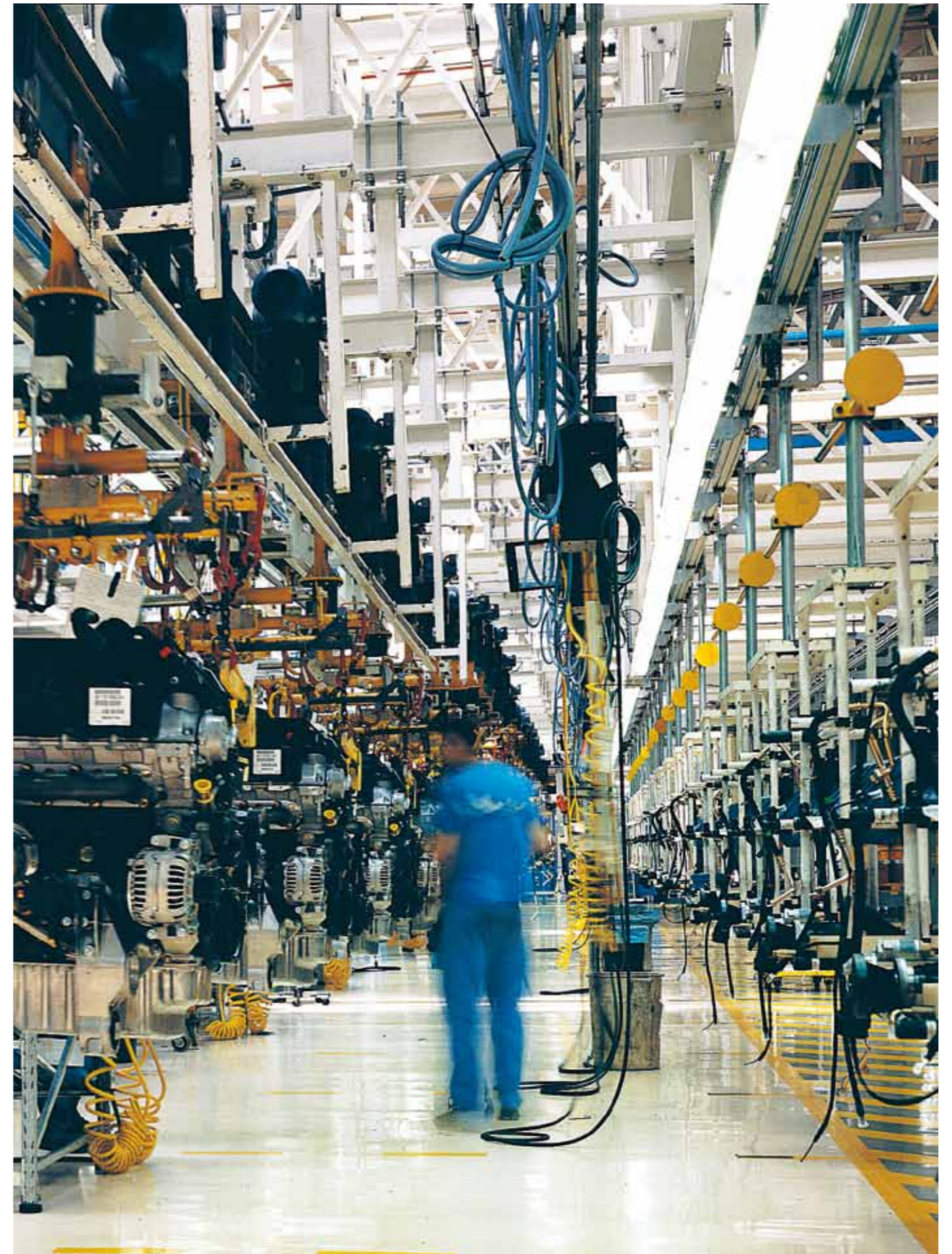
NESTLÉ

NEW COFFEE PRODUCTION PLANT

The multinational Nestlé is investing in the modernization of their plant in Girona, Spain. This investment will permit the firm to upgrade the technology involved in the production of instant coffee. The machinery will be more modern and efficient, both in terms of production capacity and from an environmental point of view. Its entry into service will result in a significant reduction in the consumption of water and energy used in the manufacturing process.

The works began in early 2013 and will conclude with the commissioning of the facility in 2015. In the medium term, the production capacity of the plant will be increased.

Idom has been working in close collaboration with Nestlé since the beginning of the project providing engineering services, procurement management, and works supervision.



STEEL & METALS

For the last 15 years, Idom has participated in the basic and detailed design of more than 30 plants that will produce and process more than 35 million tons per year of steel and other metals. Some of the countries in which Idom has worked include: Saudi Arabia, Oman, Malaysia, India, Bahrain, and Brazil...

Photo: Acerinox plant in Algeciras
Photography: Alfonso Calza

OMÁN

NEW STEEL MILL FOR JINDAL

The Indian multinational, Jindal Steel and Power Ltd is in the process of a strategic expansion, diversifying their investments. Among them, one of the most notable is the steel complex Jindal Shadeed Iron and Steel (JSIS) is constructing at the Port of Sohar, Sultanate of Oman. The new steel complex, for which Idom has developed the construction engineering, will produce

2 million tons annually of product while being continuously fed from the adjacent hot direct reduction iron plant (HDRI) which currently produces 1.5 million tons of pre-reduced briquette (Hot briquette iron, HBI), and with scrap. In addition to the steel meltshop, new facilities will be built at the plant, to complete the production process.

BRAZIL

A GROWING DEMAND FOR STEEL

Gerdau is the leading producer of Steel in the Americas and one of the leading suppliers of steel in the world. In 2011, to meet the growing demand in the Brazilian special steel market supplying the automotive market, the firm decided to make a series of investments in some of its plants in Brazil. A part of the funds has been allocated for the expansion of its plants in Pindamonhangaba and Sapucaia do Sul; in which Idom has participated.

THE MIDDLE EAST

SAUDI ARABIA & THE UNITED ARAB EMIRATES

ALUMINIUM PLANTS

In recent years, aluminium production in the Middle East is on the up. Idom has been collaborating in the detailed design of plants for the production of rolled and aluminium profiles.

In Abu Dhabi, Idom is participating in one of the projects being carried out in the Kizad industrial complex, developing the detailed engineering of an aluminium plant. The aluminium cluster is located in this complex.

In Saudi Arabia, the country's mining company Ma'aden and Alcoa are developing a megaproject that includes a bauxite mine, an alumina refinery, an aluminium smelter and a rolling mill, which will be located at Ras Az Zawr, to the northeast of the country. Once finished, it will be the world's largest integrated aluminium complex.

The construction of the rolling mill has been awarded to Samsung Engineering, who in turn, has contracted Idom to perform the Aluminium rolling detailed engineering for the construction activities, steel structure, foundations of the main buildings and foundations for the process equipment to achieve a rolling capacity of 380,000 metric tons per year, and with a surface area of 100,000 m².

In addition, the detailed design of the new silos has been carried out for the storage of alumina and coke is stored as well as the corresponding transport and materials systems.





**IN IDOM, THE PROJECT MANAGER HAS THE SUPPORT OF
A MULTIDISCIPLINARY TEAM: PROCESS, MECHANICAL,
PIPING, ELECTRICAL, INSTRUMENTATION, CONTROL,
STRUCTURES AND CIVIL ENGINEERING, AMONG OTHERS**

IGOR ASCORBEBEITIA

Industrial Engineer, Project Manager

Photo: Juan Carlos Sanz, Blanca Pérez Nanclares, Lara de la Fuente, Aitor Alonso, María Ruiz, Miguel del Amo, Janire Cerrato, Leire Pascual, Igor Ascorbebeitia
Photography: Alfonso Calza

SUPPLYING THE AFRICAN MARKET

Oryx Energies is expanding its integrated trading and downstream platform, reinforcing its network of storage facilities that help to reliably supply hydrocarbon fuels to consumers, industry and maritime operations across Sub-Saharan Africa, from east to west.

One of its investments includes the building of a strategically located logistics platform in the Canary Islands, in the Port of Las Palmas, ideally positioned close to Africa, while belonging to the European Union. The new terminal will be commissioned in March 2014 and will be used for the storage, distribution and sale of a variety of hydrocarbon fuels. The terminal has a total storage capacity of 221,309 m³ for different types of hydrocarbon fuels.

Idom has participated in its construction, providing supervisory engineering services. The terminal's main activities will be fuel supply to and from ships (bunkering), fuel storage including the mixing of fuels with viscosity modification (blending), for Oryx Energies' trading arm and third parties.

Photo: Oil storage terminal in the Canary Islands
Photography: Alfonso Calza





Photo: CEPSA Refinery Rabida (Huelva, Spain)

COLOMBIA

TRANSFORMATION OF THE BIGGEST REFINERY IN THE COUNTRY

The State Oil Company of Colombia, Ecopetrol, which is one of the 40 largest oil companies in the world and one of the top 5 in Latin America, has the largest refining and transportation infrastructure in the country, part of which requires a thorough renovation.

Over 7 years ago, Ecopetrol began the transformation process of the Barrancabermeja refinery, which covers about 80% of domestic demand of Colombia. This transformation includes among other projects, the modernization of the main industrial services (water treatment, air compression, generation of electricity and steam) required for the stable operation of virtually all the production processes of the refinery.

Ecopetrol awarded the EPC contract corresponding to the services of steam and electricity to the consortium formed by Idom, Inelectra and Schrader Camargo, to provide engineering, procurement, construction, assembly and commissioning of new facilities. Idom took charge of the process engineering. Given the aim of the project to increase the reliability and efficiency in the generation of the systems of water and steam, the construction of a new cogeneration system has been planned, as well as the modernization of existing boilers and their associated systems and the decommissioning of some of the inefficient boilers and turbines.

TECHNICAL ANALYSIS AND VALUATION

The Portuguese oil company Galp has closed a definitive agreement to sell its 5% stake in the Logistics Hydrocarbons Company to Canada's British Columbia Investment Management Corporation.

This operation, in which the bank BBVA has acted as the exclusive advisor of the Portuguese company and the Santander bank has

acted on the part of the Canadian company, is the largest of its kind in the last twelve months in the Spanish energy sector and it is the third largest investment of a Canadian company in Spain.

Idom has carried out the Technical Analysis and valuation for British Columbia Investment Management Corporation to determine the aspects relating to the level of operability, security and maintenance of the facility, as well as the expected projection of these aspects in the operation of the facilities over the next few years.

HELPING TO IMPROVE THE FACILITIES OF REPSOL

THE CARTAGENA REFINERY

The REPSOL Industrial Centre (Refinery) Cartagena was the first to be installed in the Iberian Peninsula. In 2012, the new Cartagena Industrial Complex was opened after a long process of expansion, and the largest industrial investment in the history of Spain.

The enlargement has made the Cartagena Refinery one of the most modern in the world with the capacity to refine almost any crude oil in the market, improving their efficiency and profitability. Located in a strategic location, the Cartagena refinery has been joined to the Puertollano refinery through a new pipeline thus guaranteeing the sustainable supply of products throughout the peninsula. REPSOL has requested Idom to develop the detailed engineering for the proposed revamp (modification and improvement) of the sections of fuel gas compression diesel units 1 and 2.

The new industrial complex of Cartagena has become one of the most modern refineries in the world

It is intended to replace the two existing compressors for a liquid ring compressor. This will achieve increased utilization and increase overall energy efficiency of the units by improving the process of sending the gas to the fuel gas network of the refinery.

Idom has been working closely with Repsol for many years, helping them in the improvement and development of their facilities

PUERTOLLANO REFINERY

The REPSOL refinery in Puertollano with a distillation capacity of 7.5 million tons is one of the most technically complex in Spain.

In order to technologically improve the storage tanks of the refinery, REPSOL wants to integrate a new movement management system (MMS) in the future, which will automate the transfer of liquids, optimizing the process and reducing the risks of manual actions, resulting in increased safety for both the operating personnel and the environment. To automate the MMS, it is necessary to implement a series of actions such as: the motorization of manual valves, adequacy of motorized valves, installation of safety switches on manual valves, level instruments replacement and installation of an Automatic Water Drainage System in the Oil Tanks.

Idom conducted a study to analyze the technical and economic feasibility of the various options planned for each of the systems, with the aim of technologically improving the refinery, making it more efficient and safer.

This study will allow REPSOL to analyze the investment to be made before giving the green light to the project and beginning work.

Photography: Alfonso Calza

STORAGE IN THE STRAIT OF GIBRALTAR

VOPAK, one of the largest logistics operators of hydrocarbon in the World has contracted Idom to provide basic engineering services and support in hiring contractors for the project to expand its oil terminal at Algeciras.

The new terminal will have a storage capacity of 380,000 m³ of petroleum products and will be installed in the vicinity of the existing terminal in which Idom also participated providing engineering supervision services and Project Management. Both terminals will be interconnected in order to optimize operations and maximize both operational and energy efficiency.

This new collaboration demonstrates the confidence placed by the VOPAK Group in Idom. The scope of services has been extended to basic engineering, a fundamental part of the design to guarantee the success of the terminal and ensure compliance with the operational and safety objectives.

The new terminal will have a storage capacity of 380,000 m³

Photography: Alfonso Calza





CARING FOR THE
PLANET

04

CARING FOR THE PLANET

SOME PROJECTS

2011 / 2013



WATER & ENVIRONMENTAL PROJECTS

OTHER PROJECTS

EUROPE

SPAIN
Hydro-Wind plant on El Hierro island
Client: Gorona del viento

Canal de Navarra
Client: Canal de Navarra

Hydraulic Works and Wastewater Treatment Stations
Client: AUGAS DE GALICIA

Control and monitoring of projects for the EU LIFE Programme
SPAIN & PORTUGAL
Client: European Commission

Calculation and management of the environmental footprint
Clients: Various public and private

Strategic Environmental Assessment of Urban Planning
Client: City Hall of Madrid

KOSOVO
Sanitation and water treatment
Client: P2M BERLIN GMPH

UNITED KINGDOM
Contaminated soils in Portsmouth, Northampton and London
Client: Various public and private

ROMANIA
Environmental due diligence
Client: European Bank For Reconstruction and Development

Waste infrastructure in the regions of Olt, Suceava & Timis
Client: Regional Governments of Olt, Suceava & Timis

TURKEY
Glass Recycling System
Client: European Bank for Reconstruction and Development

AFRICA

ANGOLA
Sanitation in Luanda
Client: CEDRUS ANGOLA SL

GHANA
Desalination plant in Accra
Client: ABEIMA (The ABENGOA Group)

TUNISIA
Water supply in Tunisia
Client: SONEDE

Desalination in 10 population nuclei
Client: Société Nationale D'Exploitation et de Distribution des Eaux - Sonede

AMERICA

ALASKA
Pebble mine hydro-wind plant
Client: Pebble Limited Partnership

BRAZIL
Marine Environmental Protection in the the State of Sao Paulo
Client: Fundação para a Conservação e a Produção Florestal do Estado de São Paulo

Feasibility of 4 National Parks in the Northeast
Client: Programa das Nações Unidas

COLOMBIA
Sanitation in Medellin
Client: EPM

COSTA RICA
Improvement of water supply in Costa Rica
Client: AYA

CHILE
Biogas plant in the Biobío Region
Client: Inter-American Development Bank (IDB)

BRAZIL
Mitigation and adaptation to climate change
Client: Inter-American Development Bank (IDB)

MEXICO
Water Management Strategic Consulting
Client: State Commission of Public Services of Tijuana

PARAGUAY
Mitigation and adaptation to climate change
Client: Inter-American Development Bank (IADB)

ECUADOR

PERU
Water supply and sanitation in the region of Puno
Client: PROCOES

30 Million
BENEFICIARIES OF WATER
supply & sanitation projects worldwide

4 Million
INHABITANTS
will benefit from mitigation and adaptation to climate change projects in Latin América

ASIA

BRUNEI
Integrated Waste Management System in Brunei Darussalam
Client: The Brunei Economic Development Board

UNITED ARAB EMIRATES
Desalination of seawater from the coast of Mirfa (IWPP-Independent Water and Power Project)
Client: ACWA POWER

PHILIPPINES
Water and waste management in Cagayan de Oro
Client: Cities Development Initiative For Asia (ADB)

JORDAN
Waste management infrastructure in Amman
Client: Greater Amman Municipality

LAOS
Study of hydroelectric potential in river basins
Client: Ministry of Energy and Mines

Mekong River Basin management
Client: Asian Development Bank (ADB)

VIETNAM
Diffuse pollution of the Saigon River
Client: Department of Natural Resources and Environment

**CLIMATE CHANGE, EFFICIENT USE OF
RESOURCES, PREVENTION & MANAGEMENT
OF THE ENVIRONMENTAL RISK ARE
UNAVOIDABLE ISSUES ON **THE AGENDA OF
THE SUSTAINABILITY OF ORGANIZATIONS****

MARGARITA MÉNDEZ

Industrial Engineer. Project Manager

Photo: Rafael Sagarduy, Director of the Environment Area,
Desirée Pérez & Margarita Méndez, Engineers



ENVIRONMENT

Working in a sustainable manner towards sustainability, generating economic, environmental and social value for our clients and society



CONTAMINATED SOILS

UNITED KINGDOM

BROWNFIELD REGENERATION

Decontamination of industrial land in the area of Tipner, a new access route and opportunity for residential development in the city of Portsmouth. Idom-Merebrook have provided consultancy services and comprehensive follow-up of the soil decontamination scheme and works.

