

Annual Report 2016

Innovation excellence commitment

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In Mexico, D.F.

Without doubt, 2015 has been a complex year in the world: the Greek crisis, evolution of oil prices, recession in China, falling commodity markets, terrorist attacks and many other international events have contributed to what is now a rather unstable and uncertain global climate.

In this climate, and despite certain difficulties, we have to say that overall, the balance has been positive for Idom this year.

As can be seen in this publication, we have consolidated our activity with magnificent projects around the world, developing even further, our capacity to undertake large-scale and complex world-class projects in diverse locations such as Saudi Arabia, France, Germany, Mexico, Chile or Algeria.

Furthermore, we have achieved some successes of which we are particularly proud. These projects have not just been an opportunity for us to undertake commissions of a high professional level, but we have shown a great capacity to meet the specific needs of our clients, something that would have seemed almost impossible in the past. For Fraunhofer IWES, we have built and commissioned the largest test stand for wind turbines in the world, Dynalab, in record time. We have also designed, again in record time, the Lima Convention Centre, constructed in 16 months, in time to hold the annual meeting of the Board of Governors of the World Bank and the International Monetary Fund.

And this is an aspect of Idom we would like to highlight and enhance. Our objective is not only to develop technologically complex important projects, but above all, resolve the problems that really concern our clients, understanding their needs and doing everything possible and impossible meet their needs in any location around the world. ■

Fernando Querejeta
President

Luis Rodríguez Llopis
Managing Director

WORKING ON FIVE CONTINENTS

Middle East

Some projects

| **SAUDI ARABIA** RIYADH METRO | ABI BAKR ROAD | NEW INFRASTRUCTURE IN JUBAIL | TRANSPORT SYSTEMS IN JEDDAH | **JORDAN** BIOGAS PLANT | **QATAR** MASTER PLAN FOR THE QATAR ASPIRE SPORTS ZONE | **ABU DHABI** KHALIFA PORT |

01

SAUDI ARABIA

ACCELERATING THE DEVELOPMENT OF TRANSPORT INFRASTRUCTURE

The kingdom of Saudi Arabia is undergoing a rapid modernization process. Improving mobility in cities is one of its priorities. In Riyadh, the capital, transport conditions are being improved with the development of infrastructure such as the new Metro network, bus lines and the Bus Rapid Transit (BRT) system. In addition, new urban highways and ring roads are under construction.

Photo: Khalid Al Othman & Etor
Jauregui in Riyadh.



RIYADH METRO

INNOVATION ON LINE 3

Line 3 of the Riyadh Metro runs east-west along 41 km. Idom is designing practically all the infrastructure: all the works of the line, the stations - including the transfer station with Line 6- the workshops and depots at either end of the line. Also within the scope of work of Idom is the urban repositioning of the areas affected by the metro.

THE 41 KM LINE, INCLUDES 22 STATIONS, 25.9 KM ELEVATED, 5.8 KM UNDERGROUND AND 9.3 KM GROUND LEVEL.

Idom has proposed that sustainability criteria permeate all the phases of the project, with the design of buildings with reduced energy and water consumption, the use of low environmental impact materials during construction, materials which generate low maintenance costs. Given the extreme climatic conditions in Riyadh -subtropical hot desert climate, high solar radiation and temperatures that can reach 50°C-, the main strategy has been to reduce consumption with the architectural design, producing buildings with an envelope based on bioclimatic concepts.

THE PROJECT IS AMBITIOUS IN ITS OBJECTIVE TO ACHIEVE HIGH ENERGY EFFICIENCY AND SUSTAINABILITY.



In terms of the workshops and depots, the design of the roof seeks to reduce direct solar radiation while maximizing the use of natural light. This has been achieved by introducing north-facing skylights, while at the same time optimizing the positioning of photovoltaic panels to generate some 45% of the electricity consumed by the fixed equipment of the building. The design strategy adopted to achieve savings in water consumption involves the correct treatment of grey water and its reuse for irrigation.

While the stations are based on a predefined design, Idom has had great freedom to develop the work on many levels: from the shading of the buildings to the design of a high performance envelope or optimizing the installation of solar panels, air-conditioning systems and energy-efficient lighting. ■

VIADUCTS, TUNNELS, CUT AND COVER TUNNELS, GROUND LEVEL PLATFORMS AND WORKSHOPS AND DEPORTS.



DESIGNING OTHER INFRASTRUCTURE PROJECTS IN RIYADH

In addition to the works on Line 3 of the Riyadh Metro, in recent years, Idom has also been developing the 12 kilometre Abi Bakr As Siddiqe Road Project. This road will undergo a radical transformation, upgrading from its current typology as an urban arterial road (80 km/h), to an urban highway (100 km/h), which will also feature structures on three levels at major intersections, a service road (50 km/h), and the local landscape and urban design will be improved.

INTEGRAL TRANSFORMATION OF AN URBAN ROAD INTO A HIGHWAY.

Idom is taking an interdisciplinary approach to this project, including landscaping, transportation, architecture and engineering infrastructure studies. For example, one of the elements introduced was the "Dune" concept, unifying the entire urban development, as can be seen not only from the bridge over the intersection with Iman Saud Road, but also with the rest of the structures, pedestrian walkways, side-medians and areas adapted to the different needs of pedestrians.

In addition, the work of Idom also includes the integration of telecommunications and traffic control, the location of bus stops, and the planning of sidewalks and parking spaces.

Having developed the design, Idom is now carrying out the Project Management of the construction works. ■

THIS IS AN INTERDISCIPLINARY PROJECT BRINGING TOGETHER ENGINEERING, LANDSCAPING AND ARCHITECTURE.

Photo: Ignacio Diaz Morcillo, Jihad Abdullah Al Twijri & José Luis Pando in Riyadh.





NEW INFRASTRUCTURE FOR JUBAIL

The city of Jubail, located on the Eastern Coast of Saudi Arabia, is the largest industrial city in the Middle East. Many large petrochemical companies are located in the city. In fact, 50% of the water consumed throughout Saudi Arabia comes from a large desalination plant located in Jubail.

The city was designated as "Industrial" by the Government in 1975 and is now the subject of a new expansion plan, which began with the design and construction of the required infrastructure.

Idom has been participating in the plan since late November 2014, when a framework agreement, to provide technical services to undertake this expansion, was signed with the Royal Commission for Jubail & Yanbu. These services include feasibility studies, bidding lots for the infrastructure, and technical assistance for the development of the expansion of the industrial and residential area of Jubail. The work will take up to five years and is being carried out alongside the firm "Imar, Urban Consult".

JUBAIL IS ONE OF THE LARGEST INDUSTRIAL CITIES IN THE WORLD.

The scope of work includes both the basic design of the infrastructure of the coastline and the technical specifications for the tender documents for the construction works, such as roads, highways, bridges, transport interchanges, sanitation, potable water, irrigation networks, and pumping stations, telecommunications and underground electrical distribution systems. ■

TRANSPORT SYSTEMS IN JEDDAH

In 2014, the city of Jeddah, the second largest city in Saudi Arabia and the economic and tourist capital of the country, launched an international design competition, in order to develop the architectural vision of a new urban transport system. After a two-phase selection process, the jury chose four teams of architects. Idom formed one of these finalist groups, with the others being Zaha Hadid, Foster and Partners, and HOK.

The project included the design of the metro stations, the "water taxi" stops, bus stops and an intermodal station. A Master Plan for the area in which the station is located was also presented.

The proposal submitted by Idom opted for a solution in which all the infrastructure shared a common image, while giving each typology of building a specific identity through the use of colour.

Finally the project was awarded to Foster and Partners. ■



JORDAN

A NEW SOURCE OF RENEWABLE ENERGY IN THE REGION

The metropolitan area of Amman, the capital of Jordan, is home to over 2.5 million inhabitants or almost half the population of the country. The rapid growth in population experienced by Amman represents an important challenge for the Greater Amman

Municipality (GAM), a public body responsible for providing the citizens with basic municipal services.

At present, the Municipality (GAM) is implementing an ambitious solid waste management project, which involves the improvement and expansion of the Al Ghabawi municipal solid waste landfill, and the collection and energy recovery of the biogas from the landfill to generate up to 5 MW of electricity and receive carbon credits. The first phase of the project has been funded by the World Bank, and the EBRD is financing the following phases.

GAM has entrusted Idom with the role of Owner's Engineer (Design-Build Engineer) to review and monitor the design works, execution and preparation of the site, capping and biogas collection and energy recovery system of the landfill. The initial scope of works was expanded to include the detailed design of a new landfill cell (Number 4).

Idom was awarded this project because of the firm's extensive experience in landfill gas to energy projects and waste man-

agement infrastructure. This is the latest in a long series of projects and studies in which Idom has participated; the objective of which has been improving the quality of life and liveability in the Middle East. ■

Photo: Amman, the capital of Jordan.
Upper photo: Angel Luengos from Idom.

QATAR

A NEW SPORTS CITY CLOSE TO THE CAPITAL, DOHA "ASPIRE SPORTS CITY"

Qatar is positioning itself as an international destination for sporting events, with capacity to organize, among others, events such as the 2022 FIFA World Cup.

To the west of the capital city Doha, close to architectural landmarks such as the Al Khalifa Stadium or the Aspire Dome, a nucleus of economic and sporting activity is being developed. Idom is developing phase II of the Master Plan for Aspire, the government corporation responsible for planning and managing this type of infrastructure.

The area being developed covers 190 hectares which will be allocated to a major sports and culture park surrounded by a shopping boulevard and residential units, hotels and offices. The park aims to be a new metropolitan oasis where users can lead the dynamic, urban, sporting lifestyle desired by Doha.

THE 190 HECTARES WILL BE A METROPOLITAN OASIS DESIGNED USING SUSTAINABLE CRITERIA.



In the first phase, Idom has defined a mix of land uses to achieve this objective, a balance of remunerative uses and sport-culture uses. In the last phase of the project, the guidelines will be developed for architecture, landscaping, mobility and infrastructure according to the Global Sustainability Assessment System (GSAS) of Qatar, on which the urban planning and building projects will be based. ■

Images: Aerial view of the project and views from different perspectives.

FACILITATING INFORMATION FLOWS AND LOGISTICS

The Emirate of Abu Dhabi has undertaken an ambitious development of its ports sector in recent years. Its landmark project has been the creation of Khalifa Port, constructed on a reclaimed island with an offshore area over 2.7 square kilometres. Owned by Abu Dhabi Ports, Khalifa Port commenced operations in September 2012. It hosts the first semi-automated container terminal, and has a total capacity of 2.5 million TEU for containers and 12 million tons of general cargo per annum.

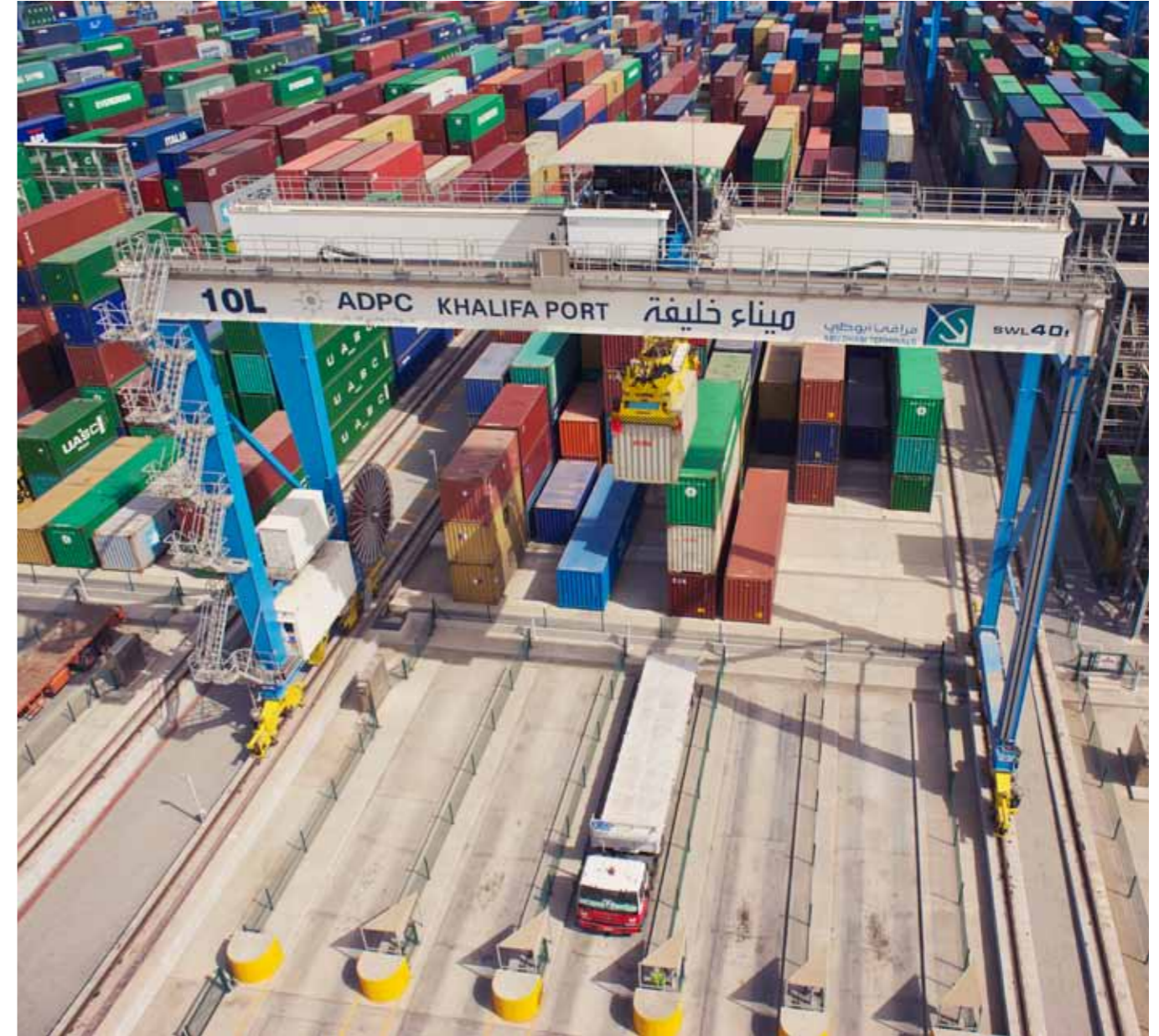
KHALIFA PORT

Today, maritime industry is a major driver of international trade, and Ports play a key role in supply chain efficiency and reliability. Their operational effectiveness has a direct impact on competitiveness of trade and industry. Being competitive at importing and exporting around the world is of crucial importance in Abu Dhabi, given the Emirate's strategy of creating national industrial champions in sectors that can develop a sustainable competitive advantage, as part of the Abu Dhabi Government's economy diversification plan.

In order to support trade development and logistics performance, Abu Dhabi Ports is developing the Maqta Gateway project.

Maqta Gateway is a visionary, mobile-enabled and community-based IT system, which will act as a Single Window to automate procedures and facilitate information flows between all the port stakeholders and parties: terminal operators, Abu Dhabi Customs, Harbour Master, shipping lines, freight forwarders, Abu Dhabi Food Control Authority, rail and air cargo Operators, etc. Idom is working in a joint venture with PortIC (the operator of the Port Community System of Barcelona) in the design and Maqta Gateway and in the supervision of its implementation.

Idom is also assisting Abu Dhabi Ports in the definition of the service development roadmap, organisation structure and strategy of Maqta Gateway. ■



MAQTA GATEWAY" IS A VISIONARY PORT COMMUNITY SYSTEM WHICH WILL ACILITATE INFORMATION FLOWS BETWEEN ALL THE PORT STAKEHOLDERS AND PARTIES

Photo: Ander Ordoñez & Marc Villalbí from Idom with members of the Abu Dhabi Ports Company, CERT & PORTIC.

ABU DHABI

New aluminum extrusion plant with a production capacity of 30,000 tpa of billets / 50,000 tpa of aluminum extrusion and products for BUTEC. Detailed civil engineering, electrical and piping works.

Geographic Information System for the Department of Transport of Abu Dhabi. Consulting services.

SAUDI ARABIA

Metro for Arriyadh Development Authority (ADA). Infrastructure design.

Transit System in Jeddah for Jeddah Municipality. Station design and Master Plan. Competition.

Audit of ITS systems in ERAOA for Arriyadh Development Authority (ADA). Consulting services.

PP12 combined cycle power plant (2,000 MW) of the Saudi Electricity Company for BEMCO-GS. Basic and detailed engineering services.

Bridge and tunnel at the intersection of Prince Turki highway and Oroubah road in Riyadh for the Arriyadh Development Authority (ADA). Preliminary study.

Conversion from a simple cycle to a combined cycle power plant PP10 (3,700 MW) of the Saudi Electricity Company for Bemco. Basic and detailed engineering services.

Rolling mill for the integral aluminum project developed by Maaden and Alcoa for Samsung Engineering. Detailed civil engineering services.

Conversion of the HAIL-2 open cycle configuration of the Saudi Electricity Company power plant with 4 boilers and a steam turbine for AL-TOUKHI. Basic and detailed engineering services.

IRAQ

Al Khayrat simple cycle (1,250 MW) power plant for Calik Enerji. Basic and detailed engineering services.

JORDAN

Exploitation of biogas energy and other works in the Al Ghabawi landfill for the Greater Amman Municipality, financed by the World Bank and the EBRD. Owner's Engineer (Design-Build Engineer).

OMAN

Oman National Railway Network, Section I of the border between UAE and the Port of Sohar, 200 km in length for Salini Impregilo S.P.A. Tender process project.

New mill capable of producing 2 million tons of by-product located in the Port of Sohar steel complex for Jindal Shaded Iron & Steel. Engineering services.

QATAR

Master Plan of the Doha Sports City for the Aspire Zone Foundation. Master Plan, architectural, landscaping, mobility and infrastructure guidelines.



“The Riyadh Metro is a mega project that will free up traffic in a city where eight million trips are made daily, of which only 2% are made by public transport.”

Maya Al-Hajj

Ph.D. Agricultural Engineer
Business Development Manager for the Middle East

Africa

Some projects

| **ALGERIA** ALGIERS METRO | OUARGLA TRAM | ITS
ROAD SYSTEMS | RADIO AND TELEVISION NETWORK
| STEEL COMPLEX | BOUFARIK SIMPLE CYCLE POWER
PLANT | **SENEGAL** UNIVERSITIES OF SENEGAL | **EGYPT**
CONSERVATION OF THE TEMPLES AND TOMBS OF
ANCIENT EGYPT IN LUXOR |

02

ALGERIA

A FIRM COMMITMENT TO MODERNIZATION

Algeria is undergoing an extensive modernization process, being as it is, the third largest economy in terms of GDP per capita in Africa. Idom is collaborating in this process, working on over 10 projects in Algeria, developing rail, road, telecommunications and energy production infrastructure.

**“Passenger transport in
Algeria is undergoing a
profound transformation
towards collective systems
which are efficient and
environmentally sustainable.”**

Eva Martínez Simón
Civil Engineer
Project Manager of the Algiers Metro project





ALGIERS METRO

IMPROVING MOBILITY IN THE CAPITAL OF ALGERIA

Algeria is the largest country in Africa in terms of area, and as such wants to be one of the main driving forces in promoting the continent. Therefore, the country has made a commitment to implementing the necessary transport infrastructure which is characteristic of a developed economy. While Algeria needs to improve communication between all areas of the country, it also needs to enhance the transport infrastructure of the capital, Algiers; infrastructure that is now obsolete given the important growth occurring in this urban nucleus. To promote this great social and economic development, the public company Métro d'Alger is undertaking an ambitious extension project for its metro network, scheduled for completion in 2025.

THE EXTENSION PLAN WILL
EXTEND LINE 1 (9.5 KM AND
10 STATIONS), CURRENTLY
IN OPERATION, TO A 55 KM
NETWORK WITH OVER 55
STATIONS.

The project includes an important Transport Interchange facility connecting with traffic entering the city from the south and enabling connection to the suburban train line of the SNTF (Société Nationale des Transports Ferroviaires) at the Gare de Ain Naadja station.

THE PROJECT DEVELOPED BY IDOM COVERS 6.2 KM AND WILL INVOLVE THE CREATION OF 6 NEW STATIONS.



Idom has collaborated in the study of this great extension of the metro network, designing the 6.2 km extension and the 6 stations that will connect the neighbourhoods of Ain Naadja and Baraki.

Some 120,000 passengers/day will be served by this extension. On the one hand, it will help decongest the road network of the Algerian capital, while on the other, it will further integrate these suburbs into the urban nucleus, thereby improving the quality of life of the residents.

SOME 120,000 PASSENGERS A DAY WILL USE THE INFRASTRUCTURE, IMPROVING MOBILITY IN ALGERIA, WHILE EASING CONGESTION ON THE ROAD NETWORK AND INTEGRATING THE SUBURBS.

The efficient use of natural resources has been achieved thanks to the open design of the stations that takes advantage of natural light, reducing energy consumption. The Le Jardin station is a perfect example of this: a window to the urban park that is considered the nerve centre of the Baraki neighbourhood. In all the stations, accessibility elements have been designed that will facilitate the mobility of persons with limited mobility. ■

On the opposite page: Khaled Bouzghaia, Jokiñe Uriarte & Amar Daoudi. In the upper photo: The platform of Metro Line 1 in Algiers.



THE TRAMWAY OF OUARGLA

AN OASIS IN THE MIDDLE OF THE SAHARA

The capital of the eastern region of the Algerian Sahara, Ouargla, is a city of 130,000 inhabitants that is located next to an oasis with palm trees, characteristic of the desert landscape. The new tramway will link the old city (El Ksar) with the new urban development of Hai Nasr. Entreprise Métro d'Alger, the public company that is developing this project has a high regard for the work carried out by Idom on the tramway of Constantine and the metro of Algiers.

The success of the work carried out on these projects has been a deciding factor for the Ouargla tram Joint Venture (composed of the companies Rover Alcisa–Assignia–Elector) to once again put their trust in Idom to execute an important part of the tramline. Idom is working on the section around Kasar,

A MILLION PALM TREES GIVE LIFE TO THE CITY.

the historic town centre, characterized by its adobe buildings and labyrinthine streets. This 5 km section has 11 stops, and among the challenges of the project is that of resolving the problems associated with the presence of sand on the tramway infrastructure and tracks.

Along with other specialized disciplines in the field of infrastructures – civil works, trackbed, tracks and electrification – Idom is also responsible for the urban development project. This will result in an important transformation for the city, infrastructure and common spaces will be modernized without compromising the city's character and identity. ■

Photo: Jorge Bernabeu, Rebeca Sánchez & Sonia Bortal.

“Dealing with the sand has been one of the main challenges of the project.”

Jorge Bernabeu

Project Manager of the Ouargla Tramway





INTELLIGENT SYSTEMS FOR ROADS

The East-West Highway is one of the main roads of Algeria. Running 1,216 km from the Moroccan border to the Tunisian border, the highway crosses different wilayas (provinces) in the northern coastal stretch of the country, connecting the major cities. In the future, the highway will form part of the Trans-Maghreb highway connecting five countries in North Africa.

This project is the first of its kind in Algeria, as the East-West Highway will be equipped with a state-of-the-art Intelligent Transport

System (ITS) to improve the mobility of Algerians: toll systems, variable message signs, video surveillance with automatic detection of incidents, weather stations and traffic data collection.

As the leader of the consortium formed with the Lebanese company Dar Al-Handasah Consultants (Shair&Partners), Idom is working on the eastern side of the highway, the section between the cities of E-Taref and Bordj Bou Arréridj. Stretching 440 km, at present, the civil works are being undertaken in the section between the Dreen in the Wilaya of Annaba and El Achir in the Wilaya of BBA. Most of the traffic diversions are already in place and work on the service building is underway. In terms of the telecommunications

equipment, interoperable solutions have been developed between the three sections and implementation will begin shortly.

Idom is working with AGA (L'Algérienne de Gestion des Autoroutes), carrying out the control supervision and monitoring of the installations and the equipping works of the operations facility. ■

ITS SYSTEMS THAT WILL IMPROVE THE MOBILITY AND SAFETY OF USERS ON 440 KM OF ROADS.

NEW NETWORK TO BROADCAST RADIO AND TELEVISION IN ALGERIA

TDA (Télédiffusion d'Algérie), a public company responsible for the dissemination and distribution of TV and radio (AM/FM) in Algeria is modernizing its transport network and creating a technology platform that will enable the delivery of advanced services.

The main strategic line of action is the total implementation of Terrestrial Digital Television in 2015, and the provision of value added services on the new transport infrastructure. Meeting this challenge requires not only

upgrading and modernizing the technology of the current infrastructure, but also the operations processes, management procedures, and the organizational structure.

Idom is working with TDA in the process of upgrading the technology in technical, regulatory, operations, and organizational aspects, to define the new scenario. We have been contracted to define the digital transport network based on radio links, as well as the network and operations management platform of the system, for more than 150 locations spread across the north of the country. ■

Photo: Iulen Iturizaga & Nuria Gomez in front of the TDT relay at the monument to the martyrs (Maqam Echahid) of Algiers.



