2011 / 2012

idom

Excellence, innovation, commitment

www.idom.com

Cover : New Idom headquarters in Bilbao. Photo: Aitor Ortiz.

“Today, international contracts for our professional services represent 50% of our business, a goal which, until recently, seemed impossible to achieve”

Photo: Miguel Renobales, Miguel Navarro, Conchi Ortega, Iñaki Garai, Fernando Querejeta and Luis Ródríguez Llopis.

Signs of Hope

We have just finished a year, which from the European economic perspective, in particular the Spanish, has been turbulent and complicated.

As is well known, the economic adjustment measures introduced in 2010, to reduce the budget deficit through a reduction in overall public spending and investment has not been sufficient to calm the markets. This has resulted in great uncertainty, especially during the summer months, bringing with it new cut-backs which still persist, and perhaps a new period of recession.

In the private sector, the situation doesn't look much better. The real estate sector has still not raised its head above water and while there is still industrial investment, it is small and primarily focused on energy related sectors, especially renewables.

And of course, the biggest problem from an economic and human perspective is the historically high level of unemployment which doesn't seem easy to reduce significantly in the near future.

Nevertheless, there are also signs of hope.

A large number of companies in this country are fighting with great success in international markets, modifying their services or products to enhance the benefits for the customer, allowing them to not only continue, but in many cases grow. Many others are starting on the same path.

Idom is today among those companies that are competing successfully around the world. And in that sense, 2011 has been very important for us. Several years ago, we made a firm commitment to internationalise our business and we are now clearly seeing the fruits. In 2011, we achieved the goal that we set out not long ago, although seemly impossible, that international contracts for our professional services, would reach 50% of our business.

"All of our technical areas have a significant projection abroad"

We have already worked on all continents, and in over one hundred countries, and all our technical areas have significant international outreach, particularly the engineering/energy groups and advanced analysis, with more than 80% of their business coming from abroad.

The following pages describe the most significant projects of the year; however, we would also like to remember others, simply to show their importance and diversity: the wind turbine bench test for Clemson University, United States; the ATST mobile dome, the largest solar telescope in the world, Hawaii; various diverse thermal and combined cycle plant projects in Spain and in the world; the AGC glass plant in Brazil; large steel projects in Bolivia and Malaysia; the design of the high-speed rail network in Poland; the Medellin tramway; the planning of sustainable urban development in Mexico (Jalisco, Mexico, Morelos, Yucatan, Campeche ...); the collaboration with FECYT in innovation projects; the AVE train station of La Coruña; the University Teacher Training College in Bilbao and many others.

The most exciting news for us has been our position in the annual ranking published by the prestigious British architecture and construction magazine, Building Design. We have appeared this year among the 50 largest architectural firms in the world, among the 10 largest in Europe, and the 10 largest in the world in project management, and among the top 5 in sports installations in the world.

Size is not everything, but this position together with the relevance of the projects in which we are participating, is a good indicator of the development that our team of architects have reached, at all levels.

We would also highlight the opening of our new headquarters in Bilbao. It is a magnificent building, designed by Javier Perez Uribarri, which is already featuring in the media, as a prime example of functional office building, comfortable yet emblematic.

And ahead of 2012, we can only contemplate the coming year with optimism. We do not know what the evolution of the economy will be, and with all the experts predicting, at least a difficult first half, our situation is very positive. We are starting the year with a portfolio of clients which exceeds that of 2011, with major projects and, as already mentioned, with a significant degree of internationalisation.

"Our team is highly motivated with a high technical level"

Our team is of high quality, motivated, eager to serve the client, and to participate in more and more important projects, regardless of location, growing professionally.

We have a solid financial situation, and our two new buildings, in Bilbao and Madrid are contributing significantly to providing more agreeable working conditions, allowing us to better serve our customers and improve our public image.

With this base, in 2012 we should consolidate our international expansion, strengthening our business outside Spain, in all areas. This growth should not be based on domestic demand, as was the case until recently, but on external demand. We have enormous possibilities that we should consolidate in the coming years.

"At the beginning of the year we have a client portfolio that exceeds that of 2011"

This will mean a great effort from us all, predominantly with the need to progressively adapt the profile of all our people, reinforcing aspects related to internationalisation and innovation.

In this way, although we cannot forget the crisis, as we are constantly reminded by the media, we can at least put it aside, continuing to drive our growth and development and contribute our part to encouraging a more optimistic business environment and generate job opportunities, especially for younger people, perhaps the main social responsibility we have in these difficult times.

Fernando Querejeta
President

Luis Rodríguez Llopis
General Director

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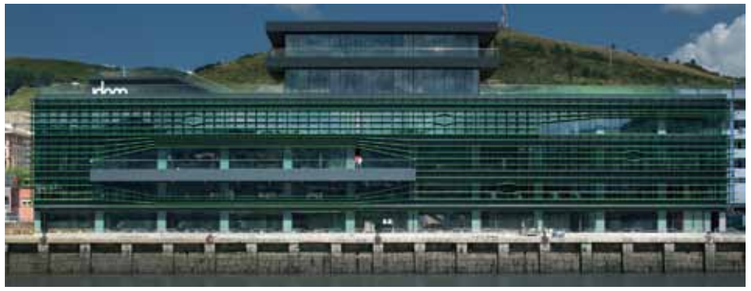
01 New headquarters of Idom in Bilbao

New headquarters of Idom in Bilbao

The new corporate headquarters of Idom are situated in an old customs warehouse, located on the Duesto canal, which forms part of the Port of Bilbao. Covering an area of 14,400 m2, the new building houses offices, research areas such as the clean room facility, the prototype workshop, and social areas.

Photography: Aitor Ortiz



RENOVATION PROCESS

: Starting point //

: o1 / The old customs warehouse before the renovation.

: o2 / The initial approach to the project was to consider how best to change the use of the original building, making it functional in its surroundings, while considering its impact on the area.

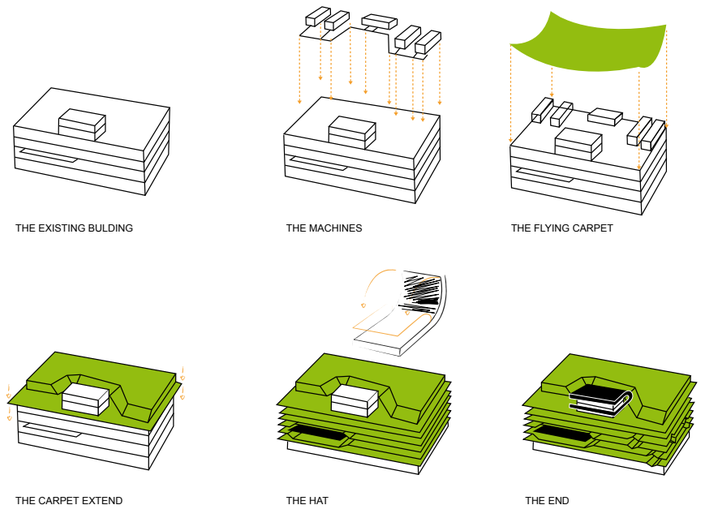
: Concept //

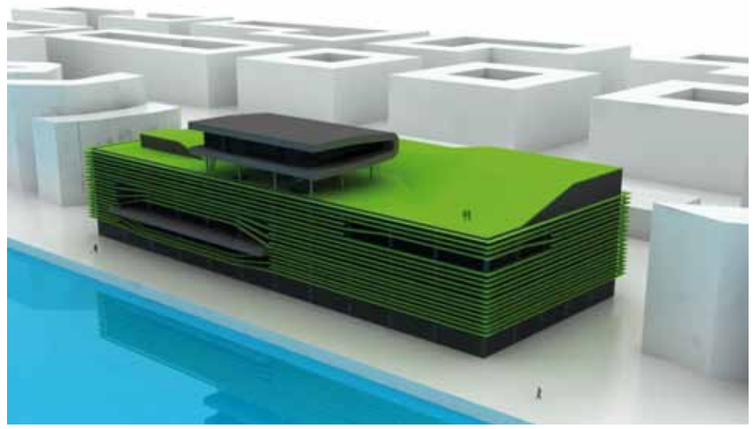
From the outset, the design centred on how best to use these floors, once occupied by the merchandise that was stored in the building.

An imaginary green 'flying carpet' was designed to cover the top floor or roof, hiding the air conditioning equipment, normally on view in most office buildings. This design has brought with it, the resulting reduction in noise and visual impact.

What emerges from this design are hill forms, as a result of the 'carpet' covering the equipment, which have been adapted to create an open-air relaxation area for strolls during break times. A lounge for employees to rest or chat, is also situated on this floor.

The flat 'carpet' area is covered with authentic grass. Neverthless, artifical grass has been used to cover the sloped 'carpet' area over the roof machinery, given the mantenance and weight issues.





: Final Result //

Virtual recreation, showing the final appearance of the design.

The façade was designed so as not to compromise the view from inside. Offering high protection from the elements, the design allows for the control of solar radiation which in turn means a saving in energy costs. This is achieved through the use of louvres reducing the entry of direct sunlight. The design for these green louvres emerged as a continuation of the green carpet, which is now folded and layered vertically. The uniformity of these louvres is broken up by the balcony sections, extending out over the canal. The louvres fold yet again to allow for access to the building, the entrance lobby, and access points for emergency services.

During the renovation project process, many varied designs were prepared before ultimately deciding on a horizontal proposal, the optimal balance between aesthetics, cost and maintenance. This was the design of protruding aluminium louvres supported on steel supports.

The louvres that cover the façade are aluminium composite with a rockwool filling supported on hot-rolled steel H-Sections using AISI 316 stainless steel bolts. Directly behind this independent structure, high performance glass with curtain wall aluminium frames is fitted between the columns of the original building. Between the structure of louvred aluminium and the glass façade, platforms have been designed to allow for cleaning.

New Idom headquarters in Bilbao

Sustainability

An energy saving of around 60% of normal consumption for a building of this type is anticipated.

The 'ecological roof' provides a number of additional benefits for the surrounding urban environment. The "Urban heat island" effect, when an urban area is warmer that the surrounding rural area, is reduced through the use of vegetation on the building. This green roof acts to reduce noise and absorb CO_2, while capturing rainwater that is then collected in a storm water tank on the ground floor, which enables the building to reduce rainfall runoff during heavy rainfall.

The interior design has respected existing elements, combining them with new ones. The great beams of the original structure, a customs warehouse, are visible on most floors. The spaces that were once occupied by the old cranes are now occupied by the main staircase and elevators. The elevators are clad in glass, offering a clear view of the surrounding office areas and the adjoining canal. On the top floor, the tower which once housed the noisy machinery of the cranes is now a library, a space for silence.

On the ground floor, it was necessary to remove three structural columns to accommodate a functions hall of 400 m2. The supporting structure of three original gantry cranes was considered in the design of the hall. The result is a continuous wooden floor, wall and ceiling paneling, which conforms to the shape of the load bearing beams, reminiscent of the hull of a ship.

The building incorporates innovative energy efficiency measures; taps and sanitary equipment with reduced water consumption; the storage of rainwater harvested from the 'green roof' is used for the automatic roof garden watering system; an automatically controlled lighting system aided by the light diffusing louvres of the façade; photovoltaic panels on the roof of the tower; and an air conditioning system that is singular; a system whereby hot air rises by convection and is then cooled by a battery of pipes of chilled water, housed in beams, suspended from the ceiling. The metal casing of these 'chilled beams', of various colours incorporates the light fittings and sensors. These beams have been installed between the existing large concrete beams. The great mass of these beams serves to reduce the temperature difference between day and night, when the air conditioning system is working or not.

As the air conditioning works through a system of air that passes through the chilled beams, there are no mechanical parts, a factor which contributes to creating an effective and durable system, requiring minimal maintenance.

The ventilation system works by displacement. The air comes out at floor level, at very low speed, heating as it rises to the ceiling, where it comes into contact with the chilled beams. It is them manipulated to descend by natural convection. A draft-free installation, both comfortable and silent.

The colour of the beams contributes to creating a more agreeable work-space, far from the monochromatic ceilings, usual in the open spaces of offices. The atmosphere that is created using chromatic greens and ochres is reminiscent of sitting under the foliage of a tree.

The walls and ceilings directly adjoining the façade are painted anthracite grey to soften the excess of natural light. In the central areas, the existing structure is left raw to the eye, maintaining the original stained white.

An important objective of the project was to create a light and airy work-space, with good intra and inter departmental visual communication, breaking down the barriers between the people of the different categories that make up the firm. On some of the floors, the central lobby is used as the work area for the secretaries, while on other floors, it is a seating area where people can talk by phone without disturbing other colleagues.

Very few designated offices have been planned; however, there are many rooms that can be used for internal meetings or working in groups. To avoid creating psychological barriers between the offices, halls and open plan areas, the enclosure of these meeting rooms or 'cubicles' is not the conventional fixed glass screen and door, but a sliding three leaved glass opening, making it possible to have 2/3 of the office opening out to the open plan work area.

Noise and open work spaces tend to be synonymous, therefore special attention has been paid to sound absorption surfaces: on the floor, carpet with the latest generation 6.6 fibre; on the front panels of the desks, veneers perforated with sheet rock wool; and on the ceiling, in order to convert the chilled beams into acoustic traps, these were lined with sound absorbing veneer. This strategy is repeated in the visiting rooms, where a wall system was designed using rock wool with an absorbent electro galvanized dichromate coating, an industrial finish used for filtering sound.

The basement-floor, was an addition to the original building. As the floor is below the water level of the Deusto Canal, to minimize the problems of leaks and damp and ensure adequate ventilation, some walls, the columns and foundations, were covered with a camouflage mesh.