WASTE

TURKEY

GLASS RECYCLING

Feasibility study of a selective collection and recycling of glass system in Turkey on a nationwide scale. Project financed by multilateral funding from the European Bank for Reconstruction and Development (EBRD).

ROMANIA

MUNICIPAL WASTE

Effective implementation of modern waste management systems and construction of infrastructure associated with the treatment of waste in the regions of Olt, Suceava and Timis. Idom is participating in an international consortium to develop these projects funded by the European Union.

CHILE

FARM BIOGAS

Feasibility Study of the project to extend the capacity of an agricultural biogas plant in the Chilean region of Biobío. The project has been commissioned by the Inter-American Investment Corporation, a member of the Inter-American Development Bank Group (IADB).

THE CANARY ISLANDS

INTEGRATED PLANTS FOR WASTE TREATMENT

Works supervision for the expansion and improvement of environmental integrated waste treatment plants on the island of Gran Canaria. The works are being developed by the Island Council (Cabildo Insular) to improve environmental quality on one of the most important European tourist islands.

Photo: Integrated plant for waste treatment Gran Canaria
Photography: Alfonso Calza

CLIMATE CHANGE

PARAGUAY, ECUADOR, CHILE & BRAZIL

NATURAL DISASTER RISK REDUCTION

Within the framework of the Emerging Sustainable Cities Initiative of the Inter-American Development Bank (IADB), in 4 South American cities, Idom is preparing an a Greenhouse Gas Inventory (carbon footprint), a roadmap for reducing emissions, and a study of natural hazards incorporating climate change variables. The cities included in the project are the Metropolitan Area of Asuncion (Paraguay), Cuenca (Ecuador), Valdivia (Chile) and the Metropolitan Area of Joao Pessoa (Brazil).

More than 4 million people will benefit from the reduction of risks from climate change thanks to this project

CARBON AND WATER FOOTPRINT IN THE WINE PRODUCING SECTOR

Sustainability in the wine industry has become a key factor in competitiveness. Idom has worked with the CVNE Bodega in Rioja to calculate and analyze both the carbon footprint and the water footprint of their Crianza wine. This is the first time the water footprint of a wine has been calculated and verified in Spain.





NATURE & BIODIVERSITY

ENVIRONMENT

EUROPE

EUROPEAN LIFE PROGRAM

In 2013, for the eighth consecutive year, as part of the Business Consortium ASTRALE, Idom is delivering services to the EU Commission: the monitoring and technical and financial control of Life Projects approved for Spain and Portugal.

In the current year, Idom is tracking 224 projects, 65 of which are Nature and Biodiversity, 174 correspond to Environment (waste, water, noise, urban environment, eco-innovation, etc.) and 10 to Environmental Information. Since the beginning of the project in 2005, Idom has carried out the follow-up of 434 life projects, all of which have been approved by the European Commission for Spain and Portugal.

BRAZIL

SUSTAINABLE MANAGEMENT OF PROTECTED AREAS

Idom has been contributing to the conservation and sustainable management of the natural heritage of Brazil, through various projects.

In São Paulo, Idom is leading an international consortium of companies, in the development of management plans of the three Marine Environmental Protection Areas (APAs) created by the Government.

The work has been contracted by the Ministry of Environment, with funding from the Inter-American Development Bank (IDB). The objective is to regulate the use of coastal and maritime territory and promote a sustainable development model in an area of over one million hectares.

In the Northeast Region, through a program funded by the United Nations, Idom is participating in carrying out a study of public-private collaboration in 4 of the most important natural parks: Ubajara, Sete Cidades, Serra das Confusões and Jericoacoara. The ultimate goal is to modernize and professionalize both environmental conservation and tourist attention, through the sustainable exploitation of the resources in the park.

Photo: Volcanic crater in the Azores archipelago, where the LIFE project Ecosystem Restoration for Seabirds is being developed, and monitored by Idom

Photography: João Salgado

ENVIRONMENT



ENVIRONMENTAL ASSESSMENT OF COMPLEX PROJECTS

Idom provides specialized environmental assessment services for projects and carries out the strategic environmental assessment of plans and programs (sectoral, territorial and urban planning). The experience gained in this technical field, working with public and private developers, has resulted in many Public Bodies who are responsible for issuing environmental authorizations entrusting Idom with providing technical assistance to support the evaluation of complex projects,

including most notably, the Ministry of Environment of the Government of Spain.

The development project of the oil fields of Montanazo and Lubina and connection to the oil platform of Casablanca (Tarragona, Spain) was the subject of the environmental assessment study for which Idom provided technical support to the Ministry of Environment.

Photo in this page: Oil platforms
Photography: Berardo62



STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) FOR URBAN PLANNING

The Madrid City Council has entrusted Idom to carry out studies for the strategic environmental assessment of the review of the General Urban Plan of Madrid, as well as providing assessment on environmental issues

HYDROPOWER PROJECTS

HAWAII (USA)

HYDROELECTRIC POWER PLANTS

Hydroelectric development of the existing potential in the old sugarcane plantation irrigation system of Acequia Koke'e on the island of Kauai, Hawaii, USA, one of the rainiest places on earth.

The project involves the creation of two hydropower plants of 3.33 MW and 4.46 MW, respectively. Once the water has been used for power generation, it will then be used for the irrigation of agricultural areas on the south west coast.

GRAN CANARIA

PUMPED-STORAGE

Development of a pumped-storage hydroelectric power station between the reservoirs of Soria and Chira that make up the reversible hydroelectric plant, including a cavern equipped with three groups of reversible turbo-pumps with a total capacity of 200 MW. The hydraulic cycle is developed, almost in its entirety, through underground tunnels. The project also incorporates a seawater desalination plant, which supplies the necessary volume of water for the system and its maintenance.

SPAIN

DAM SAFETY

La Confederación Hidrográfica del Ebro (C.H.E.) (the first water management agency to be created in the world) and Endesa Generación S.A. are in the process of implementing emergency action plans for their dams. These plans will ensure that the basic guidelines for Planning of Civil Protection against the risk of flooding are complied with. Idom is collaborating in the implementation of these projects which along with the C.H.E Early Warning Systems will ensure better flood risk management.

GALICIA

HYDROELECTRIC POWER PLANT

Underground expansion of the Hydroelectric Power Plant at San Esteban located in Nogueira de Ramuín (Orense, Spain) and owned by Iberdrola. The new plant is planned to be a single group consisting of a 175MW turbine, with a head of 95 meters.



AN ENERGY SELF-SUFFICIENT ISLAND

THE ISLAND OF EL HIERRO

This innovative project which is being carried out on the island of El Hierro, consists of two plants, one wind and the other hydrologic. Both plants will be joined to provide reliability and stability to the system.

Energy is obtained first from the wind farm that supplies power to the entire island. The differences between supply and demand are managed by a system that provides reversible hydroelectric energy storage capacity when generation exceeds demand.

In turn, the system allows for the use of this stored energy when the island energy demand exceeds that produced by wind.

The goal is to create a system to generate clean energy capable of self-supply to meet the needs of the population of the island. The overall objectives of the Gorona del Viento project is to achieve an island which is energy self-sufficient and a model which can be exported to any other island on the plant.

Client: Gorona del Viento El Hierro, S.A.
Photo: Infographic of the actual location



PERU

EXPANDING WATER SUPPLY AND SANITATION COVERAGE

In Peru, the coverage of water supply and sanitation has increased significantly over the past decades; however, there are still some gaps, especially in rural areas such as Puno, where 60% of the inhabitants lack basic services.

In the rural region of Puno, 60 % of inhabitants lack basic services

The Government of the Republic of Peru has designed a program for the improvement and expansion of the Water and Sanitation Services (PROCOES). Puno is one of the regions contemplated in this program. Funding for the program is provided by the Inter-American Development Bank (IDB).

TUNISIA

DRINKING WATER SUPPLY

Master Plan for drinking water and Preliminary Design for the region of Sousse. The distribution network has a total length of more than 8,800 km and supplies more than 400,000 inhabitants.

Among the works being undertaken by Idom, are the analysis, diagnosis, and digitization of the network and the development of the hydrologic model of the same.

The distribution network in the region of Sousse has a total length of 8,800 km and supplies more than 400,000 inhabitants

COSTA RICA

IMPROVING AND EXTENDING THE SUPPLY SYSTEMS

Although Costa Rica as a whole has sufficient water resources to supply its population growth, the significant growth being experienced by certain parts of the country means the some infrastructure is becoming obsolete or is insufficient to meet projected demands.

Idom is participating in this project by providing consultancy services for the modernization and extension of various supply systems in both urban and rural areas. 5 priority projects are being developed for the Instituto de Acueductos y Alcantarillados de Costa Rica (AyA) and financed by the Central American Bank for Economic Integration (CABEI).

LAOS

INTEGRATED MANAGEMENT OF RIVERS

Idom is providing technical assistance to the Ministry of Environment within the framework of the Program for Integrated Water Resources Management. Specifically, we are developing the Basin Plan for the Nam Ngum River, a major tributary in the middle stretch of the Mekong River. Funding for the program is being provided by the Asian Development Bank (ADB).

MEXICO

EFFICIENT WATER MANAGEMENT

Tijuana, a city in the State of Baja California, is one of the most disadvantaged areas of the country in terms of sourced drinking water; therefore, efficient water management is essential. Idom is assisting the State Commission of Public Services of Tijuana in the structuring of a project to improve the integral management of the new District VIII, through a scheme of private sector participation in the provision of services, to increase the efficiency in the operation of existing infrastructure.



IN MANY COUNTRIES, THE BASIC RIGHT OF ACCESS TO WATER AND SANITATION IS ONLY POSSIBLE BY IMPROVING THE EXISTING INFRASTRUCTURE



IRRIGATION

CANAL DE NAVARRA

Independent technical consulting to carry out the Technical Due Diligence (Funding Institutions Audit) of the construction project and operation of the irrigation area of the Navarra Canal. Phase 1 involves the irrigation of 26,000 ha. Several audits of the project have been carried out prior to the commencement of works, as well as the quarterly and annual monitoring of the works of 15 irrigation sectors, and annual audits of the concession operation.

IRRIGATION IN ARAGON

Idom is collaborating with the Aragonese Agri-environmental Management Society (SERGE), a public company that implements infrastructure project for the modernization of agricultural. One of these projects is the partial automation of the Cascajos and the Acequia de Cinco Villas Canals. This project will complete the automation of both infrastructure projects, enabling the optimization of operations, as well as improving the availability of water for irrigation in certain areas of the water system.

CANAL DE ORELLANA

The project defines various constructive, improvement, modernization and renovation solutions for the irrigation infrastructure in the provinces of Caceres and Badajoz. The irrigation area of the General Community of Irrigators of the Orellana Canal, located on the right bank of the river Guadiana is a gravity fed irrigation area covering a total area of over 40,300 ha.

This network which dates back to the 50s and 60s, presents many cases of poor con-

servation. This results in incessant water leaks during the irrigation season, with the subsequent cost, both economic and natural resources. The project will involve the upgrading of approximately 50% of the existing canals in the General Community of Irrigators of the Orellana Canal.

VALLES ALAVESES

Idom is collaborating with Aguas de las Cuencas de España in improving the efficiency of water resources with an infrastructure project that respects the

ecological flow channel in summer, while capturing surplus flow in autumn, winter and spring, storing the water in the planned irrigation infrastructure. This regulation and distribution infrastructure will serve to irrigate over 1,900 ha in the provinces of Alava and Burgos.

Idom is providing technical and environmental assistance during the execution of the works of the hydrological Infrastructure of the Irrigation network (Zone 4).

Photography: Gorka Arceniega



**SANITATION AND TREATMENT ARE KEY FACTORS
IN STRIKING A BALANCE BETWEEN WATER
RESOURCES & SUSTAINABILITY**

MIGUEL ÁNGEL FERNÁNDEZ CENTENO

MSc Civil Engineer, Project Manager in the Water Department

Photo: Miguel Ángel Fernández Centeno & Eva Quevedo

DESALINATION

UNITED ARAB EMIRATES,
GHANA, TUNISIA & SPAIN

The Abengoa group, through their affiliate, Abeinsa Ingeniería y Construcción EPC, has contracted the services of Idom to perform the detailed engineering for a desalination plant in Accra (Capital of Ghana) to supply a population of half a million inhabitants. The plant is being developed by the Ghana Water Company Limited.

The water obtained from desalination will serve for the development of the Regions

With this reference project, Idom is strengthening its position in the desalination sector for the public supply of drinking water. Idom has also carried out projects in this field for various clients in the United Arab Emirates, Tunisia and Spain.

Idom is also collaborating with the industrial sector, developing a desalination project for water supply for a mining operation in Chile.



Photo: Courtesy of Abeinsa



SANITATION

ROMANIA

SUSTAINABLE MANAGEMENT
OF PUBLIC SERVICES

The European Bank for Reconstruction and Development (EBRD) has contracted Idom to carry out the environmental and social due diligence audits of the authorities and consortia responsible for managing the supply of water and sanitation services in Romania. As beneficiaries of co-financing from the Bank, these must comply with the institution's sustainability requirements.

To date, Idom has conducted more than 20 environmental and social audits in the water authorities and consortia which provide service to more than 50% of the population of the country. These entities manage construction and/or modernization projects, for 62 drinking water treatment plants and 105 wastewater treatment plants which are co-financed by the EBRD.