**PRESENTLY ONE OF
THE LARGEST STEEL
MILL PROJECTS IN THE
WORLD**

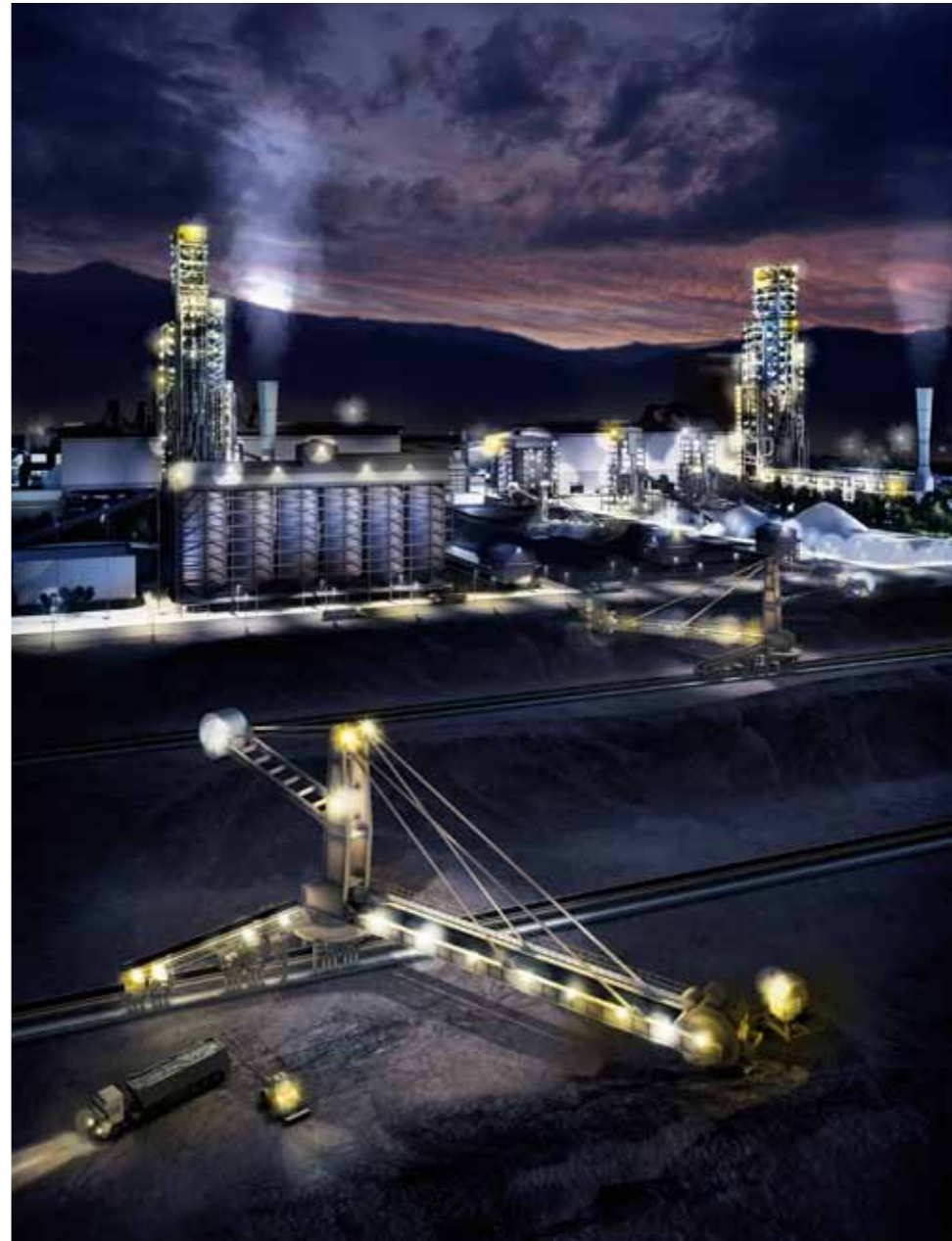
THE PLANT WILL TURN THE AREA INTO ONE OF
THE MOST IMPORTANT INDUSTRIAL CENTRES
IN THE COUNTRY, CONTRIBUTING TO THE
CREATION OF A SOLID INDUSTRIAL BASE

Photo: One of the steelworks in which Idom
has participated in the design.

BELLARA STEEL COMPLEX



IN THE FIRST PHASE, THE COMPLEX WILL PRODUCE 2 MILLION TONS ANNUALLY OF STEEL BARS AND COILS FOR CONSTRUCTION.



BELLARA STEEL COMPLEX

In late 2013, Algeria and Qatar signed a collaboration agreement. The first and perhaps most important milestone will be the construction of the Bellara steel complex in the Jijel region of Algeria. The management and ownership of the complex is in the hands of Algerian Qatari Steel. The complex is spread over an area of 216 hectares and in the first phase (from 2017) will count on a Direct Reduction Plant, two Steel Melting Shops and three Rolling mills, together with all the necessary auxiliary plants. Production capacity is expected to gradually increase, supplemented with flat product, reaching an output of five million tonnes of steel by 2019.

In June 2014, Idom was contracted for the Pre-Construction phase concluding the tender process with the procurement and awarding all packages related to the investment lots, valued in the region of USD 2,000 million. The team has been composed of professionals from the different areas of Idom: Industry and Energy, Consulting and Environment.

Having successfully completed the award phase, Idom has signed a new Engineering Service contract with Algerian Qatari Steel taking on the role of Designer, Project and Construction Management. In parallel, Idom has been assisting AQS in the development of an integral logistics model for the new complex: design of the layout, equipment and operations in the port of Djen-Djen, a rail-transport program between the site and the port (type of freight wagons, configurations, and frequency), sizing and flow design of all the storage areas, and maintenance plan. ■

THE DEPENDENCY OF ALGERIA ON IMPORTS (SOME \$10,000 MILLION PER YEAR) WILL BE REDUCED



THE PLANT WILL GENERATE APPROXIMATELY 4,000 GWh ANNUALLY, SUPPLYING OVER ONE MILLION HOMES.

BOUFARIK SIMPLE CYCLE POWER PLANT

A PLAN TO ENHANCE POWER SUPPLY IN ALGERIA

To meet the growing energy needs of the country, the Algerian Government has launched a plan to increase the power grid, which includes the construction of 9 power plants that use natural gas as the main fuel. In total, the network capacity will be increased by approximately 8,000 MW.

In the region of Blida, near the town of Boufarik, the Turkish company GAMA is building a plant which will generate around 4,000 GWh of electricity annually and supply more than a million homes.

The plant is equipped with three GE 9FA simple cycle gas turbines, using natural gas as the main fuel and fuel oil as secondary fuel, with a total capacity of 750 MW. In September 2015, the first gas turbine, No. 3, was successfully commissioned.

Once again, GAMA has called upon Idom to carry out the detailed engineering of the cycle. ■

Photo: Miguel Angel Borrallo at the Boufarik plant.

“Senegal, a reference country in African francophone countries in terms third level university education, has undertaken an ambitious reform plan to rise to the level to international standards.”

Federico Pardos Auber
Project Manager of the Universities of Senegal



EDUCATION IS THE BUILDING BLOCK FOR THE FUTURE

In the words of the rectors of the universities, the two projects being undertaken by Idom constitute a reference model for the country for two main reasons: their design has addressed criteria of sustainable architecture and the development of the work has involved the participation of the universities in their design: two aspects that have never been seen in other projects in Senegal.

SENEGAL

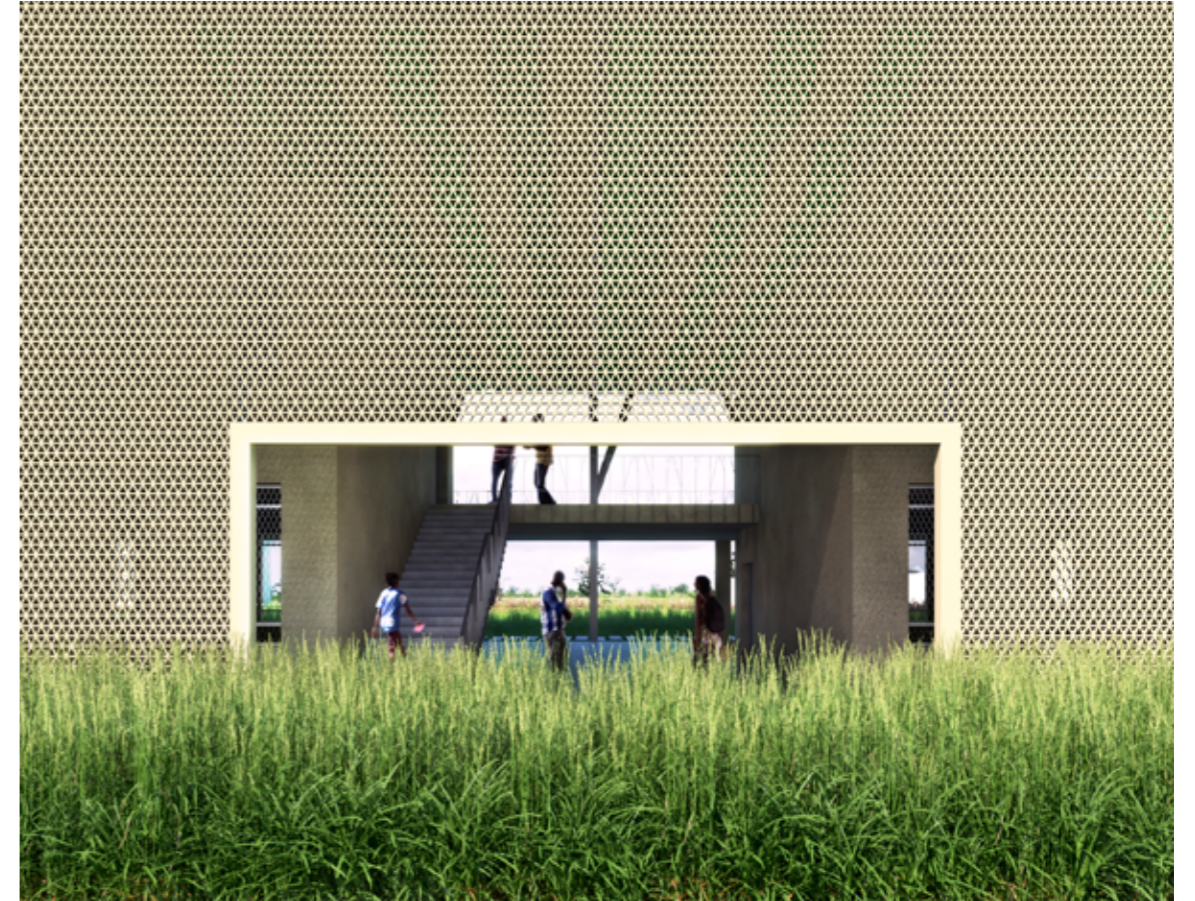
UNIVERSITIES OF SENEGAL

A BOOST TO EDUCATION

The Government of Senegal, with the financial assistance of the World Bank, launched an ambitious plan to expand and improve five universities. Idom is working on the expansion of two of the most important: Alioune Diop, in the town of Bambey, located in the interior of the country, 120 km from Dakar, and Gaston Berger in Saint Louis, the former colonial capital north of Senegal.

THE CAMPUS IMPROVEMENT PLAN FOR UNIVERSITIES HAS GENERATED GREAT HOPE IN THE UNIVERSITY COMMUNITY.

Starting with a bioclimatic and technical analysis of the existing buildings on both campuses, Idom designed new buildings for classrooms, teachers, and in the case of Gaston Berger, complemented with sport facilities (Olympic swimming pool and sports centre). Idom has assisted the client in contracting the construction and we will control the development of the works that have recently commenced, and are expected to be completed in 18 months. ■



EGYPT

CONSERVATION OF THE TEMPLES AND TOMBS OF ANCIENT EGYPT IN LUXOR

PHOTO: ARTISTIC LIGHTING IN THE
TOMB OF SETI I IN THE VALLEY OF
THE KINGS.



HISTORICAL HERITAGE

Photo: Mortuary temple of Ramses II
"the Great" (Ramesseum).

"For us it has been an
honour to collaborate in the
conservation of the World
Heritage archaeological
remains of ancient Egypt."

Sergio Llamosas
Technical Architect
Responsible for the Control Centres



PRESERVING WORLD HERITAGE SITES

The Government of Egypt is promoting the influx of international tourists into the country, by improving the experience of visitors to archaeological sites. With this in mind, the Ministry of Culture has an ambitious program for the improvement and conservation of several sites.

Idom has developed the project and is providing support during the execution of im-

provements to the sites of Giza, West Bank (Valley of the Kings, Hatshepsut, Ramesseum, Medinet Habou and Carter House) and the Temple of Luxor.

The scope of work includes lighting and security projects for the monuments and archaeological sites. After defining the project and the procurement of associated equipment, work commenced last year.

The Courtyard of Ramses II in the Temple of Luxor

NIGHT VISITS OFFER A NEW PERSPECTIVE OF VIEWING THIS PHARAONIC INHERITANCE.



The lighting works of the monuments of the Temple of Luxor (East Bank) and Ramesseum (West Bank) have been completed, as well as the artistic illumination of the tombs of Ramses IV (KV2) and Seti I (KV17), Ramses V -VI (KV9), and Ramses III (KV1), Valley of the Kings (West Bank), and have been inaugurated by the Prime Minister and the Minister of Antiquities of Egypt in official events during the months of March (Luxor Temple), July (Ramesseum Temple) and August (Tombs KV1, KV2, KV9, KV17). During these events, the Minister of Antiquities announced the commencement of night visits open to the public for the first time in history, as a result of this project.

At present, the lighting works for the monuments of the temples of Medinet Habou and Hatshepsut (Deir el Bahari) are being implemented, as well as the illumination of the landscape of the Valley of the Kings, and the artistic illumination of the tomb of Ramses IX (KV6).

GIZA, THE VALLEY OF THE KINGS OR THE TEMPLE OF LUXOR, ARE SOME OF THE SITES THAT ARE BEING IMPROVED.

In terms of security, the installation and configuration of the system at the Temple of Luxor has been completed, as well as the installation of the equipment the Control Centre of Hatshepsut. Currently, the security systems in the Valley of Kings and the Giza plateau are being installed. ■

On the opposite page, upper photo: Salah Bassem (control centres), Noemi Barbero (monument lighting), Dr. Samir Hassan, Borja Carrascal, Assisi Hernando & Ahmed Abd elfatah (security).

Lower photo: Perimeter security at the Temple of Luxor.

Upper photo: Mohamed Eldeeb (Security)

ANGOLA

Urban Regeneration of 11 neighbourhoods for Cedrus, Lda / Technical Unit of the Gestão de Saneamento of Luanda. Regeneration schemes and urban planning, urban planning and infrastructure services.

ALGERIA

Sports complex, Direction des Equipements Publics, Wilaya of Algiers. Facility design and Masterplan. Competition.

ITS equipment installation in the east-west highway (Section: Bordj Bou Arreridj - El Tarf) for Algeria Highway Management (AGA). Project review, control and monitoring of implementation.

New containerboard paper mill for the public company GIPEC. Study of technical and economic feasibility of a plant with an annual capacity of 225,000 tons.

Simple cycle power plant in Boufarik for GAMA. Basic and detailed engineering for the 750 MW plant.

Belara steel complex for Algerian Qatari Steel (AQS). Engineering services and project management.

Design of new telecommunications services and new transmission network for the implementation of Digital Terrestrial Television (DTT) for Télédiffusion d'Algerie (TDA). Consulting services and drafting of the project.

EGYPT

Lighting, security, conservation and visitor management systems to improve archaeological sites for DEFEX. Management, engineering, integration services and assistance during implementation.

Interoperable contactless fare system for Metro Cairo. Supervision of commissioning of the system on lines 1 and 2, and interoperability with the new line 3.

GHANA

Accra seawater desalination plant for Abeinsa EPC. Basic and detailed engineering.

MOROCCO

Support in the design of the industrial plan, location of assembly plants and logistics operations in Tangiers for Alstom Wind Spain. Logistics and Operations Consulting Services.

SENEGAL

Expansion of two universities for the Ministre de l'Urbanisme de l'Habitat of Senegal. Integrated project and construction management, architectural and engineering design, works supervision, urban integration design.

SOUTH AFRICA

Noblesfontein wind farm with 41 wind turbines (1.8 MW) for Gestamp Wind. Technical assistance for the execution of field and laboratory work and supervision of the geotechnical study.

TUNISIA, SFAX, SOUSSE & MONASTIR

Process, technological innovation improvement and enhancing the export capacity of 100 Tunisian companies for the Ministry of Industry and Technology. Consulting services.

TUNISIA

Drafting of the Master Plan for Water and preliminary design for the Sousse region. The distribution network extends 8,800 km and serves more than 400,000 inhabitants. Analysis, diagnosis and digitization of the network and the development of the hydraulic model.

“Boufarik will not just respond to the growing demand for electricity by increasing the energy production potential of Algeria, but the plant will also contribute to reinforcing the national industrial network and the creation of employment.”

Vanesa Collado

Industrial Engineer

Project manager of the Boufarik Power Plant project (Algeria)



Mediterranean Europe

Some projects

| **FRANCE** INTERNATIONAL ITER PROJECT |
SPECTROMETRY SYSTEM | **SPAIN** PARABOLIC SOLAR
COLLECTORS | CIVIC CENTRE | BIOCRUCES INSTITUTE |
NEW RED ELECTRICA CORPORATE SCHOOL | **SLOVENIA**
NUCLEAR SAFETY | **TURKEY** ISTANBUL METRO | **SERBIA**
HAZARDOUS WASTE FACILITY |

03

FRANCE

EUROPE, FRANCE
ITER: THE BIGGEST
INTERNATIONAL COLLABORATION
IN THE FIELD OF ENERGY

THE ITER PROJECT WILL EXPLORE THE VIABILITY OF
FUSION ENERGY CONTRIBUTING TO HUMANITY'S FUTURE
ENERGY MIX AND BATTLE AGAINST CLIMATE CHANGE AND
GREENHOUSE GAS EMISSIONS

“Being part of the ITER
project means being in the
technologic vanguard of
science and engineering in
the field of energy.”

Faustino Guillén
Project Manager of ITER

Photo: Carles Bou, Marian Sánchez Cabo, Luis Aspilcueta,
Jon Sáenz, Antonio Martínez, Ana Castañeda, Faustino
Guillén & Ana Victoria González.



ANOTHER MILESTONE FOR THE ITER PROJECT

ITER (International Thermonuclear Experimental Reactor) which also means “the way” in Latin, is the biggest international scientific collaboration in the field of energy that aims to demonstrate the viability of fusion power.

The participation of Idom in the ITER project has been wide-ranging, from support to the owner engineering, including conventional engineering and project management for the construction of buildings, to the detailed design of high-tech systems developed with specialized fluid dynamics studies for safety and other special projects.

IDOM'S PARTICIPATION HAS
BEEN EXTENSIVE, INCLUDING
SUPPORT TO THE OWNER
ENGINEERING AND THE DESIGN
OF HIGH-TECHNOLOGY SYSTEMS
DEVELOPED WITH FLUID
DYNAMICS STUDIES

The Tokamak reactor is a “machine” that incorporates many high-technology systems, more than one million components, and it is estimated that at least ten million single elements- if all nuts and bolts are counted –are being manufactured around the world and will be assembled in the specially designed Assembly Hall building adjacent to where the Tokamak will finally be located. ■

Photo: The future “Assembly Hall”, 60 metre high, is where the components of the Tokamak reactor will be assembled.



THE TOKAMAK WILL BE THE LARGEST EXPERIMENTAL REACTOR IN THE WORLD. THE FUNCTION OF THE MACHINE IS TO PRODUCE FUSION ENERGY

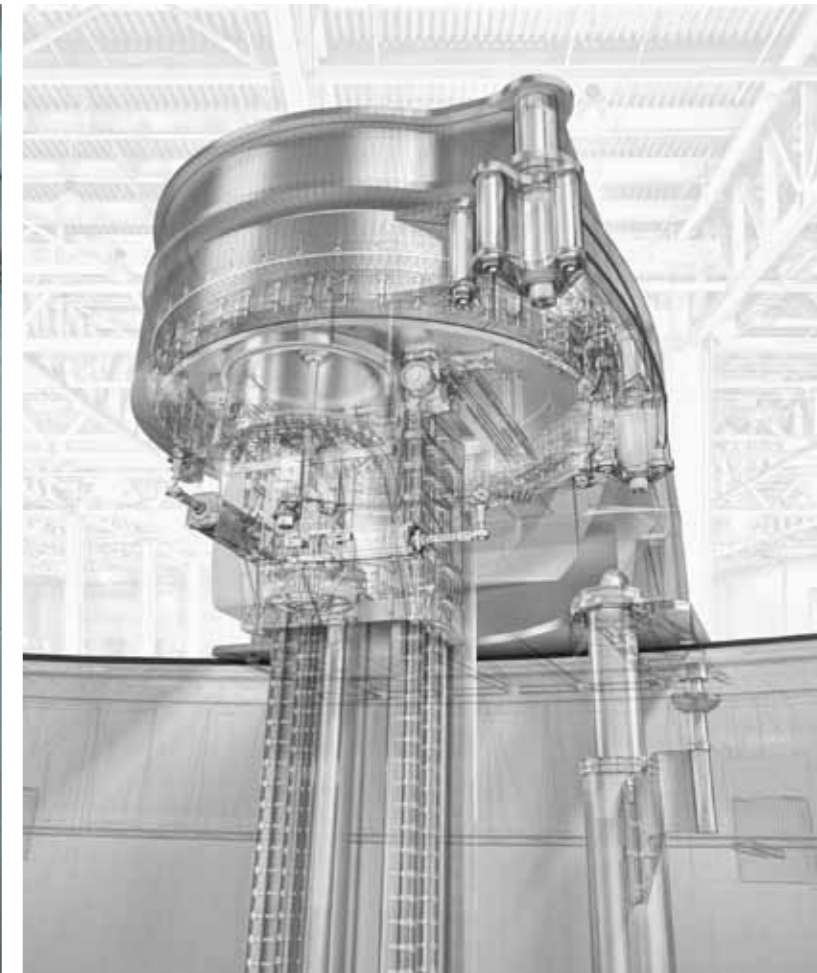
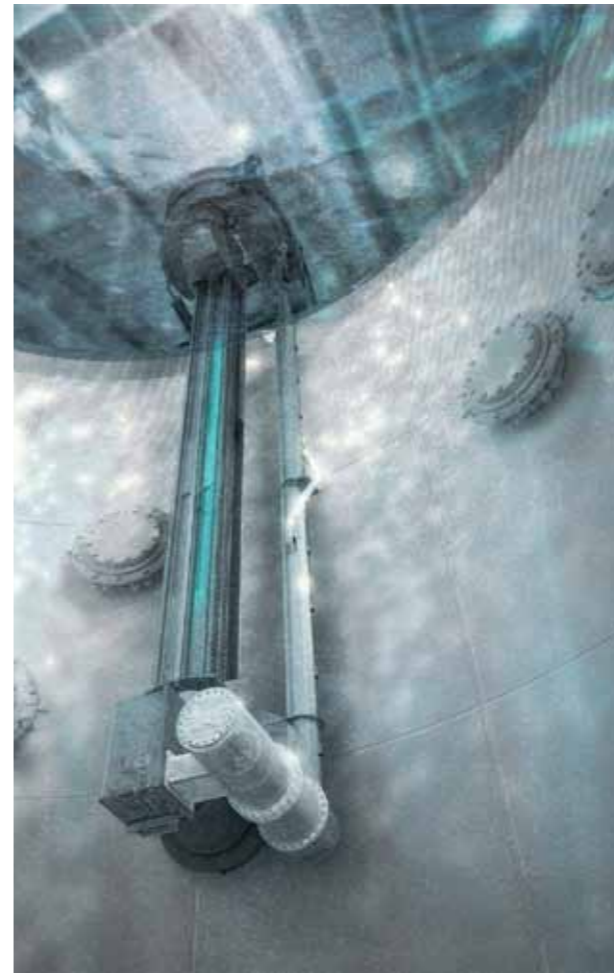
23,000
TONS WEIGHING

ITER PLASMA
TEMPERATURE
WILL BE **150** MILLION
DEGREES

500 MW
OF ENERGY PRODUCED

Within the Tokamak, the energy produced from the fusion of atoms is absorbed as heat by the walls of the vacuum vessel. In the same way as a conventional power plant, in the future, the fusion energy facility will use this heat to produce steam and then electricity through turbines and generators. ■

ITER IS DESIGNED FOR THE PRODUCTION OF A TEN-FOLD, Q=10, RETURN ON ENERGY (OBTAINED POWER TO BE 10 TIMES THE INPUT POWER).



TEST BENCHES FOR THE SPECTROMETRIC ANALYSIS OF GAMMA-RAY AND X-RAY RADIOGRAPHY

THE JULES HOROWITZ NUCLEAR REACTOR FOR MATERIALS RESEARCH

The future experimental Jules Horowitz nuclear reactor (JHR), currently under construction in Cadarache, is an international project led by the Commissariat à l'Énergie Atomique (CEA), which aims to become the largest infrastructure in Europe for research in the field of fission.

The main objective of this facility is to respond to technological and scientific challenge of improving the safety and performance of existing reactors, as well as the development of the new generation of reactors. To do this, samples of nuclear fuel and structural materials under extreme conditions and in an aggressive environment such as a nuclear plant will be tested in the facility.