01


02

INAUGURATION AND FIRST VISITS

On Tuesday, July 26, seven hundred people from the office of Bilbao moved into the new building, a move that was described as exemplary. Interruption for the staff was minimal and it was possible to work to full capacity on the same day of the move. The official opening was on September 29, following which, the new facilities have been widely reported in the media and have been visited by numerous authorities, clients and friends.


03


04

: 01 / With the President of the Regional Council of Bizkaia, José Luis Bilbao and the mayor of Bilbao, Iñaki Azkuna.

: 02 / With the Governor of Aguascalientes, Mexico and a large group of Mexican authorities and investors.

: 03 / The opening ceremony of the new headquarters was attended by over 1,000 people.

: 04 / With the President of the Basque Government, Patxi López and the Minister of Industry, Commerce and Tourism, Bernabé Unda.

02 Generating energy

“The global energy demand will grow nearly 20% in the next decade.

Our engineering teams are ready to respond to this challenge”

Javier Sáiz
Industrial Engineer

Photo: Laura Eladio, Iker Velasco, Javier Alonso, Aitor Urquiza, Javier Sáiz

Steam & gas

Idom Engineering is a company that is a world reference in combined cycle power plants, with accomplishments in over 25 countries that together exceed 20 GW.

The size and technical diversification of Idom means that the company can offer a full range of services. From the early stages of a project (market, conception, feasibility and environmental, studies, etc.) to the development of the project (basic and detailed engineering, procurement), and construction (on-site supervision and assistance in commissioning). Idom will accompany the client throughout the project in the preparation of civil engineering or 'Project Manager' and the development and standardization of new applications (floating power plants, integrated solar Combined Cycle plants) and products (innovation applied to power plants, definition of a standard with new equipment, prefabricated modules, etc.).

Some countries where Idom has reference projects in Combined Cycle plants.

Germany
Saudi Arabia
Algeria
Bolivia
China
United Arab Emirates
Spain
France
India
Iraq
Ireland
Italy
Jordan
Kazakhstan
Latvia
Macedonia
Malaysia
Morocco
Mexico
Pakistan
Peru
Portugal
United Kingdom
Russia
Turkey
Venezuela

: Photo // Combined Cycle 'Bahia de Bizkaia'. 800 MW
Scope: Complete engineering and plant construction

UNITED KINGDOM

1,700 MW Combined Cycle Power Plant, Staythorpe

Situated between the river Trent and Nottingham, this gas-fired power station was inaugurated in 2010 and generates enough electricity to supply 2 million homes. This is a combined cycle type, fuelled by natural gas, built on the site of two former coal-fired power stations, built in 1950 and 1962 respectively, and closed for over a decade.

The current plant consists of five modules of 400 MW each, equipped with a gas turbine, 288 MW Alstom GT26B, heat exchanger (boiler) and steam turbine with thermal efficiency of about 58%.

Idom has worked for Alstom in the design of piping the power island, including modelling in 3D.

:Photos // Pembrooke (Wales)

Aerial views of the five 400 MW modules

WALES

2,000 MW Combined Cycle Power Plant, Pembroke

Pembroke is a natural gas power station, built on the site of a previous oil-fired power station, which closed in 1997 and was subsequently demolished in 2001.

This is the largest power station to be built in the UK since 1986, the same year in which Drax (North Yorkshire, England) became operational. It will provide enough energy to supply 3 million homes and will employ around one hundred people.

It consists of five modules of 400 MW each, with 288 MW Alstom gas turbines, boiler and steam turbine. The gas comes from natural gas (LNG) at Milford Haven. The EPC contractor is Alstom and the client is the German firm, RWE.

Construction began in 2009 and will continue until 2012. Idom has carried out the work of Architect/Engineer for Alstom, including the PDMS modelling of the plant.

Becoming more efficient

The replacement of coal and fuel by natural gas

Gama Power Systems

Generating confidence

With the Integrated Combined Cycle Power Plant project in Whitegate (Ireland), Idom started the relationship with the Turkish company GAMA, that has gone on developing new plants. Some of these projects have been a 220 MW CCPP in Skopje, Macedonia (photo on the left), a 80 MW open cycle in Atyrau (Kazakhstan) or the new plants of 871 MW in Hatay (Turkey) and 890 MW in Kirklareli (Turkey) for which Idom is actually developing the design.

IRELAND

450 MW Combined Cycle Power Plant in Whitegate

The integrated combined cycle power plant of Bord Gáis has recently completed its first year in commercial operation. The construction of the plant was carried out in “turnkey” mode by the consortium between GE and the Turkish firm, Gama Power Systems; being Idom responsible of conducting the basic and detailed design and provide some support to the supervision of the construction works.

Idom was also selected by Conoco Phillips, to perform the basic and detailed design of the interconnections between the refinery and the combined cycle plant.

TURKEY

Multi-shaft Combined cycle power plants

For the Consortium GAMA/GE, Idom is carrying out the Architect Engineering services for two combined cycle power plants in Turkey, one of 890 MW located in the province of Kirklareli, north-west of Istanbul, and another one of 871 MW in the province of Hatay, in southern Turkey. Both plants share the multi-shaft configuration (two gas turbine generators and one steam turbine generator), while the first one is cooled with an air cooled condenser and the second one with a cooling tower.

MEXICO

300 MW cogeneration plant

The project aims to deliver 500 t/h of high pressure steam to power cryogenic units in Nuevo Pemex. The design includes the expansion to 800 t/h with an afterburner in the recovery boiler. The turbines are 2 GE 7FA multi-axis and Cerrey boilers.

RUSSIA

Electricity & heat

Besides electricity, the SUGRE plant supplies 40% of the population of Yekaterinburg, with hot water through a distribution network.

SUGRES consists of three groups and a total of 11 turbines producing 1,100 MW of power. Idom has collaborated in the design of a fourth group, a combined cycle of 403 MW thermal generation, 200 Gcal/h.

KAZAKHSTAN

Open cycles

In order to power the Onshore Processing Facility at Atyrau that purifies oil (450,000 barrels per day) and natural gas that come from the Caspian sea platforms, a power plant is being built.

Idom is carrying out the design of the extension of the existing power generation facilities with two 40 MW gas turbines 6B, operating in open cycle with natural gas, and three diesel generators of 5.2 MW, each one. Besides contributing to the overall supply of electricity, this plant will act as an emergency group in the case of power shutdown in the Processing Facilities.

: Image // Combined cycle plant in Turkey
Image courtesy of GAMA / GE

Hybrid Combined Plants

The Hybrid (solar-gas) plants have important advantages over pure solar because they are less dependent on the sun and as such less affected by fluctuations in solar radiation. They also have advantages over gas as they can reduce hydrocarbon consumption depending on demand.

ALGERIA & MOROCCO

Integrated solar Combined Cycles in the Sahara Desert

The need to find sustainable solutions has also come to Algeria, a country that despite having abundant natural gas reserves is proposing to develop its wind and solar potential.

Near the largest African natural gas reservoir, Hassi R'Mel, a 150 megawatt hybrid solar power station has been built, of which 25 MW of the power is produced by the solar field.

The plant is expected to operate at 100% continuously capacity, so that in the hours of solar radiation, the gas afterburners will be reduced or shut down completely and therefore natural gas consumption will be significantly lower.

Over the past four years, Idom has prepared the preliminary design of the plant, the definition of major equipment, optimisation of the layout and the detailed engineering of the power block, comprising of civil, mechanical, electrical, I&C and equipment specifications. Subsequently assisting the construction team, Abener until hand over to the client.

Another case of similar characteristics to the above, is the hybrid plant built in Morocco, consisting of two gas turbines and one steam, along with a solar generation system that together have an output of 470 MW, of which 25 MW is produced by solar generation.

: Photo // Hybrid plant in Hassi R'Mel, Algeria. Image courtesy of Abener

INNOVATION

Design of a 'plant-type' for Combined Cycle Power

In recent years, General Electric has been designing equipment (gas turbines, steam turbines and generators) that will define a new standard of a combined cycle plant of high efficiency and flexibility, with capabilities to perform 61% higher than the base load. The turbines are designed to work in an integrated manner with other renewable sources (solar, wind, etc.); that is, working in a flexible manner, adapting to the variations of complementary sources.

The complexity of a system that must respond to these demands for efficiency and flexibility, prompted General Electric to look for an engineering company to develop an optimal yet flexible design for their plant (a single-axis, 510 MW). Idom is the engineering company selected to carry out this work. Idom carried out the design in parallel to the development of the new GE equipment.

: Image // Courtesy of General Electric

INDIA

Thermosolar with Thermal Storage

The Solar Thermal Plant is located in Viranapalle, Pamidi Mandal in the district of Anantapur, Andhra Pradesh. It will have the capacity to produce 50 MW from a solar field, using parabolic trough collector technology (PTC), using an 8 hours thermal energy storage system based on molten salts, which is also being designed by Idom.

The heat of the sun

Idom has participated in more than 15 thermal power plant projects, which have a combined total capacity of more than 700 MWe, (solar).

The plants are based mainly on parabolic trough collector technology with or without thermal storage, but also in central tower technology both direct steam generation and direct heating of molten salts, solar integrated combined cycle and hybridized with biomass. The projects which Idom has developed are not only in Spain but also in Algeria, Morocco, India and the United States.

Seridom

'Turnkey' services

In 2011, some noteworthy projects in which Seridom has participated are the projects of concentrated solar power (CSP) plants in 'Morón de la Frontera' and 'Olivenza', both for 'Ibereólica/Inveravante'; Palma del Rio, for FCC Energía/Mitsui and Villena, for FCC Energía.

Of these, the first three projects, are phase III in the Special Regime Pre-Assignment of the Spanish Ministry of Industry. They are in an advanced construction phase and are due to start operation in the second half of 2012.

Seridom provides customers with an integrated service which includes engineering, management, procurement, construction, supply, commissioning and operation & maintenance.

: Photo // Installation process of the solar field plant in Moron de la Frontera (Seville).

Concentrated Solar Power

Social and Economic Benefits

Spain is a leader in Concentrated Solar Power technology (CSP) with a level of investment in R&D+i that exceeds, in terms of GDP, other leading countries such as Germany and the United States.*

It is estimated that each 50 MW solar thermal power plant provides enough electricity to supply 28,000 households while creating 400 jobs during the three year construction phase and 50 permanent operation staff throughout the plant life cycle. Each plant also saves 98,000 tons of CO_2 that would be emitted by a coal-fired facility of equivalent size.

Overall, the Spanish solar electricity sector generates wealth to the value of 1,650 million euros against 185 million euros paid annually, in premiums for electricity production. If the forecasts of the Renewable Energy Plan, 2020 are met, the contribution to GDP will be 3,500 million euros and 20,000 jobs will be sustained.*

* Source: Protermosolar Report (Deloitte), 2011

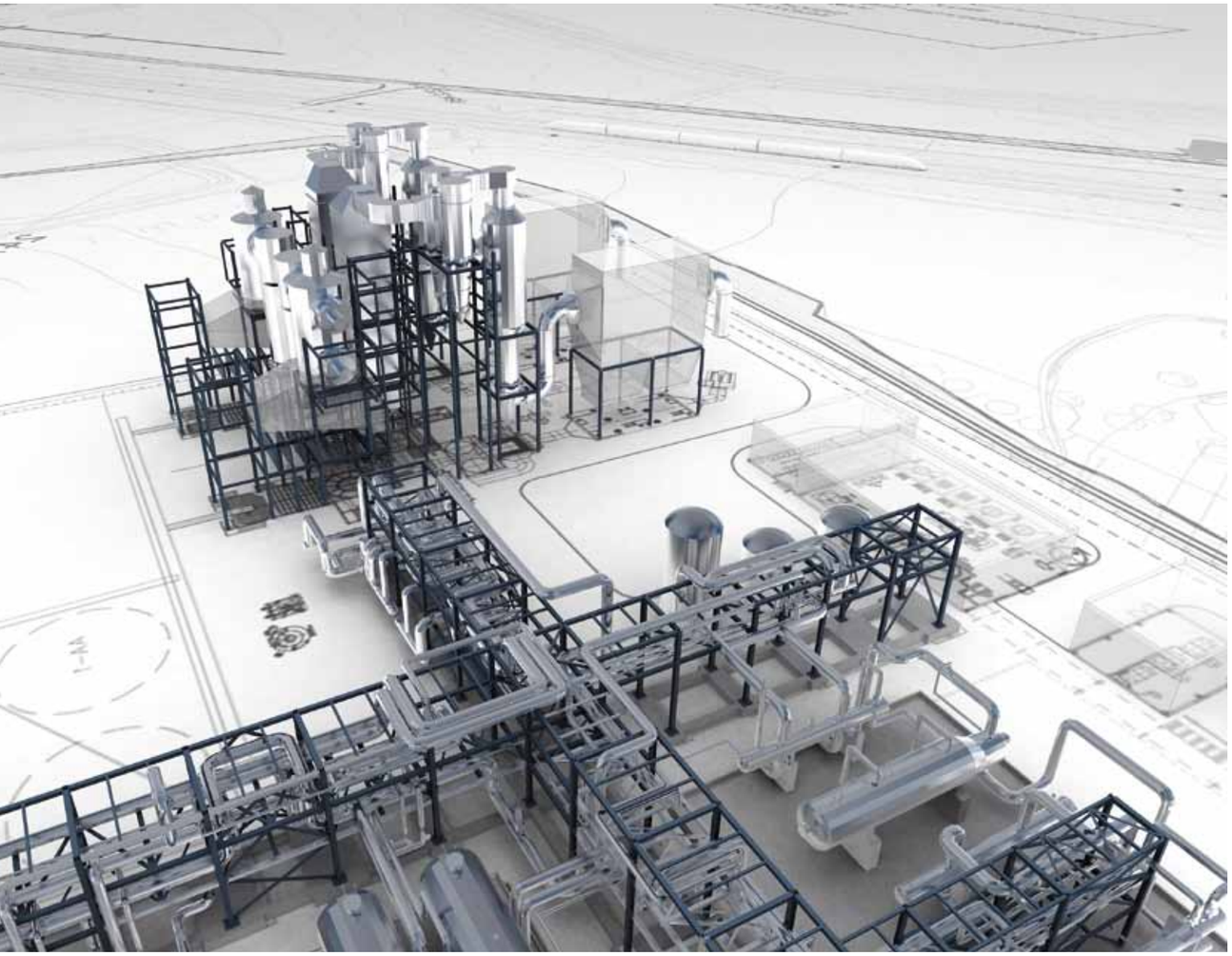
: o1 // The Guzmán Plant, Palma del Río (Cordoba)

: o2 // Power block plant, Morón de la Frontera (Seville)

: Photography // Jorge Rey. © Idom

Integrated services

Seridom assumes the responsibility of all phases of a project, including all necessary materials, supplies and services.