GALICIA

WATER SUPPLY AND SANITATION

Idom is assisting the public entity, Augas de Galicia, in the field of water supply and sanitation. We are carrying out the control, monitoring and provision of assessment for the operation of 152 wastewater treatment plant stations (WWTP), with capacity to offer sanitation services to over 3,300,000 inhabitants.

The work carried out by Idom contributes to meeting the strict standards imposed by the European regulations for this type of public service.

We have also worked on the environmental monitoring of the drinking water supply plan of Galicia, which includes, among other activities, the technical support to the operational control of 283 drinking water treatment stations (DWTS).

Photo: Meco treatment plant in Madrid
Photography: Alfonso Calza



**CONNECTING
PEOPLE & PLACES**

05

CONNECTING PEOPLE & PLACES

SOME PROJECTS

2011 / 2013



TRANSPORT & INFRASTRUCTURE PROJECTS OTHER PROJECTS

AMERICA

BRAZIL
Operating plan for the airport of Natal
Client: GAP-FIDENS

High-speed line Rio-Sao Paulo
Client: Agência Nacional del Transportes Terrestres (ANTT)

Sao Paulo Metro
Client: COMPANHIA DO METRO DE SAO PAULO

CANADA
Parkway Highway
Client: PARKWAY INFRASTRUCTURE CONSTRUCTORS

CHILE
Chilean Railway Network
Client: EFE

Design of the data network and CPD
Client: FERROCARRILES DEL ESTADO

COLOMBIA
Metro of Bogota
Client: Instituto de Desarrollo Urbano (IDU)

ECUADOR
The tramway of Cuenca
Client: INP-MUNICIPALIDAD DE CUENCA

MEXICO
Tijuana Airport
Client: Grupo Aeroportuario del Pacifico

BRT of Aguascalientes
Client: GOBIERNO DEL ESTADO DE AGUASCALIENTES

Mexico-Puebla Railway line

PANAMA
Management system for maritime traffic services
Client: CANAL PANAMÁ

PERU
Mobility study for Trujillo
Client: BID

National ITS Architecture
Client: MINISTERIO DE TRANSPORTES

U.S.A.
Mobility study for Interstate I-26, Charleston
Client: BERKELEY CHARLESTON DORCHESTER COUNCIL OF GOVERNMENTS

AFRICA

ALGERIA
Tramway of Constantine
Client: METRO ALGER

Algiers Metro
Client: METRO ALGER

Tramway of Sid Bel Abbes
Client: SACYR

ALGERIA

EGYPT
Ticketing system for the Cairo Metro
Client: METRO CAIRO

LIBYA
Urban development Bab Tarabulus, Tripoli
Client: SERCAL GLOBAL PROJECTS

ASIA

SAUDI ARABIA
Riyadh Metro
Client: ArRiyadh Development Authority (ADA)

Management systems for railway emergencies
Client: ADB

LAOS
Mobility study for Vientiane
Client: ADB

SAUDI ARABIA

TURKEY
Marmara Project
Client: OHL

VIETNAM
Hanoi Metro Line 3
Client: HANOI METROPOLITAN RAILWAY MRB MANAGEMENT

Lines 5 and 6 of the Ho Chi Minh Metro
Client: MAUR

EUROPE

CROATIA
Upgrade and duplication of the track on the section Krizevci - Koprivnica - National border
Client: HZ INFRAESTRUKTURA D.O.O.

Transport strategy in Croatia
Client: CENTRAL FINANCE AND CONTRACTING AGENCY CFCA

DENMARK
Free catenary system Odense Tramway
Client: ODENSE MUNICIPALITY

SPAIN
Port Management System
Client: AUTORIDAD PORTUARIA DE LA BAHIA DE ALGECIRAS

High-speed Network
Client: ADIF

CROATIA

FRANCE-SPAIN
Master Plan for the railway line Vitoria-Dax
Client: GROUPEMENT EUROPEENNE D'INTERET ECONOMIQUE SUD EUROPE ATLANTIQUE VITORIA-DAX GEIE SEA VD DIRECTEUR

MACEDONIA
Mobility study and tunnel in Skopje
Client: AYUNTAMIENTO DE SKOPJE

POLAND
High-speed Line Warszawa - Lodz - Poznan/Wroclaw
Client: PKP POLSKIE LINIE KOLEJOWE, S.A.

Warsaw ring road
Client: GDDKiA

Upgrade of the railway line Kalety-Kluczbork
Client: PKP PLK

Modernization of the public transport network in Rzeszow
Client: URZAD MIASTA RZESZOW

Chile

29

MILLION PASSENGERS
a year use the Chilean railways

Brazil


2.6

MILLION PASSENGERS
a year pass through the airport in Natal

Egypt

2.5

MILLION PASSENGERS
each day use the Cairo Metro

A photograph of three people in professional attire standing outdoors in a park-like setting. On the left, a woman in a tan jacket and black pants. In the center, a woman in a black blazer and grey skirt. On the right, a man in a grey suit. They are engaged in conversation. In the background, there are trees with yellow and green leaves, and a large brick building with the 'idom' logo on its facade.

**FROM THE METRO OF RIYADH TO THE AIRPORT OF TIJUANA,
IDOM DESIGNS TRANSPORT SYSTEMS, ALL OVER THE WORLD**

RAÚL COLETO SIERRA

MSc Civil engineer, Project Management, Transport Project Manager

Photo: Catia Pereira de Matos, Maya Al-Hajj Lattouf & Raúl Coletto Sierra



RAILWAYS

BRAZIL

FIRST HIGH-SPEED LINE

Idom has developed the urban planning and functional studies of the eight main stations on the Campinas-Sao Paulo-Rio de Janeiro line, in collaboration with the Brazilian architectural studio of Jorge Wilhelm. Based on passenger demand, the railway functional design was analyzed, and improvements to the sections of railway next to the stations were proposed. The design of workshops and

maintenance yards was also analyzed and operation alternatives for the new high speed line were suggested.

This Spanish-Brazilian consortium merges the experience of Idom in high-speed and the local knowledge of Brazil of the Wilhelm team. The study includes the major stations such as Rio de Janeiro and Sao Paulo, which operate as huge intermodal hubs.

SPAIN

REAL TIME TRAIN DISPLAY

Maintenance of the Geographical Information System "Localiza" for the Directorate General of Operations of RENFE. This system gives real-time positioning of the trains and permits analysis of punctuality on arrival and departure of trains, and the situation of the fleet and incidents that have occurred in service.

In this phase of the project, Idom has provided consultancy services to change the geographical information system used, studying several alternatives available in the market, and implementing the chosen technology to update and optimize the performance of the application.

CHILE

COMMITTED TO RAILROAD

The State Railways of Chile (Ferrocarriles del Estado EFE) have made a firm commitment to the development of their railway infrastructure and have entrusted this work to Idom.

Following a successful increase in capacity of the railway line between Santiago de Chile and Rancagua, and the technical inspection carried out by Idom of the upgrade of the San Pedro-Ventanas Section; we are now supervising the development of the works underway, carrying out feasibility studies and the detailed engi-

neering of the different sections in the area of the Concepción-Biotren line as well as performing the detailed engineering of the stations of line 6 of the Santiago de Chile Metro.

In addition, in order to reinforce the rail services of the country, our client has opted for the modernization of all its communications systems and facilities along 1,800 km of its rail network. With this objective, Idom is collaborating with EFE in the design of the communications network, as well as the new data center.



On this page: Viaduct High Speed Line Madrid-Hendaye crossing the Arroyo del Coso River

On the opposite page: Bypassing the city of Burgos on entry to the High-speed station

Photography: Alfonso Calza



BEATING RECORDS

6,800

METERS OF TBM

The twin tube tunnel of Bolaños (Galicia) is a milestone in the construction of the last remaining corridor to join the East and West of Spain. The tunnel is located in the North-Northwest High-Speed Corridor of the Madrid-Galicia Line. The work of Idom also includes two viaducts.

384

METERS OF BRIDGE SPAN

The high speed line between Madrid and Extremadura crosses a large concrete arch viaduct, whose span will make it the longest high-speed arch bridge in the world. This viaduct is a stretch of 996 m in length, rising 80 meters above the level of the river below.



BRIDGES TO DEVELOPMENT

In Idom we provide an integral service for our clients: from the initial studies, to the technical assistance and commissioning, including design and construction supervision.

From the idea to reality & from needs to the solution

Photo: Bridge girder gantry launcher on a viaduct of 1,128 meters long over the Pisuerga River; the Madrid-Hendaya High-Speed Line

Photography: Alfonso Calza

ROADS

SAUDI ARABIA

ABI BAKR AS SIDDIQE ROAD

Idom has been commissioned by the Riyadh Development Authority for the implementation of the Detailed Design and Tender Documents Preparation for Abi Bakr as Siddiqe Road from King Abdullah Road Intersection to Prince Salman Road Intersection Project. The work consists of the integral transformation of 12 kilometers of the urban arterial road (80 km/h), into a freeway (100 km/h); including the design of new structures for 5 main intersections, and landscaping improvements for the project area. The soul of the

project is the concept of the "dune", to support a singular vision of the streetscaping project, reflected in the morphology of a unique bridge, creating an image which is representative of the works being carried out. Therefore, this concept is not only reflected in the main structures, but also in pedestrian walkways, side-medians and pedestrian friendly areas. The project design considers the integration of telecommunications and traffic control, as well as the location of bus stops, sidewalks and handicapped parking spots.

NORTH AMERICA

JOINING CANADA & THE U.S.

As part of an overall end-to-end border transportation solution to improve the connection between Canada and the U.S. in the Windsor-Detroit area, Ontario is delivering the access road portion called the Rt. Hon. Herb Gray Parkway, a 11 km highway system stretching through Tecumseh, LaSalle, and Windsor, and will lead to the Canadian inspection plaza and crossing. Idom has participated in the geotechnical studies, temporary works and value engineering for the tunnel structures and installations, as well as design of

temporary diversion of both the traffic and services that have been affected by the works. The project includes 15 bridges, 11 tunnels, 3 gateways, 5.5 km of embankments and a complete drainage system with powerful pumping stations.

Developers: Canadian access road, Canadian inspection plaza, bridge crossing, U.S. inspection plaza y U.S. Interstate connection.

MACEDONIA

URBAN TUNNEL IN SKOPJE

Traffic Study and Detailed Design for the construction of one of the axis identified in the previous work carried out; an urban tunnel to connect the districts of the east of the city with those of the west, thereby completing the first ring road. All installations have been designed to comply with the Directive 2004/54 of the European Parliament on minimum safety requirements for tunnels in the trans-European road network.

MOBILITY

PERU

NEW TECHNOLOGIES IN TRANSPORT

The Ministry of Transport and Communications of Peru, with the collaboration and support of Idom is working on improving the operation of the transport network through the application of advanced technologies and communication systems. The development of the architecture and master plan of an Intelligent Transportation Systems (ITS) will establish the basis and framework at the national level for the implementation of ITS applications in Peru, as well as defining and establishing programs and associated strategies.

SUSTAINABLE URBAN DEVELOPMENT

In the framework of the initiative of the Inter-American Bank, Emerging and Sustainable Cities, In 2012, Idom designed the Trujillo Mobility Plan, aimed at converting the historic center of the city of great historical and cultural value into an axis for tourism development.

Pleased with the earlier work of Idom, the client (IDB) has contracted our firm for the development of the proposed solutions in the second phase of the action.

LAOS

ROAD TRAFFIC SOLUTIONS IN VIENTIANE

The number of motor vehicles in the capital of Laos has been increasing rapidly for some time now; therefore, the need to create a Sustainable Transport System is more than evident. Idom has been collaborating in the project, making proposals to improve the management of traffic and safety, promote public transport and increase the number of parking facilities in the city center. The work has been carried out for the Asian Development Bank (ADB).

CROATIA

TRANSPORT STRATEGY

With a timeline of 20 years, Idom is carrying out the Transport Development Strategy for the Republic of Croatia, a strategically positioned country for the future development of the Trans-European Transport Network; analyzing and establishing the objectives and measures to be implemented in the sustainable development of the different modes of transport within the country and their interconnection and interoperability with the rest of Europe.

MEXICO

ALTERNATIVES TO THE AUTOMOBILE

The Government of the State of Aguascalientes wants to encourage modes of transport that are compatible with economic growth, social cohesion and environmental protection, in this important center of economic activity in Mexico. Idom is working on identifying alternatives to the automobile, promoting the use of public transport and non-motorized travel, the regulation of goods transportation, and improving the image of the city, allowing the recovery of public spaces.



URBAN TRANSPORT

We cover all aspects of the project with a global approach to achieve the urban integration of the different systems. Light Rail Transport Solutions (LRT), Reserved Lanes for Bus Rapid Transport (BRT) and Tramways for a modern and sustainable city. In all our studies and analysis, we consider international standards and in all our projects we follow the principles of RAMS (Reliability Availability Maintainability and Safety)

ALGERIA

THE TRANSFORMATION OF THE CITY OF CONSTANTINE

Constantine is located in a privileged natural enclave protected by deep ravines. It has a rich historical and cultural heritage, which includes its many bridges.

The commitment to the tram as a means of public transport able to renew the city in terms of urban configuration, as well as mobility, has as its objective, the interconnecting the million people who inhabit the districts of Constantine, Zouaghi, Ali and El-Mendjeli Khroub, while contributing to the transformation of the historic city of Constantine as an international cultural reference. Idom is developing the detailed design of the extension of line 1 and will be responsible for construction supervision.

The project combines respect for the historical tradition of Constantine with the desire to modernize the new urban developments, and is an excellent example of the effort being invested by Algeria to update the country as a whole.

The tramway of Constantine involves cutting-edge technology integrated into the historical and cultural legacy of its urban structure

ECUADOR

TRAMWAY IN THE CITY OF CUENCA

In the historic center of Cuenca, we have developed a project consisting of a double track tram line running over 10.2 km throughout the city, with 20 stops along the route. The most modern systems of road signs, light rail, com-

munications, safety, electrification, etc. have been designed.

The project has been accompanied by a series of studies which include the analysis of current transportation in the city and the modeling of the same, including supply-demand forecasting, as well as carrying out important tasks in the social aspects of the works.

UNITED STATES

ENCOURAGING THE USE OF PUBLIC TRANSPORT IN SOUTH CAROLINA

A mobility study of the corridor that runs from the town of Summerville to Charleston in order to improve communication between the two municipalities, easing pressure on the interstate highway I-26, which is currently the main route used.

Various transportation alternatives have been analyzed, such as secondary roads, railway lines and BRTs

COLOMBIA

TRAMWAY CORRIDORS

After the Tramway Project of Ayacucho, the authorities of Medellin have once again put their trust in Idom to develop the Carrera 80 tramway project. This is one of the main thoroughfares for traffic in the Colombian city. The project involves a tram running 14.2 km, and includes the civil works, the redevelopment of the affected streets, the traction system, signaling, communications, buildings of workshops and depots, command post and rolling stock.

Photo: Tramway of Barcelona
Photography: Alfonso Calza



METRO BOGOTA

COLOMBIA //////////////////////////////////////////////////////////////////

Design of the first metro line in Bogota with a 26.5 km long tunnel and 28 stations. Infrastructure design, installations and the systems necessary for the operation of the line and the required rolling stock.

METRO HANOI

VIETNAM //////////////////////////////////////////////////////////////////

Hanoi Pilot Urban Railway Line, Nhon - Hanoi Railway station is a part of Hanoi Metro System. The total length of the route is 12.5 km, with 4 km underground. At present, 12 stations are being implemented, of which 8 are elevated and the remaining 4 underground. Idom's contract consists of the project management support and training services for the client.