Idom has been contracted by VTT Technical Research Centre of Finland Ltd. for the design and manufacturing of two underwater test bench units, compounded by safety classified components, that will be submerged in the reactor and storage of irradiated material pools respectively. Its main function is to manipulate and position the samples, previously exposed to radiation on the core, to perform tomography and radiography scans of Gamma-rays and X-rays on them.

The biggest challenge of the project is to solve in the most simple, robust and efficient way, the inherent complexity of a multifunctional manipulator, taking into account the added complexity of adverse environmental conditions and severe dimensional restrictions.

In addition, Idom is also responsible for the design, manufacture and installation of the Gamma-ray and X-rays collimation systems needed for testing. Both collimation systems are integrated for each test bench, confined in a sheath within the walls of the pool and exposed to the test sample.

The role of the Gamma-ray collimator is to control and direct with great precision, through the several collimation and filtering stages, the gamma rays emitted by the submerged sample toward the ray detector located in the room next to the pool. Meanwhile, the X-ray collimator directs the beam (generated in the accelerator) from the adjacent room towards the sample and imaging measurement system located in the pool. ■



Photo: Variable geometry test facility for solar parabolic trough systems of the Renewable Energy Technological Centre for (CTAER) and funded by the Ministry of Economy Innovation and Science of the Government of Andalusia.

TEST PLATFORM
FOR PARABOLIC
COLLECTORS

THE ENERGY OF THE SUN



In March 2015, the CTAER Foundation (Advanced Technology Centre for Renewable Energy) began activity at its new test facilities for Parabolic Trough Collectors in Almeria; the largest facility of its type in the world for testing and characterization. In coordination with CTAER, Idom has developed the solution, taking responsibility for the basic design, detailed design, manufacturing, installation and commissioning in the desert of Tabernas.

The services of this innovative R&D facility are already available to the solar thermal industry helping them achieve improved performance and reduced costs for this type of technology. The infrastructure will serve to develop and validate the standards, as well as the study and development of the design of both existing Trough Collectors and new generation collectors.

The concept of this variable geometry test platform devised by CTAER has been developed by Idom and allows the movement of the sun to be followed, thereby achieving greater capacity for testing, evaluation and thermal characterization, optical structural and fluid-dynamics of the collectors.

The test platform has a system of movements in azimuth, elevation and tilt capability of up to 37°, turning ± 110 degrees. The platform can accommodate collectors of up to 24 m in length with an aperture width of 7.5 m, testing of water and thermal fluid collectors accurately controlling the temperature and flow rate at the input of the receiver tube. Using sophisticated instrumentation and acquisition systems the performance of different collector designs can be evaluated.

The versatility offered by this facility enables a comprehensive characterization of any type of collector to be carried out. This centre features R&D+i capacities which are far superior to any other thermal technology test facility in the world. ■

THIS PLATFORM ALLOWS THE SUN'S PATH TO BE FOLLOWED, OPTIMIZING THE DEVELOPMENT OF TECHNOLOGIES FOR THE BETTER USE OF SOLAR ENERGY.



CUTTING-EDGE SERVICES FOR CITIZEN

THE CIVIC CENTRE OF SALBURUA

The newly created neighbourhood of Salburúa began to receive inhabitants five years ago and is now home to almost 16,000 people. In 2010, the Town Hall held an ideas competition to build the Civic Centre. Idom as the firm that had carried out the construction project for the Civic Centre of the Ibaiondo neighbourhood (2007-2009), to the great satisfaction of the Town Hall, was the winner of this new competition.

One of the main features of the Salburua Civic Centre project has been the creation of spaces where the boundary between the interior and exterior of the building has not been very pronounced. The idea was to create of "meeting point". The result is a compact building with plenty of light, permeated by numerous courtyards which help us to establish a visual relationships between the various activities carried out at the centre.

The Civic Centre is a service building that combines sports, cultural and administrative uses to serve the neighbourhood of Salburua in Vitoria.

In its entirety, the program is divided into four floors. The basement accommodates the sports courts, gymnasiums, fencing hall, dance studio and climbing wall, as well as spaces for the building installations. On the ground floor there are spaces for citizen attention, meeting rooms, cafeteria, auditorium, social club, and the stands of the sports area. On the first floor are the services such as the library, study room, workshops and the offices of social services. Finally, on the second floor they are the swimming pools and locker rooms. ■

THE DESIGN COMBINES
A LIBRARY, SPORTS
HALL, SWIMMING POOL,
AUDITORIUM, CAFETERIA,
WORKSHOPS, CLIMBING
WALL, AND OTHER USES.





BIOCRUCES INSTITUTE

NEW HEALTH RESEARCH INSTITUTE

BioCruces is the Health Research Institute of Cruces Hospital (Barakaldo, Spain), providing new tools, practices and knowledge to improve patient care.

In late 2014, Idom was the winner of the public competition to design a new headquarters of the Biocruces Institute, which will be built within the complex of the University Hospital of Cruces.

The future BioCruces facility will accommodate and expand research platforms and

the animal-lab available to the Institute. The program involves a new eight-storey building of eight heights, two of which are underground.

In addition to accommodating the exigent functional requirements of institute which will be a reference in the sector, the design aims to provide a comfortable working space for the user and simplify the work of modifying the laboratories, to adapt to the constant emergence of new technologies and experimental techniques.

From a formal perspective, the proposal submitted in the competition offers a sober and aseptic image, which seeks to establish a dialogue with the adjacent laboratory building, also designed by Idom. ■



NEW CORPORATE TRAINING SCHOOL FOR RED ELÉCTRICA

Red Eléctrica de España (REE), commissioned Idom to carry out the integral rehabilitation of two buildings of the technology park of Tres Cantos (Madrid). The project includes the rehabilitation of the buildings to adapt to the new training and technological needs of the company, by modernizing all the buildings with an envelope that meets the energy efficiency requirements.

The distribution of the new school aims to increase the quality of the work spaces and classrooms, as well as achieving efficient organization, maximizing the available space, creating diaphanous and recognizable access areas and clarifying and reducing the floor area for common areas. An ample laboratory and test area has been included to boost the R&D+i of REE.

The buildings are rehabilitated in their entirety in terms of energy, acting as insulation for the building, floors, façade, radiation protection, and incorporating a green roof. They have been designed to be nearly zero

energy buildings (NZEB) and, in the future, have the capacity to meet all consumption requirements with a photovoltaic system and with inertial systems with a certain capacity to disconnect the time of demand and consumption.

The environmental impact of the rehabilitation is minimal, in line with the standards of Red Eléctrica and the needs of today's society. ■

A strategic international project, a pioneer in terms of modality, in order to ensure safety

IMPROVING NUCLEAR SAFETY SYSTEMS

Although all nuclear power plants are designed for a limited period of operation (40 years usually), with the passage of time, the conclusion has been reached that most of them can prolong their life without compromising safety. In deciding whether to extend the lifecycle of a plant, a global systematic assessment of the entire facility is required. In addition, following the Fukushima accident the severe accident management strategy needs to be reassessed.

As a result of these assessments, the authority for nuclear safety in Slovenia has decided to extend the life of the Krško nuclear power plant a further 20 years. This is subject to, among other things, the installation of the Emergency Control Room in a new bunker building. The Emergency Control Room al-

lows the operators to achieve and maintain safe shutdown of the NPP in the event of an evacuation of the Main Control Room.

Under a Turnkey Contract, Idom is performing the engineering for the modification of the original plant design to include the new room, the procurement of major equipment, and site support during the construction and commissioning of emergency control room.

This project forms part of the international strategy of Idom, and due to being the first of its kind in Europe the project creates the possibility of transferring obtained experience to other European and worldwide PWR reactors. ■

Photo: Inés M^ª Amado, Xabier Ruiz Morín & Javier Encabo at the Krško Nuclear Power Plant.

EXTENDING THE METRO OF ISTANBUL

17 KM UNDERGROUND AND 15 NEW STATIONS.

With more than 14 million inhabitants, Istanbul is the most populous city in Europe. The city which attracted more than 11.2 million tourists in 2014 alone, is the cornerstone of the Turkish economy.

To meet the needs of mass transit, the Metro system of the city which was inaugurated 1989, has undergone successive expansions and now has various lines in operation. At present, 3 lines are under construction on the Asian side of Istanbul and 4 on the European side.

One of these lines will cross the Turkish capital underground from south to north, from Vezneciler to Sultangazi, towards the third airport. This 17-kilometer line will have a total of 15 stations and will pass under the famous district of Fatih Mosque.

ISTANBUL, WITH OVER 14 MILLION
INHABITANTS, ATTRACTED 11.2
MILLION TOURISTS IN 2014.



THE METRO OF ISTANBUL

In October 2014, the Istanbul Metropolitan Municipality entrusted our firm with the preliminary and detailed design of the entire metro line between Vezneciler and Sultangazi.

Based on the experience Idom has gained on the many metro projects developed around world, this ambitious project will be carried out in a period of just 15 months.

The scope of work, including 15 stations and a depot, involves among other tasks, the preparation of an alternatives study, the transport and route study, the geotechnical investigation, a feasibility study of the line, the architecture, structural, and electro-mechanical design, and the production of the tender documents. ■

THIS 17-KILOMETER LINE WILL HAVE A TOTAL OF 15 STATIONS AND WILL PASS UNDER THE FAMOUS DISTRICT OF FATIH MOSQUE.

Upper photo: Gregorio Nieves, Jose Alberto Fuldain, Meryem Bulut (IBB), Fahrettin Öner (IBB), Hakan Kolcu (IBB), Banan Khalid A Hassan, Guillermo Di Gregorio & Iñaki Uriarte (ETS) visiting the metro works of Bilbao.

SERBIA

WASTE TREATMENT

For over five years now, Idom has been participating in environmental sustainability projects funded by the European Union in Serbia.

The most recent project is in Subotica, the fifth largest city in the country, located in the north near the Hungarian border, Subotica and its surrounding municipalities are receiving funding to build infrastructure for waste management that meets the standards of the European Union. Specifically, a Waste Treatment Centre is being built, with capacity for 100,000 t/yr, thereby ensuring the integral waste management of municipal waste until 2030.

Idom is part of an international consortium that is responsible for the construction supervision of the treatment centre.

Moreover, since 2010, Idom has been leading the consortium that has been defining what will be the first hazardous waste treatment plant in the country. The consortium has been providing the authorities with technical assistance in the processes of analysing, planning, and the design and management of the plant.

By participating in these projects, Idom is increasing and consolidating its presence and activity in the countries of the Balkan region. ■

IDOM HAS BEEN PARTICIPATING IN ENVIRONMENTAL SUSTAINABILITY PROJECTS IN THE BALKANS FOR OVER 5 YEARS.



Photo: Pedro Fernández, Desirée Pérez & Rafael Sagarduy.

BELGIUM

The Seismic-Initiated events risk mitigation in LEad-cooled Reactor (SILER) Project the European Economic Community. Advanced engineering design and training..

CROATIA

Reconstruction of the freight station of Rijeka and construction of the new container terminal associated with the new loading dock in Rijeka for the Rijeka Port Authority. Feasibility studies, preliminary and detailed design.

Transport network of the country for the Ministry of Transport. Development of the Transport Strategy.

Corridor V (Pan-European corridor) connecting the Adriatic ports. Designs for improvement and track duplication, Rehabilitation and electrification.

SPAIN

Alternative Emergency Management Centre for the Ascó and Vandellós NNPs. Detailed engineering and construction management.

Filtered containment venting. Ascó Vandellós Nuclear Association. Detailed engineering and technical support to the Project Manager.

Container Maintenance Workshop (TMC) in the Centralized Temporary Storage (ATC) for Enresa. Detailed engineering and licensing.

Salburúa Civic Center for the municipality of Vitoria-Gasteiz. Architectural and engineering design, construction management.

Biocruces Institute for Osakidetza. Architectural and engineering design, construction management.

New corporate training school for Red Eléctrica de España Corporación S.A. Architectural and engineering design, procurement and license management, construction management.

Testing facility for parabolic solar collectors for the Advanced Technology Centre for Renewable Energies (CTAER). Design, Construction and Commissioning.

PMO and SAP Services to implement a business management system in a turbine component manufacturer. Consulting services.

Study of the Galician energy system and development of energy guidelines for Galicia in the 2015-2020 timeline for the Enerxético Institute of Galicia. Consulting services.

Second Zaragoza tramline for the city of Zaragoza. Preliminary and detailed design.

Treatment stations for Canal Isabel II. Framework contract for the design and tender specifications.

FRANCE

Test benches and collimation systems for gamma spectrometric analysis and X-ray radiography in the Jules Horowitz reactor for the Technical Research Centre of Finland (VTT). Design, assembly, integration and verification.

MACEDONIA

Railway section Kriva-Palanka- Bulgaria Ministry of Transport and Communications of Macedonia. Feasibility study and construction project.

ROMANIA

Environmental and social due diligence for the public water supply and sanitation sector. European Bank for Reconstruction and Development.

SERBIA

Regional Waste Treatment Centre of Subotica. Funded by the European Union. Construction supervision.

Hazardous waste Plant. Funded by the European Union. Technical assistance in the process of analysis, planning, design and management of the infrastructure.

SLOVENIA

Krsko Nuclear Power Plant (NPP) Emergency Control Room (ECR) in a new Bunker Building for Nuklearna Elektranara Krsko (NEK). Detailed design & equipment procurement.

TURKEY

Erzin combined cycle power plant (871 MW) with two GE 9FB gas turbines, a 60 MTD Skoda steam turbine and cooling tower fed with seawater for Gama-GE. Basic and detailed engineering Services.

Istanbul Metro line: Vezneciler- Edirnekapi- Eyüp-Gop-Sultangazi, with a total length of 17 km. Preliminary and detailed design.

Innovation, technology transfer, business plans, attraction and marketing of 45 SMEs for the start-up and internationalization of the first Technology Park in southeast Turkey in Elazig. Consulting services.

“There is no technical difficulty to extending the life of nuclear power plants, provided we guarantee the conditions for safe operation.”

Jacobus Cornelius Steenkamp

Nuclear Engineer
Krsko Nuclear Power Plant (Slovenia)



Atlantic Europe

Some projects

| **GERMANY** WIND TURBINE TEST FACILITY | MORE EFFICIENT PORTS | **SPAIN** QUIJOTE TELESCOPE | SAN MAMES STADIUM | MUNICIPAL OFFICE BUILDING | HOUSING DEVELOPMENT | **SWEDEN** HIGH-SPEED LINE | POLAND RAIL SYSTEMS | UNITED KINGDOM JET PROJECT | **IRELAND** DUBLIN AIRPORT | **PORTUGAL** INTELLIGENT TRANSPORT SYSTEMS | **FINLAND** GUGGENHEIM HELSINKI |

04

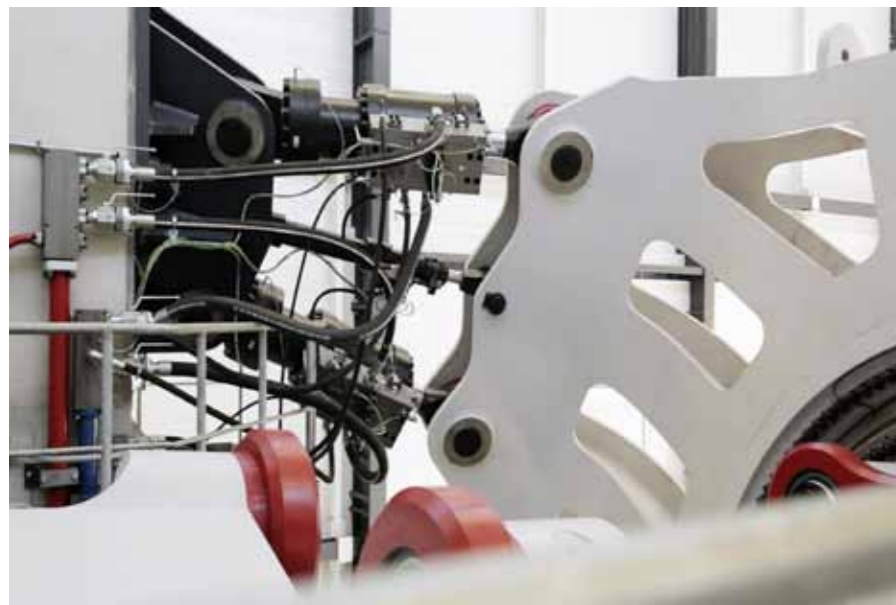
TEST BENCH FACILITY FOR WIND TURBINES

THE PROJECT WAS INAUGURATED
IN OCTOBER 2015 IN THE PRESENCE
OF THE HIGHEST AUTHORITIES
AND REPRESENTATIVES FROM
FRAUNHOFER.

**“The result is a true
High-Tech machine,
one of a kind.”**

Prof. Dr.-Ing. Jan Wenske
Deputy Director IWES Nordwest





TEST BENCH FOR WIND TURBINES

Idom has provided the Fraunhofer Institute IWES with the first complete test stand for multi-megawatt wind turbines, known as the Dynamic Nacelle Laboratory (DyNaLab). Since its inauguration in October 2015, DyNaLab is one of the most technologically advanced testing facilities in the world.

The facility was handed over in September 2015 and the inaugural event held the following month in Bremerhaven was attended by about 300 people including many authorities and international industry representatives. This first-class infrastructure, is a milestone for the wind industry and further consolidates the prestige of Idom in the sector.

The Fraunhofer Institute IWES entrusted Idom to carry out the design, and turnkey supply of the test stand, as well as the architectural, engineering and construction management works of the building to house the test laboratory. Design, manufacture, assembly, integration and implementation of the test stand was carried out in parallel to the construction of the facility under a fast-track scheme that has been recognized and appreciated by Fraunhofer IWES.

Idom has provided DyNaLab with its extensive experience in the design and construction of facilities for wind turbines. The innovative design developed by Idom for DyNaLab consists of a rotary drive of up to 10 MW, and incorporates an innovative load application system and grid simulator, as well as an HIL simulator (Hardware-in-the-loop).

The result is a facility that stands out for its high dynamic performance - permitting fluctuations and variations of torque to be simulated in an agile and very quickly manner - and capacity simulation of robust networks. ■

ONE OF THE MOST TECHNOLOGICALLY ADVANCED FACILITIES OF ITS KIND IN THE WORLD.

Photo: Prof. Jan Wenske, Deputy Director of Fraunhofer IWES, Prof. Eva Quante-Brandt, Minister of Science, Health and Consumer Protection of Bremen, Prof. Alfred Grossner, member of the Board of the Fraunhofer Institute and Prof. Andreas Reuter, Managing Director of Fraunhofer IWES, during the opening event of DyNaLab.

© Fraunhofer IWES / Martina Buchholz



“The future of the ports depends on services which are increasingly more efficient, with a greater environmental commitment.”

Javier Erice Elejoste
Manager of Operations and Ports



MORE EFFICIENT PORTS

WORKING TOWARDS MORE COMPETITIVE PORTS

Idom offers ports an integral service, assisting port authorities and private companies during the entire investment cycle, as well as assisting them in making continuous improvements to their processes. As of today, Idom has helped over 80 port authorities and private companies in different projects, such as:

- Strategic Plans and Master Plans, developed with the comprehensive experience of strategic and operations consultancy teams, as well as port and civil engineering.
- Technical, economic and financial feasibility studies, including cost benefit analysis to evaluate the investments and obtain finance.
- Costs and tariff studies, helping ports to assess their competitive position as part of an integrated supply chain.
- Technical assistance in the acquisition and management of PPP concessions, supporting both port authorities in the process of granting, and private companies to develop port activity.
- Reengineering processes, improving productivity and the quality of services, monitoring indicators to monitor progress.
- Port information systems: Implementations of VTMS, PMS, GIS, PCS, to support the improvement of processes and services for the entire port community and port clients.
- Developing Green Port initiatives to ensure the environmental commitment of the ports to society and the future.
- Port-City integration projects, where both parties complement each other as part of a joint development.
- New port development projects, from basic studies to detailed engineering and construction supervision.

WORLDWIDE PRESENCE

SOME PORT PROJECTS

During 2015, Idom has advised both public and private companies in the development of port projects, helping our clients in the decisions-making process and the development of their investments, as well as improving operations.

- Study for the development of the cabotage sector in Brazil. **Secretaria de Portos do Brasil.**

- Consulting services for the implementation of the Port Community System in the port of Abu Dhabi. **Abu Dhabi Port Company.**

- Cost benefit analysis of the new port infrastructure. **Autoridad Portuaria de Bilbao.**

- Feasibility study of a specialized car terminal in Mexico. **Administración Portuaria Integral de Manzanillo.**

- Logistics model study for the development of a DRI plant in Algeria. **SIDER.**

- Design of the methodologies for calculating tariffs for port services. **Ministerio de Transporte Colombia.**

- Technical assistance for the presentation of projects, obtaining funding from the European Commission CEF program. **Autoridad Portuaria de Barcelona.**

- Technical assistance in the development of the procurement competition to acquire STS and RTG cranes. **Operador de Contenedores en Europa.**

- Strategy for the development and business model for the Port Community System. **Autoridad Portuaria de Algeciras.**

- Design of the Logistics Activity Zone of Montevideo. **Corporación Nacional para el Desarrollo, Uruguay.**

- Analysis of the development of logistical and economic activities to modernize three Border Crossings. **Departamento Nacional de Planeación, Colombia.**

- Technical assistance for a benchmark study of port capacity and efficiency indicators. **Instituto México de Transporte, México.**



Photo: The Port of Bilbao

THE QUIJOTE EXPERIMENT OVERSEEING THE BIG BANG THEORY

STEPHEN HAWKING SHOWED HIS SUPPORT FOR THE QUIJOTE PROJECT DURING THE "PHILOSOPHY OF COSMOLOGY" INTERNATIONAL CONGRESS, HELD ON THE ISLAND OF TENERIFE IN 2014.





INAUGURATION OF THE QUIJOTE TELESCOPE

The Quijote Experiment, comprising 2 telescopes, 2.5 m in diameter whose design and turnkey supply has been carried out by Idom, aims to detect gravitational waves caused by the accelerating universe occurred during the immediate moments after the Big Bang and thus confirm the inflationary theory developed in the 80s.

The first telescope, Quijote I, has been operating since 2012 at frequencies of 11, 13, 17 and 19 GHz, and is dedicated to the characterization of polarized radiation from interstellar dust in our Galaxy. This is to determine an important component of pollution which can affect the result of obtaining of the desired signal.

The installation of the second telescope, Quijote II, was completed by Idom in late 2014. This second telescope will operate at 30 and 40 GHz in order to characterize the polarization of the Cosmic Microwave Background (CMB) and detect the pattern

of the so-called B-modes in the polarization of the CMB arising as a result of gravitational waves in the origin of the universe. ■

RESEARCH ON GRAVITATIONAL WAVES CAUSED BY THE BIG BANG WILL PROGRESS SIGNIFICANTLY WITH THE LAUNCH TO THE NEW TELESCOPE.

Lower photo:

Ceremony commemorating the 30th Anniversary of the Canarian Observatories, chaired by His Majesty King Philip VI, who inaugurated the Quijote Experiment facility, in addition to 6 other robotic telescopes, describing them as "very important milestones in the history of our science and our Astronomy".

Photograph of the Inauguration courtesy of the website of the Royal House.




SAN MAMES, VOTED THE BEST STADIUM IN THE WORLD IN 2015

San Mames stadium has recently been awarded two of the most prestigious international architectural competitions. The first of these, the World Architecture Festival in Singapore, is considered the world's largest international architectural event. San Mames has managed to claim victory in the Completed Building Sport category as the best sports facility in the world. The result was known after the ten finalists made a live presentation to the public and the international jury. The other finalists were the studios of Zaha Hadid, Populous and Sweco Architects.

Furthermore, in Doha (Qatar), the World Stadium Congress was held, another prestigious international sports architecture event. In Qatar, San Mames was the winner in the Stadium of the Year category, beating two strong opponents who had also reached the final: the Ali Bin Hamad Al Attiya Arena (Doha) and HW Stadium, presented by the Qatar Foundation, linked to Congress.

According to statements of the organization: the judges were impressed with the visual attributes of the building, the way in which the stadium is incorporated into the city and the complexity of the project. ■



“The jury evaluated not just the aesthetics of the building, but also its commitment to sustainability, and the resulting experience of the fans.”

César Azcárate
Head Architect



MUNICIPAL OFFICES IN VITORIA-GASTEIZ

One of the issues that most taints the view of the citizen with respect to the local public administration is being passed from Peter to Paul (office to office) in their dealings with various municipal departments.

This is why, over five years ago, it was proposed by the town hall of Vitoria-Gasteiz to concentrate all the services with attention to the public in one single office. This office was finally inaugurated in June, 2015 by the Mayor of the city.

Idom has designed these new offices, located in the district of San Martín, using cutting-edge architecture, efficient and functional, while incorporating traditional architectural elements existing in Vitoria.

The building also incorporates numerous passive and active sustainability strategies, energy savings measures. These strategies and measures mean that the building has an "A" energy rating, in line with the city of Vitoria as a "Green Capital".