INNOVATION

Thermal hybridization of biomass

In the municipality of Les Borges Blanques, Spain, an innovative plant is being built, singular in its use of hybrid solar energy with wood biomass. The power plant can produce up to 25 MW (solar or biomass).

The plant will operate 24 hours a day during the months of October to June, maintaining a minimum load of 50%, using biomass. During the months of July to September, it will run in solar mode, without hybridization.

One of the most innovative aspects of this plant, in which 150 million euros will be invested and 30 jobs created, is the incorporation of a biomass plant in a conventional thermal plant, with biomass, fueling the boiler that has heated the thermal oil until it reaches the desired temperature.

Experience

The power block, the solar field (with central tower or parabolic cylinder) and the molten salt thermal storage.

The Madrid-Barcelona high-speed rail line crosses the site of the plant, with solar fields on both sides of the track. The thermal-solar joint venture, Borges comes about from the union of Abantia and Comsaemte.

: Images // Computer graphics of the future plant
- Biomass boilers
- Steam generation system
- Turbine and generator group

Computer graphics: Andreia Faley. © Idom

16 **Concentrated Solar Power Plants**
USA
India
Spain

2 **Hybrid Combined Cycles**
associated with solar fields using parabolic trough technology.
Africa

THE UNITED STATES

Photovoltaic Plants

Idom has developed numerous projects and services in power generation using photovoltaic technology, both for end users and EPC contractors. Idom has participated in power plant reference projects ranging from 100 KW to 35 MW. Recently, the firm Global Energy Services (GES) has contracted Idom to carry out the detailed engineering work for the Californian plants in Palmdale California (Los Angeles County), and Twenty-nine Palms (San Bernardino County).

California is at the moment, one of the most promising photovoltaic markets; with a total of 600 MW, in installations of plants greater than 2 MW, and a further 2.5 GW, in various stages of construction, with up to 10 GW in the design phase.

The force of the wind

Idom has participated in over 450 wind farms, providing services ranging from the supervision of on-site works, to the preparation of basic and detail design, or analysis and design of complex foundations.

INDIA

Project Management and Construction for a new manufacturing plant for wind turbine blades – models G5X (850 KW) & G8X (2 MW) – Promoted by Gamesa in Halol, Gujarat.

ROMANIA

Basic and detail engineering for several wind farms with a total of 300 MW in the region of Dobrogea for the Grupo Jorge. The scope of Idom includes the civil and electrical works of the wind farms, substations (30/132/400 kV) and overhead lines.

BRAZIL

Since 2000, Idom has participated in the design and site supervision of many wind farms in Brazil. Idom is currently performing detail engineering for a 288 MW facility for Iberdrola Ingeniería y Construcción and a 120 MW plant for Cobra Energy.

Image courtesy of Gamesa

MEXICO

Basic and detail engineering of Oaxaca I wind farm for EYRA. The wind farm consists of 51 2 MW wind turbines (Vestas). The scope of Idom has included the civil and electrical works for both the wind farm and 34.5/220 kV electrical substation.

KAZAKHSTAN

Conducting a feasibility study for a 60 MW wind farm (expandable to 300 MW) in Shelekin, Kazakhstan. This study is being conducted jointly with the Kazselenergoproekt Institute for Samruk Energy, including the characterization of the resource, estimation of production, comparison of different wind turbines, pre-design of the wind farm and general technical specifications for civil, electrical and control works.

POLAND

Basic and detail engineering and assistance for permitting procedures for the 20 MW Zlotoryja Wind farm, developed by ENHOL.

GAMESA

Collaboration with a leading international company, a reference in the field.

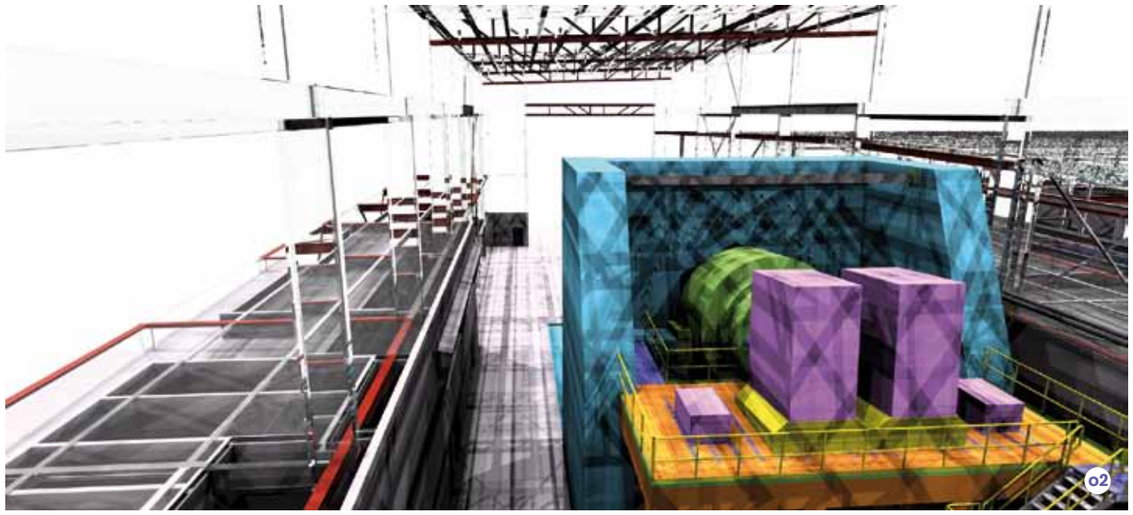
Gamesa is a global technology leader in the design, manufacture, installation and maintenance of wind turbines.

Idom has worked with Gamesa since 1993, in almost all areas of their business activity working with their engineering departments, in both the development of the different elements of the turbine and the industrial tooling design for mass production.

One of the activities of Gamesa, in which Idom has been involved, has been the construction of the wind turbine production facilities that the company has built throughout the world. Following the work carried out in the construction of the Spanish plant of Nacelles (blades, gearboxes, etc.), Idom has been part of Gamesa's international expansion, working on the new plants in the U.S. (2003), China (2006) and currently in India.

Idom has also actively supported Gamesa in the construction of wind farms, having developed numerous projects for the Spanish market, as well as providing on-going advice on the technical adjustment of wind turbines, to meet the regulations of the different countries in which they are being introduced.

: Image // A worker in a blade manufacturing plant in China. Courtesy of Gamesa.



THE UNITED STATES

Engineering test plant

Clemson University (South Carolina), is one of the most prestigious in the United States, created in 2004, The Clemson University Restoration Institute (CURI), is a multidisciplinary institute, dedicated to the revitalization of industry and sustainable development, within which, renewable energies occupies a privileged place.

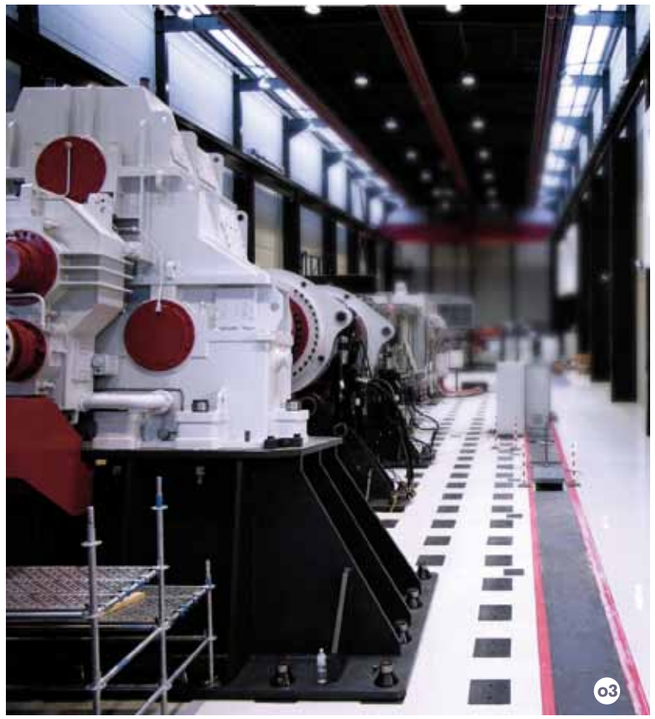
The United States Department of Energy awarded the CURI, the project for the construction and subsequent operation of what will be, the largest wind turbine testing facility in the world.

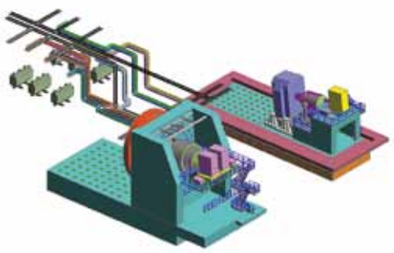
This testing facility will have two test beds for ultimate load tests, test operation and accelerated fatigue testing of wind turbine power drive trains of 7.5 and 15 MW respectively. The facility is strategically located at the Port of Charleston (South Carolina), in Building 69, a former naval warehouse, and as such, will offer services to important companies, engaged in the design of the next-generation, high power offshore wind turbines.

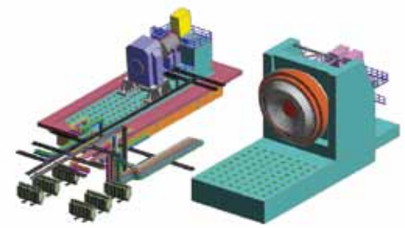
The Institute has entrusted Idom, with the design of the architecture and engineering works, and support during the construction of this unique facility. The commissioning of the facility is scheduled for late 2012.

: Images /

: 01 // Test shop
: 02 // Design of wind turbine testing facility using BIM system
: 03 // Wind turbine testing plant designed and built by Idom for CENER
: 04 // Cooling systems and medium voltage







Other renewables

COLOMBIA

Biomass for bioethanol

For Isolux, Idom has prepared the basic engineering for the biomass cogeneration plant in the industrial complex of Bioenergy, to produce bioethanol in Meta (Colombia).

The solid fraction obtained after the milling of sugar cane, called bagasse, is burned in a biomass boiler to produce a maximum of 180 t/h high pressure steam, that expands in a turbine, permitting the thermal self-sufficiency bioethanol plant to generate power of up to 43 MWe.

HAWAII (US)

Waste Gasification

8.5 MW waste gasification power generation plant, using construction and demolition debris as fuel. The plant will be built at the Campbell Industrial Park, on the island of Oahu in Hawaii. Gasification technology is used to obtain a synthetic gas, for later burning in a boiler, producing steam that then powers a turbine generator.

Hydroelectric Plant

The project consists of 2 powerhouse units of 4.6 MW each, namely, The Upper and Lower Puu Lua Hydroelectric Project; and is an example of the hydroelectric power projects being developed by Idom in the world.

Network engineering

Spain's 'Red Eléctrica (REE)'

Engineering for substations, transmission and distribution lines for utility and installation companies, nationally and internationally. One of which is REE, providing substation engineering services for volumes greater than 25,000 hours/year.

THE CANARY ISLANDS

Studies of electrical systems

Behavioural studies of power systems in steady and dynamic state. Analysis of safety and quality of power service grids. Power Grid planning. In 2011, an important work of Idom was the vulnerability analysis of the Canary island electrical systems, in withstanding extraordinary weather events, and design proposals to improve the network configuration, new design standards and thresholds, as well as, strengthening the network elements, most exposed to the weather.

Image courtesy of 'Red Eléctrica de España'

03 Transforming matter

“Our challenge is to transform natural resources into useful goods, in a sustainable manner”

Juan Lekube
Industrial engineer

Cristina Vicente
Chemical engineer

Steel & metals

In 2011, Idom performed the engineering for the construction of 10 complete plants, that together will produce and transform more than 12 million tons of steel and other metals.

JINDAL STEEL & POWER

Idom carries out works in America and the Middle East, for one of the world's leaders in steel manufacturing.

This industrial multinational, of Indian origin is in the process of strategic expansion, through diversification in their investments. Two flagship projects are the steel plants in "El Mutún" (Bolivia) and the port of Sohar (Oman).

At the end of 2010, Jindal inaugurated a production plant, producing Hot Briquetted Iron (HBI) (pictured here) which feeds the nearby Meltshop, a project in which Idom is also heavily involved.

In recent years, Oman has gained a prominent place in the ranking of the top five economies of the Middle East and North Africa, due to its privileged geographical location and excellent diplomatic and economic relations with its Arab neighbours, Europe, China and the U.S.

Photo: Irfan Naqi

BOLIVIA

Integrated steel plant

Jindal Steel & Power awarded Idom, the engineering works project of a new integrated steel complex, located in the mining region of “El Mutun”, Bolivia. Idom is performing the engineering works for the construction of an integrated 1.7 MTPA Steel Melting Shop, 6 MTPA DRI plant, 10 MTPA Pellet Plant and auxiliary services, including a 450 MW power plant, much needed because of the inexistence of an electrical power network in the area.