METRO RIYADH

SAUDI ARABIA //////////////////////////////////////////////////////////////////

We are participating in the new Metro Network, which is to be implemented in the next 5 years, with a length of approximately 180 km and 75 stations, distributed over six lines that run through the city from north to south and east to west. Currently we have just begun the detailed designs of the Line 3, as part of the Consortium led by Salini- Impregilo.

METRO EL CAIRO

EGYPT //////////////////////////////////////////////////////////////////

With the commissioning of the TAG card in April 2013, Phase I of interoperable fare system (IFM) for lines 1 and 2 of Cairo and the new Metro Line 3, built by the National Authority of Tunnels NAT culminates. (Touch And Go TAG Card)

METRO SANTIAGO

CHILE //////////////////////////////////////////////////////////////////

The new Line 6 project is planned to run entirely underground over a total of 15.7 km with 10 stations. The new line will reduce congestion on Line 1, and extend the Santiago transportation network. The stations will play an important role in the city, and will be integrated into the urban context, with public spaces being renewed to facilitate connection with other modes of transport.

METRO BILBAO

SPAIN //////////////////////////////////////////////////////////////////

We are participating in the construction of Line 3, in the sections: Etxebarri Station (San Antonio), Etxebarri-Txurdinaga, Txurdinaga-Casco Viejo and Casco Viejo. The Etxebarri-Txurdinaga section of the line includes a 2 km tunnel and two underground stations.

METRO SAO PAULO

BRAZIL //////////////////////////////////////////////////////////////////

We are working on the new line, line 17-Oro, which is already being executed. This line has the peculiarity of being an elevated monorail. The construction project includes four stations, a switching yard, and workshops for the line.

BARIK TRAVEL CARD TRANSPORTES DE BIZKAIA

Following its launch in 2012, there are now over 850,000 Barik travel cards in circulation. Idom has been present in the entire process of defining and implementing the Barik card and is still working with CTB in defining and monitoring the implementation of new services.

METRO ALGIERS

ALGERIA //////////////////////////////////////////////////////////////////

The project consists of the extension of line 1 from Ain Naadja to Baraki, with a length of 6 km, giving access to the center Baraki, affected by heavy traffic congestion. The project involves the construction of 6 new stations and will be connected to the railway network, SNTF (Société Nationale des Transports Ferroviaires).

METRO HO CHI MINH CITY

VIETNAM //////////////////////////////////////////////////////////////////

Lines 5 and 6. Facilitating mobility and reducing traffic congestion and pollution in the city. We are participating in the design of lines 5 and 6 including the basic design of stations, communication system, energy, signaling, ticketing, etc.

METRO SYSTEMS



METRO SYSTEMS, LIGHT RAIL AND TRAM

We have developed construction systems in underground, overground and elevated projects.

We have worked on the transport systems in more than **30** cities around the world:

- | | | | |
|-----------|-------------|------------------|----------|
| Bogota | Riyadh | Barcelona | Medellin |
| Hanoi | Constantine | Bilbao | Skopje |
| Algiers | Ho Chi Minh | Moscow | Oporto |
| Sao Paulo | Arad | Cuenca (Ecuador) | Granada |

A PORT IN CONSTANT GROWTH

The Port of Algeciras Bay, one of the main ports in the Spanish port system, is an international benchmark for trade and passenger flow. With this scenario, and in order for the port to remain a major source of economic activity and employment in an increasingly competitive market, Idom has led the project for the development of the new Strategic Plan 2015 with a vision through 2020, which permits the Authority to develop the advanced landlord port model with a company structure which is flexible, effective and focused on providing services. In addition to the strategic plan, Idom is also collaborating in the implementation of a Port Management System (PMS), carrying out the project management. The Port Management system will facilitate the implementation of the procedures and operational control resulting in the efficient management of the established planning and waiting times

PORTS

PANAMA

UNITING THE WORLD FOR A CENTURY

The Panama Canal which opened in 1914 between the Atlantic and the Pacific, has an approximate length of 80 kilometers, and is a navigable channel with a system of locks that rise and lower the water level.

The inauguration of the new locks in 2014 will mean an increase in the traffic capacity of the canal, with the consequent increase in port operations; therefore a comprehensive review of the processes of maritime traffic including the supporting systems and tools is needed.

Idom has designed a strategic plan outlining the actions necessary to convert the Maritime Traffic Control Centre into a world leader in the management of vessel traffic services, defining a Roadmap whose implementation will require an investment of around \$16.5 m in the next 4 years.

BARCELONA

QUALITY MARK

The “Efficiency Network” Quality Mark is a commitment to quality and service efficiency between companies and institutions involved in shipping in the Port of Barcelona. It is a system that offers customers freight security, information transparency and reliability in operations.

Idom is assisting in the analysis of documentation and processes of the logistics chains in the port by identifying the exchanges and actions of different agents, defining service quality standards and monitoring indicators. We are also collaborating in the design of the Guarantee Program and the definition of the internal commitments to be made by each agent on joining the Quality Mark.

We are also assisting in the implementation of the short sea shipping strategy of the Port, providing integral consulting services for the new passenger terminal and cargo ferries in the “Costa Dock”, instructing the Grimaldi Group.

JAMAICA

PORT COMMUNITY SYSTEMS

The maritime container shipping industry is a key factor in foreign trade, and its smooth operation has a direct impact on the competitiveness of import/export companies in the area of influence. For this reason, many ports and national governments are implementing technology in the form of tools that offer increased efficiency, safety and traceability in dealing with the flow of goods in ports, especially containers.

Port Community Systems (PCS) are systems that allow all the stakeholders of the port to be integrated into one system. The electronic data interchange of internationally standardized transactions is implemented, providing one-stop-shop functionalities, thereby optimizing the processes.

Idom has been providing technical assistance to the Government of Jamaica in the preparation and selection of a consortium for the implementation of a Port Community System in Jamaican ports, under a Public Private Partnership.

ABU DHABI

IMPROVING PORT OPERATIONS

Khalifa Port in Abu Dhabi, has decided to implement a new Port Community System (PCS) to improve communications between the different operators and government agencies, in order to automate and accelerate port operations.

Idom has collaborated in consortium with PORTIC (the company that operates and develops the PCS of the Port of Barcelona), in the analysis of the existing import/export processes in the port of Khalifa, and the definition of the business and operations model of future PCS, as well as its functional design.



Photo: Port of Algeciras
Photography: Alfonso Calza



THE LARGEST RIVER PORT IN SPAIN

Currently this port is the only commercial river port in Spain; with an annual traffic of 4M tons.

The dimensions of the new lock, a project in which Idom has participated are 434 meters long and 40 meters wide. In addition to ensuring the protection of Seville against flooding, the new lock will increase the short shipping distance.

Additional works carried out include the construction of 5.65 km of roads and 3.43 km of rail track and three bascule bridges with a span of 40 meters. The adequacy of the navigation channel to the depth of the lock has required dredging to a depth at about 2 km.

With river traffic of 4M tonnes this project will increase the short sea shipping



TIJUANA AIRPORT

CONNECTING THE U.S. AND MEXICO

In order to increase airport capacity in the San Diego area of Tijuana, the governments of Mexico and the U.S. have agreed to the construction of a Crossborder Airport Facility, facilitating the access of passenger from the U.S. to Tijuana International Airport (Mexico) through the installation of a gateway and associated passport control buildings.

Commissioned by Grupo Aeroportuario del Pacífico (GAP), Idom has designed the Mexican side of the gateway and its integration into the international area of the terminal, including an extension of the passport control and customs areas, as well as improvement in the quality of service for international passengers. Idom is also supervising the project, which is expected to enter into operation in 2015

NO BAGGAGE LOST

Automatic baggage handling system

MADRID - BARAJAS

In order to comply with European legislation coming into force in the near future, Idom is collaborating with Aena in updating the Automatic Explosive Detection Equipment (EDS) in the Airport of Madrid-Barajas.

This update involves the adaptation of luggage transport systems (up to 500 conveyors), while at the same time optimizing the routes taken by the different baggage transfer lines. The new equipment is integrated into the Automated Baggage Handling System in all the airport terminals.

FUERTEVENTURA

Baggage handling is one of the most crucial services at any airport, to the point where the design of the airport is conditioned by the planning of a handling system which is safe, efficient and fast.

In recent years, Idom has been working on the design and monitoring of the automated baggage handling system (BHS) for the airport of Fuerteventura using the cutting edge technology, CrisBag, to manage the movement and tracking of individual pieces of luggage in tubs using radio frequency identification technology (RFID).



**SPACES FOR
LIVING**

06

SPACES FOR LIVING

SOME PROJECTS

2011 / 2013



ARCHITECTURE PROJECTS OTHER PROJECTS

AMERICA

BRAZIL
Urban operations in Sao Paulo
Client: Prefeitura de Sao Paulo

Study on the development of tourism in national parks
Client: Government of Brazil

Gare Urban Park
Client: Municipal Prefecture of Passo Fundo

CHILE
Hospital del Salvador
Client: Ministry of Public Works

Metro in Santiago de Chile
Client: Passenger Transport Company Metro S.A.

COLOMBIA
Functional Recovery Center BASAN
Client: Ministry of National Defense of Colombia

Metro stations in Bogota
Client: Urban Development Institute of Bogota

GUATEMALA
Central American Parliament
Client: Central American Bank

NICARAGUA
Carlos Roberto Huembes Hospital
Client: Central American Bank for Economic Integration

DEPARTAMENTO DE CHINANDEGA HOSPITAL
Client: Central American Bank for Economic Integration

URUGUAY
BBVA Branch Network
Client: BBVA Project Finance

ASIA

SAUDI ARABIA
Riyadh Metro
Client: ArRiyadh Development Authority (ADA)

Technical Consultancy for the Sheikh Zayed National Museum
Client: El Seif Engineering Contracting CO. LTD. Abu Dhabi

CHINA
Campus in Beijing Business School CEIBS
Client: CEIBS

INDIA
Convention and Exhibition Center in Mohali
Client: Punjab Infrastructure Development Board

AFRICA

SENEGAL
Alioune Diop & Gastón Berger Universities
Client: Ministère de l'urbanisme de l'habitat de Sénégal

ALGERIA
Constantine Revitalization Plan
Client: City Hall of Constantine

LIBYA
University campus at Misratah. ODAC
Client: Organization for the Development of Administrative Centers

Stations for line 1 of the Algiers metro
Client: Entreprise Metro Alger

EUROPE

BELGIUM
Projects for the European Parliament in Brussels
Client: The European Parliament

Rehabilitation of Headquarters buildings of the European Parliament in Strasbourg
Client: Property Management and Maintenance Unit of the European Parliament in Strasbourg

LUXEMBOURG
Projects for the European Parliament in Luxembourg
Client: The European Parliament

UNITED KINGDOM
49 homes and nursery in Bermondsey
Client: Blueprint Homes Ltd

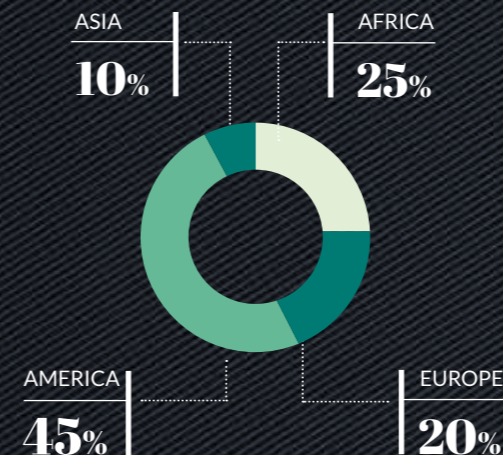
FRANCE
Housing and Care home for the elderly in Ballancourt
Client: Espace Vie Ballancourt

Housing for diplomats in St. Georges Drive. London
Client: Embassy of Spain in the United Kingdom

Projects for the Paris Philharmonic
Client: Elaborados Metálicos EMESA, S.L.U.

PROJECTS

LOCATED IN THE WORLD



SOME SECTORS

Idom-ACXT has completed projects in virtually all sectors of economic activity, most notably:

HEALTHCARE

SPORTS

HOTEL - RESIDENTIAL

TECHNOLOGY - CORPORATE

TRANSPORT

TERRITORY

EDUCATION

COLOMBIA

WITH REFERENCE PROJECTS IN THE MAIN CITIES,
IDOM ARCHITECTURE HAS A NOTABLE PRESENCE
IN COLOMBIA

NICOLÁS ESPINOSA
Architect

Finalist in *"Arquitectura de la Diáspora Colombiana, 2012"*
"RIBA Award Category Awards EU 201"
"Building of the Year . ArchDaily 2011"

BOGOTA. *Bogota. Functional Rehabilitation Center*
ARCHITECTURAL & ENGINEERING PROJECT

BOGOTA. *First metro line. Stations*
ARCHITECTURAL & ENGINEERING PROJECT

CARTAGENA DE INDIAS. *Exhibition center*
FEASIBILITY STUDY AND CONCEPTUAL DESIGN

EL CARMEN DE VIBORAL. *The Antioquia Technology Park*
BUILDING CONSTRUCTION CONSULTING AND URBAN PLANNING

MEDELLIN. *The tramways of Ayacucho and Avenida 80.*
Stations and depots
ARCHITECTURAL AND ENGINEERING PROJECTS

Photo: Nicolás Espinosa, Marina Ajubita & Helena Sá Marques, Architects



SPACES FOR HEALTHCARE

Welcoming environment
for the patient



NICARAGUA

CARLOS ROBERTO HUEMBES HOSPITAL

If there is something that particularly characterizes the Carlos Roberto Huembes Hospital, it is perhaps that it is intended to serve a very specific group of the Nicaraguan population, some 250,000 people. The future hospital, which will be located in District 3 of El Zumen (Managua), will provide healthcare to people with high-risk professions such as those pertaining to the Ministry of the Interior, National Police, the Prison System, Immigration and Nationality, the fire service, among others.

Located on a plot of 34,558 m², the hospital will have 257 beds, and 178 outpatient beds, in three buildings which will contain the dif-

ferent medical areas: the first block dedicated to outpatients and administrative use; the central block will include diagnostic and hospitalization services; and the third block will accommodate emergency services and the surgical theaters.

DEPARTAMENTO DE CHINANDEGA

The Departamento de Chinandega Hospital will be located on a plot of 55,078 m² in the town of El Realejo. It will have 300 beds and 5 large blocks containing the different medical areas: Outpatients and Clinical Support Block, Emergency Block, Hospital Area Block; Technical Block; and General Technical Services Block.

Idom has been contracted for the development of market research, diagnosis of healthcare, the functional medical plan and architectural medical program, terrain studies; conceptual

Photo: Amarante Hospital in Portugal
Photography: Fernando Guerra

design; and subsequent architectural construction design, structure and facilities, equipment project, organizational plan of the hospital; and the quality plan and final report.

PORTUGAL

AMARANTE HOSPITAL

Amarante Hospital represents a vast improvement in the supply of medical services of the Portuguese city.

The building, on four floors, has a day unit, which aims to reduce the need for hospitalization and improve the quality of life of patients and their families, a mental health unit, physical medicine and rehabilitation unit, and three operating theaters for outpatient surgery, in addition to the emergency department.

CHILE

HOSPITAL DEL SALVADOR

The Hospital del Salvador, in Santiago de Chile, is part of a project that also incorporates another building: the National Institute of Geriatrics. Both share the same site, logistical support and central technical unit.