Another novel aspect of the project has been its mode of financing: Public/Private participation. The company LEPAZAR XXI has invested €37 million in its construction and will assume the future

equipment and maintenance costs for a period of 30 years. The city has agreed to pay an annual fee and once the period has concluded, ownership will revert to the city.

LEPAZAR XXI called on the services of Idom from the initial phase of the architectural competition to the later phases of design and construction supervision. In his inaugural speech, the Mayor thanked both the developer, the constructor and Idom for this remarkable contribution to the city. ■

THE BUILDING, CONSISTENT WITH VITORIA AS A "GREEN CAPITAL" HAS AN "A" ENERGY RATING THANKS TO AN ABUNDANCE OF SAVINGS AND SUSTAINABILITY MEASURES.



HOUSING

A NEW URBAN LANDMARK IN THE CITY

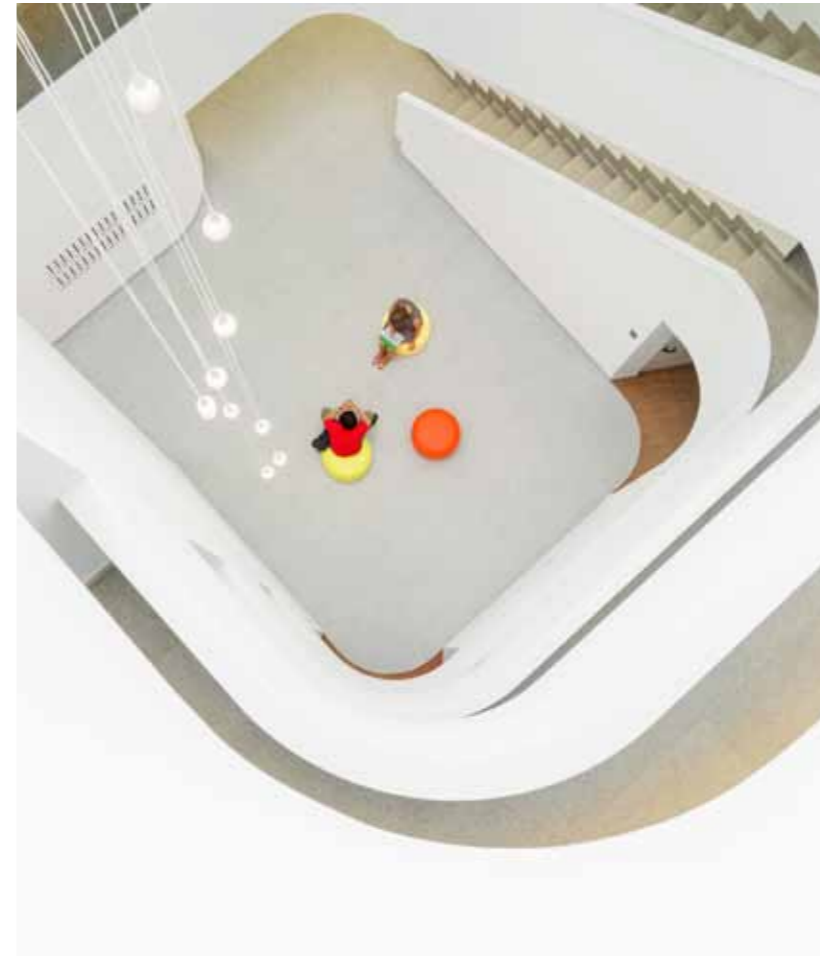
After some attempts to develop this site located in the neighbourhood of San Ignacio (close to the headquarters of Idom) which failed due to the housing bubble in 2007; finally in summer 2011, the company Anida of the BBVA Group decided to launch a competition for the integral management of the development.

This new type of services involves an integral project management scheme in which the winning company must take on the responsibility for the entire investment, that is, pay a penalty to the client in the case the budget or schedule is not met. In December 2011, Idom was awarded the contract.

The development includes 132 housing units (79 private-market and 53 VPO subsidized housing units), 215 parking spaces, and commercial premises. After four intense years of work, our firm delivered the properties to the client last September, meeting all the objectives proposed.

Although there is a clear difference between the sites for the subsidized housing and the private-market housing, with 10 storeys in the corner tower block and the remainder 6 storeys, the below-ground floors have been designed as a common area.

The use of natural stone, in this case cut marble and folded sheet aluminium, a combination that identifies and distinguishes the building. Elements such as the roof garden, the interior courtyard as a play area, and the carefully considered volume of the tower, all make this development a new urban landmark in the city. ■



HOUSING

ENHANCING THE SENSE OF COMMUNITY

The 58 social housing and private development homes are in Leioa, in the Basque Country. These are two symmetrical blocks located on a hillside terrain, a site which is highly visible in the environment. The housing development stands out for its generous common areas and the appearance of the blocks with alternating curves, forming balconies, which allow the users to enjoy the incredible views.

The buildings combine traditional farmhouses (caseríos) architecture with modern architecture seeking a close relationship between the interior and exterior without emphasizing the boundaries between them. Traditional architecture is

recovered in the interior by enhancing the common areas of the stairway, at present, minimized in the vast majority of housing developments.

Without doubt, this space is the differentiating contribution of the design to the neighbours, as well as an opportunity that, going beyond their apartment as an expression of individuality, this courtyard offers them, within the building, a community space appreciated by all, to recover the importance of common areas, a scarcity nowadays. ■

SPECIAL EMPHASIS HAS BEEN PLACED ON THE COMMON SPACES, TO RETRIEVE THEIR IMPORTANCE THROUGH ARCHITECTURE.

“High Speed in Sweden:
the latest rail technology,
promoting sustainable
intercity transport.”

Enrique Rico Izquierdo
Rail Infrastructure Manager

THE FIRST LINE OF HIGH-SPEED LINE IN SWEDEN

The East Link (Ostlänken) is proposed as a new bi-directional high-speed line connecting east central Sweden with the rest of the railway network of the country. Ostlänken will be part of a future high-speed rail network connecting the metropolitan centres of Sweden with the main capitals of the Scandinavian region, while also connecting with the existing rail network. The line will have stations in Vagnhärad, Nyköping, Skavsta Airport, Norrköping and Linköping.

The East Link will reduce travel time between major cities in the region and enable the users to make more direct connections. Rail freight traffic will also increase while fully absorbing the passenger traffic of the existing network and increasing security and reliability of the railway system in the region.

The Swedish government has referred to Ostlänken as the largest investment in the National Transport Plan for the period from 2014 to 2025. The entire Ostlänken line will be fully operational by 2028. ■

THE LARGEST INVESTMENT OF THE
SWEDISH NATIONAL TRANSPORT
PLAN UNTIL 2025.

Photo: Adrian Escobar, Lucia Schmid & Enrique Rico.

RAILWAY HUB IN WARSAW

Currently, Warsaw is seeing a steady growth in the number of rail passengers, therefore, the number of trains running on the network every day will have to be increased. Additionally, more and more people are coming to the capital from other parts of Poland, making it necessary to adapt the rail infrastructure to future transport demand.

The work involves the design project to improve the railway hub in Warsaw and the E20 line that forms part of West-East Pan-European Corridor connecting Berlin with Moscow. The works will include the remodelling of suburban stations handling freight rail or offering suburban rail service nearby. The infrastructure is expected to be upgraded, signalling and telecommunications systems installed, and catenary changed. ■

THE WORKS WILL IMPROVE
EXISTING LINES, INCREASING
THE NUMBER OF TRAINS AND
REDUCING WAITING TIMES.

RAILWAY IN LODZ

The state of the railway lines in the region of Lodz (Poland) is very varied: from newly modernized lines to non-electrified or even single track lines. The same goes for the stations and stops. The region also has several underutilized rail corridors with great potential.

The Regional Authorities have proposed the identification of the measures and projects that need be implemented in order to archive a multimodal system which is effective and adapted to the needs of citizens, with special emphasis on the rail.

In this context, the authorities asked Idom to conduct a study on the integration of passenger transport by rail with other modes of transport. ■

THE STUDY ON TRANSPORT
INTEGRATION INVOLVES 15 LINES
AND MORE THAN 140 STATIONS.

DEVELOPING RAIL
SYSTEMS

Photo: Iñigo Arana, Shaunta Butler & Jose Manuel Gonzalez Mato

UNITED KINGDOM

PROJECTS FOR A GLOBAL WORLD

The UK market is a continuing challenge at the highest level. Idom continues to consolidate its commitment to stand out and differentiate itself. With a growing geographic presence of offices across the country (London, Belper, Manchester, Cardiff, Keston and Stirling), Idom is also expanding the services on offer to tackle important complex projects.

We are committed to providing an integral, innovative and flexible approach in order to achieve practical and effective solutions and achieve excellence in everything we do. The team of Idom UK includes professionals from 15 different countries, working in coordination with the rest of the group. ■



JOINT EUROPEAN TORUS

RELIABILITY STUDIES

The Joint European Torus (JET) is an experimental nuclear fusion reactor, operated by Culham Centre for Fusion Energy (CCFE), at a United Kingdom Atomic Energy Authority (UKAEA) facility located in Oxfordshire in the UK. The operation of JET is funded through the European Union's Horizon 2020 research and innovation programme, and managed via the EUROfusion consortium. JET was built in the early 80s and has been operating since then, carrying out experiments and studies on fusion energy.

The JET machine is a large tokamak device of approximately 15 metres in diameter and 12 metres high. At the heart of the machine there is a toroidal vacuum vessel where plasma confinement is performed by a magnetic field generated by large D-shaped coils around the machine.

JET IS A MACHINE, 15 METRES IN DIAMETER AND 12 METRES HIGH.

JET is capable of producing pulses of hydrogen plasmas with temperatures of millions of degrees. Obtaining such high temperatures requires extraordinarily powerful heating in a short time.

Each JET pulse consumes around 10 GJ of energy with the peak power requirements exceeding 1000 MW. This amount of power cannot be taken from the UK National Grid so two massive flywheel generators are used to supply the additional energy needs. The rotating part (rotor) of each generator is 9 metres in diameter and weighs 775 tons.

Plasma heating is not the main consumer of energy at JET. In reality, a significant amount of power is needed to feed the large coils which produce the strong magnetic fields to keep the plasma under control and for cooling of different systems.

IT CAN PRODUCE PLASMA PULSES FROM HYDROGEN ATOMS AT TEMPERATURES OF MILLIONS OF DEGREES.

CCFE has been contracted to undertake a second Deuterium-Tritium fuelled Experiment (DTE2) using JET in 2017, in support of technical developments for the ITER project.

In order to manage risks of delay or early project termination CCFE adopted a risk based inspection (RBI) process to identify the systems which could influence the successful delivery of DTE2 and in turn to identify by a risk assessment process those systems or components which require mitigating action in order to minimise risk.

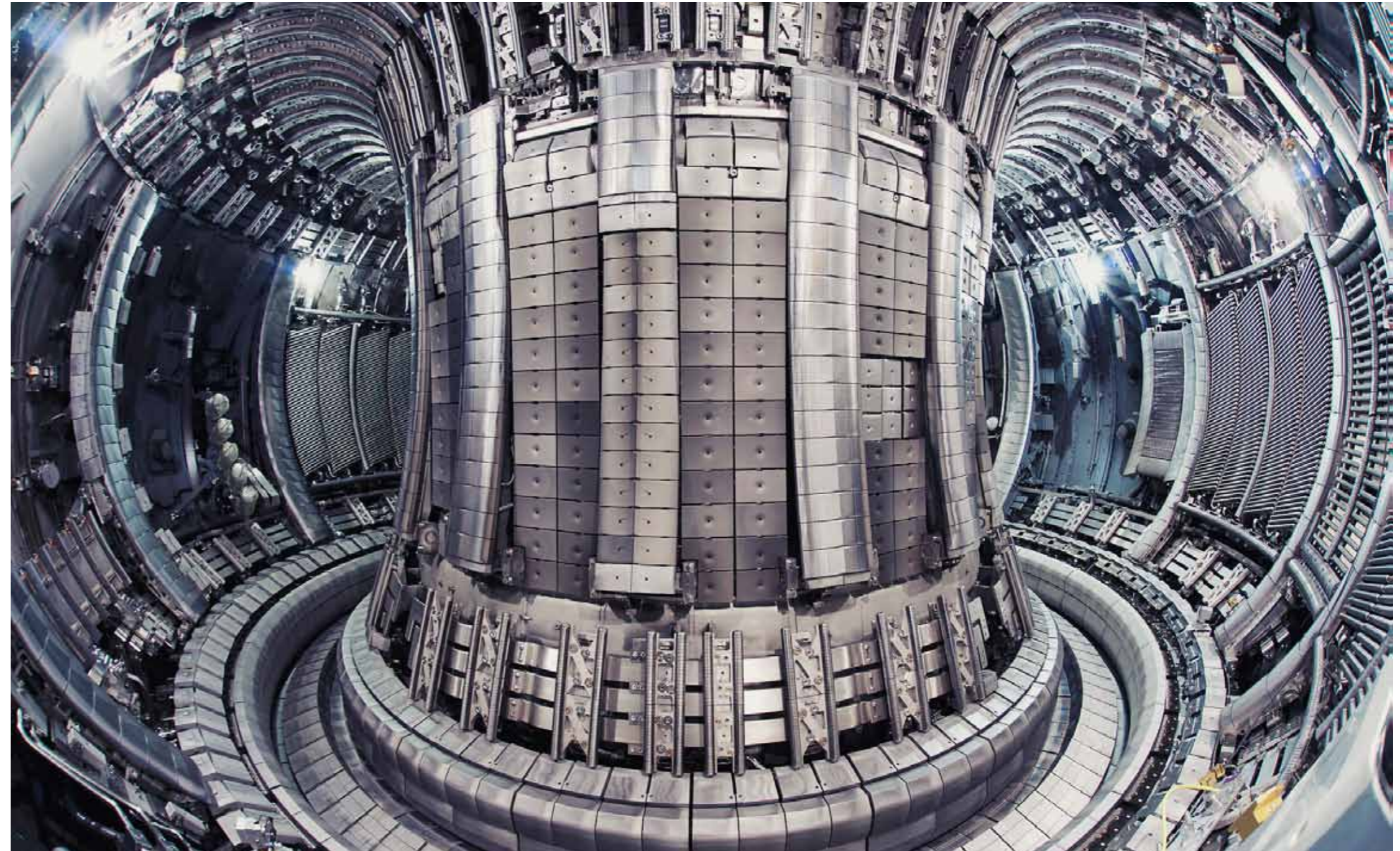


Photo: courtesy of CCFE

Idom was appointed to provide engineering services for these studies, covering the various support systems that support operation of the reactor.

The previous experience of Idom in life management of the nuclear power plants of Garoña, Almaraz, Trillo, Ascó I and II and Vandellos II was very useful. We proposed an approach to the RBI study which was similar to the initial stages of a Life Management Programme and this was significant in securing the contract.

Furthermore, this project is a milestone for Idom in the UK, because it is the first major contract of this scale in the UK nuclear sector.

For more info on JET please see "<http://www.euro-fusion.org>" www.euro-fusion.org and "<http://www.ccf.ac.uk>" www.ccf.ac.uk ■

IN THE HEART OF THE MACHINE,
PLASMA IS CONFINED TO PERFORM
ATOMIC FUSION EXPERIMENTS.

Engineering works in an airside environment require very specialist skills and expertise.



DUBLIN AIRPORT

In the process of improving the airport infrastructure at Dublin Airport, daa, the company that manages the main airports in Ireland (Dublin and Cork), is undertaking an aviation apron and taxi lane pavement rehabilitation project.

The rehabilitation works commenced in March 2015 with a feasibility analysis, and the detailed design of the rehabilitation areas. All of our engineering works are being phased to mitigate their impact upon the airfield operations, given that main works affect the part of the airport that is most used for parking aircraft.

During the study phase, it was decided that the complete renovation of up to 80,000 m² of the aprons, and taxiways would be un-

dertaken over a period of 4 years. Within the scope of works is the redesign of rigid and flexible pavement, the aerodrome ground lighting and associated circuitry, drainage, and signage and markings. At present, the detailed design and tender process of the first phase has been completed and the works commenced in October 2015.

The work has been carried out by a team of professionals from both the Spanish and UK offices of Idom, who have commenced the preparation of the design package for 2016 while supervising the construction works of the first phase. ■

Photo: Beatriz Rodríguez, Héctor Martín, Javier Losada & Huw Ebenezer at Dublin Airport.



PORTUGAL

INTELLIGENT TRANSPORT SYSTEMS

OVER 44 KM OF OPEN ROAD AND
TUNNELS ON THE ONLY HIGHWAY
ON THE ISLAND OF MADEIRA

Photo: The Island of Madeira

“Intelligent Transport Systems (ITS) are the tool to efficiently, safely and sustainably manage mobility.”

Koldo Berasategui Ordeñana
Project Manger

INTELLIGENT TRANSPORT SYSTEMS IN MADEIRA

With a length of over 44 km, the VR1 highway which connects the capital of the island (Funchal) to the airport, is the only highway on the island of Madeira (Portugal). Since the highway must bypass several towns and given the rugged terrain of Madeira, the VR1 has numerous viaducts and tunnels.

The highway is operated under concession by the company Vialitoral through a shadow toll system. The company is committed to improving safety on the road, and has commenced a renovation project of the intelligent transport systems (ITS) both on the open road and in the tunnels. The scope of this renovation project includes the video surveillance system, information panels, SOS posts, the sensor system, and the shadow toll system and communications network.

THE HIGHWAY CONNECTING THE CAPITAL, FUNCHAL, CROSSES NUMEROUS TUNNELS, NAVIGATING THE RUGGED TERRAIN OF THE ISLAND.

The work of Idom includes an audit of the project drafted by FCC and technical assistance for the renovation works, to ensure the proper execution of the same. ■



FINLAND

HONOURABLE MENTION FOR IDOM'S GUGGENHEIM MUSEUM PROPOSAL

The Solomon Guggenheim Foundation wants to build a Guggenheim Museum in Helsinki. With this in mind, an international architectural competition was organized. The 11 members of the jury were internationally recognised figures in field of architectural and museum critique as well as

representatives of the Guggenheim Foundation, the city of Helsinki, Finland, and the Finnish Association of Architects (SAFA).

The jury selected six finalists and awarded 15 honourable mentions. The proposal of Idom which received one of these mentions was prepared by a large interdisciplinary team consisting of architects, engineers, designers and consultants, under the direction and leadership of Jesus Llamazares and Galo Zayas and with the critical assessment of César Caicoya.

The aspects evaluated included the urban integration and accessibility, architectural design, the operations of the museum, sus-

MORE THAN 1,700 CANDIDATES PRESENTED PROPOSALS, THE LARGEST PARTICIPATION IN AN ARCHITECTURAL COMPETITION TO DATE.

tainability and economic viability, as well as seeking to create a new landmark for the city of Helsinki.

The projects of the finalists and honourable mentions were exhibited between April and May 2015 at the Kunsthalle Helsinki. Cesar Caicoya and Jesus Llamazares attended the event in representation of the Idom group. Finally, the proposal of the French-Japanese group, Moreau-Kusunoki Architects was announced the winner. ■

GERMANY

Test bench facility for wind turbines up to 10 MW for Fraunhofer IWES. Turnkey project. Architecture, Engineering and Planning of the Facility.

BELARUS

Technical assistance for promoting the green economy and control of air emissions. Funded by the European Union.

SPAIN

Municipal Offices in Vitoria for LEZAMA XXI, City Hall of Vitoria. Architectural and engineering design, construction management.

123 homes in the Sarriko for Anida desarrollos inmobiliarios. Architectural and engineering design, construction management.

58 social housing units in Leioa for Sukia Eraikuntzak Construcciones S.A. Architectural and engineering design, construction management.

QUIJOTE Experiment Telescope to measure the polarization of the cosmic microwave background (CMB) for the Astrophysical Institute of the Canary Islands (IAC). Design, assembly, integration and verification.

New San Mames Stadium for San Mamés Barria S.L. Architectural and engineering design, construction management, special plan.

SPAIN & PORTUGAL

Technical Assistance for the LIFE program. Commission of the European Union. Technical and financial monitoring and control of Environment and Nature projects.

SLOVAKIA

Seismic evaluation of structures, systems and mechanical and electrical components of the Mochovce NPP for ENEL. Technical assistance.

FINLAND

Guggenheim Museum Helsinki, Salomon Guggenheim Foundation. Design. International Ideas Competition.

FRANCE

First 575 MW combined cycle power plant using flex efficiency technology (9HA.01 gas turbine, generator and W86 D650 steam turbine) for GE. Basic and detailed engineering services.

Mixed-use building for the Campus of the Chamber of Arts and Crafts in Lille. Basic and detailed design, construction management.

IRELAND

Rehabilitation of the apron and taxiways of Dublin Airport to Dublin Airport Authority (daa). Drafting of the construction project, procurement of the work, and works supervision.

Extension of the Dublin LUAS tramway for Obrascon Huarte Lain SA (OHL). Preparation of the design proposal.

PORTUGAL

Due diligence for waste treatment facilities in Portugal for FCC.

Upgrading of ITS systems for VIALITORAL. Project audit, procurement support and technical assistance during implementation.

Oporto light rail (line C) for Metro do Porto, S.A. Comprehensive engineering of the infrastructure and superstructure.

UNITED KINGDOM

Dock 2. Business Incubator building for the City of Leicester. Design and construction of Phase 2. Winning Proposal of the architectural competition.

SWEDEN

Preliminary Design of the 5.5 km tramline infrastructure for Lunds Kommun. Infrastructure and urban integration design, road, power, catenary, signalling and information systems and communications.

“The gas turbine power plant of Bouchain is a jewel of technology, capable of meeting the energy needs of over 600,000 households in the shortest possible time with an efficiency level of over 61%.”

Aitziber Uriarte

Specialist engineer in mechanical installations
Combined Cycle Power Plant in Bouchain (France)



North America

Some projects

| **UNITED STATES** HAWAII SOLAR TELESCOPE | CLEMSON RESEARCH CENTRE | STAINLESS STEEL PLANT IN KENTUCKY
| WORKS FOR THE UNITED NATIONS | **MEXICO** MOBILITY
| TERRITORIAL DEVELOPMENT | COMPETITIVENESS |
VALLE DE PLATAH | THE AUDI CITY | HEALTH SYSTEMS |
TECHNOLOGICAL INNOVATION | DATA CENTRES | MADERO
REFINERY | THERMAL POWER PLANT IN BAJA CALIFORNIA |

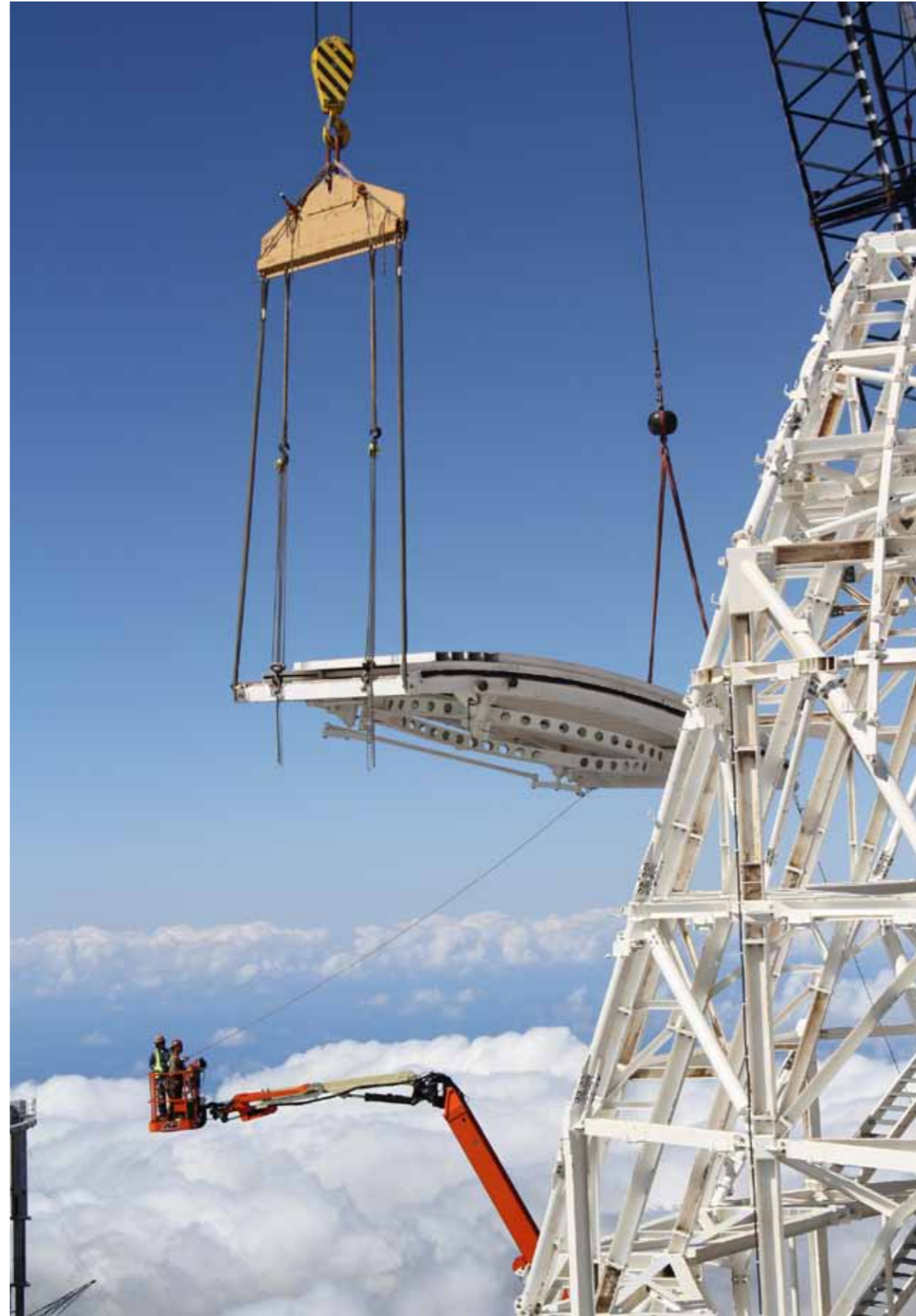
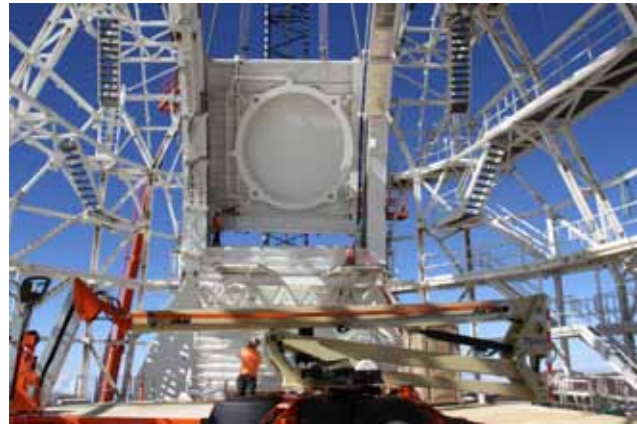
05

SOLAR TELESCOPE OF HAWAI'I

Located on the island of Maui, the Haleakala observatory, will become the largest solar telescope in the world, with unprecedented capabilities for research in astronomy, plasma physics and interaction between the sun and the earth. The dome has a height of 22 meters, equivalent to a seven-storey building.