OMAN

New Meltshop at the Port of Sohar

This new Steel Meltshop (shown here in model form) will be producing two million tons of steel in 2013. It will be fed directly by a Hot Direct Reduced Iron plant (HDRI), with capacity for 1.5 million tons, annually. To achieve this production level, the furnace with a taping capacity of 200 t and a 200 MVA transformer, will also be fed with scrap.

Jindal Iron & Steel is currently working on the next phase of the project, which will see the installation of several rolling mills for the production of pipes, bars and sections.

BAHRAIN

Steel Meltshop and Heavy Section Rolling Mill

In 2011, Idom completed the design of a steel Melting Shop for an annual production of 850,000 tons, and heavy structural section mill with a capacity of 600,000 tons, annually, of finished product.

The project located in the Hidd industrial area, near the capital of Bahrain is being built by the consortium of Samsung and the German technology supplier, SMS.

This facility is part of an integrated steel plant, which is complemented by a Direct Reduced Iron plant (DRI), a pelletizing plant with capacity of 6 million tons a year, and a reception and storage area for iron ore on the dockside.

BRAZIL

Hot Rolling Mill for SBQ

Idom is carrying out the engineering works for the rolling mill for SBQ for the world's leading producer, Gerdau. This is a facility producing mainly for the automotive sector will have the capacity to roll 400,000 tons, annually. Operational in 2012, the main purpose of the facility will be the supply of steel to the growing Brazilian market.

New cold rolling plant

Given the current demand for building materials in Brazil and in order to maintain its leading position in the local market, Gerdau is building a new wire mesh and lattice construction plant. The engineering work is being performed by Idom.

Photo courtesy of Acerinox

MALAYSIA

Cold Rolling Mill Stainless Steel

BAHRU STAINLESS (Acerinox Group) has continued to rely on Idom for the development of the engineering work for the construction of Phase II of its cold rolling mill plant for Stainless Steel in Malaysia. Idom has worked for Stainless Bahru in Malaysia since 2009 when Phase I, now in operation was initiated.

SAUDI ARABIA

Aluminum Rolling Mill

Idom has designed the civil works and steel structures of the new aluminum rolling mill plant, with capacity for 380,000 tons per year; a building of over 115,000 m2. This plant is being constructed by Samsung Engineering Ltd, for Maáden Alcoa. The Korean company has once again put its trust in Idom, following the successful project for the construction of the steel meltshop and rolling mill, located in the Kingdom of Bahrain. The construction engineering of the new aluminum rolling plant, with a 15,000 tons metal structure and concrete foundations of 120,000 m3, has been completed and finalized by Idom, in less than 6 months, using the latest technology and 3D design tools.

Image courtesy of Acerinox

Refining and Petrochemical

Engineering for operational and energy optimization studies in refineries, storage and hydrocarbon processing facilities.

SPAIN

Pinoso

Configuration Studies and Extended Basic Engineering (FEED) and cost estimation of underground storage facilities, for liquid hydrocarbons.

Project for the transportation and storage of liquid hydrocarbons, in salt dome caverns, with 1.9 million m^3, capacity.

PERU

Talara Refinery. Engineering, management & supervision of Project

Petroperu is developing the project of the modernization of the Talara refinery, for the production of diesel and gasoline, with low sulfur content, and improve the refinery in the processing of heavy crude and reduce waste, increasing efficiency and improving environmental aspects.

The Consulting Project Management and Supervision is being carried out by the consortium, PMC Talara, formed by Inelectra, Idom and Nippon Koei.

SPAIN

Storage Terminal, Algeciras
Petroleum products

Idom is collaborating with the Dutch company, Vopak, a world leader in the transportation and storage of hydrocarbons and chemicals, in what will be one of the largest storage terminals for oil products in the Mediterranean; to be concluded in the second of two planned phases (the first phase is currently in construction). The capacity will be approximately 1 million m^3, and the facility will have a Jetty of 400 meters. Idom is carrying out, the Project Engineering, Management and Monitoring (Phase I) and Extended Basic Engineering (FEED)(phase II).

:Photo // Storage Terminal, Algeciras

UNITED STATES

Petroleum processing facility, Transmix.
Engineering for relief systems & collection of slops

Idom has prepared studies, simulations and the engineering for the modification and extension of the relief system and collection of slops (liquid waste), at the Kinder Morgan petroleum processing facility, Transmix in Richmond, California. Kinder Morgan is a processing, transportation and energy storage firm, in the sector of hydrocarbons and petrochemical products.

Petronor refinery
Repsol group

Energy efficiency studies in the distillate hydrotreating unit, G3

Studies and simulations, to improve energy efficiency by optimizing the heat exchange networks, and the implementation of improvements in the main dynamic equipment of the unit.

Configuration Study and Basic Engineering for solidification systems of liquid sulfur

Configuration studies and basic engineering, for the new sulfur solidification systems, in order to obtain a solid sulfur product with higher added value, meeting the current market requirements.

Photography: Joserra Irusta. © Idom

SPAIN

Production plant for bread-making flour

Seeking a logistical advantage, the Spanish company, Haribéricas XXI, has built its new plant on a site located in the Port of Seville. They produce various formulations, from the mixture of different flours, through a wheat milling process; in both bagged and bulk form.

The surface area of the site of the industrial plant is 20,000 m^2, with buildings of 6,500 m^2, to a maximum height of 45 meters, meeting the requirements of the storage silos. The plant will process 600 tons of wheat per day.

Industrial projects

The world of industry is comprised of many different sectors. For a multidisciplinary company such as Idom, this is the ideal environment to deploy the potential of its technical services. The following cases are just a sample of this potential.

Airbus

European aeronautics industry

Over the last decade, Idom has carried out many works for the European aerospace giant, ranging from the design and construction of production facilities for the A380, A400M and A350 (Puerto Real, Getafe, Illescas), to advanced analytics for the A400M testing facilities, or dimensioning the the rear fuselage of one of their aircraft.

Pikolín

Bedding products

Recently, this Aragonese Company decided to move its factory and headquartered to Zaragoza, implementing a change in the management model for the distribution of the finished product. To carry out this project, they turned again to Idom, the company who has been providing technical assistance to the company for over a decade.

UNITED KINGDOM

Recycled paper mill

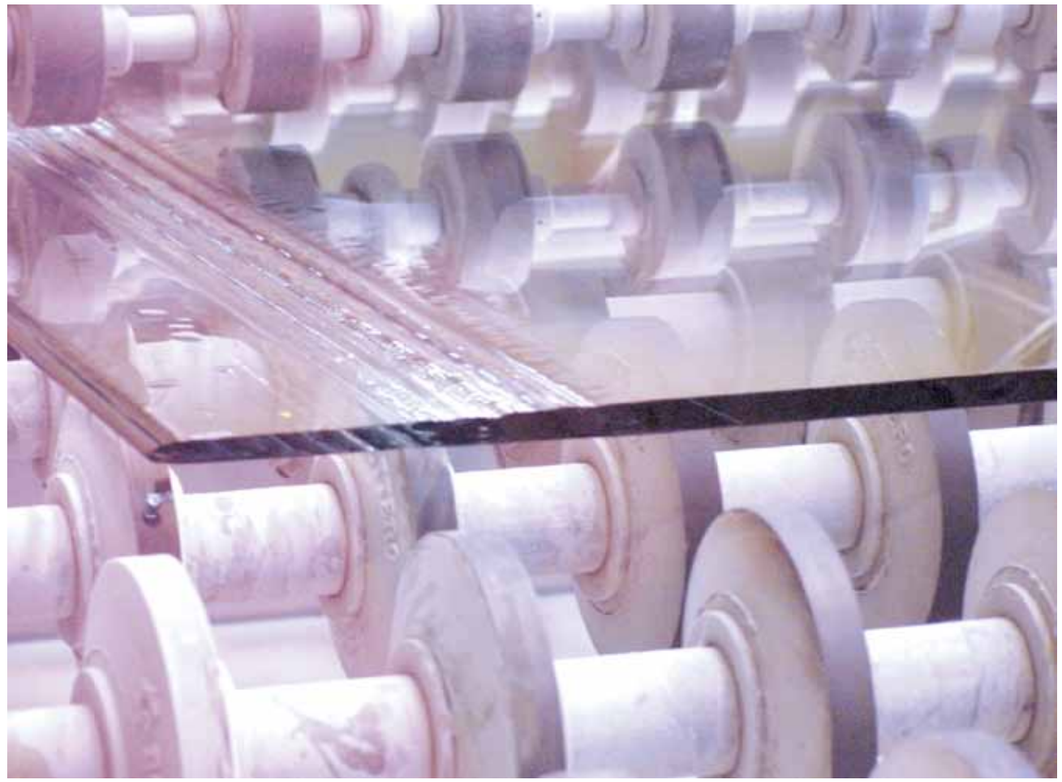
Close to Manchester in the UK, SAICA is building a manufacturing facility for low grammage paper used in the manufacture of corrugated board. This facility will use the world's most advanced technology.

Idom is designing the Combined heat and power plant, the water treatment and effluent plants, as well as the urbanization and other general infrastructure of the factory.

: 01 / Preliminary design of the plant
: 02 / Current status of plant construction

Large scale

In the first phase, the plant will produce 220,000 tons of flat glass, per year. In the future, AGC plans to expand production capacity, making it one of the largest plants of this type.



BRAZIL

Integrated plant for the production of glass

The Brazilian economy is growing at a fast pace and the construction and automotive sectors now require massive amounts of glass. To meet this need, a world leader in the glass industry, AGC, will build its first South American plant, for the production of flat glass.

The first phase, which is scheduled for late 2013, will have a furnace, with a capacity to produce 600 tons a day, most of which will be used, to meet the demands of a market that manufactures 500,000 cars per year.

AGC has commissioned Idom, to supply technical assistance for the construction of the integrated plant, inlcuding engineering, procurement, construction supervision and commissioning. The production line of float glass, will be built on a site of 750,000 m^2, which will also house other production lines: automotive glass plant, mirror glass plant, and coater glass plant.

:Image // AGC plant in Belgium

Nuclear services

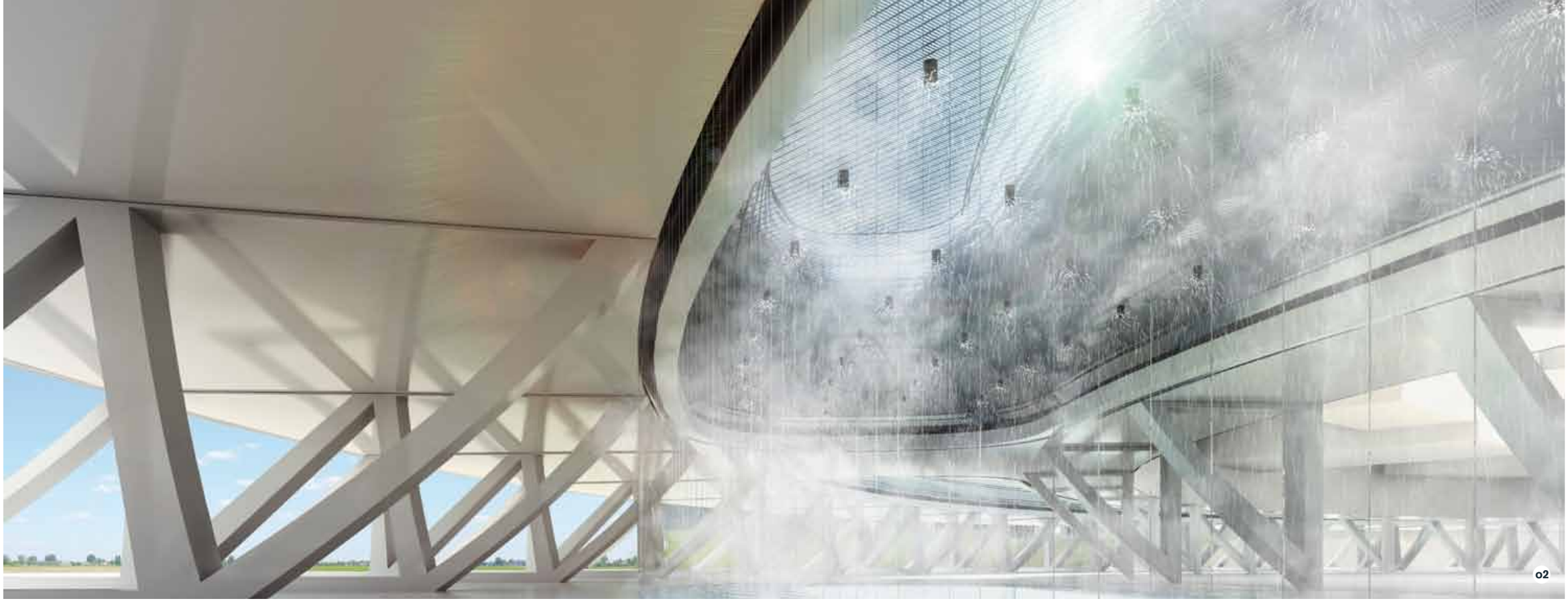
From stress testing and management of nuclear fission power plants (lifetime), to engineering for future fusion installations.

FRANCE

ITER Project

The objective of ITER (International Thermonuclear Experimental Reactor), is to demonstrate that nuclear fusion can be an energy source for the future.

Idom is collaborating in this project, in partnership with two global engineering groups, Halcrow and Altran Technologies, providing technical assistance and site engineering, in the design and construction phases of the complex. Idom is also assisting with the management and recruitment phase, and the supporting infrastructure, buildings and facilities.



o2

Stress Tests

Analysis of the Spanish nuclear power plants

Idom is conducting the stress tests required by the Western European Nuclear Regulators' Association (WENRA), including security reviews and risk analysis (stress tests). Idom has carried out in depth evaluations of the ability of the plants to withstand earthquakes, floods and other external forces, beyond the design basis for the plants.