The hospital will have a build area of around 70,000 m² and approximately 26,000 m² of underground parking, a total of 530 beds, 124 observation cubicles, 83 cubicles for treatment procedures, 18 dental cubicles, and 26 surgery wards. The National Institute of Geriatrics, with a capacity for 12 beds, will cater exclusively to patients over 60 who require specialized gerontology care, and will be distributed over a floor space of 12,600 m² and approximately 6,500 m² of underground garage space.

COLOMBIA

BASAN RECOVERY CENTRE IN BOGOTA

The building, intended for members of the Colombian army, is located next to the existing Comprehensive Rehabilitation Centre, allowing the rehabilitation process for soldiers to be carried out uninterruptedly at the same location.

The main access to the two buildings is defined by a plaza or square to organize the flow of vehicles and pedestrians.

The recovery center is designed as a compact building surrounded by gardens where users can do all kinds of recreational activities. All the floors are organized in the same manner; a central hallway gives access to all spaces distributed on both sides.

NEW HQ IN MADRID

UNIVERSITY CLINIC OF NAVARRA

The project has been developed paying particular attention to the aspects of lighting, sound, space, climate, energy and function. It will be an almost zero energy consumption building, with ecological low-impact, and simple to maintain

Formally, it is a compact set, with a central atrium, where the vertical development is maximized (vertical communication to allow faster access to all spaces).

Photo: New Headquarter of the University Clinic of Navarra

Infographics: Poliedro



SPORTS AMENITIES

Spaces on a different urban scale, and macro-social impact



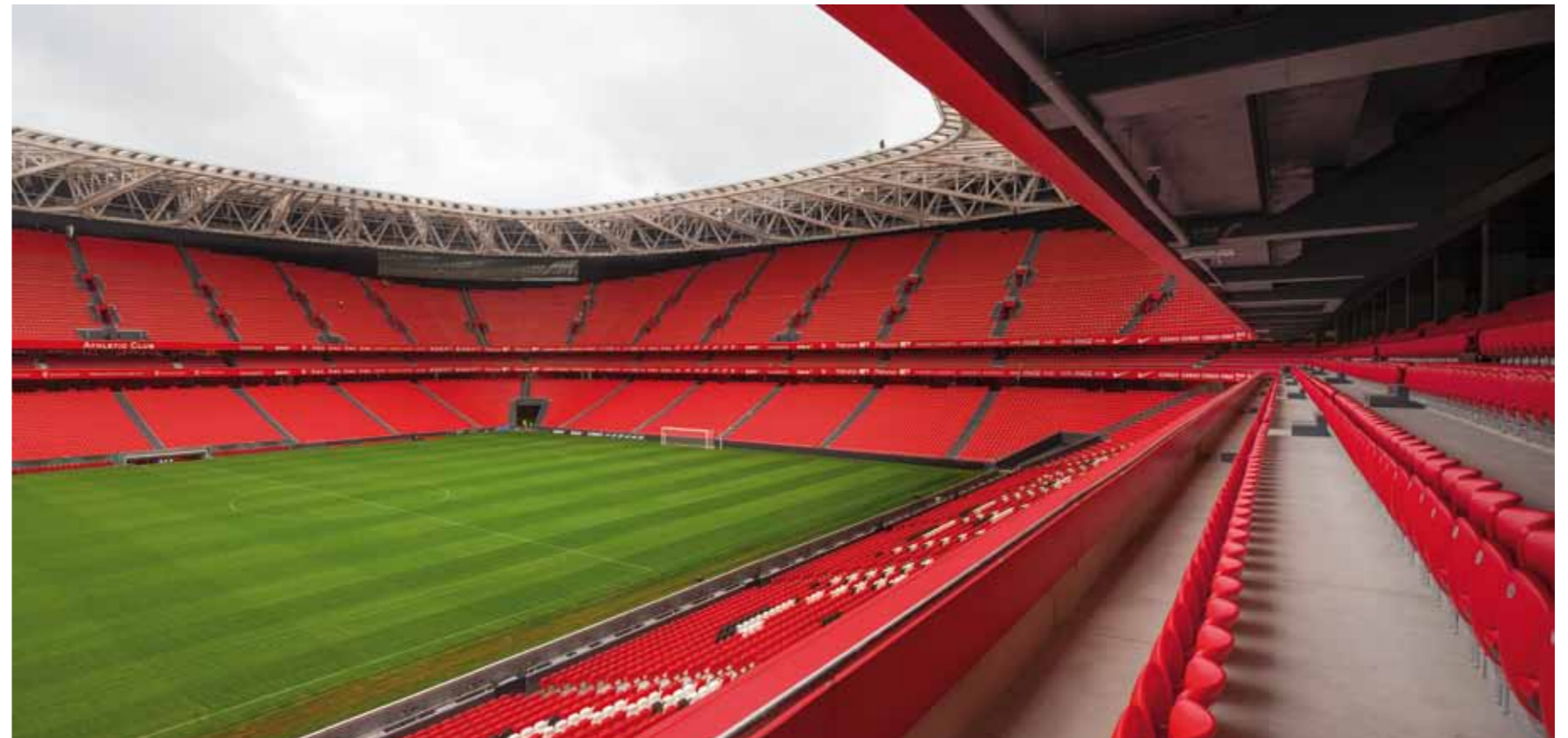
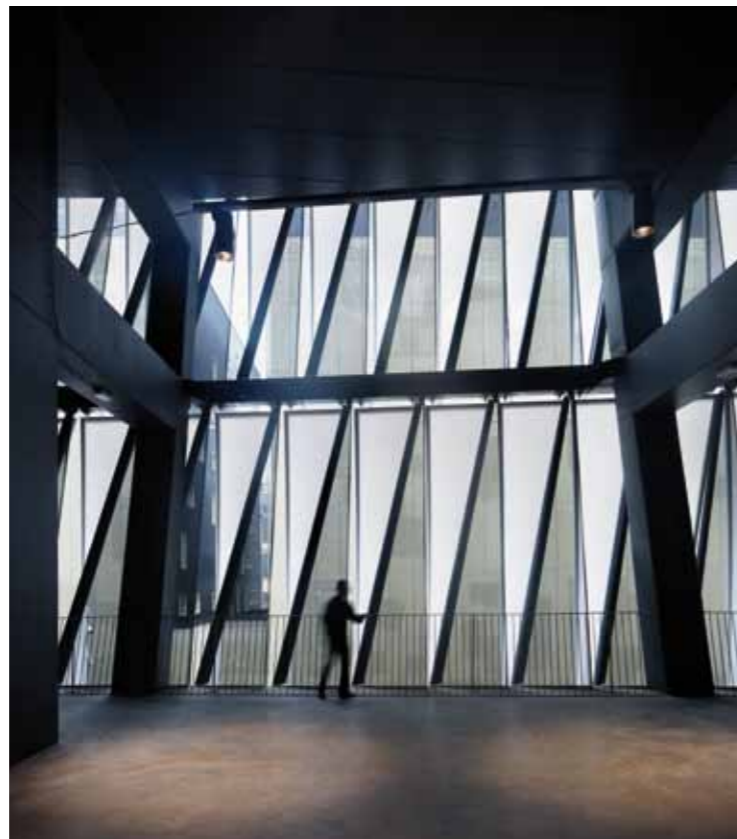
THE NEW SAN MAMES FOOTBALL STADIUM

CONCLUSION OF THE FIRST PHASE

The new stadium is located at the end of the Ensanche (widening of the city) of Bilbao. Its privileged position looking out over the river makes this project an architectural piece that should manifest itself with force and clarity while at the same time respecting the rest of the buildings that complete this area of the city.

The premise has been to provide value to the areas of the stadiums that are traditionally forgotten. These are the areas between the perimeter of the stadium and the rear of the grandstand, which constitute the spaces of movement from which the grandstand is accessed or vacated.

The complex also has other uses such as a museum, shopping area, restaurant, cafeteria, events rooms, meeting rooms and conference rooms. The new stadium which will have capacity for 53,000 spectators has all the attributes to become a "5 star" stadium, according to UEFA.





HELIOS SPORTS COMPLEX IN ZARAGOZA

NEW GENERAL SERVICES BUILDING

A key element within the Helios sports and leisure complex (Zaragoza, Spain) is the new general services building which connects the two main existing sports areas.

The ground floor brings together the cafeteria-bar, multipurpose room, lounge and reading room. The upper floors are dedicated to more private uses: a gym and spa on the first floor and three Padel tennis courts on the roof.

The building is equipped with a system of wooden louvres that, in addition to creating warm and inviting spaces, protect from the direct sun light. The indoor-outdoor separation using glass brings outdoor vegetation into the building, making it a part of the building.

Photography: Iñaki Bergera

BRAZIL

*Sustainable development
in the urban environment
and in nature*

DESIGNING THE NEW
SAO PAULO

The Rio Verde Jacu urban operation consists of a package of interventions and measures to achieve an urban transformation that will involve structural, social and environmental improvement.

In an area of 11,235 hectares in the region of Sao Paulo, the development of the project includes a mobility plan, environmental impact studies and economic feasibility studies.

The area includes five delimited territories (Entre ríos, Ragueb and São Mateus, among others) where strategic projects have been developed involving design solutions and typologies of urban occupation that will serve as models for implementation.

11,235 hectares for
development

Upper photos: Entre Ríos & Jericoacoara
Lower photos: Ragueb & Ubajara
Infographics: Andreia Faley

ECOTOURISM & SUSTAINABLE
CONSTRUCTION

With the intention of exploiting the tourism potential of the national parks of Jericoacoara, Ubajara, Sete Cidades and Serra das Confusões using a model which is economically, environmentally and socially sustainable, as a strategy for the conservation and socio-economic development of the region; the Brazilian government has announced a competition for design projects and feasibility analysis of possible private concessions.

The project is divided into a Demand Study, an Architecture and Engineering Study (where we have developed sustainable construction), Environmental Studies, Economic Evaluation and Business Model, Financial Assessment and legal model. The proposal which we developed for the Ministério do Planejamento, the Instituto Chico Mendes de Conservação da Biodiversidade and the UNDP (United Nations), reached the stage of becoming an operational project.



ALGERIA

CONSTANTINE, CAPITAL OF CULTURE

Constantine, a city to the east of Algeria, with thousands of years of history, will be in the 2015 capital of Arab culture.

Its historic center sits on a rock bounded by gorges of more than 150 m in height. This difficult topography is one of the challenges to be resolved ahead of the revitalization and restructuring of mobility in its historic center.

In the framework of the transformation, Idom is carrying out a Strategic Plan for the event which includes the medium to long-term urban projects necessary to revitalize the urban center of Constantine.

Inevitably, these urban works go hand in hand with a mobility plan to regulate, organize, and improve the chaotic traffic. The Plan will

seek to recover urban spaces for pedestrians, avoiding the monopoly of the car, in order to provide a level of urban quality in Constantine that makes it worthy of the title of World Heritage City.

Infographics: Poliedro

SPACES FOR A BETTER FUTURE

Education is a sector in constant transformation and our services are tailored to this challenge



SENEGAL

THE UNIVERSITIES OF SAINT LOUIS & BAMBEY

The Government of Senegal, supported financially by the World Bank, has embarked on an ambitious plan of expansion and improvement of several universities in the country, and has contracted us for the projects of the universities of Gaston Berger (in San Luis, in the north of the country) and Alioune Diop (in Bambey, to the west).

In both cases the assignment consists in the realization of an audit of the existing buildings, the design of new buildings, assistance in the procurement of construction work and the supervision of the works. In Gaston Berger, three buildings will be designed, with four planned for Alioune Diop.

Infographics: Alfonso Álvarez Díaz, Roberto Fernández de Gamboa Vidal



REHABILITATION OF THE UNIVERSITY OF DEUSTO

The University of Deusto decided to renovate its Central Building, known as "La Literaria", in the framework of a Strategic Plan (2011-2014) with which it aims to achieve professional excellence, while offering a better service to students and to society as a whole. The works which began in 2001 were completed in 2012.

The main objective of the architectural design has been to respect and enhance the spatial, aesthetic and functional qualities of the original building, designed by the architect Francisco de Cubas in 1886 and classified as Cultural Heritage and a Monument.

The decision to renew the central building has meant the restoration of the galleries on the noble floors, as a fundamental element of reference, coupled with the symbolic nature of the space of the cloisters and the semi-interior space that has been achieved by the construction of two new ceilings covering the courtyard; making this, the new nerve center of university life on the campus of Deusto.

COSTA RICA

MANAGING ENERGY

The new Energy Control Center (Centro de Control de Energía-CENCE), is the headquarters of to the Costa Rican Institute of Energy (Instituto Costarricense de la Energía-ICE), one of the most representative institutions of Costa Rica. With over 10,000 m² of buildings and 15,000 m² of urbanization, the complex includes the offices and central technical services of ICE and manages, through its control center, both the energy produced as well as that passing through Costa Rica, an obligatory step between Nicaragua and Panama.

The project is being developed under five main premises: good working conditions and level of comfort for the workers, high energy efficiency associated with active and essentially passive systems, maximum physical and functional safety (Tier IV), flexibility, both for the growth of the building and the internal changes in the distribution, and an optimum water management system.

Infographics: Andreia Faley





ULTRA HIGH VOLTAGE LABORATORY

This is one of the only laboratories of its kind in existence in the world

In 2011, the Artech group, an organization which offers solutions and equipment for the power sector in the areas of generation, transmission, distribution and industry, decided to set up a laboratory where ultra-high voltage equipment up to 1200 kV AC could be tested.

The building, located in Mungia (Biscay, Spain), is a large open space which is 57 meters long, 30 meters wide and 27 meters high, forming a Faraday cage, needed for precision measurements carried out inside.

Annexed to the main space, there is a technical block with views into the test area, which has two control room, a reception area, a meeting room and a space for presentations and meetings for up to 60 people.

In order to perform the required precision measurements in the interior, the building design had to respond, with regard to electromagnetic shielding and design of the grounding grid; a very detailed development specifications.

Externally, the polished metal facade (which vibrates and breaks along the perimeter) is a volume which is intended to be a mirror, a representation of the investment that ARTECHE in making in innovation.

Photography: Aitor Ortiz



A TECHNOLOGICAL SPACE FOR THE FUTURE

NEW HQ FOR DOCALIA IN MADRID

Docalia is a firm that belongs to Grupo Caja Rural, providing services in the field of the management and personalization of printed documents to financial firms.

For some years now, the company has recognized the need for a new building to offer an image of the firm which is modern and technological, a requirement to promote their current international expansion process.

The new building also houses the Data Processing Center of another company of the group: Rural Servicios Informáticos (RSI).

When Docalia decided to make the investment, they called on our Firm for support in the development of the project.

For over three years, Idom has planned and managed the entire investment project, from locating the site and project management, through to the design of the projects. The building is located in the newly created Valdelacasa Business Park, intended for technologically advanced firms which have the capacity to generate added value. The structure of the building is exposed white concrete with interior courtyards on different levels, providing natural light and landscaped spaces to its 4 floors above ground level.



QUALITY HOUSING AT AN AFFORDABLE PRICE

SUBSIDISED SOCIAL HOUSING

This project is the result of a competition organized by Ensanche 21 – Zabalgunea, a company belonging to the City Hall of Vitoria-Gasteiz, Spain. The proposal submitted in collaboration with ARALAN was judged to be the winner, based on its urban planning, architectural, functional, and aesthetic value. Our proposal paid particular attention to the energy efficiency of the building, while con-

sidering the tight budget which is normal for the development of social housing. The project represents the fourth social housing project we have carried out in Vitoria-Gasteiz; in total 497 housing units.