“This will be the world’s largest solar telescope and will have unprecedented capabilities to observe the sun in detail.”

Gaizka Murga
Project Manager



A KEY PIECE FOR ASTRONOMICAL RESEARCH

The Daniel K. Inouye Solar Telescope (DKIST), formerly the Advanced Technology Solar Telescope (ATST) is a 4-meter class domed solar telescope which is currently under construction at the Haleakal Observatory on the island of Maui, Hawai'i. The DKIST will be the largest solar telescope in the world and will have unprecedented capabilities for observing details of the Sun.

Since 2010, IDOM has successfully completed the Design phase of the DKIST Enclosure, as well as the Manufacturing, Factory Assembly, and Factory Test phases. During 2015, IDOM has been responsible for Construction Administration and Technical Assistance during the Site Assembly of the Enclosure at its final destination. The DKIST Enclosure is a large structural-mechanical system 26.6m [87ft] in diameter and 22m [72ft] tall that not only protects the telescope

but, in contrast to conventional enclosures, also positions the optical system's first entrance aperture stop with millimetre-level accuracy.

The on-site Assembly of the DKIST Enclosure in Hawai'i started in February 2015. Only five months later, in July, the azimuth mechanism was set up, and in October, only three months later, the altitude mechanism was also put into service. Having both main mechanism systems commissioned and verified, remaining works on-site entail the installation of the cladding and auxiliary systems. It is expected that the Site Assembly of the Enclosure will be completed by early 2016, after which the Site Acceptance Tests are to take place.

The Daniel K. Inouye Solar Telescope is a facility of the National Solar Observatory (NSO). NSO is funded by the National Science Foundation under a cooperative agreement with the Association of Universities for Research in Astronomy, Inc. ■

ENR, the prestigious international magazine has recognized Idom with the award of "Best Global Project" and "Best of the Best project in the USA" for the Energy Research Center at the Clemson University.



ENR AWARD OF EXCELLENCE

CLEMSON UNIVERSITY'S ENERGY INNOVATION CENTER, A FACILITY WITH MANY AWARDS

The Engineering News-Record (ENR) magazine, an international publication reporting on construction industry worldwide, has recognized CLEMSON University's SCE&G Energy Innovation Center in North Charleston as the "Best of the Best Projects 2014" in the USA. The awards were presented during the ceremony held in April 2015 in the Marriot Marquis Hotel in New York. CLEMSON University's SCE&G Energy Innovation Center was distinguished not just with the best project within the Industry/Energy category, but also received the "Global Best Project" within the same category, awarded by ENR. This distinction joins the many awards conferred on the facility so far.

Idom has been responsible for the architecture, engineering development and owner's engineering of the facility during all phases of the SCE&G Energy Innovation Center project of Clemson University. This is a leading energy research facility that will permit the wind industry to reduce the testing time of new generation off-shore wind turbines. This is the second year that one of the projects developed by Idom has been recognised by the Engineering News-Record magazine. ■

FIRST-CLASS ENERGY RESEARCH CENTER WITH THE CAPACITY TO CARRY OUT ELECTRICAL, MECHANICAL AND ACCELERATED LIFE TESTS ON THE LATEST GENERATION OF WIND TURBINES.



On the opposite page: Armando Bilbao, Operations Director in Idom ADA, Thomas E. Lorentz, Vice President of Idom Inc. Íñigo Eletxigerra, Project Manager & Javier Ariño, Senior Systems Engineer, with the award.

Upper photo: the SCE&G Energy Innovation Center of Clemson University, the best industrial building in the United States and globally. Image courtesy of Clemson University.

STAINLESS STEEL PLANT IN KENTUCKY

North American Stainless (NAS) is a stainless steel production facility located in Kentucky (US) that was founded in 1990 as the result of a joint venture between Acerinox and the American Steel Corporation, Armco. Subsequently, Acerinox acquired 100% of the firm and made it the most efficient and profitable plant in the world, gaining the title of No. 1 producer of stainless steel in the United States.

Acerinox has decided to further expand this plant, which currently has a total production capacity of just over 1.4 million metric tons and employs more than 1,350 people.

No.1 PRODUCER OF STAINLESS STEEL IN THE US.

The extension project involves the installation of a new cold rolling mill and a bright annealing line for stainless steel production. The steel is obtained after cold-rolling with polishing cylinders, and once annealed (solubilized) in an inert atmosphere controlled oven (BA) will acquire a shiny, reflective appearance for its subsequent use in products such as architectural building finishes.

Idom has been working with Acerinox for many years, and at present, with the occasional technical support of the offices in Bilbao, the engineering services for this project are being developed at our offices in Minneapolis. ■



Photo courtesy of North American Stainless (NAS)

FROM BANGKOK TO NEW YORK

Idom began cooperating with the United Nations in 2010, on projects for their headquarters in Geneva, the peacekeeping mission in the Democratic Republic of Congo, and the United Nations Development Programme (UNDP) in Brazil and Ecuador. During the last three years, Idom has been developing the "Strategic Capital Review" project for the department that handles the property of the UN around the world, the OPMU. This project is being managed from New York.

The United Nations buildings around the world must meet the requirements of the organization. In addition, the property must also maintain their value over time. The project appointed to Idom involves the definition of the main actions, which, in view of these objectives, need to be undertaken in some buildings: maintenance, refurbishment, and possible construction of new buildings.

There are eight buildings included in this project. Four of these have been involved in the three phases of the project - ONUN (Nairobi), CEPA (Addis Abeba), CEPAL (Santiago

de Chile), CESPAP (Bangkok) - and four have been considered in the development of the project - ONU NY (Nueva York), ONUG (Ginebra), ONUV (Viena), CESPAP (Beirut) - and are included in the final study.

After visiting all the sites under the study, with the exception of Beirut, the work commenced in coordination with each of the teams responsible for the properties. Apart from analysing the aspects of architecture, engineering and the costs of the different projects identified, Idom designed the framework for the works to be carried out, including baseline information, applicable regulations, etc.

In addition, Idom has provided support during the due diligence phase, coordinating the various offices and local consultants selected to carry out the upgrade works. Finally, Idom has evaluated this work and designed the project and investment scenario for the next twenty years, collecting all this information into a database created ad hoc for this purpose. ■

Photo: Yolanda Cerezo, Luis Gutierrez de Rozas & Violeta Bertón

**A long-term planning
program for the reformation
and maintenance of various
United Nations offices**

UNITED NATIONS

DEVELOPING INFRASTRUCTURE

Idom is playing a fundamental role in development of infrastructure, from the planning of the same through to improving mobility in large cities, as is the case in Mexico City. Idom has carried out a comprehensive diagnosis of sustainable urban mobility of the historic centre of the city.

With regard to ports, Idom has carried out a feasibility study of a new terminal with a capacity for 100 thousand vehicles for the Port of Manzanillo. With respect to roads, Idom is supporting the Ministry of Communications and Transport in the realization of the technical and environmental feasibility study of the Choix-Bahuivhivo road.

In addition, Idom is also working in the airport of Morelia, on the expansion of runways, taxiways and platforms, and on the airport of Hermosillo with the expansion of the terminal which will occupy a new area of 4,200 m², giving service to 2.1 million passengers a year within 15 years. Idom is developing the works of conceptual design, basic and detailed design for the extension of the terminal building, the Rescue Corps and Firefighting facility, as well as the reform of the existing parking facility at the airport. ■

“Mobility in Mexico will change in the next decade thanks to the investments being undertaken.”

Héctor Martín
Aeronautical Engineer

Photo: Diana Teresa Guzmán Arroyo, Héctor Martín Martín & Alfredo Molina Ledesma.

VALLE DE MEXICO, THE LAND OF OPPORTUNITY

Mexico City has decided to build a new airport on the grounds of the former Lake Texcoco, thereby freeing up the grounds of the present International Airport. The decision is motivated by the increase in air traffic in recent years - due to the rapid growth of the Mexican economy -, as well as the need to improve airport services.

The development of the city in the coming decades will be conditioned by the decisions taken on the use of the land affected by this operation.

The Authorities in Mexico have entrusted Idom precisely with this task: to study what

can be done with the land that is being freed up (780 hectares) and how to guide the development of the area around the new airport (10,000 hectares).

For over a year, a team of nearly fifty consultants from Idom have been working on identifying the best uses for the existing airport grounds and defining the best structure for the east of the city.

A UNIQUE GLOBAL PROJECT THAT WILL DEFINE THE FUTURE OF MEXICO CITY.

On the grounds of the existing airport, Idom has proposed creating an Economic and Urban Pole with high quality and eco-

sustainability standards. As a result of the proposed operation, 52,000 houses and 182 hectares of green space will be created where 172,000 people could live. This operation should generate up to 60,000 jobs.

On the lands surrounding the new airport, Idom has proposed creating new spaces for metropolitan and regional uses with a strategic focus, linked to the presence of

52,000 HOUSES AND 182 ha OF GREEN SPACE WILL BE CREATED ON THE LAND OF THE EXISTING AIRPORT.

METROPOLITAN STRATEGIC USES HAVE BEEN PROPOSED FOR THE LAND AROUND THE NEW AIRPORT.

the new airport infrastructure and the potential of the land.

Overall, this is a unique, complex, world-class project involving a large number of public administrations, which will define the future of the Valley of Mexico in the next 50 years, positioning this megalopolis in the leading group of Global Cities. ■



Improving infrastructure and metropolitan amenities will permit regional development and position Mexico strategically and economically.

ECONOMIC AND REGIONAL DEVELOPMENT

Idom is actively working on the regional economic transformation of the country, on various actions or measures ranging from improving competitiveness and innovation to the creation of new infrastructure to support MSMEs, and the formulation of public policies and governance models.

These include, among others, the participation with CONACYT in developing Innovation Agendas in ten states of Mexico to identify strategic sectors, competitive advantages, scientific and technological capabilities,

and the definition of a portfolio of strategic projects, also with the participation of agents of the government, academia, industry and society.

In addition, Idom is developing, through the 'CONACYT-Government of Jalisco' Joint Fund, a model of energy governance that includes a strategic plan, public policy guidelines and the design of an Agency to increase energy security, promoting renewable energy, and the efficient use of energy in the state.

In terms of infrastructure, Idom is promoting the National System of Agroparks of SAGARPA Program. In Durango, Idom has conducted feasibility studies and developed a master plan for a 27-hectare AgroPark. ■

Photo: Cristian Luengo Lahoz, Begoña Gomez Soria, Rosario Urbano Roy & Alvaro Blasco Valenti.



DEVELOPMENT OF THE VALLE DE PLATAH IN TIZAYUCA

In the state of Hidalgo, the new PLATAH Logistic Platform of Mexico is being created. Located in an area of 630 hectares, it will be one of the main growth engines for the economic diversification of the country.

Artha Capital, one of the main promoters of this infrastructure project, together with the state government, expects a new pole of development to be created around the platform, along with the possible link of the region to the New Mexico City International Airport.

Our firm has been responsible for developing the 'Grand Vision' for the development

of Valle de PLATAH, an area of 9,000 hectares, which intends to grow in an integrated and balanced manner. The area includes a Logistics City, regional-level shopping and entertainment areas, medium and high-level residential areas, as well as economic areas and strategic services related to the new airport infrastructure and other potential infrastructure of the region.

The centre of Valle de Plata will be a creative place, ideal for boosting competitiveness, productivity and employment in the region, and will feature amenities, urban services and green spaces that will ensure quality of life for its inhabitants and visitors.

In this context, the territorial development guidelines are defined for the region, considering its integration into the largest market in Mexico, with a concentration of nearly 37 million people in a radius of 150 km². It is expected to be integrated into

the transport and logistics networks in the country, especially the road and rail network connecting the region with the new airport in Mexico City. Areas reserved for the support-service uses for the airport infrastructure are being identified, and a new urban centre is being planned to provide further support to the platform as part of effective regional planning. In urban areas an attractive, safe and liveable space will be designed to attract global companies, providing favourable conditions for the growth and consolidation of economic and social activities in an eco-sustainable environment.

A Land Management Model has also been established, defining the key actors in terms of development and their characteristics: leaders, owners, real estate developers, among others. ■

A NEW CREATIVE AND FRIENDLY CITY

The automaker Audi has selected the town of San José Chiapa, in the Mexican state of Puebla, for their new plant. Up to 150,000 vehicles a year will be produced at the plant which will be spread over some 600 hectares. This project will boost not just employment but also the tradition of the region as a car producer, increasing its economic competitiveness and making it attractive to other companies in the value chain.

Currently, the region lacks an urban centre with the characteristics required for the growth that will be generated by the new plant, an estimated 20,000 inhabitants and

5,000 houses. Therefore, the Government of Puebla has commissioned Idom to develop a Master Plan for the design of a new city: The City Model.

THE NEW CAR PLANT WILL ATTRACT MORE THAN 20,000 RESIDENTS

Our firm has proposed, in a first phase, allocating 150 hectares to resolving the demand for housing and amenities. We are designing a city which is safe and liveable, promoting socio-economic integration and cultural diversity, an urban fabric whose density favours a variety of uses and eco-

mobility (more than 70% of movement can be made on foot, by bicycle or using public transport).

The amenities and specialized services of the new city, for example, the two new universities, will increase the regional offer and consolidate the city as a creative city where knowledge and innovation are closely linked to the productive network.

In addition, Idom has been working on the development of a Regional Ecological Management Program (PROE), a Sub-regional Land Management Program, and a Metropolitan Plan. The objective of this work is to regulate and induce land use and the productive activity in the region, working towards sustainable development which is compatible with environmental protection. ■



HEALTH SECTOR, MEXICO

PROPOSALS FOR HOSPITALS

Following budget cuts in the public sector in Mexico, the health sector has found itself looking for ways to be more efficient in planning and spending in terms of their resources, while finding new schemes for project financing. In this sense, Idom has

collaborated with the leading institutions both in structuring projects and improve operational efficiency.

For the coming years, Public-Private Partnerships (PPPs) are one of the best tools to ensure the development of new and modern infrastructure for public services. Among this infrastructure is the creation of new hospitals. Projects can be driven by the public sector, or they can be promoted under the scheme of unsolicited proposal (PNS) by a private developer to a public entity or agency.

In this context, Idom is participating in two Unsolicited Proposals for hospital projects. One is for the Mexican Social Security Institute (IMSS) in the State of Nuevo Leon, and the other is for the Institute for Social Security and Services for State Workers (ISSSTE). Between them, they total more than 64,000 m² and 400 beds, serving more than half a million people.

Idom is providing technical assistance to the private part of the PPP, performing consulting studies such as the social profitability, estimation of investments and contributions, financial and economic feasibility; and the architectural and engineering definition of the hospital complex.

Idom has also worked directly with the IMSS (the largest health care institute of Mexico and one of the largest in Latin America) in the creation of a new unit that will be responsible for the planning and coordination of the investments of the institute, with the objective of improving the efficiency of the entire development cycle of investment projects and the procurement of services. ■

Photo: Ricardo Flores,
Marco Suarez & José Eduardo Zavala.

Photo: Marco Busatto, Samuel Alonso & Daniel Salvan.

IMPROVING OPERATIONS IN THE MEXICAN PRIVATE SECTOR

Within information systems applied to the production, the Thielmann Group, the leading global manufacturer of stainless steel barrels for liquids has contracted Idom for assistance in the development and implementation of Manufacturing Execution System (MES) for the San Luis Potosí plant (Mexico), following the successful implementation of the same system at the factory in Granada.

Idom has also provided the Department of Business Strategy of Telefonica Mexico (TeMM) with support in the process of transforming its supply chain. TeMM, one of the leading telecommunications companies in the country, is defining a set of proposed actions that will have a global impact, achieving savings of between 10 and 11 Million USD. These actions will directly affect the indicators measuring the speed and agility of the supply chain and the growth indicators indirectly. ■





CRITICAL FACILITIES

THE DATA REVOLUTION

The flow of information and data as well as the storage and processing of the same, is growing rapidly. It is in the area of storage, that today a Data Revolution in terms of Data Centres is occurring. Trends such as virtualization, cloud computing, and all that will come in the near future, also require a physical space in which to analyse and process information. Within these Data Centres, a new building concept is arising, known as Critical Facility.

The design of Data Centres is based on many differentiating concepts (availability and resilience in the first instance), and that is why the market requires profession-

als with experience and appropriate training to trust their designs. In Idom, we have dedicated years to preparing for this revolution in the field of construction, working for major international players and with the highest levels of certification recognized (Uptime Tier III and IV, ICREA levels IV and V).

Idom has worked on the new Data Center Redit now KIO in Tultitlan, the State of Mexico, and ALESTRA in the State of Queretaro. From initial concept and cost-benefit studies for the decision-making process for technologies such as cogeneration, to accompaniment in the construction phase. With levels of TIER III and IV certification ICREA and V, depending on the type of room, an integral design has been produced of both the infrastructure and the associated buildings, structures and architecture development. Everything in the Revit BIM environment until LOD 350-400. ■

THE DESIGN OF DATA CENTRES IS BASED ON CONCEPTS WHICH ARE DIFFERENT FROM THE NORM.

THE MADERO REFINERY IN MEXICO

WORKING TOWARDS ENERGY SELF-SUFFICIENCY

The oil company Pemex, has six refineries in Mexico, one of which is the Francisco Ignacio Madero refinery. Located in the city of Madero, the refinery is named in memory of the famous Mexican politician. The power block of this refinery is not able to cover the total electricity consumption of the plant (about 97 MW), and at present around 14 MW has to be imported, from other Pemex sites, or from the national grid.

To cover this deficit and increase the reliability of the refinery, a new 25 MW cogeneration plant and an electrical and control substation is being built. Idom is developing the basic and detailed engineering of this project.

The new plant will be composed of a 20-25 MW gas turbine generator and heat recovery unit and all associated equipment and auxiliary services.

In addition to the engineering, Idom is also responsible for the Comparative Technical Evaluations, the tracking of orders from suppliers (in the bidding phase and once awarded), delivery of integration training for the staff of the refinery, and the development of commissioning procedures for the turbo generator, associated equipment and its integration with the refinery installations. ■

THERMAL POWER PLANT IN BAJA CALIFORNIA

Close to La Paz, capital of the State of Baja California Sur (Mexico), Acciona, a leading company in the development and management of infrastructure, renewable energy, water and services, is building the Baja California Sur V thermal power plant, owned by the Comisión Federal de Electricidad (CFE).

The plant, which is expected to be commissioned in the summer of 2016, will have a net capacity of 46.8 MW using an internal combustion engine fueled by residual heavy fuel oil. Therefore, the technology will optimize the crude oil cycle and minimize its environmental impact. Additionally, Diesel will be used as auxiliary fuel.

THE POWER PLANT WILL SUPPLY ELECTRICITY TO THE CITY OF LA PAZ AND THE TOURISTIC AREAS OF THE STATE.

The exhaust outlet of the combustion gases of the internal combustion motor will be equipped with an advanced nitrogen oxide (NOx) emissions reduction system (SCR type). In addition, a heat recovery steam generator (HRSG) will be installed to meet the steam consumption required. For maximum efficiency and power at the plant, the steam discharged from the generator will drive a steam turbine generator and auxiliary equipment. ■

Photo: Carlos Aguado, José Antonio Aguilar & Iratxe Mena Hurtado, part of the team working on thermal power projects in Mexico.



CANADA

British Columbia: 40 MW Biomass Plant in Fort Saint James and Merrit for IBERINCO. Detailed engineering services.

New substation and evacuation line for the 36.3 MW biomass plant for Iberdrola. Detailed engineering of civil works, electromechanical assembly, instrumentation and control.

11-kilometre Highway for Infrastructure Ontario and the Ontario Ministry of Transportation. Technical assistance and owner's engineering for the geotechnical structures and tunnel installations and the temporary detours design.

U.S.

Daniel K. Inouye Solar Telescope (DKIST) for the Association of Universities for Research in Astronomy (AURA). Design, manufacture, assembly testing, packaging, transportation and technical assistance on site. (EPC)

Strategic Capital Review for the United Nations. Integrated management, design and construction.

Test bench for wind turbines of up to 15 MW for Clemson University. Global Awards Best Project and Best of the Best Project in the US for the ENR magazine. Engineering and Architecture Services.

Solar thermal central tower with molten salt (110 MW) for COBRA. Detailed engineering services.

MEXICO

Extension of Hermosillo airport for the Pacific Airport Group (GAP). Conceptual design and design project.

Alestra Data Center. Design, project and construction supervision.

Due Diligence of the Bordo Poniente sanitary landfill degassing project. Metropolitan Electrical Systems and Financial Institutions.

Strategic Environmental and Social Evaluation (EASE) of wind farms in the south of the Istmo de Tehuantepec. Secretaría de Energía.

Development of the Creative Digital City in Guadalajara for the Inter-American Development Bank (IDB). Consulting services.

Support for strategic and regulatory modernization of the Federal Telecommunications Institute (IFT). Consulting services.

Durango Agroindustrial Park for Parque Agroindustrial Durango 450 S.A.P.I. Promotion and economic development of the primary sector in rural Mexico.

Master Plan of the New Audi City. Planning and conceptual design of a new city in the environment of the auto plant.

Great conceptual vision for the development of the Valle Platah for Artha Capital. Strategy Territorial and Urban Development Strategy for an integrated and equitable growth.

Uses and applications of the International Airport of Mexico City for Grupo Aeroportuario de la Ciudad de México. Study of the uses, urban planning, infrastructure, equipment and transport.

Territorial analysis of the immediate environment of the New Mexico City International Airport and Reserve Areas for the Ministry of Agricultural, Territorial and Urban Development. Territorial Development Strategy and trigger projects.

Feasibility study of a specialized car terminal at the port of Manzanillo. Consulting services.

Baja California Sur-V Power Plant (46.8 MW) for ACCIONA. Basic and detailed engineering.

Madero refinery: construction of a new 25 MW cogeneration plant for COBRA. Basic and detailed engineering.

New Steelworks ingot casting and special steel for Bascotecnia. Detailed engineering of civil works, urbanization, foundations of buildings and equipment and piping.

Integral Sustainable Urban Mobility Plan of La Paz for the Inter-American Development Bank. Analysis and diagnosis of mobility and integration in the ICES strategy document.

Life Management of the Laguna Verde NPP for the National Institute for Nuclear Research (ININ). Specialized engineering studies.



“We are convinced that Mexico City will change substantially with the urban plans we have designed for the land freed up on the site of the old airport.”

Marc Potard

Architect specializing in territorial development Mexico airport

South and Central America

Some projects

| **COLOMBIA** SANITATION SYSTEMS | INNOVATIVE PUBLIC
PROCUREMENT | VALLEDUPAR MUSEUM OF MUSIC &
EVENTS CENTRE | **NICARAGUA** RIVER HYDRAULIC USE
| WASTE ENERGY RECOVERY | **ECUADOR** STEEL MILL |
PANAMA SUSTAINABLE FUTURE | **JAMAICA** NATURAL GAS |

06

SANITATION SYSTEMS

Idom is present in several Colombian cities, improving sewage and health systems. In Medellín, Idom is developing the conceptual and detailed design for the modernization, replacement and expansion of the sewage system and water supply systems of its associated channels. Within the activities of the project and working with the client, Empresas Públicas de Medellín (EPM), various methodologies and flowcharts have been developed to help the client in the decision-making process, as well as providing them with GIS environment management tools in of the later designs, for future construction.