Idom has participated in all the Spanish plants: Vandellós, Asco, Cofrentes, Almaraz, Trillo and Garona.

: o1 / Cooling tower project
: o2 / Turnkey project for the new cooling system, Vandellós II

Security systems

Nuclear plant reliability

Various projects related to safety have been carried out; from geological and geotechnical site evaluation to withstand extreme natural disasters, to the development of basic and detailed engineering, equipment purchase, construction, installation, and the commissioning of the new safety systems of the plant; as in the case of, the EJ system of Vandellós II which provides an emergency cooling circuit for the reactor.

Idom is evaluating the fire protection of the plants, based on the new safety regulations of the Nuclear Safety Council (CSN) IS-30, and the analysis of HVAC emergency systems, and adjustment to conform to the new regulations.

o2

Security

Nuclear power plant life management requires continuous and systematic monitoring of aging structures, systems and components important to safety.

Life Management

Nuclear plants

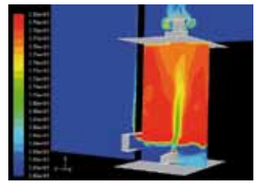
Between 2003 and 2009, Idom has conducted the studies and evaluations necessary to request a long-term operation permit for the Santa Maria de Garona Nuclear Power Plant. Since 2006, Idom has been providing support, in various different areas, from planning, development, implementation and monitoring, in Life Management Plans, for the Spanish nuclear power plants of Asco, Almaraz, Vandellós II and Trillo, following the CSN Safety Instructions IS-22, based on the 10CFR54, NUREG 1800, and NUREG 1801 standards, of the NRC.

Plant Engineering & support for maintenance

Nuclear plants

Idom conducts studies of new modifications in design for implantation in the successive “Programmed Shutdowns for Refuelling”, as well as, support for the engineering and maintenance departments of the power plant.

Idom is highly capacitated in this field, based on the use of techniques of advanced calculations, for a range of applications, by making fluid-dynamic calculations (fluid dynamics, pictured on the right), thermohydraulic calculations and models, nonlinear calculations of stress and flexibility, calculation of impacts, condition monitoring based on operating experience, modifications of design and supervision of construction works and assembly.



Advanced Analysis & Design

The use of adaptive optics technology will provide the most detailed view of the solar system, ever obtained.

HAWAII

Advanced technology solar telescope

The National Solar Observatory in the United States has decided to build the Advanced Technology Solar Telescope (ATST), on Mount Haleakala, Maui (Hawaii). This will be the largest solar telescope in the world with unprecedented capabilities for observing the Sun.

The telescope with a diameter of 4 meters will have a significant impact on the study of stellar magnetic fields, plasma physics and astronomy, allowing scientists to learn even more about the Sun and solar-terrestrial interactions. The ATST project is funded by the "National Science Foundation" and coordinated by the Association of Universities for Research in Astronomy (AURA).

The dome is a complex structure, designed to protect the telescope, including the wide range of mechanical sub-systems. In addition to protecting and maintaining the telescope, the dome will allow the movement of the entire structure, required for targeting and solar tracking. The design of the solar telescope differs significantly from the usual night-vision telescopes, as the thermal radiation from the sun needs to be offset so that the heat of the sun does not affect the vision of the telescope.

European-Extremely LargeTelescope (E-ELT)

Redesign of the dome and construction sequence, Cerro Armazones, Chile

The construction of the E-ELT is one of the priorities in astronomy today, as it will move forward on issues critical to the fundamental study of astrophysics, such as the beginning of the universe, its fundamental laws, black holes or exo-planets, among others.

In June 2011, the Council of the European Southern Observatory (ESO) approved a new reference design of the E-ELT, in order to achieve cost savings and reduce risk in some important issues. As a result, the diameter of the primary mirror has been slightly reduced to 39 m, with the telescope in its entirety also decreasing in proportion.

Idom has carried out the complete redefinition of the dome and foundations, adapting them to the telescope mirror of 39 meters, including the redesign of all major subsystems. In general, the original philosophy of the compact design of the dome, previously designed by Idom, using cost optimization strategies, has been maintained. Likewise, some new elements, such as the ad-hoc system of seismic isolation for the telescope have been included. Idom has also designed the assembly sequence.

Image courtesy of the European Southern Observatory

STUDYING THE GALAXIES

The Gran Telescopio, Canarias (GTC)

On the Canary island of La Palma, the largest visible range telescope in the world has been built, using some of the most advanced technology. The project, led by the 'Instituto de Astrofisica de Canarias', culminated with the first light of the telescope on 13 July 2007.

The telescope is located at the Observatory of Roque de Los Muchachos, a location offering optimum conditions for observation, due to the quality of the air and meteorology.

With the telescope, it will be possible to learn more about black holes, the most distant stars and galaxies in the universe, and the initial conditions behind the Big Bang, among other fields of astrophysics.

Idom is responsible for the design, manufacture, assembly and commissioning of two sets of the Folded Cassegrain (FC) foci sets, for rotation and guidance of scientific instruments, weighing up to a ton, with an accuracy of 13 arc seconds (16 microns).

During 2010, Idom worked on the design of the systems and began the production of the different components, once the Critical Design Review (CDR) was complete. During 2011, the two units were assembled and have undergone an extensive validation process and acceptance tests. The units were succesfully handed over at the 'Observatorio del Roque de los Muchachos´ (La Palma Island) and it is expected that 2012, will see their installation.

This project has received funding from the ERDF of the European Union.

Image courtesy of IAC / www.iac.es

Photo: Íñigo Escalante

Telescope Field Rotator

These pages present some photos of the assembly and testing of one Folded Cassegrain Sets for the Gran Telescopio Canarias. Each set is composed of a field rotator for instruments of up to 1,000 kg, and the acquisition and guiding optics for each of the Folded Cassegrain foci (lens) of the telescope. The rotation range is 530º, with a positioning accuracy of 13 arc seconds at speeds of up to 15 º / s.

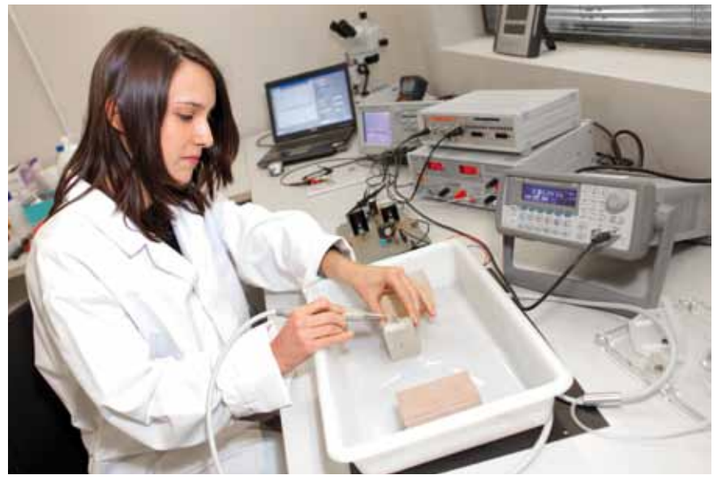
Engineering for Science

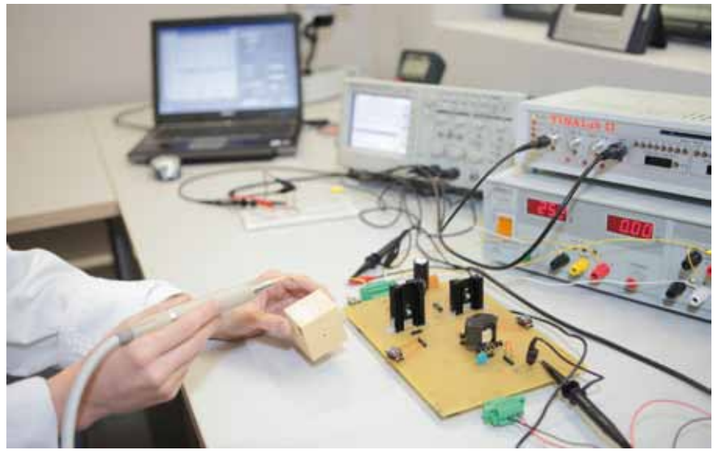
A Service of the Department of Advanced Design & Analysis

Idom with the collaboration of international laboratories and research consortia has performed all the works from the basic and detailed design to the construction and the commissioning of the facilities, including the instrument and equipment specifications. The designs have been validated using the most advanced techniques in virtual simulation, prototyping and testing.

The projects in this field include the research and development of optical, thermo-hydraulics, cryogenics, radiation and precision monitoring, large mobile structures, and so on.

: Photos // Idom researchers with models of the Extremely Large Telescope and the Advanced Technology Solar Telescope in Hawaii.





Piezoelectric scalpel

Study & optimization

The piezoelectric scalpel allows cutting into the bone without damage to soft tissue. It is used in fields such as dentistry, maxillofacial surgery, orthopaedics, neurosurgery, and so on.

This instrument replaces the tools powered by micro motors, that have limited access to complicated areas and can damage soft tissue. Micro motors generate a high level of mechanical energy, which is converted into heat through friction, and can damage tissue near the bone. As such, they require an irrigation cooling system; which can be difficult to integrate into these designs.

The piezoelectric scalpel provides greater precision, making it cleaner in the tool-bone interface, compared to traditional scalpels. The heat produced, is lower than conventional tools and the risk of contamination during surgical procedures, is lessened.

Working for the BTI Biotechnology Institute, Idom has redesigned the blade, focusing on the study and design optimization for the user, in order to improve performance. Compatibility with other units being manufactured is also under consideration.

ENVIRONMENT

Climate change-Carbon footprint, ISO 14064-1:2006

The first step to mitigate greenhouse gas (GHGs) emissions in any organization is to identify and measure them, through a GHG inventory; that is, calculating the carbon footprint.

Cespa, Euskaltel, Fagor, Gamesa, Metro Bilbao, Norbega-Coca Cola, Vicinay Chains, Vidrala, Galdakao Hospital-Usansolo and the town hall of Donostia-San Sebastián have participated in the project, led by Ihobe (Public Company for Environmental Management, Basque Government): "Design and piloting of a GHG verification system according to ISO 14064-1:2006." The project aims to deploy the use of this international standard, therefore adding further credibility to the GHG audit reports.

Idom, in addition to the technical assistance throughout the process, for the participating organisations, has designed training courses, and a guide for the implementation of the standard, along with other support materials to facilitate the adoption of the standard by other organisations.

BRUNEI

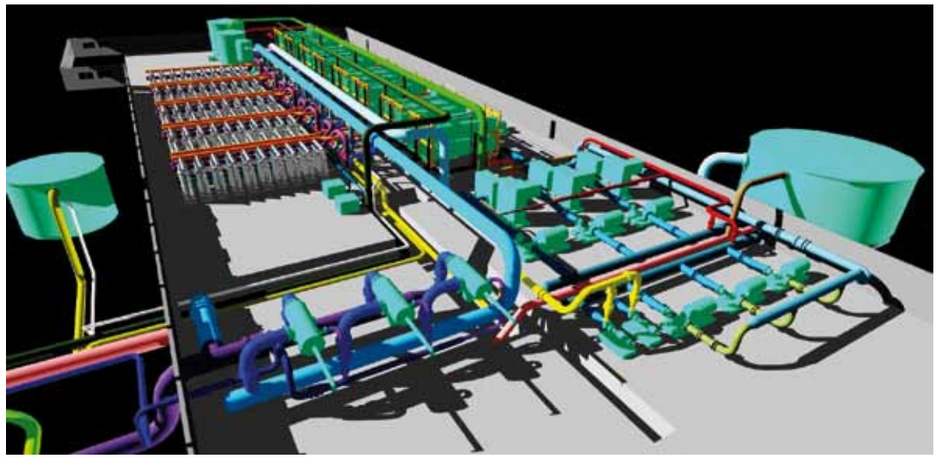
Integrated waste management

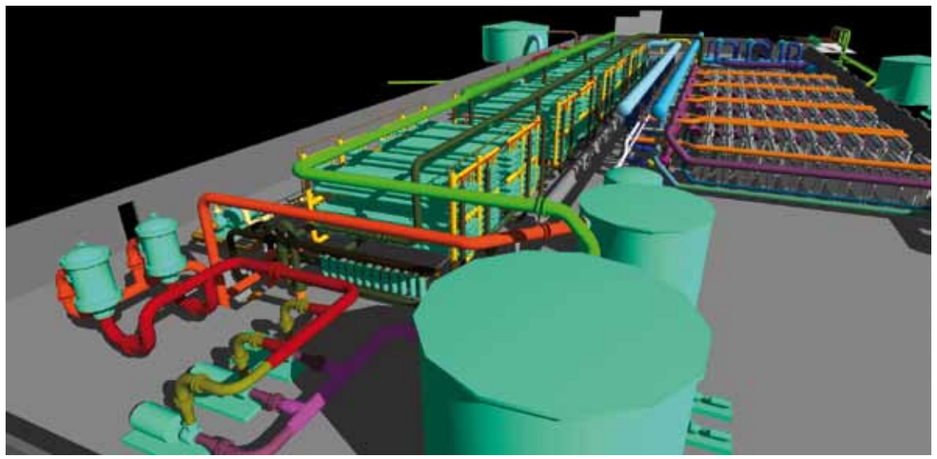
The State of Brunei Darussalam is modernizing quickly, in the context of population and economic growth. This has also meant a sharp increase in waste generation. It is because of these circumstances, that improving the current waste management model and its associated infrastructure, is considered a national priority.