Photography: Aitor Ortiz



NEW CORPORATE HEADQUARTERS

ONO, TELECOMMUNICATIONS COMPANY

The need to upgrade the facilities of an office building located in a residential neighborhood in the north of Madrid, has been seen as an opportunity to enhance an underutilized building, whose successive interventions over time had become increasingly unintelligible. The operation involves a new Space Management Policy for the company, including turning the building into the Corporate Headquarters of the Group.

From the formal point of view, the project seeks to enhance the particular conditions of the building space, the three main elements: the courtyard, the flexible organization of the different floors, and the image of the building, along with a tight budget which has made it necessary to be especially precise with all actions carried out.



On top of the façade, which had originally been clad with ceramic tiling, a metal shield has been installed. It has been made up of vertical galvanized steel louvers of varying opacity to prevent against direct solar radiation. The design for the façade seeks to improve the thermal properties of the building, while at the same time improving the image.

Photography: Miguel de Guzmán



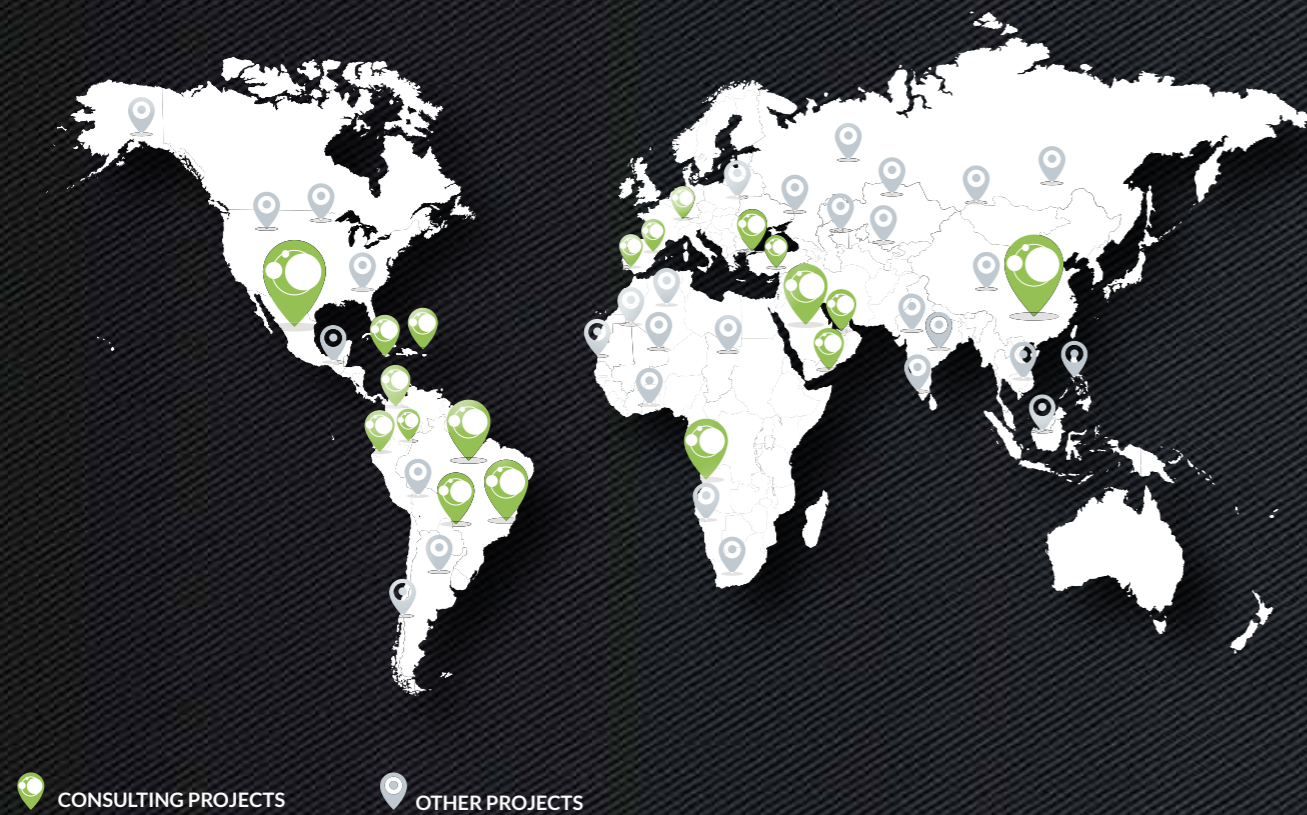
**CREATING
VALUE**

07

CREATING VALUE

SOME PROJECTS

2011 / 2013



AFRICA

Neighborhood Redesign
Client: Cedrus Limitada

ANGOLA

Supply chains in the agriculture sector
Client: IFC (World Bank)

EGYPT

Reform of the transport sector
Client: The European Commission

EUROPE

Warehouse Management Systems
Client: Iparlat

SPAIN

Demand planning tool
Client: Ormazabal

Information Systems Plan
Client: Pevasa

Warehouse Management System
Client: Amig

Productive maintenance optimization
Client: Viscofan

Pharmaceutical cooperation Models
Client: Roche

SWITZERLAND

Optimization of materials management
Client: Gestamp

SAP implementation
Client: The Onnera Group

TURKEY

Manufacturing Management System
Client: TEKA

FIRASET Technology Park
Client: The European Commission

Processes and systems for supply chain planning
Client: The Onnera Group

ASIA

Greenfield logistics model
Client: Confidential

SAUDI ARABIA

SAP implementation
Client: The Onnera Group

CHINA

GIS management in the transport sector
Client: Department of Transport Abu Dhabi

UNITED ARAB EMIRATES

Design of production plant layout
Client: Jindal

OMAN

AMERICA

Deployment of management model
Client: Arteche

BRAZIL

National Strategy for entrepreneurship & MSMEs
Client: National Institute of Entrepreneurship (INADEM)

Mobility plans for Santa Maria, Catanduva & Recife
Client: Prefecture of Santa Maria, Prefecture of Catanduva and Ministry of Cities, Pernambuco

Plan for Science, Innovation and Technology
Client: Mexiquense Council for Science and Technology (COMECYT)

Supply chain planning system
Client: Nutresa

COLOMBIA

Innovative Public Procurement
Client: Ministry of Economy / CONACYT

Metalworking sector development plan
Client: Productive transformation Program

Centre for Innovation in the textile and clothing sector
Client: Council of Science and Technology of the State of Hidalgo (COCYTEH)

Diagnosis of the competitiveness of electric energy related services
Client: Productive transformation Program

Innovation agendas
Client: National Council for Science and Technology (CONACYT)

National Logistics observatory
Client: National Planning Department

PARAGUAY

Studies of urban growth
Client: The European Commission

Geographic Information System
Client: Metropolitan Public Company for the Urban Development of Quito

ECUADOR

Training and Training Support Project for the Economic Integration of Paraguay
Client: ECA / CE

The El Oro industrial Eco-park
Client: United Nations Program for Development (UNDP)

Freight transport and trade facilitation Strategy
Client: Inter-American Development Bank

CARIBBEAN REGION

Inventory Reduction
Client: Coppel

MEXICO

National Plan for Systemic Competitiveness
Client: European Commission

DOMINICAN REPUBLIC

Improving the supply chain
Client: Telefónica Movistar

500
BILLION USD
of sales for our clients

400
BILLION USD
of advised investment

140
MILLION USD
savings generated by Idom



**TOWN PLANNING REQUIRES A COMPREHENSIVE APPROACH,
BASED ON A VISION AND LONG-TERM STRATEGY TO STIMULATE
ECONOMIC DEVELOPMENT**

ANTONIO FERNÁNDEZ

Director of the Region & City Area

Photo: Marc Potard, Nahikari Gómez, Antonio Fernández, Estíbaliz Olivares, Álvaro Porcuna

REGION & CITY

The new paradigm of urban regeneration, applies innovative technologies and a comprehensive approach, adapted to the local reality of emerging cities



PARAGUAY, ARGENTINA & ECUADOR

IMPACT OF CLIMATE CHANGE

In Paraná (Argentina), Cuenca (Ecuador) and the metropolitan area of Asunción (Paraguay), cities in which the population is expected to double within 50 years, Idom has developed projected scenarios to configure this future growth. These are growth models that each city aspires to and have been developed by reaching a consensus between the majority of political will and the citizen. The proposal which is based on the concept of

Smart Growth is oriented to the eco-development and improvement of the quality of life, through orderly and sustainable growth that considers, among others, mobility, vulnerability to natural disasters and climate change adaptation and mitigation.

Photo: City of Cuenca in Ecuador

Photography: Presidency of the Republic of Ecuador

CHILE

PROMOTING SUSTAINABLE ECONOMIC DYNAMISM

The government of Chile is aware of the key role of cities in the revitalization of the economy and its possible undesirable effects for the sustainability of development and the quality of life of its inhabitants. The study of the historical dynamics of the City of Valdivia orientates development planning toward sustainability, considering the effects of the environmental catastrophes, climate change and pollution generated.

MEXICO

URBAN DEVELOPMENT CERTIFICATE

The project promoted by Idom contributes decisively to boost planned and sustainable growth in the metropolitan area of Cancun, and is coordinated with other types of growth and integrated within a "Sustainable Development Pole" working towards turning the existing urban growth trend.

REGION & CITY



BRAZIL

INNOVATION AND TECHNOLOGY CENTER

The integral definition of a Centre for Innovation and Technology (CIT) is always a challenge that requires different variables (knowledge, governance, business, and feasibility) to be combined until the right balance is reached and an Urban and Architectural proposal materializes.

The CIT of Novo Hamburgo, promoted by the State of Rio Grande do Sul, will allow the city to take an important leap towards being a competitive city, an environment which is conducive to the active creation and attraction of technology-based companies that will contribute to the development of the region and promote synergies for the development of R&D+i activities.

An environment that will facilitate the creation and attraction of technology-based companies

Infographics: Idom

BOLIVIA

PERI-URBAN AREAS

Bolivia has one of the lowest rates of water supply coverage and sanitation in Latin America. The European Commission's initiative focuses on improving these indicators in peri-urban areas of the main cities of La Paz, El Alto, Cochabamba and Santa Cruz, with a novel approach to the issues of institutional strengthening and capacity building in the governance of water.

Improving quality of life through water management

ECUADOR

AGRO-INDUSTRIAL ECOPARK

The Autonomous Provincial Government of El Oro, through a loan from the UNDP has initiated the creation of the first agro-industrial ecopark in Ecuador. The main objective is to design a dedicated space for processing, optimization and innovation in agriculture, strengthening the sector and achieving diversification.

Photo: The El Oro Agro-Industrial eco-park in Ecuador
Infographics: Idom



ANGOLA

REZONING AND IMPROVING ELEVEN DISTRICTS IN LUANDA

Luanda has increased its population six-fold, in less than twenty years, with more than 80% of its population living in unplanned neighborhoods. The project includes the planning of water supply, sanitation, energy, waste management, provision of mobility and amenities, as well as the emblematic future actions necessary to boost the city and give it identity.

Being a country rich in natural resources, Angola is now in a position to invest in urban infrastructure



MOBILITY PLANS

Urban mobility has been established as another social right, and as such needs to be preserved and guaranteed. Idom is actively participating in the realization of this right in various cities around the world

Photo: Amparo Yagüe, Amparo Román, Francisco Burgos, David Moncholí, Francesc Arechavala & Luz Ruiz

BRAZIL

Given that urban mobility is one of the key elements of urban sustainability, various municipalities have decided to undertake schemes that provide innovative solutions to the problems of traffic and transport that are beginning to emerge in the cities of Brazil.

Idom, with the support of local businesses, is undertaking the mobility plans of the cities of Santa Maria and Catanduva, as well as Master Plans for cycle and transport of loads in Recife

and Fortaleza, cities with populations ranging from one hundred thousand up to and a half million inhabitants.

These projects will improve the mobility of persons and goods, as well as promoting the more sustainable modes of transport, favoring the pedestrian, integrating the bicycle, enhancing public transport, recovering urban spaces for the people and thus promoting sustainable mobility in Brazil.

SPAIN

In Europe sustainable mobility has also become a concern shared by most of the cities, which have begun to promote public transport and non-motorized modes.

The municipalities of Valencia and Alicante have entrusted Idom with the preparation of the Sustainable Urban Mobility Plans, with the main objective of increasing the quality of life of their inhabitants.

GEOSYSTEMS

Idom develops solutions based on Geographic Information Systems (GIS), Satellite Imagery and Mapping, handling highly complex spatial data management and its integration with data from other information systems

ECUADOR

The System of District Indicators (Sistema de Indicadores Distritales SID) is the BI module of the project named Metropolitan Information System (Sistema de Información Metropolitana SIM) of the Municipality of Quito.

The Web portal of SID hosts a series of strategic indicators for the municipality in the form of interactive web-based reporting. The SID Web portal contains a part which is open to the public in general, as well as other parts which are more oriented to the municipal officials, secretaries, public enterprises and city hall. This second group of users may access the complete portal and can use all types of reports with all the function-

alities of analysis for their own studies, as well as having the possibility to download tables in Excel format which include all the information relevant to the indicator in question.

ABU DHABI

The development of the emirate of Abu Dhabi is guided by the Plan Abu Dhabi 2030. This ambitious plan has the objective of guiding the development of the emirate guaranteeing sustainability, the capacity of the infrastructure and the quality of life for its citizens.

Transport infrastructure, directed by the Department of Transportation (DoT), plays a key role in this develop-

ment, ensuring the mobility and connectivity of the population through the development of new networks and means of transport that may be the answer to the projected rapid growth. One of the elements that will facilitate the development of the transport infrastructure is that of new information technologies, and for this Idom will be collaborating with the DoT from 2013 until 2015 by designing and implementing new applications based on GIS.

The objective of these new systems is twofold: on the one hand improving the services that the DOT offers to the citizens, facilitating the use of different means of transport; and on the other hand, simplifying and improving the efficiency of the process of planning, design, construction, operation and maintenance of transport infrastructure.

COMPETITIVENESS

STRATEGY & PUBLIC POLICY

WORKING WITH ENTREPRENEURS

In order to solve the various problems faced by entrepreneurs and the micro, small and medium-sized enterprises in Mexico, at the beginning of 2013, the Mexican Secretariat of Economy created the National Institute for entrepreneurship (INADEM). Idom has collaborated with this institution in developing a Strategic Plan for the strengthening of the national policy of promotion of entrepreneurs and the micro, small and medium-sized Mexican firms.

As a result of a diagnosis of the situation and the identification of the international best practices in this area, and a visit to the headquarters of the Organization for Economic Cooperation and Development (OECD) in Paris on the occasion of the meeting of the representatives in the field of policies to support SMES of the countries associated with the OECD, 7 strategic axis were identified on which to base support for the entrepreneur ecosystem and Mexican business: financing, innovation, the development of regional strategic sectors, productive chains, scaling the business, entrepreneurial culture, and fomenting exportable offer. These axis have been further developed with the addition of lines of action and tools, in agreement with all the Directorates-general of the INADEM, and will be the basis for their development in the rest of the six-year period.

INNOVATION AGENDAS

In the States that make up the Mexican Republic, there are no strategies focused on innovative development specializing in strategic sectors that allow efforts to be concentrated on the development of strong economic sectors or those with great future projection in the market place.