In Cartagena de Indias, the important growth that the city is experiencing has resulted in the need to expand the intake and treatment system of potable water for the city. Working with Aguas de Cartagena SAE, S. P. (ACUACAR), Idom is developing the design project for the construction of a new Water Treatment Plant, with a total capacity of 2.4 m³/s. The plant will be built in phases, according to the supply needs established in the Water Supply Master Plan of Cartagena, covering the next 40 years. ■

INNOVATIVE PUBLIC PROCUREMENT

After competing with hundreds of cities around the world in a competition organized by the Wall Street Journal, in 2013, Medellín was recognised as the “Most Innovative City”. The entity in charge of positioning Medellín as a city of knowledge, RutaN, has called on Idom to collaborate in the deployment of an Innovative Procurement Program, following the recommendations of the Organisation for Economic Cooperation and Development (OECD) on Public Policy for Science, Technology and Innovation (ST & I). To achieve these objectives, Idom is developing an Innovative Procurement Program, training more 1,000 agents to the highest level. Pilot projects are being developed in public and private organizations in the fields of energy,

transport, food and ITC, sectors which are considered strategic.

Based also on the recommendations given to the country by the OECD to increase the value generated by innovation, Colombia Compra Eficiente, the National Public Procurement Agency with the support of Idom has begun working on developing a Public Innovation Procurement policy (CPI) to transform the culture of contracting and increasing the investment in developing innovative solutions for the delivery of goods, works and services that benefit citizens. Given the success of the project, the client has contracted Idom to provide the public authorities with the necessary support to develop pilot CPI projects. ■

In 2013, Medellín received the recognition as the “most innovative city in the world.”

Photo: Liliana Delgado, Paola Andrea Vargas, Sandra Sinde & Laura Autor.





COLOMBIA

EVENTS CENTRE AND MUSEUM OF VALLENATO

Valledupar, the capital of the Department of Cesar, is also known as the capital of the music genre of Vallenato. This popular folk music with its Colombian Caribbean rhythms aspires to be Intangible Cultural Heritage (UNESCO). The metropolitan area of Valledupar has nearly one million inhabitants and, besides being an important centre of

agricultural production, attracts thousands of visitors during the Vallenato Legend Festival.

Despite being one of the epicentres of Colombian culture, Valledupar does not have the cultural centre it merits. The Government has recently approved an investment plan to build a centre, preferably dedicated to folklore and vallenato music. The project designed by Idom, is inspired by tropical trees, a key element in the cultural development of the region. For centuries, the leaves of these trees have provided shelter for groups gathering for fun and merriment and of course to play music. When the project was presented, it was received by applause from artists and the city in general.

In addition to its architectural and functional benefits, the centre will incorporate the most modern efficiency measures, ensuring savings in energy and water consumption. The building is clad with a mesh of synthetic material, permeable to air and visual from the exterior, it will act like a giant curtain, protecting the building from the intense solar radiation of Valledupar. ■

WITH ALMOST ONE MILLION INHABITANTS, VALLEDUPAR IS ONE OF THE EPICENTRES OF COLOMBIAN CULTURE.



NICARAGUA

HYDRAULIC USE OF RIVERS

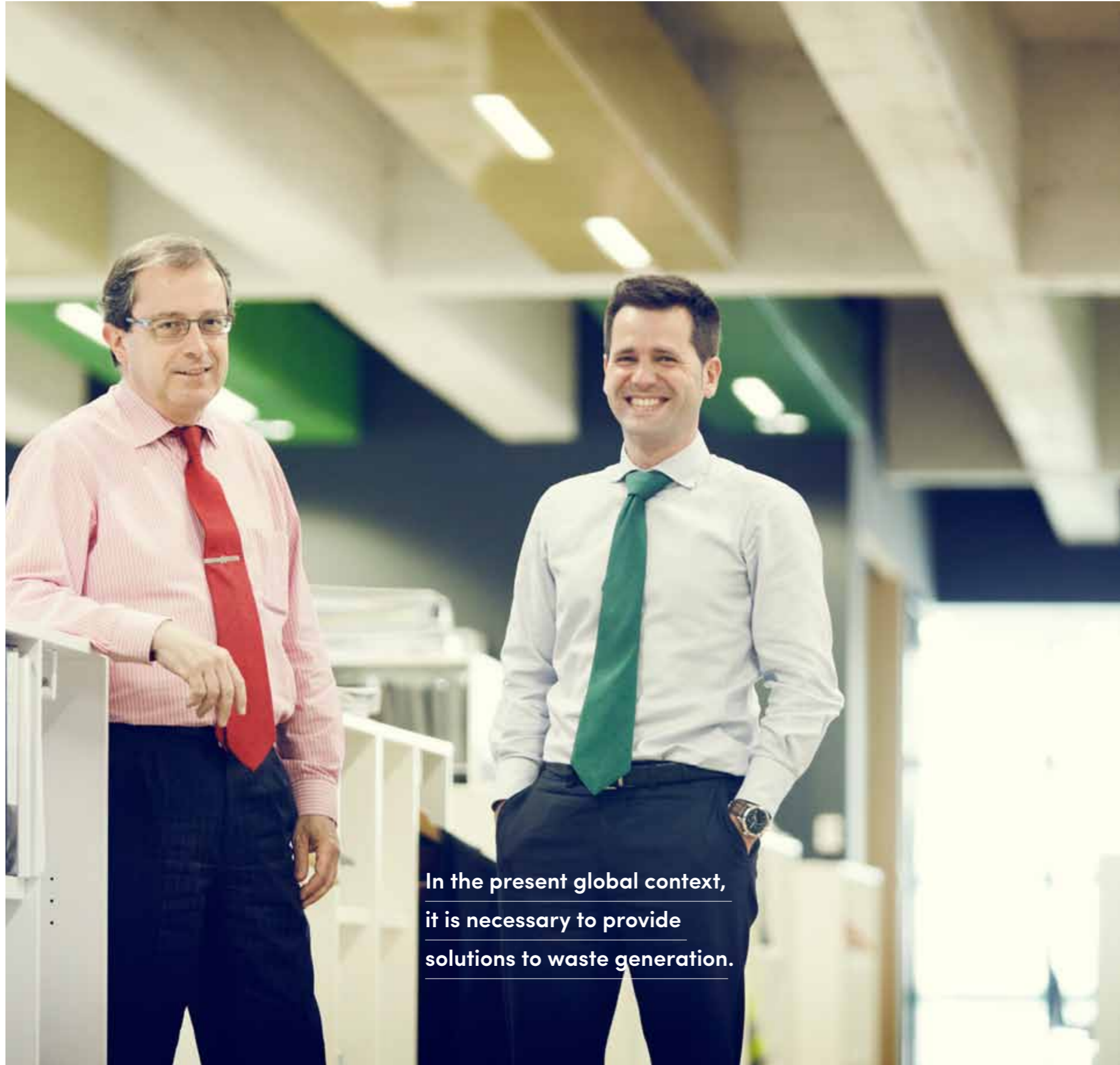
Idom is participating very actively in the National Sustainable Electrification and Renewable Energy Program (PNSER) being carried out in Nicaragua with the participation of various international organizations, and

which aims to increase the availability and electricity coverage in the country through the development of various renewable energies, such as hydro and wind.

In collaboration with the German company MVV decon, Idom has carried out, in a first phase of the works, a study of the hydroelectric potential of two major river basins of the country, the basins of the Coco River and Grande de Matagalpa, selecting the more suitable (technically, economically and environmentally) sites for the location of hydroelectric plants.

As an extension of the works, the Nicaraguan government has awarded a second phase consistent preliminary and feasibility studies of the main sites selected in the completed studies of the previous phase. ■

A COUNTRY RICH IN HYDRAULIC RESOURCES WILL DEVELOP ITS RENEWABLE ENERGY SOURCES TO INCREASE ELECTRICITY COVERAGE.



**In the present global context,
it is necessary to provide
solutions to waste generation.**

TRANSFORMING WASTE TO ENERGY, ON FIVE CONTINENTS

Idom is present across the world in various projects developing the detailed engineering of several energy recovery from waste plants, located in Poland, Ireland, Colombia, UK, Brunei and Spain, among other countries. The capacity of Idom to provide a high added value to clients in EFW plant projects is due to the expertise built on years of experience in developing power generation projects, waste management projects, and providing integral technical assistance services in the process of obtaining environmental approval for the facilities. ■

BOGOTA

THE FIFTH LARGEST LANDFILL IN THE WORLD

The 6,000 tons of municipal waste generated every day by 8 million people in Bogota is currently being disposed of in the Doña Juana landfill. With an area of 400 hectares, this is the fifth largest in the world.

BOGOTA WILL GENERATE ELECTRICITY FROM THE SOLID WASTE OF ITS 8 MILLION INHABITANTS.

In this context, the public company, Empresa de Energía de Bogotá (EEB), has contracted Idom to develop a Feasibility Study and Front-End Engineering Design (FEED) for the implementation of one or more plants to generate electricity from solid waste. This initiative is part of the Zero Waste Program, sponsored by the Mayor of Bogota. ■

BRUNEI

Idom has previously developed other projects with a similar scope to that now being undertaken in Bogota. Specifically, the "Feasibility study for the development of an Integrated Waste Management System in Brunei Darussalam". This is a project in which the feasibility of different technologies for the construction of an EFW plant in the Sultanate of Brunei (400,000 inhabitants) was studied. The basic engineering of the selected alternative was also carried out. ■

Photo: Rafael Sagarduy & Juan Lekube, responsible for the various EFW projects.

**"Idom is developing plants in Colombia,
Poland, Ireland, UK, USA, Brunei and
Spain, among other countries".**

Juan Lekube
Project Manager

ECUADOR

INTEGRAL STEEL MILL

Currently, the demand for steel products in Ecuador is being met by imports. To remedy this situation, the Government intends to develop an integrated steel mill. The plant will be based on Direct Reduced Iron (DRI) technology and electric arc furnace, with a hot rolled coil production capacity of 1.0 Mt/yr.

The plant will be located in the community of Porsorja, in the Guayaquil Canton; specifically, in a new industrial processing pole where other basic industries and associated services are situated. The public company, EP Petroecuador has contracted Idom to carry out the conceptualization study.

THE PLANT WILL HAVE A HOT ROLLED COIL PRODUCTION CAPACITY OF 1.0 MT/YR.

As a starting point, an "in situ" market assessment has been carried out to determine the required capacity of the plant. Following this, different technical solutions have been analyzed. Finally, technical feasibility, social, and environmental studies have been developed, as well as a financial feasibility study of the new plant.

With the availability of natural gas at moderate prices, it has been concluded that the steel plant project is feasible and attractive for a potential investor, both from a technical and financial perspective. ■

PANAMA

SOLUTIONS FOR A SUSTAINABLE FUTURE

The business centre of Panama City generates important flows of commuters from the extensive residential suburbs. This frequently leads to congested roads and the quality of life of the inhabitants is reduced. Given this situation, it is necessary to prioritize mobility or transport infrastructure, without forgetting that the solution is to rethink the city taking a global approach to ensure a sustainable future.

Fortunately this is possible, as the Inter-American Development Bank (IDB) has selected Panama to be one of the 40 American cities that are part of the Emerging and Sustainable Cities Initiative. Idom has been

contracted to develop the study of Pacific Metropolitan Area taking a multidisciplinary approach that includes strategic regional planning and urban development.

In addition, the IDB and Panama Metro S.E. have commissioned Idom to carry out a study on the social and urban impact of Line 2 of the Metro that is currently under construction. The challenge is to evaluate how to take full advantage of the capital gains generated by the new mass transit line, by creating new areas of opportunity that will in turn decongest the city centre. The project is being developed with the application of Transit-oriented development (TOD) planning principles. ■

To grow sustainably, Panama is proposing to provide quality public services, environmental protection, mobility solutions and opportunities for housing and employment.

Photo: Panama City by Martha de Jong-Lantik

JAMAICA

INTRODUCING NATURAL GAS

Jamaica is the third largest island in the Caribbean. With a population approaching 3 million inhabitants, the economy is based on the production of alumina and tourism, two sectors which consume a great amount of electricity.

Currently, the island generates electricity from imported oil, so improving efficiency and achieving energy diversification will involve, among other measures, the use of natural gas in the sectors of industry and electrical power generation.

The decision that the government has taken for the coming years involves acquiring and transporting liquefied natural gas (LNG) to the island, for its subsequent re-gasification using a floating unit.

This involves the development of a new sustainable, national gas sector which in turn, requires the development of the institutional capacity to assess and manage the environmental and social aspects of this activity.

In this context, the government has contracted Idom to help them develop the necessary capacities to regulate and manage the natural gas sector, including environmental assessment and all the processes associated with the granting of environmental permits for the operations of the new gas infrastructure.

Once the work was completed, Idom presented the results to the government who has been fully satisfied with our work. All this reinforces our position as an international expert in the sectors of gas and environment. ■

Photo: Antonio Pérez, Esther Martínez, Rosana Asensio & Jesús Longares, who along with Álvaro Blasco & Jordi Polo, make up the team.



“Jamaica has given us the opportunity to assist them in their first steps towards a more efficient and less polluting energy model.”

Jesús Longares
Environmental Expert

LATIN AMERICA AND THE CARIBBEAN

Emerging and Sustainable Cities Initiative for the Inter-American Development Bank. Risk mitigation and growth scenarios.

CENTRAL AMERICA

Development of studies in the field of renewable energies in Belize, El Salvador, Guatemala, Honduras and Panama, for the Inter-American Development Bank. Consulting services.

COLOMBIA

Colombia: Events Centre and Museum of Vallenato, Gobernación del César. Architectural Design.

Energy recovery from waste plant in Bogota. Energy Company of Bogota. Feasibility study.

Demand and feasibility study of LRT in Bogota for Torrecámara y CIA de Obras SA. Demand and feasibility studies.

El Cerro potable water treatment plant in Cartagena for Aguas de Cartagena S.A. Acuar. Drafting of the construction project.

Design of sewage systems and upgrading the La García basin in Medellín for Empresas Públicas de Medellín E.S.P. (EPM). Conceptual and detailed design.

Industrial and port development in Urabá for the Antioch Development Institute. Territorial dynamics, socioeconomic and environmental impacts, financial viability.

Urban and environmental regeneration in Barranquilla for the Inter-American Development Bank and the Mayor of Barranquilla. Strategic plan, pilot project and management model.

Development of the first metro line in Bogotá for the Urban Development Institute (IDU). Advanced detailed Design.

Study on Climate Change, Natural Hazards and Urban Growth for Findeter. Recommendations on urban growth in the municipality. Consulting services.

ECUADOR

Integrated DRI steel plant for EP Petroecuador. Conceptualization study.

Development, construction and implementation of Cadastral GIS, District Data Infrastructure (IDD) and District Indicators System (SID) in Quito. Geo-systems and Cadastre Systems.

Agroindustrial Park of Ecuador for the United Nations Development Programme and the Prefecture of the province of El Oro. Plan and strategic territorial vocation and strategic plan, master plan.

HONDURAS

Development of Municipal Territorial Information Systems for the management of cadastral and land information for the Honduran Institute of Forest Conservation (ICF). Consulting services.

JAMAICA

Institutional enhancement for the environmental assessment of the gas sector in Jamaica for the Ministry of Science, Technology, Energy and Mines of Jamaica (funded by the World Bank).

NICARAGUA

Development of the Adaptive Capacity of the sector of Transportation (Roads) in Nicaragua. Ministry of Transport and Infrastructure of Nicaragua (financed by the Nordic Development Fund).

DOMINICAN REPUBLIC

Business model for telecommunications services using fiber optic for the Dominican Electricity Transmission Company (ETED). Consulting services.

“With the help of the Inter-American Development Bank, medium-sized populations of Latin America and the Caribbean will take a step forward in their environmental, urban and fiscal sustainability.”

María Álvarez Mingorance

Architect specializing in urban planning
Emerging and sustainable cities initiative



South America | Pacific Area

Some projects

| **CHILE** SANTIAGO DE CHILE METRO | SANTIAGO AIRPORT
| RAIL | **PERU** LIMA CONVENTION CENTRE | ANCÓN
INDUSTRIAL AND LOGISTICS PARK | SCIENCE PARK AND
UNIVERSITY OF GASTRONOMIC SCIENCES | SUPPLY AND
SANITATION NETWORKS IN LIMA | TACNA-ARICA RAILWAY |
"CHILCA PLUS" COMBINED CYCLE POWER PLANT |

07

CHILE

CONNECTING COMMUNITIES AND PEOPLE

Idom has had a growing presence in Chile since July 2011. At present, almost 200 professionals are working at the offices of Idom in Santiago. In 2015, the infrastructure sector has been the main focus of our projects. We have signed major contracts with Empresa de Ferrocarriles del Estado (EFE) and Passenger Transport Company Metro de Santiago (Metro de Santiago), among others.

“Idom has found its place in Chile, strengthening its position, year after year, among the top engineering firms in the country.”

Andrés Mackenna
Manager of the office of Santiago de Chile



“The construction of lines 3 and 6 of Metro de Santiago represents the before and after picture of the modes of transport in Santiago.”

Our client has made a firm commitment to technological innovation, placing their confidence in Idom to achieve their goals.”

José Ortiz
Civil engineer
On-site Manager of IT Systems

Photo: Hernan Barrios Thomas & Jorge Vasquez Moll



METRO OF SANTIAGO DE CHILE

EXTENDING THE CHILEAN NETWORK

The Santiago Metro network consists of 5 lines, covering in all a total of 105.3 km with 108 stations. The Construction Project of Lines 6 and 3, will extend the Metro network by a further 37 km in tunnel, adding 28 stations and the corresponding workshops and depots, and a link connecting lines 6 and 3. Currently, Idom is participating in two contracts for the projects of Lines 6 and 3.

On line 6, Idom is carrying out the detailed engineering for the 10 new stations of the

Line. This is an integral project that aims to define a new image for the stations. The work has been developed, following on from the civil works of tunnels and previous galleries, and the scope has included the realization of the architectural design projects, structures and the stations installations as well as all the associated above grade works: Access to squares or plazas, shelters, passenger facilities, etc. In addition, works have been developed to extend, improve and connect the 3 existing stations, adopting solutions

THE METROPOLITAN AREA OF SANTIAGO ACCOUNTS FOR MORE THAN 6.5 MILLION PEOPLE, APPROXIMATELY 40% OF THE TOTAL POPULATION OF CHILE.

to ensure that the operations of the metro service and above-ground activities are uninterrupted.

The work of Idom has also included the development of the iconography and signage for the new line with the objective of giving it a new identity.

LINES 6 AND 3 TOTAL OF 37 KM IN TUNNEL, 28 STATIONS, WORKSHOPS AND DEPOTS AS WELL AS LINK CONNECTING BOTH LINES.

LINES 6 & 3. SYSTEMS AND EQUIPMENT

Idom has been awarded the contract to carry out the technical inspection of the installation, testing and commissioning of the systems and equipment of the Lines 3 and 6 project.

The service provided by Idom covers the technical inspection of the following systems: CBTC System, Electric System, Communication System, Centralized Command System, Platform Doors System, Ticketing System and Machines, Escalators and Elevators System, Track and Catenary System, Forced Ventilation System and Pump Handling System. In addition, Idom is also carrying out inspection tasks in relation to the rolling

stock at the manufacturing facility of CAF in Beasain, Spain.

As an innovative component, in the development of both commissions, a software tool designed and developed by Idom is being used to monitor the tasks of the works. This web-based application allows access (through any Internet browser installed on a PC, tablet or smartphone) to all parts of the daily inspections recorded by onsite staff. Tablets are used to produce reports of each visit to the works in a quasi-automatic procedure. These reports can also be accessed by the client in real time. ■

Photo: Sandra Sellers Cañizares

EXPANSION OF SANTIAGO AIRPORT

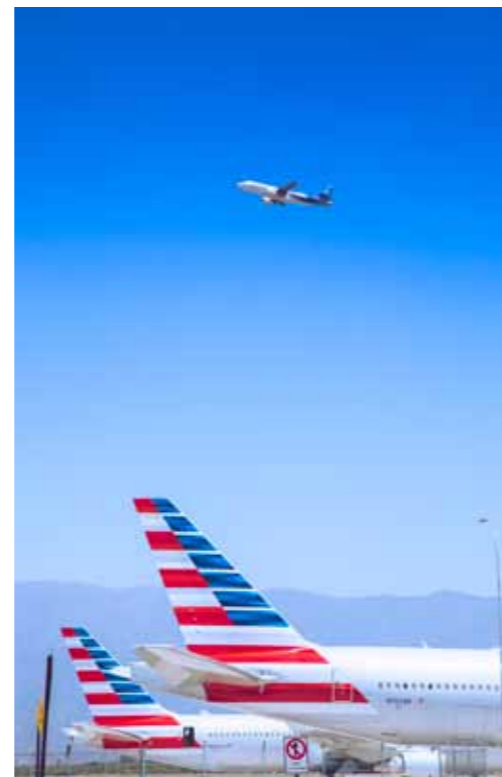
CONNECTING CONTINENTS

Arturo Merino Benitez International Airport, a major hub for flights between America, Oceania and Europe, is one of the most modern and efficient in Latin America. The growing demand for flights has led the Ministry of Public Works (MOP) to commence with the expansion of the infrastructure, including reforming the existing terminal, construction of a new terminal, parking facility, and other ancillary buildings as well as water treatment and energy plants. The project will be developed under an Administrative Concession Model granted by the MOP. Idom has been selected by the main contractor for the construction work to participate in the design phase, developing the various installation projects.

Our firm is designing the external civil works, networks, modifications to the services, road and landscaping. We are also developing the architectural design of a series of ancillary

GIVEN ITS STRATEGIC POSITION, THIS AIRPORT IS AN IMPORTANT HUB BETWEEN AMERICA, EUROPE AND OCEANIA.

buildings (Fire protection, Police, Transport Centre and Security Points). The project, involving a surface area of approximately 350,000 m², is being developed using Building Information Modelling (BIM). The work will be completed in a period of 10 months. Close to 60 professionals of Idom are working on this ambitious project, mainly from our offices in Chile and in Madrid. ■



CHILEAN RAILWAYS

“Chile is betting heavily on the development of passenger and freight rail transport.”

Javier Puerto
Civil Engineer
Project Manager Santiago - Melipilla



Photo: Carlos José Vial, Architect.

CHILEAN RAILWAYS

SANTIAGO - RANCAGUA

The Santiago - Rancagua railway line, 80 km long, running southward at the foot of the Andes, offers suburban, regional, long-distance and freight services. Idom has participated developing the basic and detailed engineering design of the improvements being made to the existing rail infrastructure and systems, as well as monitoring the works. The project involved the construction of two additional tracks in the first 22 km of the line, the Alameda- Nos section, the design of 9 new stations, and the upgrade of the existing stations on the Nos-Rancagua section. Once in service, the improvements implemented will increase the frequency of passenger trains and volume of freight transportation.

SANTIAGO - MELIPILLA

Idom is developing the basic and detailed engineering for the civil works and railway systems for the upgrade of the railway infrastructure. Section: Santiago - Melipilla.

The objective of the project is to achieve a public transport service which will be an alternative to existing bus services that operate in the corridor between Alameda station and Melipilla station, a high standard passenger rail service linking Santiago to Melipilla in 46 minutes, a reduction of travel time of about one hour.

The action is located in a catchment area of 1.4 million people, generating a demand of about 31 million rail passengers a year.



IDOM IS ACTIVELY PARTICIPATING IN ALL THE STAGES OF THE MOST IMPORTANT PROJECTS INCLUDED IN THE CURRENT EXPANSION PLANS OF THE CHILEAN NETWORK.