The Spanish government, through its Financing Line Feasibility Study (FEV), under the Development Assistance Fund (FAD) has funded the preparation of the Feasibility Study, for the development of an Integrated Solid Waste Management System, in Brunei Darussalam. The implementation of the system has been awarded to Idom.

In the execution of this work, completed in 2011, Idom has designed a system of integrated waste management, on a nationwide scale, both modern and sustainable, based on a combination of technologies to ensure material and energy recovery.

: **o1 //** Brunei Kampong Ayer
: **o2 //** Sultanate of Brunei in Southeast Asia
: **o3 y o4 //** Sungai Paku Waste Management Complex





GHANA

Sea water desalination plant

Ghana is a country that is experiencing a significant growth in population, primarily in the towns around the capital, Accra. This in turn has resulted in an insufficient supply of drinking water.

For this reason, the Government of Ghana has recently signed a contract with Abengoa for the construction, commissioning and 25 year operation of a desalination plant that will supply towns such as, Teshie, Nungua and Tema.

The plant represents an investment of 115 million dollars, and will have the capacity to produce 60,000 cubic meters of drinking water, daily, using a process of reverse osmosis, with the previous stage of ultrafiltration and post re-mineralization of water through calcite beds.

Idom has been contracted to perform the Basic Engineering and On-site Engineering.

GALICIA

Sanitation Plan of the Arousa Estuary

'Las Rías Gallegas' (estuaries of Galicia) are a valuable asset for their environmental, scenic, economic, social and touristic importance. Protecting water quality is a priority for the Water Administration of Galicia.

In 2011, 'Augas de Galicia' commissioned Idom, to carry out the implementation of the sanitation plan, on the left bank of the 'Ria de Arousa': the municipalities of 'Vilanova de Arousa', 'Cambados' and 'Illa de Arousa'.

The Plan contributes to achieving the objectives of the Water Framework Directive in Galicia, and serves as a binding reference, for investments in sanitation and wastewater drainage in the area.


o1


o2

JORDAN

Landfill gas (LFG) and carbon credits

The solid waste management project in Amman, capital of Jordan includes the improvement and expansion of the urban landfill of Al Ghabawi, the capture and energy recovery of biogas for the generation of 6 MW of electricity and carbon credits.

Amman Municipality has contracted Idom, to carry out the Site Engineering, to review and supervise the work of designing and implementing the expansion of the landfill, and also to review and supervise the design and operation of the collection system and energy recovery of biogas generated by the landfill, and to provide technical assistance in the operation of the cells 2 and 3.

: o1 // Amman Citadel
Images. Other similar installations carried out by Idom:
: o2 // Valdemingómez plant, Madrid
: o3 // Artigas landfill, Vizcaya


o3

04 Connecting people & places

“The infrastructure projects designed by Idom, compete worldwide”

Enrique Moreno
Civil engineer

Photo: Mercedes Las Heras, Enrique Moreno, Marcia Yumi Teruya
Photography: Ila Cairoli

High-speed

The development of high-speed rail systems is one of the priority activity areas of Idom, through the global design and management of railway infrastructure coordinating and integrating the various systems involved.

Activity

Highly specialised teams

This activity is carried out by teams which are highly specialized in the different areas that make up High Speed Systems: Platform and Track, Stations and Terminals, Energy and Electrification systems, Signalling and Communications Systems.

Services

Life cycle

Our services cover the entire lifecycle of a high-speed project from the initial concept and feasibility studies to the commissioning and maintenance of the system, along with the intermediate stages of preliminary project draft, Construction Projects and the management of the civil works.

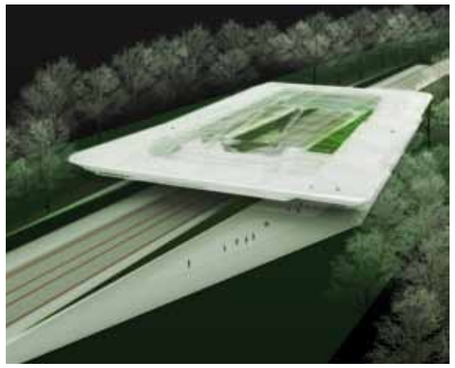
High-speed Lalín - Santiago
Client // ADIF
Photo: Alfonso Calza

Poland

High-speed Wroclaw-Varsovia

The Polish railway operator (PKP PLK) is counting on Idom for the ambitious implementation of a network of 450 km high-speed railway linking Warsaw, Lodz, Poznan and Wroclaw, using trains that can reach a top speed of 350 km/h, setting a record travel time ranging from 35 minutes Warsaw–Lodz; Warsaw –Poznan, 95 minutes; or Warsaw–Wroclaw, 100 minutes.

Idom is preparing the analysis necessary to choose the best variant for the line and the detailed proposal for the development of the chosen route. Analyses include demand studies, the basic design of the line, the modernization of existing infrastructure, the characteristics of the systems and rolling stock, as well as the funding model and infrastructure management.



BRAZIL

High-speed Río-Campinas

Implementation plan and preliminary design of the 9 stations on the line: Barao de Maua, Galeao Airport, Vale do Paraíba Fluminenese, Aparecida, Vale do Paraíba Paulista, Guarulhos Airport, Champ de Mars, Viracopos Airport and Campinas. It includes the design of the surrounding areas and the design of intermodal transportation, examining the technical and economic viability and the coordination of all the agencies involved.

PORTUGAL

High-speed Évora-Caia

Feasibility study of the high-speed section located between Evora and Caia, 101 km in total. It is planned for mixed traffic: 350 km/h for passenger and 160 km/h for goods. A preliminary study on 9 full layout alternatives, including the mandatory Environmental Impact Assessments for each, has been prepared. A positive impact statement for the selected alternative was the outcome.

Spain

Rail option Burgos

A 20.8 km rail option that will eliminate the circulation of rail through the centre of Burgos. The railway infrastructure is a double track gauge consisting of a 4.5 m platform and another parallel single-track and five branch connections. The emblematic new line will have 6 lines, with 6 buildings with 3 platforms, a new maintenance base for the infrastructure in Villafría and 52 electrical drives for switch motors.

High-speed Lalín - Santiago
Client // ADIF
Photography: Alfonso Calza

High-speed. Installations

High-speed Madrid - Barcelona

Assistance to the works management of Electrical installations (overhead contact line, substations, signage, fixed telecommunications, GSM-R) for the section Lleida-Barcelona, of the Madrid-Zaragoza-Barcelona high-speed line. It includes: Project Documentation review, test and redesign briefs, economic monitoring, on-site supervision, and provisional and final hand overs.

: o1 / Overhead contact line system
: o2 / Electrification installation of the line

ELECTRIFICATION

Idom has carried out the functional design, electrical sizing studies, simulation of the line and the design of overhead contact lines, also including electrical substations, self-transformation teams and power lines.

SIGNALLING AND COMMUNICATIONS SYSTEMS

Simulation studies, signaling and interlocking design, communications and systems engineering of driver assistance and communication systems, GSM-R and fixed telecommunication systems.

High-speed. Stations

Intermodal station La Coruña

In the field of intermodality, Idom specializes in flow analysis, functional integration assessment, architectural design, modal interconnection and the development of basic and detail design and analysis of different concession models.

Graphics: Poliedro
© Idom.

Intermodal station

In the future, the city of La Coruña will join the select group of Spanish cities, that have connected the high-speed railway network to the urban fabric, through a new intermodal station. To be built in the vicinity of the old station of San Cristobal, this station will integrate the urban and inter-city transport systems, to facilitate the exchange of users of rail with other modes of transport, the bus station, shopping centre, underground car parking and hotel.

In May 2011, the decision was made to award the international tender for the design of the new station to the joint venture formed by Idom and Cesar Portela. The 11-member jury of experts in the field, representing various institutions and agencies, such as ADIF, Xunta, The Town Hall, provincial council, Chamber of Architects and Association of Civil Engineers, decided unanimously in favour of the proposal presented by Idom.

: o1 / The plaza by night
: o2 / Station main entrance
: o3 / Main lobby

Remodeling Atotxa

San Sebastian is preparing to recieve High-Speed

This ambitious project involves the integration of high-speed with conventional gauge trains - passenger and goods trains - and connection with the bus station.

Graphics: Poliedro
© Idom.

The new intermodal station at Atotxa

Uninterrupted service during the works

This urban location where the works will be carried out, the old North Station, which was opened in 1864, is restricted in terms of size for the new requirements of additional tracks and platforms.

The brief for Idom was to solve this problem while at the same time maintain the historic marquee of the station, constructed in the workshops of the Eiffel Tower. Another requirement has been the need to maintain service during the refurbishment works.

These are questions which will be resolved by the comprehensive approach to the planning of the building works, infrastructure, tracks, electrification, safety and communications.

The building which has been planned with the traveller in mind is situated over the street, looking out to the city over the river, forming a new city landmark. Designing a cantilever over the street, ensures that areas such as the taxi ranks are protected from the elements, while also connecting with the future bus station and car park. The elevated position allows the dynamics of internal flows of the exchange of travellers in the lobby to be clearly visible from the street.

: o1 / View from the entrance plaza to the bus station
: o2 / View from ‘jardines de Francia’
: o3 / Access to the station
: o4 / Inside the lobby

Roads

Adding value at all stages of the project, from preliminary studies to construction management and commissioning.

NAVARRE MOTORWAY

Construction project

Engineering design for part of the A-15, the Navarra Motorway, with a length of 17.5 kilometres in the province of Soria. The route runs through a very environmentally sensitive area, so the exact fulfilment of the requirements specified in the Declaration of Environmental Impact was a priority of the project. It includes three junctions, a viaduct over the River Duero and cut-and-cover tunnel in the Peñablanca mountain.

MUDÉJAR MOTORWAY

Layout and Construction

The Construction Project of the Alto de Monrepós-Caldearenas stretch of the Mudéjar Motorway, the A-23. It includes a tunnel, over 3 km long, and a parallel service tunnel. The tunnel is equipped with the latest safety facilities and infrastructures (ventilation, lighting, power supply, automatic termination, video surveillance, automatic detection and control system), meeting the corresponding European Directive.

SEVILLE MOTORWAY

Works management

Assistance to Site Supervision for a 7.7 km stretch of road, in the south west section of the Seville Ring Road, the SE-40, between Almensilla and Espartinas. It includes 24 different types of structures, as well as all the necessary elements for the drainage of the roadbed, signalling, lighting, markings and the appropriate safety guards for a motorway, such as the repositioning of networks and services affected by the works.

South Metropolitan Bypass of Bilbao

Project technical assistance & construction management

Since the early 90's, the level of traffic congestion in the south access to the metropolitan area of Bilbao, highlighted the necessary to consider the possibility of constructing an alternative access for passing traffic. Thus, the south Bilbao bypass, also known as the "Supersur" has become the most ambitious civil works undertaken in the Basque Country.

Photography by Joserra Irusta

South Metropolitan Bypass of Bilbao

Awnings, toll booths and control building

Project Construction, feasibility and Site Supervision Assistance for road works including Bilbao VSM tunnels, with a construction budget in the order of 450 million euros. The tunnels, with two and three lanes in each direction, total over 11 km in length. In addition to the two junctions and numerous infrastructures, some of which are very unique, the Project includes the identification and toll areas, and the infrastructure control building.

The bypass includes the largest road tunnel in Europe, allowing entry and exit, to and from Bizkaia, in a quick and safe manner, avoiding the existing A-8 urban road section of Bilbao. It also distances hazardous materials traffic away from residential areas, reducing the flow of vehicles in the urban environment while reducing the emission of gases into the atmosphere.

: o1 / Awnings, South Metropolitan Bilbao Bypass
: o2 / Modelling the transport network in Libya Al-Araar

Transportation Studies

Mobility analysis

SPAIN

The Metropolitan Region of Barcelona with more than 5 million inhabitants, is the fifth largest conurbation in the European Union. It has a strong public transport network, comprising of 10 local train lines, 11 metro lines, 6 tram lines and 500 bus lines.

The modelling developed by Idom includes all of this, making it an indispensable tool for the transportation planning authority, permitting them to plan new infrastructure, tailor services to the needs of the population and estimate the effects of possible changes in the network.

LIBYA

The Resort of Araar Beach is situated near the city of Misurata in Libya, covering a coastal area of over 370 hectares. The resort will include a marina, hotels and commercial and residential areas. As part of the commission, Idom carried out traffic studies and assessment of the demand for parking and the basic design for the network of roads in the resort.

MACEDONIA

In addition to the required traffic studies, the basic design of two new avenues in Skopje (Macedonia): the continuation of the Boulevard St. Kliment Ohridski, has been prepared by Idom. This will mean the completion of the second ring-road of the city and the construction of a underground road, running parallel to the Vardar river, between the Cathedral and the National Bank. This will result in a significant reduction in the levels of traffic crossing the historic centre of Skopje.

Urban transport

Metro, light rail and tram systems

From the idea, project conception to commissioning, operation and maintenance of urban mass transit systems, including the design of the facilities of workshops and depots, as well as comprehensive expertise in all disciplines (systems, energy architecture and civil engineering) from any financial, management, maintenance and design standpoint.

Tramway Murcia
Client // Tranvía Murcia
Photography: Alfonso Calza

ZARAGOZA

Metropolitan tram

With a length of 20 km (12.8 in operation since April 2011), the new tram network in Zaragoza includes a catenary-free system, using the latest technology, based on on-board ultracapacitors, and stops charging points. Idom has conducted the technical audit of the design, construction and operation of the network, focusing on the technical analysis of the projects, and on monitoring economic risks, and delivery time completion for the execution of works, and the maintenance requirements and operation of the rail.