Idom has extensive knowledge in intelligent specialization strategies, particularly the RIS-3 methodology of the European Union. Drawing on this experience, Idom has developed, within a large national strategic project

promoted by the National Council for Science and Technology (CONACYT), the innovation agendas for 10 States; the States of Guanajuato, DF, Guerrero, Oaxaca, Chiapas, Veracruz, Tabasco, Campeche, Yucatán and Quintana Roo.

In the framework of this project, a regional innovation agenda is also being developed for the southeast region of the country. Idom develops its work in constant coordination with the various state and federal institutions related to scientific, technological and economic development.

INNOVATION IN TEXTILE

The textile and clothing industry is one of the areas of greatest historical importance in the Mexican economy. However, strong competition from other countries has created the need for Mexico to strengthen its textile and clothing industry through the generation of higher quality added-value products, mainly through innovative processes.

The textile industry is one of the sectors of great historical importance in the Mexican economy

Idom designed the Master Plan for the National Center for Innovation in Textile-Clothing. This Plan identifies the need for innovation in the sector and defines the development strategy of the Center, its business, management and governance model; in addition to the conceptual architectural design of a container building which is a space for innovation in the textile and clothing sector.

The project has been developed in coordination with, among other stakeholders, the Secretariat of Economy, the National Institute of the entrepreneur, the Ministry of Economy, the National Institute of the Entrepreneur, the National Chamber of the Council of Textile and Technology, and will be the headquarters of the future Innovation Center.

MEXICO

SCIENCE AND TECHNOLOGY

The Mexiquense Council for Science and Technology (COMECYT) as the institution responsible for the development of Science, Technology and Innovation in the State of Mexico, contracted Idom Consulting to characterize the situation of the state in the area of technological, through interviews and workshops with about 90 researchers, technologists and business leaders in the region.

A long-term plan for the State of Mexico has been proposed, with a portfolio of projects that will strengthen capacities of the state in Science, Technology and Innovation, working towards excellence and achieving the vision established.

INNOVATIVE PUBLIC PROCUREMENT

One of the five measures being undertaken by the Mexican Federal Government to stimulate the growth of firms is aimed at encouraging the innovation processes of the business sector through government procurement, using a tool called "Innovative Public Procurement". This action is being carried out at state level to strengthen the role of the public authorities as a driver of innovation in business; permitting the ordering of goods which do not exist, but can be developed in a reasonable period of time, thereby, stimulating the development of strategic markets and competition in the country.

Strengthening public institutions as drivers of innovation in companies

The Ministry of Economy and Conacyt have contracted Idom to design the innovative public procurement system, analyzing the legal framework, the main public buyers (PEMEX, IMSS, ISSSTE, the Ministry of Communications and Transportation), and the existing business offer, developing a guide for the start-up of the system and a roadmap for its implementation.



THE STRATEGIES WE DESIGN AND IMPLEMENT TO COMPETE IN GLOBAL MARKETS ARE MEASURABLE, REALISTIC AND FUNDABLE

XABIER MANTEROLA
Director of the Strategy & Management Area



Photography: Alfonso Calza

BOOSTING COLOMBIAN INDUSTRY

In recent years, the Colombian sectors of Iron and Steel, Metalworking and Shipyards have not kept pace with the domestic market and have not been able to boost exports, due to internal factors such as fragmentation, low productivity, lack of supply chains; and external factors such as the appreciation of the Colombian peso, lack of customs control, and logistical barriers.

For this reason, the Ministry of Industry of Colombia has launched the Productive Transformation Program, contracting Idom to design a business plan for the abovementioned sectors for the period 2012-2027.

The roadmap designed by Idom contemplates an investment of more than fifteen billion dollars over the next five years.

The main beneficiaries of the business plan will be the Iron and Steel, Metalworking and Shipyard sectors

NATIONAL LOGISTICS OBSERVATORY

In the National Logistics Policy, the Government of Colombia has defined strategies for the development of the national logistics system, as well as effective support to increase competitiveness and productivity. One objective of this policy is to create an information culture in logistics.

In this regard, the National Planning Department (DNP) has contracted Idom to structure

the National Observatory of Logistics (ONL) of Colombia. This project will furnish the DNP with a tool to capture, analyze and disseminate information relating to logistics in the country; generate indicators and create a quantitative model to facilitate effective decision-making in public policy as well as the prioritization of public and private investment. This is an action which is geared towards improving the country's competitiveness.

The project aims to put logistics information in the public domain country in order to facilitate decision-making

DIAGNOSIS OF COMPETITIVENESS

In the framework of its productive transformation program, the Ministry of Industry and Tourism in Colombia has contracted Idom to carry out a diagnosis of Colombian firms belonging to the services subsector related to electrical energy.

The objective of the project is to define sectoral actions that can help overcome the barriers that the subsector is coming up against in its internationalization. For this purpose, the diagnosis seeks to find the gaps that separate the sector from international businesses of reference.

Idom is working in close collaboration with all the actors involved, such as the companies benefiting from engineering design, construction and electromechanical assemblers, their potential Colombian customers and those from neighboring countries, or large global manufacturers of electro-thermal equipment.



THE CARIBBEAN REGION

Freight transport and trade facilitation

Idom is developing a strategic plan of action for shipping, freight logistics and trade facilitation in the Caribbean for the Inter-American Development Bank. The work is being developed in the context of the CARICOM countries and the Dominican Republic; countries which have low levels of logistics efficiency, and therefore, great potential for improvement in the performance of logistics and trade.

The work being developed by Idom includes a detailed analysis of the trade flows from the region, maritime routes, an econometric trade model and the impact changes in infrastructure taking different future scenarios, such as the expansion of the Panama canal or new ports in the region, as well as changes in trade policies. Idom has developed a detailed plan of action that includes elements of both investment and public policies related to infrastructure,

logistics services and the processes of trade facilitation in the three regional hubs (Jamaica, Dominican Republic and Barbados).

Photo: Freight Container Terminal in Kingston Jamaica
Photo courtesy of Kingston Container Terminal

PROCESSES

ORGANIZATIONS & CORPORATIONS

Photo: Aina Torrens & Vanesa Lorenzo at the industrial facility of the Onnera Group

INSTITUTIONAL AND CORPORATE COMPETITIVENESS IS BASED ON EFFICIENT PHYSICAL AND TECHNOLOGY INFRASTRUCTURE

AINA TORRENS
Project Manger



Photography: Alfonso Calza



INTERNATIONALIZATION

MANAGEMENT MODEL FOR THE ONNERA GROUP

Idom is carrying out the implementation of the Onnera Group corporate model (formerly, Fagor Industrial). The Onnera Group is an international group of companies that provides equipment solutions for the catering, laundry and cold applications.

The project being developed by Idom is to deploy the corporate organization, processes and systems to all the plants of the group. The main tool being used is SAP. This process will take place over several years, with Turkey and China being the first international plants where the corporate model is to be deployed. In subsequent phases the model will be de-

ployed to Mexico, Poland, France, Colombia, the United States and Australia.

DEFINING THE PLANNING PROCESS

Within the redefinition process of the corporate model, Idom is developing the reengineering of the planning processes of the Supply Chain.

The project aims to redefine the processes of planning and management with the ultimate goal of improving customer service and in-

creasing the profitability of all the companies that make up the Onnera Group.

The work of Idom include a redefinition of trade policies by product categories, as well as the reengineering of all the processes involved in the generation of stocks of finished product, marketed product, SAT (technical support) and raw materials.

Photos: The facilities of Ormazábal & Amig in the Basque Country

ORGANIZATIONS & CORPORATIONS



REDUCTION OF INVENTORIES IN COPPEL

Coppel is one of the largest retailers in Mexico, with some 1,000 points of sale, 19 stores and more than 85,000 employees. The target market for Coppel is the lower-middle class, which accounts for 50% of the Mexican population, around 15 million families. Following an initial project in 2012, during which a diagnostic analysis was carried out of the necessary improvements to be implemented to

reduce stock levels in the stores. Idom is currently helping Coppel to reduce inventories without compromising sales. The project has been approached from two different angles. On one hand, collaborating with key suppliers and buyers to achieve "Quick Wins" that provide quick results, while on the other, re-thinking of strategic and business decisions.



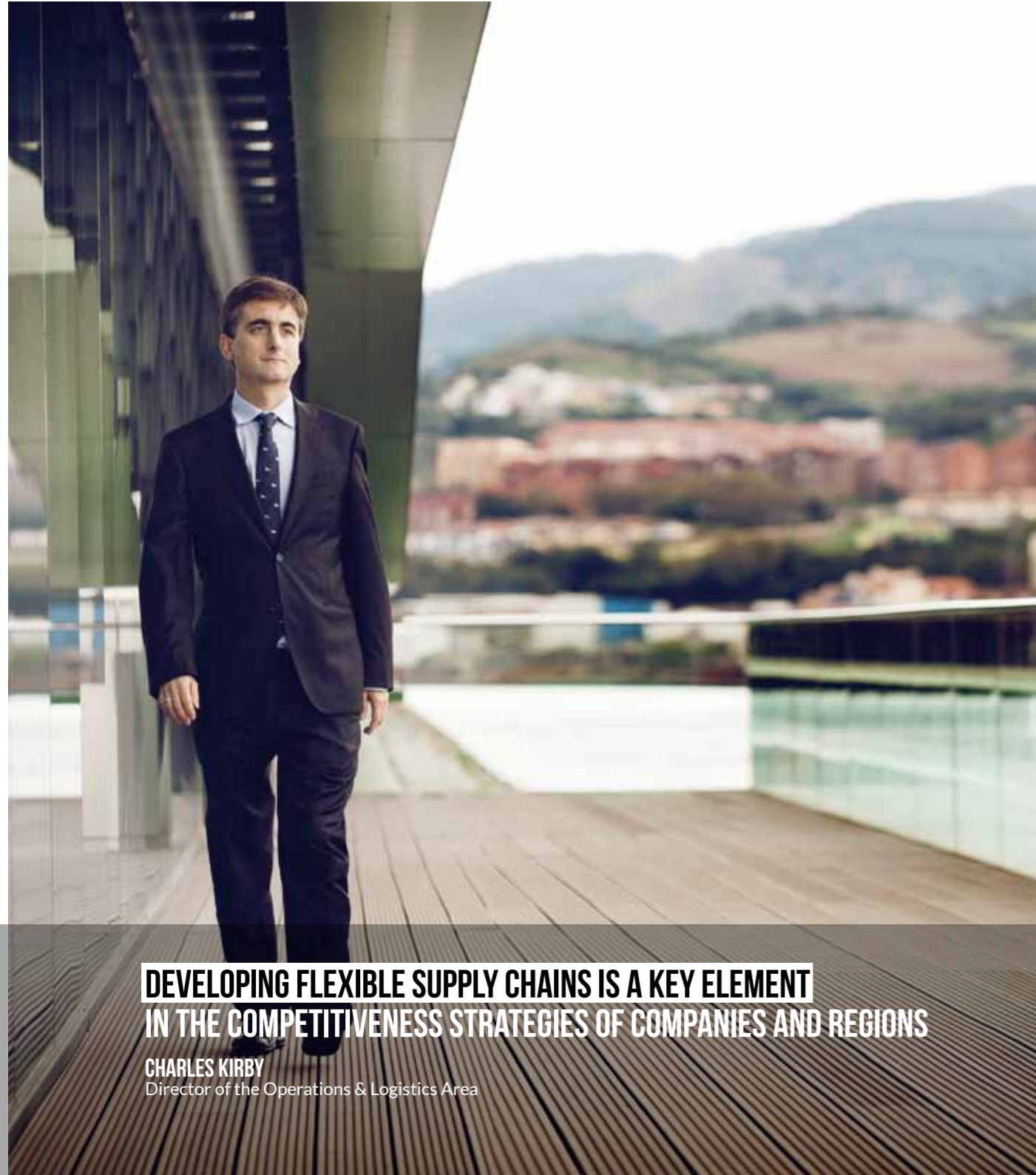
FORECASTING DEMAND FOR ORMAZABAL

Ormazabal is a specialist firm in the electrical sector working in the area of innovation, delivering solutions worldwide. The firm has over 100 years of experience, commercial offices in 20 countries, production plants in the 5 continents, and 1,500 employees.

units to meet the demand of the customers, optimize the group's productive capacities and increase competitiveness. The project brings together the forecasts of all the sales offices of Ormazabal in the world and the productive units in the Iberian Peninsula and Germany.

Idom has developed a project for the definition and implementation of a common forecasting process which is shared by all the productive

Photography: Alfonso Calza



DEVELOPING FLEXIBLE SUPPLY CHAINS IS A KEY ELEMENT IN THE COMPETITIVENESS STRATEGIES OF COMPANIES AND REGIONS

CHARLES KIRBY
Director of the Operations & Logistics Area



WAREHOUSE MANAGEMENT SYSTEMS

Amig is a company dedicated to the distribution of hardware material to small shops and workshops as well as large hardware retailers such as Leroy Merlin. The firm was one of the first companies to automate their storage and picking processes, over 15 years ago.

Nowadays, however, the changes in the market require greater adaptability and flexibility in operations; something Amig cannot offer because of the rigidity and obsolescence of their warehouse management systems.

For this reason, Amig has called on Idom to assist them in the process of identifying improvements to be made and the migration of the warehouse management system of its logistics center in Vizcaya, Spain.

MANUFACTURING EXECUTION SYSTEM (MES)

Teka is a multinational company focusing on the manufacture and marketing of kitchen and bathroom appliances, porcelain products and industrial containers. The company currently has 27 factories marketing its products in over 110 countries.

At present, the existing systems in the Teka plant in Zaragoza do not meet the production management and control needs which are required by a plant with tight delivery deadlines and a high variety of finished products, thereby creating problems and inefficiencies. To resolve this situation, Idom is implementing a Manufacturing Execution System (MES) and an Advanced Planning and Scheduling (APS) integrating ERP business processes with production, maintenance and quality processes.

DEPLOYMENT OF A NEW MANAGEMENT MODEL

Since 2007, Idom has been developing the implementation project of the new management model for the Artech Group through the deployment of its business management system in all the plants of the Group.

Following the implementation of the management model in four of the Group's plants (Mexico, Argentina, USA and China), as well as the parent company in Spain, in 2013, Idom carried out the implementation of the model in the Brazilian plant. The project consisted of adapting the global processes model of the Artech Group to the local specificities (legal and functional) and the implementation of these processes through a SAP management system.

FOOD SECTOR

ORGANIZATIONS & CORPORATIONS

SUPPLY CHAIN OF THE FOOD SECTOR

The Nutresa Group is the fourth largest company in Latin America in terms of market capitalization, with over 35,000 employees and sales of \$5.3 billion in 70 countries. Its portfolio includes 146 brands of biscuits, chocolates, coffee, pasta, meat, ice cream and instant cold powdered beverages.

The Nutresa Group has selected Idom to design and implement an advanced planning tool that will make it possible to optimize their supply chain in an integrated manner, from demand to the suppliers of raw materials, generating transportation plans, and

manufacturing, purchasing and stock control to improve gross margins, always considering the constraints of the operation.

DAIRY PRODUCT TRACEABILITY

The implementation of traceability systems is a key to the competitiveness of the dairy produce, as it must not only to adapt to the new European requirements for food safety, but must satisfy an ever more demanding market in terms of the quality of food products consumed.