Photo: The San Eugenio workshops. Rancagua Express

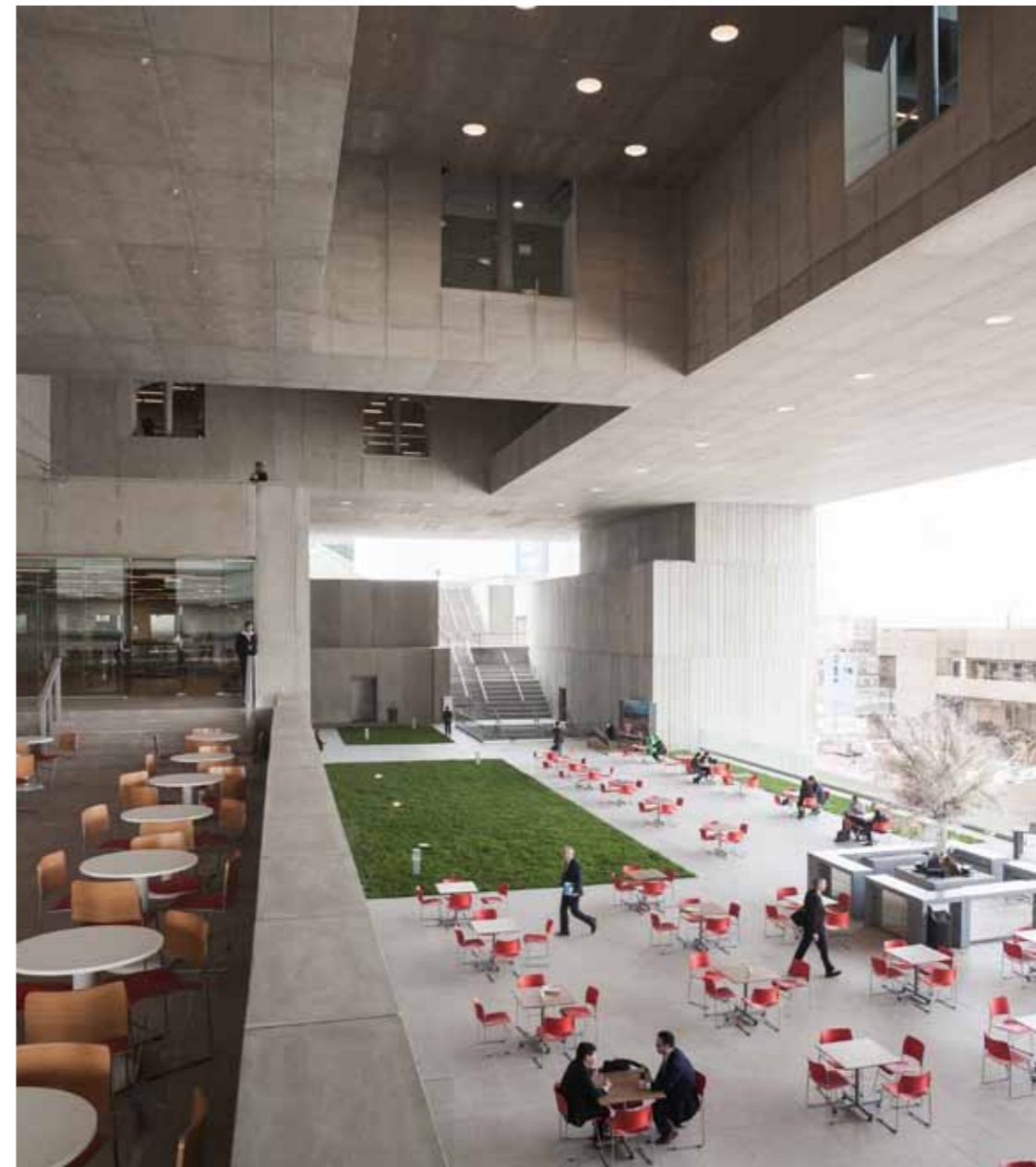


Integrated multidisciplinary and holistic approach, a key success factor to achieving this successful project in a tight timeframe.

LIMA CONVENTION CENTRE

In early October, the Lima Convention Centre was inaugurated, in time to hold the Board Meeting of the World Bank and the International Monetary Fund. This is a project of Idom that the Brazilian construction firm OAS executed in 16 months, "a record" according to Milton Von Hesse, the Minister of Housing of Peru. "The latest technology used in its construction has made it possible to meet all the scheduled deadlines."

PERU



LIMA CONVENTION CENTRE

Strategically located at the Cultural Centre of the Nation, home to the Museum of the Nation, the National Library of Peru, the National Grand Theatre of Peru, the Ministry of Education and the new Headquarters of the Banco de la Nación, the conceptual proposal had three main objectives: to be a cultural and economic engine capable of activating the urban space; a meeting place rooted in Peruvian collective cultures; and become a unique architectural landmark, flexible and technologically advanced.

The ambitious objectives already defined in the project brief sought to make the LCC a model of urban integration and architectural quality, realized in an expressive volume - with the internal layout of the rooms of conventions defined in the program resulting natural - in which the material and proportion of each of the three bodies in the built volume is organized so that the LCC is not a self-absorbed building, but it assumes and reinforces the virtues of the urban space and surrounding buildings, acting as an integrator of the spaces and symbols of collective culture, showing its intention to "make a city". ■

THANKS TO THIS CENTRE, PERU WILL BE A "CENTRE OF ATTRACTION FOR ALL OF LATIN AMERICA", ACCORDING TO GOVERNMENT SOURCES.

The park is set to become one of the main infrastructure of its kind in Peru



With over 1,300 hectares of industrial land for MSMEs and industrial and service companies; a Technology Park with research and/or teaching centres; Logistics Area with a Dry Port directly connected to the seaport of Callao, and Truck Centre; and urban amenities (education, health, retail and recreation), in addition to world-class urban services (desalination plant, wastewater treatment plant, substations, etc.).

INDUSTRIAL & LOGISTICS PARK OF ANCÓN

The Ministry of Production in intersectoral coordination along with the Ministry of Transport and Communication and the Environment, is promoting and encouraging, under the National Productive Diversification Program (PNDP), a change in the country's productive matrix with the generation of new engines of economic growth and the enhancement of the existing ones.

IMPROVING PRODUCTIVITY & COMPETITIVENESS WITH THE DEVELOPMENT OF INFRASTRUCTURE.

The National Authorities in Peru have commissioned Idom with the challenge of developing the Concept Master Plan and Business Plan for the Industrial Park Ancón (PIA), which is destined to become one of the main industrial parks in Peru, given its importance and economic dimension. The PIA will act as a competitive catalyst in the country's economy and its development will seek to transform the immediate urban environment - Ancón and Santa Rosa - and the Metropolitan Lima-Callao area.

The aim is to implement a new productive area model which is attractive for industry and anchor companies, highlighting the strategic position of the park and the advantages of direct access to the road transport networks and high-capacity railway that will connect to the Port of Callao, Jorge Chavez Airport, and the rest of the country. ■

CRITERIA OF FUNCTIONALITY AND ECO-SUSTAINABILITY ARE INCORPORATED IN THE PARK, REFLECTED IN THE TERRITORIAL AND URBAN BIOCLIMATIC DESIGN.

Photo: José Calvo, Juan Pablo Puy & José Ruiz Pando.

PRODUCTION DIVERSIFICATION



GASTRONOMY AND TECHNOLOGY IN PERU

NEW SPACES FOR EDUCATION AND BUSINESS

A small tourist town, situated on the coast some 40 kilometres south of Lima, is about to become a first-rate cultural attraction pole and will grow from 1,500 to 45,000 inhabitants in few years.

Santa Maria del Mar has been fortunate to be chosen by the Pontifical Catholic University of Peru (PUCP) to accommodate

the new University of Gastronomic Tourism and Environmental Sciences, as well as a Technology, Scientific and Social Park.

In a few years, the University, jointly promoted by the PUCP and the Peruvian chef Gastón Acurio will be the main point of reference in culinary education on the continent and one of the most important worldwide.

THE 45 HECTARE TECHNOLOGY PARK WILL INTEGRATE SME AND LARGE CORPORATIONS IN ONE LOCATION.

The park with an area of 45 hectares, will be the main technology park of Peru, integrating small and medium sized enterprises with large corporations in a project that involves the active participation of universities, business and government in the country.

In May 2015, Idom was declared the winner of an international competition organized by the PUCP to develop Master Plans for each. Construction is scheduled to commence in 2016. ■

THE INTENTION IS TO INTEGRATE INNOVATION, CREATIVITY, TECHNOLOGY AND NATURE, BOTH IN TERMS OF ENERGY AND ENVIRONMENT.

MONITORING WATER

SUPPLY AND SANITATION NETWORKS IN LIMA

Quite often in developing countries, drinking water and sanitation are scarce commodities. In addition, high rates of population growth and the decreasing availability and quality of the resource aggravate the problem. In Peru, the public company SEDAPAL is responsible for managing the supply of drinking water as well as the collection, treatment and disposal of wastewater for more than 9 million people in the cities of Lima and Callao.

OVER 9 MILLION PEOPLE LIVE IN LIMA AND CALLAO.

SEDAPAL has set itself the objective of improving the drinking water and sewage service, upgrading the automation, supervision and control systems of the service; thereby allowing them to undertake the necessary improvements to the services in an integrated manner.

Idom is helping SEDAPAL to implement the new system known as SCADA (Supervisory Control And Data Acquisition). The support provided by Idom involves all the phases of the project, the technical evaluation and diagnosis of the water supply control system; the identification and selection of alternatives; the drafting of the Masterplan for the automation and SCADA; the organizational design; the technical specifications for new projects; the communications network; the design of the new integrated control centre; and the technical tender documents. ■

IMPROVING ACCESS TO WATER IS ESSENTIAL FOR MUCH OF THE POPULATION.





THE TACNA-ARICA (PERU-CHILE) RAILWAY

The single track railway connecting the towns of Tacna (Peru) and Arica (Chile), was constructed in 1856 by the English company, The Arica & Tacna Railway Co. At the time of its inauguration, the approximately 60 km line was entirely in the country of Peru. According to the 1929 Lima Treaty, ownership and operation of the railway is in the hands of the Peruvian State, connecting two cities with important economic, cultural and demographic ties.

In 2013, The Committee on Transport and Communications of the Congress of the Republic of Peru declared the construction, maintenance and rehabilitation of the national section of the railway to be a public necessity and of national interest, in order to increase commercial activity and

promote tourism in the South of the country. With the passage of time, both the infrastructure and equipment had become obsolete, and service has been suspended in 2012.

In July 2014, the Government of Peru, through the Private Investment Promotion Agency of Peru ProInversión, contracted Idom to carry out the studies on improving the railway. Our firm is currently conducting a study of the pre-investment level profile (study of alternatives), considering solutions to capture 1 million passengers a year. The solutions involve the overall improvement of the line, construction new stations (including one cross-over station), adapting the infrastructure and signalling to the speed-levels to be achieved while improving the level of safety. ■

**OVER 5 MILLION PEOPLE MOVE
BETWEEN THE TWO CITIES
ANNUALLY.**

CHILCA PLUS COMBINED CYCLE POWER PLANT

IN THE ENERGY HEART OF PERU

The district of Chilca, in the Peruvian province of Cañete, is considered the energetic heart of Peru. 40% of the country's electricity is generated in this area, where the main thermoelectric power plants are located.

One of these plants is located to the south of Lima; the Chilca Uno combined cycle power plant owned by the Peruvian com-

pany Enersur (a subsidiary of GDF Suez). In order to meet increasing energy demands within the Peruvian electric power system, Duro Felguera is extending this power plant with a new combined cycle, which will be named "Chilca Plus".

The new cycle will operate with natural gas and will have an installed capacity of 110 MW. It will be equipped with a General Electric gas turbine, a steam turbine, a heat recovery steam generator and an air cooled condenser. It is expected to begin commercial operation during 2016.

Duro Felguera has once again called on Idom to develop the detailed engineering for the plant. Idom is also participating with the firm in developing the engineering for a combined cycle power plant in Algeria. ■



COLOMBIA

Soacha Industrial Park for Byron Lopez Salazar BLS. Vision and Strategic Plan, Needs Program, Urban planning proposal, Business Management Plan, and Plan of Action.

Bogota: Diagnostic of the competitiveness of Colombian firms in subsectors related to electricity for Bancóldex. Consulting services.

Characterization and mapping exercise of the international logistics chains for the Department of Santander and projects to improve the competitiveness of the firms of the regions. Logistics Studies.

Updating Regional Competitiveness plans, including a project prioritization methodology for the Chamber of Commerce of Tolima. Consulting services.

CHILE

Santiago de Chile Metro, Passenger Transport Company. Metro SA. Architectural and engineering design, urban design project.

Santiago airport expansion, Vinci Construction Grand Projects and ASTALDI. Architectural and installations design. Masterplan.

Osorno sanitary landfill for Servitrans. Detailed engineering and technical assistance for the construction and operation of the facility.

Comprehensive improvement of rail passenger services between Santiago and the city of Melipilla for Empresa de los Ferrocarriles del Estado (EFE). Basic and detailed engineering.

PERU

Integration agents for Lima Metropolitan for the INVERMET Investment Fund. Pre-investment studies.

Lima Convention Centre for the Peruvian branch of OAS Constructora. Detailed design and technical assistance on site.

University of Gastronomic Sciences, Tourism & Environmental for PROCIBARIS. Drafting of the Masterplan.

Scientific, Technology and Social Park for Pontificia Universidad Católica of Peru. Drafting of the Masterplan.

Due Diligence of medical waste management in Lima. Proinversión.

Control of supply and sanitation networks for SEDAPAL. Consulting services.

Architecture and Development Master Plan of Intelligent Transport Systems (ITS) for the Ministry of Transport and Communications (MTC). Consulting services

Design of the interoperable fare collection system for the Autoridad Autónoma del Sistema Eléctrico de Transporte Masivo de Lima y Callao (AATE). Consulting services.

Formulation of the Strategic Plan (2013-2021) for the Development and Modernization of Peruvian Border Crossings for the Ministry of Foreign Affairs (MRE). Consulting services.

The Industrial Area of Ancon for UNOPS. Enhancing the industrial network, generating economic competitiveness and improving industrial infrastructure and communication.

The Chilca Plus Combined cycle power plant (110 MW) for Duro Felguera. Basic and detailed engineering.

“The expansion of the airport of Santiago de Chile means, in real terms, the creation of a new facility that will handle 30 million new passengers every year.”

Ana Díaz

Architect specializing in airports



South America | Atlantic Area

Some projects

| **BRAZIL** SAO PAULO RAIL | BAIXADA SANTISTA CAMPUS
| EMERGING AND SUSTAINABLE CITIES | **BRAZIL**
MASTERPLAN OF DE PALMS | MANAUS REHABILITATION
CENTRE | TECHNOLOGICAL INNOVATION | **ARGENTINA**
SUSTAINABLE TERRITORIES |

08



MODERNIZING RAIL IN SAO PAULO

Brazil has one of the most important metropolitan rail transport companies in the world, Companhia Paulista Metropolitan Trains (CPTM, São Paulo), with nearly 3 million daily users. As the Company currently has 6 suburban lines using a mix of technologies from different eras, it has decided to undertake a technological renovation, entrusting Idom with the development of the Comprehensive Plan of Telecommunication Systems.

BRAZIL

NEXT GENERATION TECHNOLOGIES & SYSTEMS

This plan aims to define and detail the technological standards of all the telecommunication systems for the running and operation of the rail infrastructure, safety and new services for users.

For this purpose, Idom will define the next generation technology communications network, the Ground-to-Train voice communications systems, high capacity Ground-

to-Train telecommunications (LTE / WiFi), electromechanical equipment control, station ticketing, information to the user via loudspeakers and panels, access control, systems integration at stations, centralized management and maintenance as well as a closed circuit television (CCTV) and systems integration in the control centre. ■

THE COMPREHENSIVE PLAN OF TELECOMMUNICATION SYSTEMS WILL INVOLVE THE RENOVATION OF TECHNOLOGY, BENEFITING 3 MILLION PASSENGERS DAILY.



BAIXADA SANTISTA CAMPUS

The Federal University of Sao Paulo (UNIFESP) has six campuses. One of them, the Baixada Santista Campus, is located in the city of Santos, 85 km from Sao Paulo. The campus which specializes in Health Sciences and marine technology and is undergoing expansion.

In May 2015, the authorities of the Campus held a special meeting to present the first infrastructure Masterplan of the University. The Masterplan project which began in September 2014, has been developed by Idom, with the participation of the academic community.

Over recent months, our firm has been busy studying and diagnosing the current situation and proposing Campus infrastructure scenarios for the short, medium and long

term. In addition, Idom has proposed the architectural concept of the future buildings -136,195 m² in the short term and 80,056 m² in the long term- as well as the growth strategy of the campus, with the aim of making it more sustainable, accessible, and adequate to the needs of the teachers and students.

The solutions proposed by Idom will enable UNIFESP to transform the Baixada Santista into a contemporary, active and friendly campus while integrating it into the urban fabric of the city, allowing it to act as a structuring and dynamic element of the region. ■

THE AIM OF THE MASTERPLAN IS TO CREATE A CAMPUS WHICH IS MORE ACCESSIBLE AND SUSTAINABLE.

Photo: Pedro Paes, Luciana Pitombo, Christiane Ribeiro, Andreia Faley, Ana Camila Sanches, Fernando Paal, Rafaella Basile, Eugenio Borges & Rebeca Mello.



EMERGING AND SUSTAINABLE CITIES

Latin American cities are often situated in physical environments which are vulnerable to climate change and natural hazards. With this in mind, the Inter-American Development Bank (IDB) is financing a program called the Emerging and Sustainable Cities Initiative (ESCI) to support cities in achieving balanced and sustainable growth.

Within the initiative, Idom has worked in 18 cities that now have resilient and sustainable growth models, permitting them to design urban growth scenarios (2030 and 2050) which are more compact and liveable, with a view to boosting the local economy, creating employment and encouraging eco-mobility.

LATIN AMERICAN CITIES FACE THE CHALLENGE OF GROWING IN A BALANCED AND SUSTAINABLE MANNER.

Photo: Mariana Corá, Heloisa Barbeiro & Carolina Valenzuela.



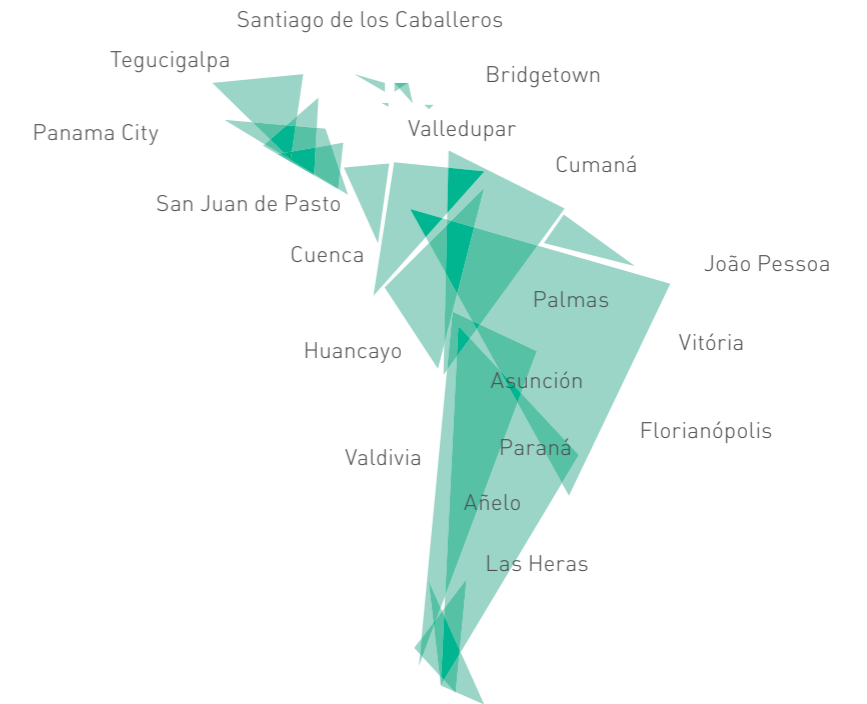
SUSTAINABILITY

LEADERS IN LATIN AMERICA AND THE CARIBBEAN

Idom has taken a technological, pioneering approach to the work, giving municipalities a set of tools for structuring projects to improve their environmental, urban and fiscal sustainability.

Within each process and in order to present and validate the final results of the studies conducted with the municipal officers from each city, Idom has organized several workshops. During the workshops, the process to study each case has been shared, and for the future, the appropriate strategies and actions for urban development to continue to achieve sustainable growth.

At present, Idom is a leading consultant in this type of studies and initiatives in Latin America and the Caribbean. ■



ARGENTINA

Paraná
Añelo
Las Heras

BARBADOS

Bridgetown

BRAZIL

Florianópolis
Palmas
Vitória
João Pessoa

CHILE

Valdivia

COLOMBIA

San Juan de Pasto
Valledupar

ECUADOR

Cuenca

HONDURAS

Tegucigalpa

PANAMA

Panama City

PARAGUAY

Asunción

PERU

Huancayo

DOMINICAN REPUBLIC

Santiago de los Caballeros

VENEZUELA

Cumaná



Infographics of the Master Plan of Palmas

MASTER PLAN OF PALMAS, BRAZIL

LOOKING TO THE FUTURE

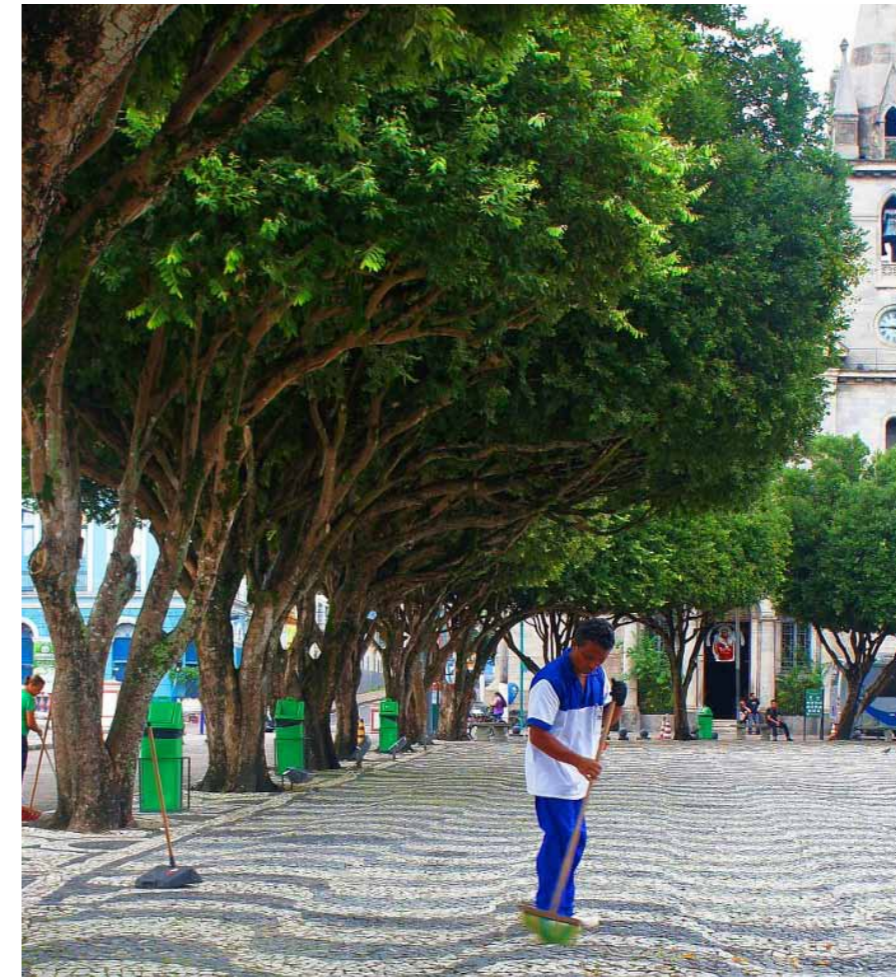
The current urban footprint of the city of Palmas (Brazil), the result of an unplanned growth, makes it difficult for citizens to enjoy environmental and urban quality of life. In addition, it is estimated that by 2050 the population will have doubled, reaching more than half a million people; however, the existing infrastructure, urban services and housing supply will not be able to handle this increased load.

In line with the guidelines of the project previously undertaken by our firm within the "Emerging and Sustainable Cities Initiative" of the Inter-American Development Bank (IDB) has developed a Pre-Master Plan for the city of Palmas with the aim of promoting inclusive growth with the rest of the city and enhancing its 6.5 km lagoon water-front area for uses associated with tourism and contact with nature.

In short, an urban transformation is proposed which is centred on a pedestrian square, integrating the new city hall and all administrative buildings in an environment of mixed uses and activities. In turn, the strip of land by the lagoon will be recovered, reinstating its natural value of protection against flood risks and being

conditioned to receive the new Convention Centre, leisure, outdoor sports and water sports areas. Its landscape integration is completed with several green corridors that cross the new districts to the existing city and become ideal spaces to locate amenities and neighbourhood shops, all connected by an integrated public transport network with rapid bus transit (BRT) and cycle lanes. ■

IT IS ESTIMATED THAT THE POPULATION OF PALMAS WILL DOUBLE BY 2050.



The centre of Manaus

REHABILITATING THE CENTRE OF MANAUS

LIVING AND WORKING IN THE CENTRE OF THE CITY

Manaus, the capital of the State of Amazonas and the main economic centre of northern Brazil, has decided to promote its valuable historical centre with the objective of providing quality of life for its inhabitants, preserving the built heritage, without neglecting the existing economic activity.

As is the case with many Brazilian cities, the buildings of the historic centre are run down, there is a shortage of housing, and much of the land is given over to services sector uses such as port and storage activity.

It is in this context, that Idom in collaboration with the Polis Institute of Brazil and the Inter-American Development Bank (IDB) has commenced the first phase of the Rehabilitation Plan of the Centre of Manaus. The aim is to progress with measures to

EXISTING BUILDINGS, PUBLIC SPACES & URBAN INFRASTRUCTURE IN THE CENTRE OF MANAUS WILL BE REHABILITATED.

ensure the recovery of existing buildings, public space and urban infrastructure, including the recovery of the waterfront of the Negro River to attract new residents and investors.

Recently, a workshop has been held with the participation of the main local stakeholders and professionals from Idom and the Inter-American Development Bank (IDB). The first steps of progress were presented and the areas to be acted on were defined. ■



MEXICAN TECHNOLOGY SECTORS

Stemming from the common effort of the Ministry of Economy and CONACYT (National Council of Science and Technology) is the promotion of innovation in companies through instruments like FINNOVA. Through projects such as "Skills for Innovation", funded by FINNOVA and implemented by the National Chamber of the Electronics Industry of Telecommunications and Information Technology (CANIETI), Idom has been supporting business innovation, documenting various technologies.