SEVILLE

Light-rail construction

The Project for Construction of the Seville Line 3, connects the neighborhoods of Pino Montano and Bermejales. It covers a total length of 13.2 km, including the technical line to workshops and depot. Most of the route of the main line is underground. It is planned to include a total of 19 stations and two areas for the corresponding exchanges with the future Line 4.

VIETNAM

Line 5, metro Ho Chi Minh City

Demand studies and preliminary design of the future Metro Line 5 of Ho Chi Minh City (Vietnam), including the civil works and the prior environmental assessment impact analysis, the basic design of stations, communication system, power, signalling, ticketing, etc. The work has included the analysis of economic and financial feasibility analysis and civil works, resettlement plans.

BARCELONA

Construction of line 5

Project for interior outfitting, building services and access of three stations, Sant Genis depots and shunting area, Vall d'Hebron, including defining the architecture finish of the stations, signs, electrical supply and installation of medium and low voltage lighting, power, ventilation and air conditioning, fire protection, communications, video surveillance, ticketing and fixed installations.

TRAMWAY OF MURCIA

Site Management and Technical Assistance of the installation works

A few years ago, Murcia City Council adopted a public transport model based on sustainability and minimum environmental impact. Before committing to the tramway model, an "experimental section" of 2 km, opened in May 2007 with 4 stops using international gauge. Only after verifying the technical and economic feasibility of the project in 2009, was it decided to tender the construction and operation of Line 1.

The new tramway opened in May 2011 improving public transport in Murcia between the two universities in the municipality, the main commercial areas, the leisure centres, and the centre of the capital.

In a project, in which speed and economy prevailed, Idom has successfully managed the construction of an 18 km section of the line, striking a balance between improvement on the original project costs and execution time.

This infrastructure has involved the lifting of three bridges, the building of workshops and depots, and the alteration of the most emblematic roundabout of the city, the Plaza Circular.

18 km line in record time

(Civil engineering works completed in one year, with commercial operation in 20 months)

TRAIN TRAM

Asturias

A new concept of transport, taking advantage of the existing rail infrastructure in Asturias, incorporating a tram of 42 km in length. The system can achieve higher speeds between towns, while maintaining the philosophy of an urban tram ride and urban integration. The project includes the study of alternatives, demand study, the design of route and track, urban integration and landscaping, structural design, structure engineering, catenary and substations, stations and park and ride.

DRIVERLESS METRO

Barcelona

Line 9 in the Barcelona metro, was the first driverless system to be introduced in Spain. Idom prepared simulation, analysis and ventilation studies, and the design of 6 Metro stations, with the specifications required for the automatic operation of the line, including the necessary safety and security measures.

Tramway in Medellin

Tramway Avenues in Colombia

Medellin, with more than 3 million people has added to its urban transport network, several tram lines known as “Green Avenues”. Idom has been awarded the contract for the two tramway priority projects of Ayacucho and la carrera 80.

TRAMWAY OF AYACUCHO

A tramway system of almost 5 km, with the singular characteristic that has required the development of an innovative tramway design, with tyres and guidance system, electrically powered, capable of climbing slopes of 12%, and negotiating a radii curvature of less than 20 m. The system incorporates the latest technological advances for control and operation.

CARRERA 80

La Carrera 80 is one of the main traffic thoroughfares of the city of Medellin. It is a conventional tram, 1435 mm wide using 750 Vdc power. With a length of 14.2 km, the project includes civil works, the redevelopment of the streets, the traction system, signaling, communications, buildings, workshops and depots, command post and rolling stock.

The project for the construction of the avenue also includes the redevelopment of affected areas.

Tramway maintenance workshops

The workshops and depots have been designed as a unique facility for the maintenance and management of Air Cable as a mass transit system, and the tramway. Construction of this singular building is about to commence, with this being the first tram to be built in South America.

The approach to the maintenance workshops in Colombia is highly innovative and is subject to eco-sustainable design.

The analysis of the energy efficiency of the building has been performed from the initial phases of the project, including the procedures to obtain specific energy ratings; the choice and use of sustainable materials, easy and low maintenance; intelligent management of the facilities, to reduce consumption and increase useful life, along with a positive economic balance. And finally, the use of thermal energy, geothermal energy, lighting management, efficient installations, etc.

Workshops and depots

Idom has a wide range of accomplishments in depot and maintenance facilities

The maintenance and operations buildings of the railway and tramways systems are the logistics and control nucleus for operators.

The design and conception of these requires a good knowledge of the operations associated with the maintenance of railway vehicles and their use.

Idom has a highly qualified team, with proven experience in multiple international projects, in the design of these facilities (Vietnam, Portugal, Colombia, Spain), and operation (Renfe, Euskotren, ETS, Feve, ADIF, Refer, Metro of Porto, Metro Medellin).

Idom prepares integrated design for the buildings, from an architectural perspective of logistic analysis and sizing of storage, work areas and specialist areas, workshop equipment specifications, design of checkpoints (CCP), and design of installations in line with rail discplines (track, catenary, traction power, low current, communications).

The design of these facilities is, in all cases based on a balance between operating efficiency, sustainability and the integration of the building in the surrounding environment.

Water cycle

Studies and designs for the optimal use of water resources in each region.

TUNISIA

Supply to the Sousse region

Master Plan of Drinking Water (Water Supply and Distribution) for the region of Sousse in Tunisia, for more than 400,000 permanent residents. This is one of the main tourist areas of Tunisia, which in summer can reach 2,000,000 inhabitants. The distribution network totals over 8,800 km. and includes the development of the hydraulic model for the network and the proposed draft of the first phase works of the Master Plan.

TURKEY

Sanitation in the town of Zolgundak

The project involves the improvement and expansion of the existing drainage network, totaling over 42 km of sewerage network, including another 25 km of new construction. The network includes 7 pumping stations and a collector-interceptor, to pump wastewater to the treatment plant, and an outfall with a length of 620 m, to evacuate effluent from the treatment plant.

SLOVAKIA

Water cycle

The project includes the extension of the water treatment plant at the foot of the Starina dam, 53.5 km of main line and related facilities. Comprehensive supply and sanitation in the area of South Zemplin, including more than 250 km of pipelines, and 14 wastewater treatment plants. Finally, the necessary tender documents for the procurement of works will be drafted.

PORTUGAL

Girabolhos

Reversible hydroelectric exploitation of two dams to be constructed in the Mondego River in Girabolhos (a 93.5 m high vault) and the counter-dam of Girabolhos (concrete breakwater of 66.5 m). The main reversible installation (turbine pump) at the foot of the dam will have 335 MW of total power installed. A conventional installation uses the jump from the counter dam, with 29.50 MW of total power.

Lock in Seville
Client // Autoridad portuaria de Sevilla

Regulation of the Eresma river

The study of alternatives and solution development for problems in deficit and quality of the water supply to affected populations (125,000 inhabitants), providing a regulation capacity with potential uses for irrigation or aquifer recharge. It includes the scheme design and the Environmental Impact Study of the Carbonero dams (gravity), Gijasalvas (concrete breakwater) and El Tejo (lengthening of the current dam).

Supplying the city of Lugo

The proposed project includes discharging water from the River Miño and a pumping station with a capacity of 650 l/s, pipes of 700 mm in diameter and 7,400 m in length, two new storage tanks with a capacity of 25,000 m^3 each, recirculation pipes of 600 mm in diameter and 10,700 m in length for the maintenance of environmental flow into the River Miño, as well as other pipes and small installations to complete the system.

Guadarrama river floodplains

The purpose of this project is to provide the technical tools needed to manage the Public Water Domain (DPH), and delimit floodplains in the section of the Guadarrama river that runs through the Madrid Region. Hydrological, hydraulic, geomorphological and environmental studies have been conducted, which are necessary to define the DPH and obtain the flood lines for different return periods.

Photo // Canal of Navarra
Client // Canal de Navarra

Hydro-wind Plant

Isla del Hierro, declared a “Biosphere Reserve”

The company, “Gorona del Viento”, led by the Cabildo of the island of El Hierro, is promoting a system of clean energy generation capable of meeting the needs of its population and its tourism (2,000 hotel rooms).

The energy is obtained from a wind farm that supplies electricity directly to the island. The differences between generation and energy demand is managed through a reversible hydroelectric system, that provides energy storage capacity, when generation exceeds demand and the use of stored energy and when demand for the island is greater that that produced by wind generation.

In short, these two plants, one wind and one hydraulic are united to give the system reliability and stability. Today, El Hierro generates its electricity through a conventional power station, which, besides being a pollutant, implies a total dependence on external supplies.

Image / Recreation infographic
: o1 // top deposit
: o2 // lower deposit
: o3 // wind farm

Idom is preparing the installation project, Procurement and Site Supervision and commissioning. The works are nearing completion and the plant will become operational during 2012.

A major technical challenge has been the settlement of the upper basin, located inside an extinct volcanic cone.

Ports

Specialised technical assistance for planning, design, installation, commissioning, operation and maintenance of works, services and transport operations and marine terminals.

GUATEMALA

Master Plan of the Port of Santo Tomas de Castilla

The Port Authority of Santo Tomas de Castilla (Republic of Guatemala) contracted Idom for the development of the new Master Plan for the Port of S. Tomas de Castilla, to define the potential development of the port in the long-term. In addition to assessing the current situation and trend of the port, Idom will review the functional design of the new plant configuration and establish according to the study of demand, the basic elements of its operating model (investment, financing, ...)

MEXICO

Investment analysis and expansion proposal of the port of Guaymas, Empalme Bay

The good rail connectivity of the Port of Guaymas, and its strategic position close to the U.S., make this port an efficient option in the freight chain between the U.S. and Asia. Current trends in shipping (draft, specialized terminals and storage space) require ports to adapt to these changes. With this objective, the project analyzes the adequacy requirements of the port facilities to become a reference.

MOROCCO

Feasibility & impact study of the construction of the new port of Tangier

The Agency 'Speciale Tanger Méditerranée' (TMSA) responsible for the development and construction of the Port of Tangier Med has commissioned Idom to carry out the feasibility study of the new maritime infrastructure (port and activities zone logistics). To do this, considering the demand forecasts made, the necessary infrastructure has been defined (drafts, docks, access, connectivity with the rest of the Moroccan territory, etc...). In addition Idom has evaluated the economic and social impact on the region and the country as well as the environmental impact of the port.

ALGECIRAS

Port Strategic Plan managed by the port authority of the bay

The port of Algeciras is now the busiest port in relation to goods, regular passenger and vehicle passage in the Spanish Port System. Idom has designed the new Strategic Plan, considering the changes taking place on the national and international scene and to further develop the Port Authority in efficiency and profitably, using the advanced landlord model (a flexible company structure, efficient and focused on service delivery).

Photo courtesy of the Port Authority of Barcelona
Photography: Lluis Mª Castellà

Airports

Idom has participated in the development of dozens of airports and heliports. This year has seen the positioning of Idom as a leading company in providing assessment on airport concession processes.

Idom has the capacity to manage the implementation of all aspects related to the airport environment, from initial conception (pre-design, technical and economic feasibility), to commissioning. This capability can be applied to develop any one element of an airport including the airport as a whole. Idom has a staff of experts in the planning and management of airports, who have worked directly for airport operators.

Projects of references have been carried out at major airports, such as Heathrow (United Kingdom), Madrid (Spain) and Guarulhos (Brazil), working for global companies such as Aena, Ferrovial and Abertis.

BRAZIL

New airport in Natal. Tender invitation for a new mid-size airport

Idom has assisted the consortium, GAP (Pacific Airport Group), the Mexican airport operator, with the completion of the draft project of the entire airport, the proposed architecture, the study of capital expenditure (CapEx) and Operational Plan development.

Airports of Guarulhos, Viracopos and Brasilia. Brazil represent a concession tender for 30% of Brazilian traffic.

Idom is assisting the consortium of the world's largest airport operators, designing and developing the infrastructure investment plan in different concession periods for the three airports. The bidding ends in 2012.

SPAIN

Aena, the world's largest operator in passenger numbers, offers for tender its two greatest assets

Idom is preparing the CapEx, the preparation of the capability studies and environmental aspects of the bid for the consortium participating with one of the largest franchisees, worldwide. The bidding process ends in 2012.

R&D+i

Security, resource allocation and OSAS

Two innovative projects are noteworthy: 1) Security inspection of baggage and resource allocation and 2) OSAS System (Satellite Orthoimagery Airport System) a software tool to centralize, disseminate and exploit satellite imagery for Aena, allowing the detection of obstacle in airport operations.

05 Communication technologies

“Good communication is essential, particularly in difficult situations”

Koldo Berasategui & Nuria Gómez Merchán
Communication engineers

Communication technologies

From technology consulting and project management to project design support and implementation, Idom has worked in such varied sectors as Administration, Telecommunications, Railways, Airports, ITS (Highways), Ports, Security, or Utilities, among others.

Photo // Sergio Zubizarreta

Advanced ticketing systems

EGYPT

Smart Card in the metro of Cairo

The Implementation and integration of the ticketing systems of lines 1 and 2 with the new line 3 (under construction). The contactless Cairo Metro card incorporates advanced high-security chip interconnecting technologies from different manufacturers, to facilitate the mobility of their users. In the future, the system will allow interoperability ticketing, extending its use to new lines and other Egyptian transport operators.

SPAIN

The Barik System in Biscay

The objective of the Barik project is to evolve the public transport fare system of Biscay to contactless technology, making the system more flexible, convenient and efficient. The metro, tram, rail, urban and intercity bus services, along with other modes of transport have been adapted to the latest technology, which is coordinated through an online Registration, Management, Security and Clearing House system. The Biscay Transport Consortium has set up an extensive network of charging points for the convenience of the users, who can also top up on the internet or using a mobile phone.