Idom is continuing to provide assistance to the Dairy Product Group,

Iparlat, in the implementation of a warehouse management system of its four plants, integrating it with its ERP, to ensure the traceability of products throughout the supply chain. During 2013, the project to deploy the system to the warehouses of Renedo (Santander) and the cold chamber of Urnieta (Guipuzcoa) was developed.

INFORMATION TECHNOLOGY IN FISHING VESSELS

PEVASA is a Basque fishing company with activity in the Atlantic and Indian Oceans that builds and operates its own tuna freezer fishing vessels. Its strategic objectives are, in addition to growth, increasing the efficiency of the organization. To achieve these

objectives, Idom has designed the Information Systems Strategic Plan for PEVASA.

Idom has collaborated with the PEVASA in the creation of an information systems objective model aligned with their strategy by analyzing different scenarios and current and future technological solutions to meet the possible growth of not just the company but also the systems.

OPTIMIZING THE COST OF PRODUCTIVE MAINTENANCE

VISCOFAN is a world leader in the production of artificial casings for meat products, with its headquarters

in Cáseda (Navarra) and production centers worldwide. The continuous production process requires the operation of the production equipment to be guaranteed and the risk of breakdowns and stoppages to be minimized. In addition, the maintenance of the facilities is an important operating expense, the fourth biggest expense after raw materials, personnel and energy.

Idom is collaborating with VISCOFÁN in identifying areas for improvement and the optimization of the maintenance activities performed at the factory of Caseda. The actions for improvement will then be extended to the other plants of the Group.



IMPROVING SUPPLY CHAIN FOR TELEFÓNICA MÉXICO

With 20.6 million users, 350 customer service points and the most advanced mobile phone network in Mexico, Telefonica Mexico (Movistar) is the second most important mobile phone operator in the country. The operator is noted for its proximity to the customer, for being one of the best companies to work for, and their commitment to the Mexican society. The company has received several awards in the field of Corporate Social Responsibility.

Movistar Mexico contracted Idom to improve the stock availability of mobile terminals in their own shops and the consumer channel. Mechanisms have been developed to improve processes and tools to optimize capitulation of needs for resupply and assortments and in determining purchasing forecasts to be sent to the various equipment suppliers.

Photo: Courtesy of Telefónica Mexico

Photo: Roche laboratories
Photo courtesy of Roche



COLLABORATION MODELS IN THE PHARMACEUTICAL INDUSTRY

Pharmaceutical companies are pursuing collaborations with academia to identify innovative ideas that could one day become products. The synergies created between academic institutions and the pharma industry have proven to have a positive impact on R&D productivity, provided that the appropriate model of collaboration is in place.

The goal is to facilitate the access to academic innovation with a cost-effective and flexible approach. Roche, which is one of the world's leading pharmaceutical companies, has contracted Idom to carry out a landscaping of

partnering models used to facilitate collaboration with academic institutions. These are models which are currently being used by the industry in the early stages of drug development (discovery and preclinical phases).

The landscaping project involves identifying and analyzing the collaboration models currently being used by the pharmaceutical industry to reach or access innovation originating in academia, as well as detailing how leading firms are applying these models to their organizations.

EFFICIENCY IN MANAGEMENT

Gestamp is an international industrial group dedicated to the design, development and manufacture of metal components and structural systems for the automotive industry. Nowadays, Gestamp is present in 19 countries, and has 94 manufacturing plants and a workforce of over 28,500 employees worldwide. Idom has collaborated with Gestamp in developing a scrap management process which is auditable and homogeneous in all its plants. The implementation of this process from the headquarters to the organization will require a more efficient model with respect to use of materials, and will establish mechanisms for global sales negotiations with operators/re-claimers.



LOGISTIC MODELS

ORGANIZATIONS & CORPORATIONS

OMAN

The company Jindal, one of the main producers of steel in the world has contracted the services of Idom for the design of a logistics model for new production site of 120 hectares in the Port of Sohar (Oman). The model developed seeks to optimize the flow of people and materials, in over 20 types of products and more than 20 million

tons being handled, both within the complex and for transportation to the port and the local market. The resulting layout is flexible enough to allow adjustment to the operations of Jindal during the different stages of growth envisaged by the client.

SAUDI ARABIA

With a workforce of about 245,000 people worldwide and operations in more than 60 countries, Arcelor Mittal is the world leader in steel production and its derivatives. In Jubail (Saudi Arabia), the multinational is now in the construction and commissioning phase of a new seamless tube mill which will have a capacity of 600,000 tons per year.

One of the main objectives of the plant is to supply components to the markets of North Africa and the Middle East. In this context, Arcelor Mittal has contracted Idom to review the logistics model of the plant. This project includes a review of the projected multimodal logistics flow; an analysis of the export/import flows, both to and from local

and international markets; an analysis of the future operations of the ports of Jubail and Damman; an assessment of the inventory levels of raw materials and finished products necessary for operations; a review and optimization of the logistic model of the plant; and proposed improvements to the preliminary design.

**ABOUT
IDOM**

08

Photo: Bilbao Arena
Photography: Carlos Olmedillas
Photography of Chapter 8:
Alfonso Calza

PROFESSIONAL DEVELOPMENT

Idom values and encourages the professional and personal development of all its staff and recognizes them as the main asset of the firm

75%

*of the managers of Idom
joined the firm between
the ages of
23 to 29*

Photo: Alberto Tijero, Industrial Engineer, Director of Idom Bilbao

SOME FIGURES

The financial structure of Idom is solid and solvent, as it should be for a business project that aims to establish personal and patrimonial relationships in the long-term

200

MILLION
euros in turnover for
professional services in
2013

10%

INCREASE
in the billing of
professional services
with respect to 2012

90

MILLION
euros for services supplied in
2013



120
COUNTRIES
with projects

37 IN **20**
OFFICES COUNTRIES

Photo: Cristina Negro, Specialist Laywer in Economics, Head of the Legal Department



PERSONS

Idom is an innovative, global, and independent firm which is committed to its clients. These traits are born of the character and ideals of the people who make up the Company

2,500

number of
PERSONS
working
in 2013

29

years is the average age
at the time of
JOINING

9

years is the average
LENGTH OF SERVICE
of the persons of Idom

A woman with long brown hair in a braid, wearing a bright green dress and black tights, stands on a modern architectural walkway with a white railing. The background shows a modern building with large windows and a green lawn.

OWNERSHIP OF IDOM

Idom is an association of professionals, which is 100% owned by the people who work in the firm. Our financial independence means that our business activity is oriented exclusively to satisfying the interests of the client

100%

**OWNED BY THE PEOPLE
who work in the firm**

23%

of the people of Idom are
**PARTNERS
(co-owners)
OF THE FIRM**

36

**IS THE AVERAGE AGE
for the employees to become partners**

Photo: María C. Ortega, Civil Engineer, Head of the Light Rail Department

RESPONSIBLE

In Idom, we are accountable for what we do, primarily to our clients. Their opinion drives us to increase the quality of our service, year after year

CUSTOMER SATISFACTION



Level of customer satisfaction with the work of Idom

ENVIRONMENT

We analyze the environmental implications of our projects beyond mere legal compliance. And as should be, we seek to reduce the consumption of resources and carry out proper waste management

HEALTH & SAFETY

The training and awareness of the people of Idom on the prevention of occupational hazards means that we have an incidence rate below the industry average

Photo: Eva Sanromán, Industrial Engineer, Project Manager



MANAGEMENT SYSTEMS

For almost two decades, Idom has been subjected to the scrutiny of Quality Assurance Agencies that measure the quality of our work according to international standards

Implemented systems

GENERAL SYSTEMS

Quality
ISO 9001-2008

Environment
ISO 14001-2004

Health & Safety
OHSAS 18001-2007

SPECIFIC SYSTEMS

Potentially contaminated soils, and associated groundwater, and wastewater
ISO 17020

Aerospace Quality
ISO 9100

Assurance System for Nuclear Safety and audits of client nuclear projects

Systems in which we have commenced work

Information Security and Confidentiality
ISO 27001

Risk management throughout the lifecycle of projects
ISO 31000

Guaranteed continuity of customer service
ISO 22301

Photo: María Besada, Industrial Engineer

RELATIONSHIP WITH THE UNIVERSITY

Idom maintains a close relationship with the leading universities and business schools, located wherever the firm has offices, putting at the disposal of the students, both the knowledge of our professionals, as well as the opportunity to begin their professional career

Photo: Marina Ajubita, Architect

50

*Universities
with which Idom
maintains
A CLOSE
COLLABORATIVE
RELATIONSHIP*

01 TECHNOLOGICAL DEVELOPMENT PG 8 - 39

European Extremely Large Telescope - E-ELT in Chile
Solar Telescope - ATST in Hawaii
QuiJoTe Telescope on the Canary Islands
Cryogenic systems for moving components
Test facility for wind turbines DyNaLab in Germany
Test facility for wind turbines FUJIN in the UK
Test facility for wind turbines in the US
Test platform for parabolic solar collectors
Converting wave motion into electrical energy
Lighting & security of archaeological sites in Egypt

Fiber Telecommunications in the Dominican Republic
Roll out of fiber optic cable in Mexico
Tabakalera: audio-visual and communications installations
Technology "fiber to the home" (FTTH)
Nuclear security in the Ascó NPP
Thermonuclear Experimental Reactor (ITER) in France
PAD for spent nuclear fuel in Garoña
Special fluids installation for ENUSA
Ventilation & fire dampers (HVAC) in the Ascó NPP
Review of the Design Hypothesis of Motorised
Valves in the Vandellós & Ascó NPPs

01

02 GENERATING ENERGY PG 40 - 67

PP12 Combined Cycle Plant in Saudi Arabia (2,000 MW)
PP10 Combined Cycle Plant in Saudi Arabia (3,700 MW)
Combined Cycle Plant in France (525 MW)
Combined Cycle Plant in Turkey (871 MW)
ThermoSolar power plant in Nevada
Hybrid ThermoSolar Plant in Lleida
ThermoSolar Plant in Alicante (50 MWe)

Network engineering
Wind farms in Brazil
El Porvenir Wind Farm in Mexico
Energy supply for a mine in Alaska
Industrial Plan for offshore wind in France
Noblesfontein wind farm in South Africa
Biomass cogeneration in Colombia

02

03 INDUSTRIAL DEVELOPEMENT PG 68 - 89

Integrated plant for glass production in Brazil
Wind turbine manufacturing plant in Brazil
Plastic packaging factory in the US
Engineering for paper production plant
Adaptation of plant for Mercedes-Benz
Modernization of a Nestlé plant
Steel complex in the Sultanate of Oman

Aluminum plants in the Middle East
Hydrocarbon supply the African market
Process engineering for Ecopetrol in Colombia
Analysis and technical assessment for British Columbia
Engineering for the Repsol refinery in Cartagena
Studies for the Repsol refinery in Puertollano
Enlargement of an oil terminal for Vopak

03

04 CARING FOR THE PLANET PG 90-115

Regeneration of industrial land in the UK
Selective collection and recycling of glass waste in Turkey
Waste management systems in Romania
Agricultural biogas plant in Chile
Improving environmental quality in Gran Canaria
Studies on climate change in Latin American cities
Carbon and water footprints in the wine sector
European LIFE program
Sustainable Management of Protected Areas in Brazil
Environmental assessment of complex projects
Strategic Environmental Assessment in Madrid
Hydroelectric Power in Hawaii
Safety of dams
Reversible hydroelectric power station in Gran Canaria
Hydroelectric power station in Galicia

Hydro-wind plant on the island of El Hierro
Rural water and sanitation projects in Peru
Water Master Plan in Tunisia
Improvement of water supply systems in Costa Rica
Basin Plan for the Nam Ngum River in Laos
Efficient water management in Mexico
Studies of irrigation areas in the Canal de Navarra
Upgrading of irrigation system in Aragón
Irrigation infrastructure in Valles Alaveses
Upgrading of irrigation network in the Canal de Orellana
Wastewater treatment in Galicia
Drinking Water Treatment plant in Galicia
Desalination plant in Ghana
Supply and sanitation in Romania

04

05 CONNECTING PEOPLE & PLACES PG 116 - 147

High-Speed Rio-Sao-Paulo
Railway line Rancagua-Santiago de Chile
Railway line in Chile San Pedro-Ventanas
Expansion of the Biotren suburban railway in Chile
Real-time display of trains
High-Speed Madrid-Galicia
High Speed Madrid-Extremadura
Abi Bakr As Siddiqe Road in Saudi Arabia
Highway in the Windsor - Detroit area, Canada
Urban tunnel in Skopje, Macedonia
Mobility study in Trujillo, Peru
Urban Transport Studies in Laos
Transport Development Strategy in Croatia
BRT of Aguascalientes, Mexico
Tramway of Constantine, Algeria
Tramway of Cuenca, Ecuador
Mobility study in South Carolina, US
Tramway in Medellin, Colombia

Riyadh Metro
Algiers Metro
Sao Paulo Metro
Bogota Metro
Metro Systems. Cairo
Metro Systems. Barik Travel Card
Hanoi Metro
Ho Chi Minh City Metro
Metro of Bilbao
Metro of Santiago de Chile
Strategic Plan for the Port of Algeciras
Strategic Plan of the Panama Canal
Port of Barcelona
Port Community Systems in Jamaica
Port operations in Abu Dhabi
Locks in the Port of Seville
Tijuana airport, Mexico
Automatic baggage handling system

05

06 SPACES FOR LIVING PG 148 - 175

Carlos Roberto Huembes Hospital in Nicaragua
Chinandega Departmental Hospital in Nicaragua
Amarante Hospital in Portugal
Hospital del Salvador in Chile
Rehabilitation Center in Colombia
New University Clinic of Navarra, Madrid
New San Mames football stadium in Bilbao
Extension of the Helios Sports Complex in Zaragoza
Urban Operation Rio Verde Jacu in Brazil
Projects for National Parks in Brazil

Revitalization Plan for Constantine, Algeria
Extension of the Gastón Berger University in Senegal
Extension of the Alione Diop University in Senegal
Rehabilitation of the University of Deusto
Energy Management Center in Costa Rica
Ultra High Voltage Laboratory
Data Processing Center and Offices in Madrid
Subsidized housing in Vitoria
New corporate headquarters for the company ONO

06

07 CREATING VALUE PG 176 - 209

Urban growth in Latin American cities
Promoting sustainable economy in Chile
Urban development certificate in Mexico
Innovation and Technology Center in Brazil
Peri-urban areas in Bolivia
Agro-industrial Ecopark in Ecuador
Redesign of neighborhoods in Angola
Mobility Plans in Brazil
Sustainable Urban Mobility in Spain
Geographic Information System in Abu Dhabi
Geographic Information System in Quito
Strategy support for Mexican entrepreneurs
Innovation agendas in Mexico
Innovation in the Mexican textile industry
Science and Technology Plan in Mexico
Innovative public procurement in Mexico
Boosting Colombian industry
National Logistics Observatory in Colombia

Competitiveness of utilities companies in Colombia
Goods and trade facilitation in the Caribbean Region
Internationalization of management models
Supply Chain Planning
Retail inventory reduction
Customer demand forecasting
Warehouse Management Systems
Manufacturing Execution Systems
Deployment of a new management model
Supply chain planning system for the food sector
Traceability of dairy product
Information technologies in fishing vessels
Optimizing maintenance costs
Improved processes for Telefonica Mexico
Pharmaceutical industry innovation collaboration models
Efficiency in industrial management
Logistic model for the steel sector in Oman
Steel sector logistic model in Saudi Arabia

07

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