One of the instruments being used is that of "Innovation Cells", seeking to turn ideas into actual innovation projects. An Innovation Cell formed by a group of college students, with the help of a business coach, seeks to address, over a period of up to 4 months, an innovation challenge resulting in a new process or product for the company of the coach. The Innovation Cell combines training (university) and experience (coach), acting as a temporary R&D+i department for small businesses. This project is based on the experience of a German multinational company from the automotive industry that successfully introduced Innovation Cells into its processes to define new products. ■

THE TECHNOLOGICAL DEVELOPMENT OF LATIN AMERICAN SMES

Small and medium sized enterprises have limited access to technologies that are commonly used in large organizations. To help SMEs incorporate technology, international agencies are designing counseling programs related to the improvement of production processes, product development, management, marketing, etc.

In this context, the Inter-American Development Bank (IDB) has contracted Idom to analyze the programs that offer Extension Technology Services (SET) in Brazil, Mexico, Peru, Uruguay and Paraguay and propose recommendations to enhance the provision of such services. ■

SCIENCE AND INNOVATION IN URUGUAY

Through technical assistance funded by the European Union, Idom has produced recommendations to triple the capacity of researchers in Uruguay, based on sectorial scientific expertise and has produced a ranking of European scientific centres of excellence as well as the keys attraction factors of the country. The strategic and operational model of the Observatory of Science Technology and Innovation has also been defined, for the monitoring and evaluation of policies and actions carried out in this field. ■

CONSOLIDATING THE THREE BASIC PILLARS OF SCIENTIFIC INNOVATION.

INNOVATION IN THE VETERINARY SECTOR

In 2008, the Gepork Group, a family holding company dedicated to animal genetics and swine artificial insemination and distribution of veterinary products, developed with the support of Idom, a Plan for Innovation in which the actions were defined that were considered priority at that time. In recent years, the plan has been updated with two objectives: firstly, to identify innovative projects to be undertaken in the coming years and secondly, involve middle managers in the management of the company. ■

Photo: Marta Albertí, Pau Segarra & Patricia Vilar in the Barcelona Activa Technology Park.

A SUSTAINABLE FUTURE

Sustainable development in Argentina needs to be considered when projecting future of balanced social and environmentally scenarios and for the protection of some of the most spectacular natural environments in the world (Photo: the Perito Moreno glacier in the Southern Patagonian Ice Field).

Idom is working in the Patagonia on projects in the municipalities of Añelo and Las Heras, two "oil" towns, where urban and demographic growth has not occurred in an orderly manner, resulting in urban footprints which are not sustainable and a significant deficit in the level of amenities and services. In these locations, the objective is to achieve economic diversification, improve amenities, services and public spaces while also achieving a social and environmental balance in a post-oil scenario.

In the case of Parana, the capital of the province of Entre Ríos and the head of the Metropolitan Area of Paraná-Santa Fe, Idom has been collaborating with the Inter-American Development Bank (IDB) in reducing the zonal and sectoral imbalances, by undertaking actions that contribute to urban integration, product diversification, and better public and fiscal management. ■

ARGENTINA

Emerging and Sustainable Cities Initiative in Las Heras for YPF-Argentina. Masterplan, environmental impact, traffic and feasibility studies. Urban planning demand generated by future centres of employment and the future development of the oil sector.

Emerging and Sustainable Cities Initiative in Añelo for YPF-Argentina. Urban planning demand generated by future centres of employment and resilient development strategy.

Emerging and Sustainable Cities Initiative in Parana for YPF-Argentina. Socio-economic revitalization and recovery of the Parana River riverfront.

Projects to improve public spaces in Añelo and Las Heras for YPF-Argentina. Executive projects for public spaces for socio-economic improvement.

BRAZIL

Baixada Santista Campus, Federal University of Sao Paulo. Masterplan, environmental impact, traffic and feasibility studies.

Integral Telecommunications Plan for Sao Paulo for para la Companhia Paulista de Trens Metropolitanos (CPTM). Strategic Consulting.

Guidelines for the future Palma Masterplan for the Inter-American Development Bank. Risk mitigation and growth scenarios within the Emerging and Sustainable Cities Initiative.

Master Plan for the rehabilitation of the centre of Manaus for the city administration of Manaus. Rehabilitation and urban regeneration.

Guidelines for the future Palmas Masterplan for the Inter-American Development Bank. Master Conceptual Master Plan for orderly urban growth and integration.

Emerging and Sustainable Cities Initiative in Florianopolis for the Inter-American Development Bank. Mitigation of risks associated with climate change, vulnerability and risk analysis, urban growth scenarios and development of mobility.

Emerging and Sustainable Cities Initiative in Vitoria for the Inter-American Development Bank. Plan to mitigate and adapt to climate change, natural hazards mapping, calculation of risks and harm and support for governance.

Emerging and Sustainable Cities Initiative in Palmas for the Inter-American Development Bank. Risk mitigation plan and adaptation to climate change, sustainable development of the waterfront.

Emerging and Sustainable Cities Initiative in João Pessoa for the Inter-American Development Bank. Risk mitigation, sustainable urban growth scenarios, reducing urban inequality.

BOLIVIA

Development of a plan for the Bi-Oceanic Corridor for the Inter-American Development Bank. Proposal for the Regional Development of International Bi-Oceanic Corridor Development between Santa Cruz (Bolivia) and Corumba (Brazil).

Support for the Water and Sanitation sector for the European Commission. Strategy for Adaptation to Climate Change in Bolivia.

PARAGUAY

Profile Study of Natural Hazards for the Inter-American Development Bank. Emerging and Sustainable Cities Initiative in Asuncion, mitigation of risks associated with climate change, urban growth scenarios and municipal management.

URUGUAY

Strategic plan for the integrated management of sludge generated in the treatment plants and wastewater treatment for Sanitary Works.



“Idom is working in most Portuguese-speaking countries, a community of nearly 300 million people, with 200 million in Brazil alone.”

Joaquim Nunes Barata
Industrial Chemical Engineer
General Manager of Idom Portugal

Asia

Some projects

| **CHINA** INFORMATION TECHNOLOGY | **INDONESIA**
SANITATION AND WATER TREATMENT OF FIVE CITIES | AGC
PLANT | **VIETNAM** METROS OF HANOI AND HO CHI MINH
CITY METROS | **LAOS** WATER RESOURCE MANAGEMENT |

09



CHINA

INFORMATION TECHNOLOGIES INTEGRATING BUSINESS MANAGEMENT PROCESSES

Information technologies are today an indispensable part in the deployment of business strategies, permitting information to be efficiently centralized while perfectly integrating all the areas of the company, regardless of geographical location. The partnership between Idiom and the Onnera Group, in this field, began in 2012 with the deployment of a corporate business model on the SAP R/3 enterprise resource planning system, in the companies: Coreco companies (Córdoba, Spain) and Edessa (Barcelona, Spain).

In 2013 and 2014 the system was implemented in Gebze, Istanbul (Turkey) and Kushan, Shanghai (China). Phases such as the definition of the impact of the procedures and the building of the system were carried out simultaneously in both countries. However,

the implementation of the system was sequentially, starting first in Turkey and later in China. The implanted system integrates demand management and sales orders, purchasing, forecasting, production, logistics, engineering, document management, project management and economic-financial processes. In all these processes, Idom and the Onnera Group have jointly decided the Key Performance Indicators (KPI) essential for the management and decision-making processes. At present, these processes are supported by SAP R/3 applications adapted to meet the legal requirements of each country. ■

Photo: Yu Zhou & Qingqing Chen, Engineers.

INDONESIA

**BIG CITIES
BIG NEEDS**

Photo: aerial view of Jakarta, located on the island of Java. The capital and largest city of Indonesia covers an area of 650 square kilometres and has a population of over 8 million people, rising to 18.6 million in the metropolitan area.

Jakarta is the tenth most populated city on the planet and its metropolitan area is called Jabodetabek. It is the political, industrial and financial centre of the country.

ACCESS TO WATER

“In Indonesia, access to water and sanitation, will only be possible by improving existing infrastructure.”

Diego San Martín Rodríguez
Environmental Business Area of Idom.
Responsible for Water Projects.





SANITATION AND WATER TREATMENT OF FIVE CITIES

With nearly 250 million people, Indonesia is the fourth most populous country and the largest economy in Southeast Asia. However, the lack of infrastructure in general, and water supply and sanitation in particular, is significant.

The Indonesian government, with assistance from international agencies, is undertaking some projects that are part of the "Metropolitan Sanitation Management Investment Project", which is scheduled for completion in 2020.

The aim is to improve urban sanitation and treatment systems, nowadays practically non-existent, in relation to sewerage networks and treatment plants in the cities of Cimahi, Jambi, Makassar, Palembang and Pekanbaru, with populations around one million inhabitants each.

Idom is participating in an international consortium contracted by the Asian Development Bank (ADB), one of the international organizations that are financing the actions in Indonesia described above, to provide technical assistance to the local governments of the cities to develop management and operational capacities to handle the future sanitation and water treatment systems that are being developed.

Capacity building is being implemented on two levels: institutional (the owner of the service) and operational (the agency delivering the service). The works to be undertaken include, among others, developing policies on regulation, management, organization, operation and financing of services, technical assistance and project monitoring and conducting workshops and training activities. ■

INDONESIA IS THE FOURTH
MOST POPULOUS COUNTRY IN
THE WORLD AND THE LARGEST
ECONOMY IN SOUTHEAST ASIA.



AGC GLASS PRODUCTION PLANT IN INDONESIA

The demand for glass for the construction and automotive industry in Indonesia is growing as the country is experiencing economic growth. It is expected that this growth will continue in the coming years. To meet this demand, AGC, a global leader in the sector, has decided to increase its production capacity in this area. For this reason, AGC is moving production from Jakarta to Cikampek, where the existing plant already produces automotive glass.

The new production line will have a production capacity of 210,000 tons of float glass a year, an increase of 40% in the current production capacity. Once again, AGC has contracted Idom to deliver the detailed engineering services of the piping and electrical utilities of the new furnace. ■

THE NEW PRODUCTION LINE WILL
HAVE A PRODUCTION CAPACITY
OF 210,000 TONS OF FLOAT GLASS
ANNUALLY.

Photo: Idom has also worked in the AGC Sagunto Plant.

“12 million people will benefit from the new transport infrastructure.”

Pablo de la Puente
Metro Business Director.

VIETNAM

**THE METROS
OF HANOI &
HO CHI MINH CITY**

Idom is contributing decisively to the urban and social integration of the Metro systems in Vietnam. Over 12 million people will benefit in Hanoi and Ho Chi Minh City from this new transport infrastructure.

Idom, as the Project Manager of Line 3 of Hanoi and the designer of Lines 5 and 6 of Ho Chi Minh is becoming a model and setting the standards in the achievement of designs that revitalize the society and economy of both cities, while accentuating the urban landscape.

This is being achieved through the high level of commitment and coordination of our professionals in the aspects of technology, environment and social integration and the holistic vision required for these mega-projects.

The effort that we are making has been recognized by the College of Civil Engineering of Spain by the award for the “2015 Best Project abroad”. This award was given for the design of Line 5 of Ho Chi Minh City metro.

Our work in Vietnam has achieved that the societies of Hanoi and Ho Chi Minh City see the Metro as an opportunity for development and well-being. ■

Photo: Jorge Ocon & José Ignacio Peñas, have assisted in the implementation works of the Metro of Hanoi.





METRO OF HO CHI MINH “AWARD FOR BEST ENGINEERING PROJECT ABROAD 2015”

In late 2015, the College of Civil Engineering, Canals and Ports of Spain, in recognition of the growing importance of the Spanish Engineering in the international arena, awarded Idom the “Award for Best Engineering Project Abroad” for line 5 of the Ho

Chi Minh Metro. The merits for this distinction are based on the technical, manufacturing and design quality of the project and its contribution to improving quality of life and respect for the environment. ■



FOUR REASONS FOR A WELL-DESERVED AWARD:

1 SOCIAL SIGNIFICANCE AND IMPROVING THE QUALITY OF LIFE

The project impacts on the lives of more than two million people, reducing travel times, mitigating environmental pollution and contributing to the process of modernization of the entire city.

2 TECHNICAL AND FUNCTIONAL EXCELLENCE: SUSTAINABLE AND EFFICIENT

The project, based on its functional suitability and technical suitability, rests on a strict use of resources and a choice of solutions and processes, not seeking to be iconic or singular, but the most necessary and efficient.

3 RELEVANCE OF THE CONTRIBUTION IN A MULTICULTURAL SETTING

The Spanish contribution is especially significant as it forms part of a small group of countries such as Japan, China, Korea and Germany, cooperating in the design and financing of the metro in Vietnam.

4 PRESTIGIOUS LOCAL ENGINEERING

Leadership of the civil engineers of Madrid in an international multidisciplinary team.

Opposite page: Nguyen Thu Thuy, Jorge Ocón de Diego & José Ignacio Peñas. Upper photo: Vietnam’s ambassador to Spain, Nguyen Ngoc Binh, Rafael López, Jorge Bernabéu, Mauricio Gómez, Mikel Etxeberria, Pascual García & Pablo De La Puente, Metro Business Director receiving the award at the College of Civil Engineering, Canals and Ports of Spain.

“The implementation of Idom in India is key for accessing new opportunities as well as for the project team growth.”

Carlos González
Director of the Idom office in India.

AN EXPANSION PROJECT

Idom is expanding in India, therefore, in late 2015, we moved to larger offices in Delhi. The team is now made up of over 50 people, mostly engineers (mechanical, civil, electrical, etc.), working on projects in the area of industry and energy.

The team in India provides support to projects in other parts of the world such as Mexico, Algeria and Saudi Arabia, among others. In addition, we are also working on projects being undertaken in India, such as improvements to the Mahou brewery in Rajasthan, with the objective of achieving zero liquid discharge in the facility. Another important project we are working on is the provision of technical support to the Ministry of Renewable Energy (MNRE) for the

study and development of clean energy, financed by the European Union.

The strategy of the office is to provide services from India that are 100% from Idom. Unlike many international firms seeking the “low cost” element of the Asian subcontinent, Idom in India aims to create a stable professional team, to ensure that our philosophy and work practices remain, while at the same time, allowing us to effectively enter this market. ■

Photo: Pratik Khedkar, Engineer & Carlos González, Engineer, Director of Idom India



LAOS

MANAGING WATER RESOURCES

Laos is extremely rich in water and as such its effective management has become one of the country's priorities. The development needs of key economic sectors such as agriculture, mining and obtaining hydropower require careful planning and the implementation of actions to achieve the proper regulation of the resource, while also achieving high environmental quality.

Idom has collaborated decisively in the efforts of the Ministries of Energy and Mines (MEM) and Environment (MONRE), laying the foundation for rational and sustainable water management. We have developed the plan for the most important watersheds in the country, and developed studies on the management of reservoirs of greater national importance (Nam Ngum, Nam Ou and Xekong), as well as the basic guidelines of the Inventory of Water Resources an essential element of control in the future. It is also important to note that Idom has carried out intense educational work to develop the capacities of planning and control of hydraulic engineers from both ministries. ■

Photo: Mr. Phouanphanh Souvannabouth, National Technical Consultant, Mr. Lamphone Dimanivong, Deputy Director of the Department of Energy Policy and Planning, Ministry of Energy and Mines, Carlos Agudelo & José Luis Palencia (Idom) & Mr. Somzay Champathangkham, Associated Modeler.



“The foundations have been laid for the rational and sustainable management of the most important watersheds in the country.”

Oscar Ruiz
Project Manager

BANGLADESH

Combined cycle power plant (340 MW) with a GE 9FA gas turbine using natural gas for Isolux Corsán. Basic and detailed engineering.

BRUNEI

Feasibility study for the development of an Integrated Waste Management System in Brunei Darussalam. BEDB.

CHINA

Railway emergency management system for the Ministry of Railways funded by the Asian Development Bank (ADB). Consulting services.

Implementation of SAP enterprise management system for the Onnera Group. Consultancy Services for the design, construction and implementation of logistics and financing processes.

PHILIPPINES

Wastewater management, waste and watersheds in Cagayan de Oro City. Cities Development Initiative for Asia (CDIA). Feasibility study.

INDIA

Technical Cooperation on Energy and Environment in India. Lot 1: Clean Energy. Delegation of the European Union in India.

Skyscrapers and Intelligent Urban District in East Delhi for the National Building Construction Corp. and Delhi Development Authority. Design of the entire district. Contest winning proposal.

Mohali Exhibition and Congress Centre for the Infrastructure Development Board of Punjab State. Architectural Design.

New building for the Congress, the Senate and Assembly of Generalde Chattisgarh. Council Naya Raipur. Ideas Competition.

INDONESIA

Sanitation and water treatment in five cities in Indonesia for the Asian Development Bank. Technical assistance for institutional strengthening.

New furnace for flat glass for AGC. Detailed engineering of piping and electricity for a new float line of 800ton/day.

KAZAKHSTAN

Almaty LRT under a PPP scheme for Akimat of Almaty. Technical and legal advice for the preparation of the PPP tender documents.

Tranche 3 open cycle power plant (80 MW) with two 40 MW GE 6FB gas turbines and three 5.2 MW diesel generators for Gate. Basic and detailed engineering services.

RUSSIA

The Sredneuralskaya combined cycle power plant (410 MW) with a GE 9FB gas turbine and a Skoda steam turbine for Iberdrola. Basic and detailed engineering services.

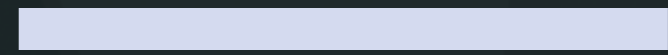
“The metro infrastructure that is being implemented in the cities of Southeast Asia will boost economic growth which is both healthy and environmentally sustainable.”

Pablo de la Puente

Civil Engineer
Metro Business Director



About Idom



| **SERIDOM** INTEGRATED SERVICES | **INNOVATION** |
SUSTAINABILITY | PROFESSIONAL DEVELOPMENT |
SOME FIGURES | IDOM OFFICES | CREDITS |

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“Idom is able to integrate its multidisciplinary capabilities to respond to clients who require a turnkey approach, providing professional services along with supply management and the execution of the project.”

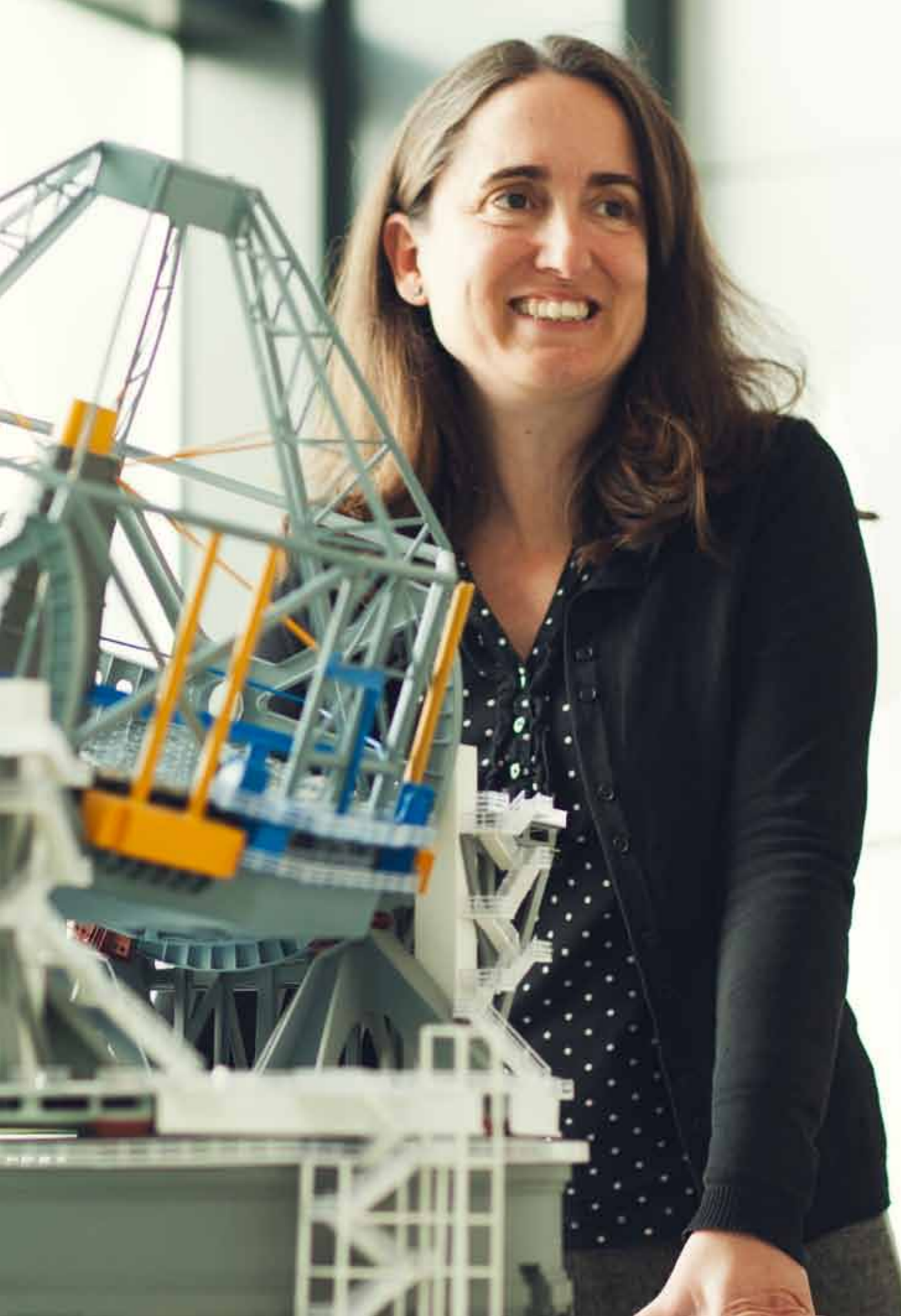
For over 20 years now, Idom has been combining the professional services that form part of a traditional engineering services firm (design, project management, works supervision), with the actual execution of the work itself, assuming full responsibility for the provision of materials and even at times, providing services for the operation and maintenance of the facilities once these come into operation. The service offered is flexible in that the modalities of the contractual relationship may be established either at a fixed price, as an open-book agreement, or at guaranteed maximum price, etc., adapting to the preferences of the client.

The sectors of the projects in which Idom can provide turnkey services are varied, from industrial production facilities to power gene-

ration plants, or even architectural projects for public or private use. In the turnkey activity, Idom integrates the different professional skills that are needed in the project, and becomes the interlocutor that designs and makes the project happen for the client with the full guarantee of success.

In Turkey projects, Idom integrates all the different professional skills and expertise required, acting as “The Conductor” that designs and makes the project happen for the client, on time and in budget, with a full guarantee of success. ■

Photo: Álvaro Rey, Director of SerIdom.



“Innovation involves always being one step ahead, creating value.”

In Idom, innovation means being one step ahead of what the client needs. And this applies to all the activities of a firm that provides professional services: from the design of a combined cycle power plant to the design of an intelligent building or the enclosure of solar telescope. The services we provide today are no exactly the same three years ago, they are evolving. We have an area of activity, Advanced Design and Analysis, working specifically on technological innovation,

both for Idom itself and our clients. Innovation is very much present in all the other areas of the firm: from Innovative Agendas for SMEs to high-speed rail or bioclimatic architecture design. ■

Photo: Ámaia Zarraoa, Project Manager (Integration of the diagnostics in the ITER Project ports).

Photo: María Cortes, Ramon Gutiérrez & Antonio Villanueva.

**“Energy efficiency,
renewable energy and
reducing emissions are
the keys to an innovative
and sustainable design.”**

Antonio Villanueva
Industrial Engineer



SETTING THE PACE IN THE DESIGN OF SUSTAINABLE BUILDINGS

LEED certification, managed and developed by the US Green Building Council (USGBC), provides the owners and users of the buildings with a framework for identifying and implementing practical and measurable solutions in the design, construction, operation and maintenance of sustainable buildings.

Idom has received this certification for many of the buildings designed by the firm across the globe. These include the LEED Gold awarded for the SCE&G Energy Innovation Centre of the University of Clemson in South Carolina,

or mixed-use residential centres and data centres in Spain. Our own offices in Madrid and Bilbao have been awarded LEED certification, achieving a high score on energy efficiency and water use.

Another project we are carrying out and that is a challenge in terms of energy efficiency is the Riyadh Metro. Given the extreme weather conditions in the Saudi city, the buildings are being designed with an envelope based on bioclimatic concepts. ■



Idom is owned by the people who work in the Company and only those who work in it.

This ownership structure creates a culture of engagement, resulting in a strong commitment to the client, colleagues and work.

The objective is that each person working in Idom can become a co-owner once they have demonstrated their capacity to embody the spirit of the firm.

2,700
persons

Over
500
partners

Photo: Laura Suárez, Amaia Vicario & Igor Askorbebeitia Garaigordobil.



“The level of internationalization of Idom, above 80%, has served to enrich and further strengthen the essence of our company, the people.”

Rafael López, General Manager of Development in Idom.

Projects in

123
Countries

39
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Volume of activity

300
Million Euro

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