: 01 / Control access in Metro Bilbao
: 02 / Barik card & automatic reader
Photo: Sergio Zubizarreta

The project implements a common single contactless ticket for all transport modes in Vizcaya-Bizkaia, promoting the comfortable and efficient use of public transport.

Modes of transport:

: 03 // Bilbobus, Bizkaibus & other bus lines
: 04 // EuskoTren railway
: 05 // EuskoTran tram
: 06 // Metro of Bilbao

Systems for airports

PASSENGER BOARDING BRIDGES

The boarding bridges attend 15 of the new positions of the terminal and have systems that allow energy supply and air conditioning for the parked aircraft without the use of fuel, thus saving energy. Laser guidance systems for parking have also been installed.

The work of Idom work began in late 2008, by defining the needs and preparing the final design. Idom continued with the project management of the civil engineering works and installation, plus the factory testing of all equipment.

: Photo // Passenger boarding bridges, Alicante airport

o1

o2

o3

: o1 // Check-in counters

: o2 - o3 // Baggage is transported in tubs from the check-in counter to their destination. Alicante airport.

AUTOMATED BAGGAGE HANDLING SYSTEM

The baggage handling system (BHS) is a facility that allows automatic inspection and sorting of baggage, from its entry through the check-in counter to the sort flight carrousels. Baggage is transported in tubs using radio frequency technology (RFID) tracking.

Idom began work on this project in 2006, with the functional design of the system, followed by the preparation of the technical specifications stipulated in the contract. This stage was followed by the technical project management of the installation including simulation (prior to the start of the assembly). After nearly two years of installation, configuration, tuning and testing, Idom is now carrying out the control, monitoring, fine tuning and implementation of the maintenance plans during the first months of the facility being operational.

Networks & communication systems

Idom provides technology services and solutions for telecom operators, technology consulting, transport telematics, infrastructure and emergency and security technology.

LONDON

Advanced signalling

Tubelines, the licensee for the maintenance and operation of the Jubilee, Northern and Piccadilly lines (London Underground), is replacing the current operational system signalling with a new CBTC system. Idom has carried out a comparative study on the actions developed by Metro Madrid in a similar upgrading project, focusing on sharing best practices to implement the new system while minimizing the difficulties of the changeover.

BILBAO

CBTC signalling systems

The new Line 3 of Metro Bilbao has been designed for automated and driverless operation based on a Communication Based Train Control (CBTC) system. Idom has defined the backbone of this new Line under the premise of maximum availability and highest efficiency.

SPAIN

ADSL network rollout

Jazztel is a Spanish telecom operator that engaged Idom to perform the Project Management in the deployment of its fiber optic network and equipment and to provide ADSL2+ services. Spread throughout the Spanish territory, this project aims to extend the service to more than 1 million customers.

Next Generation Networks

The new Strategic Plan for Next Generation Networks (NGN), named BANDA ZABALA+, aims to position the Basque Country at the head, in the availability of such networks for all users and in the framework of the European Digital Agenda 2020, several actions have been detailed to boost the activity of Telecom Operators, with the needed coordination.

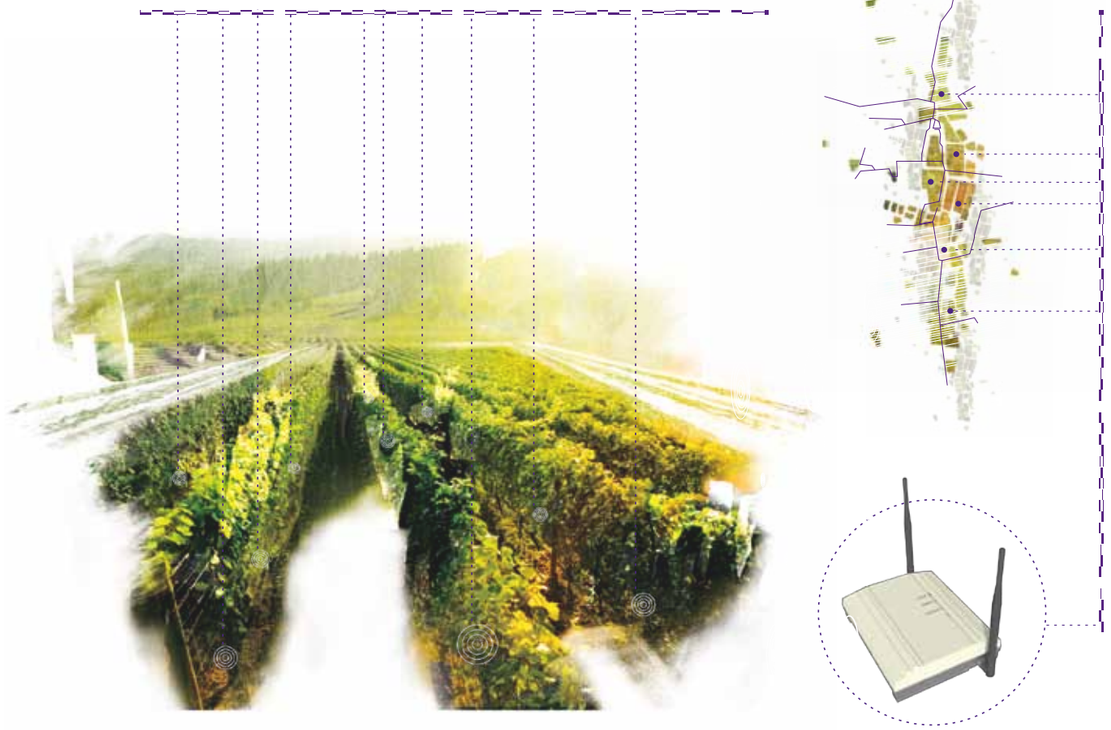
Image courtesy of British Telecom

MEXICO

Telecommunication & security

In its penitentiary strategy 2008-2012, the Government of Mexico plans to expand the federal penitentiary capacity, following the conditions and standards of construction, design and operation applicable to prisons.

To this end, Idom is designing the communication and security systems of the new Women's Centre for Social Rehabilitation in Morelos, using the latest technologies. These works are being performed for Homex, the company in charge of the construction, management and operation of this Centre.



Wireless sensor networks

Smart viticulture

Several Spanish wineries are implementing new technologies to improve production of vineyards, both the quality and quantity of grape and a reduction in the use of chemicals.

Idom is deploying a network of sensors in the vineyards, connected by wireless technology for real time analysis of all information generated during the grape harvest, optimizing the management of production wineries.

Smart Santander

The objectives of the Smart Santander project are to design, deploy and validate an experimental service platform in the field of Internet of Things (IOT), city-wide, consisting of 12,000 devices which in addition to facilitating research will be able to offer useful information and new services to citizens, businesses and city managers.

Idom was the winner of the first phase to be tendered out, with the objective of reaching the 3,000 IoT devices in the catchment area.

Idom has worked with the project consortium in the initial network design and in its implementation.

: Image / Wireless system for data analysis of the vineyards

International contemporary culture centre

Audiovisual & TV

The International Contemporary Culture Centre located in the emblematic Tabakalera building of the former tobacco factory in San Sebastian, is a cultural reference that will combine a contemporary art centre with a centre for film and television. The Centre will have the latest technological resources for the production and management of audio-visual programmes and will be at the disposal of national and international artists, as well as sets for online TV shows.

Idom is developing the technology project which includes audio-visual facilities, TV and communication that will utilize the facilities of the Centre.

Telecommunications Centre & Information Technology

Unifying information systems & telecommunications

The agency that centralizes all computing and telecommunications services for the Generalitat de Catalunya, 'the Centre for Telecommunications and Information Technology' (CTTI) has decided to become a public service provider, a technology leader, proactive and innovative in the entire world.

As part of its strategy, CTTI has decided to move to a new headquarters, to increase the visibility of their services. To this end, they have acquired and refurbished a 'basic building' leaving the walls and floors open-plan, without any intended use.

In 2009, CTTI commissioned Idom to carry out the transformation of the building. The engineers of Idom adapted the space to the ambitious plan, to integrate the computer services of the Government. At the same time the architects of ACXT converted the building into not just a new collaborative environment, but a new corporate brand to position CTTI, in the centre of the international consultant market for information technology.

: Photo / New headquarters of CTTI

Port Management System

Idom provides the engineering and design of the systems and facilities required for the operation of transport infrastructure

BARCELONA

Port Traffic Management

The Port Authority of Barcelona (APB) has implemented a new port traffic management system (Port Management System) in the control tower at the Port of Barcelona, to provide a comprehensive and automated management of maritime operations.

Starting from the benchmark of the facilities and services available around the world, Idom has analysed and developed more than 30 maritime procedures to specify the PMS system to be implemented in the port of Barcelona. The tasks carried out by Idom include assistance in the bidding process and awarding the management of the implementation and development of the operational procedures for the control tower in the Port of Barcelona.

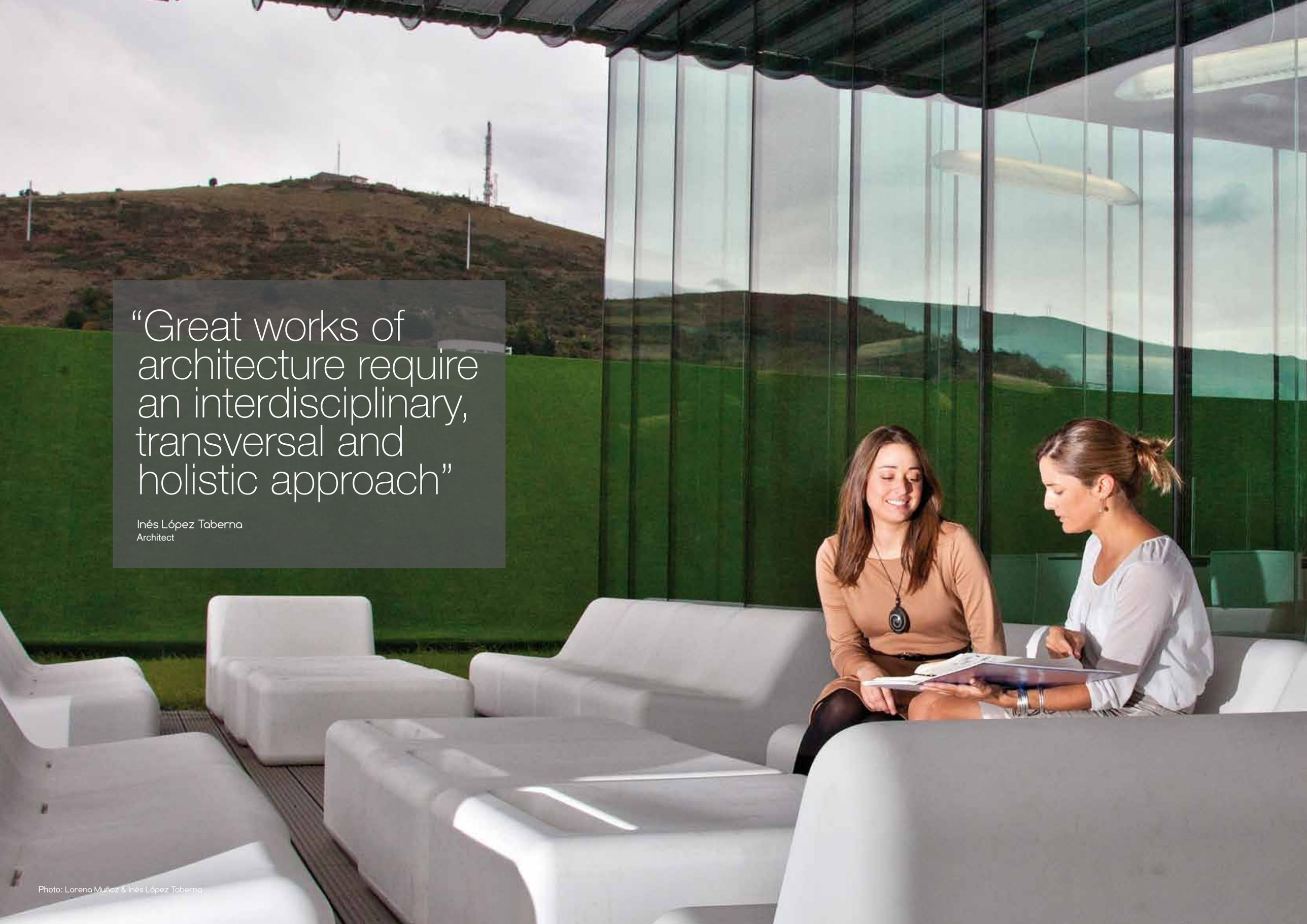
ALGECIRAS

Port Services Management

The Port Authority of Algeciras Bay (APBA) has the strategic objective of insuring quality service in maritime operations with transparency in mobilization and coordination of port services.

Idom has carried out the analysis and development of procedures relating to the planning mooring and the coordination of related port services. It has also designed the specifications for a Port Management System that will allow the APBA, to implement the procedures developed and operational control allowing for efficient management of the established planning and waiting times.

06 Spaces for living



“Great works of architecture require an interdisciplinary, transversal and holistic approach”

Inés López Taberna
Architect

Photo: Lorena Muñoz & Inés López Taberna

ACXT

Apartments in Vitoria-Gasteiz
Architect // ACXT
Client // Visesa

Economic and comfortable

Public housing in Vitoria-Gasteiz

A development of 242 homes in the neighbourhood of Salburua. The building consists of a 20 storey tower and a continuous U-shaped block, with 4 to 7 floors. Entrances to the blocks and the 9 premises are located on the ground floor; the garages, the box rooms and the technical rooms are located in the two basements; additional storage rooms are located in the loft.

The design of the building was based on the premises of increased energy efficiency and reduced running costs. The south facing U opens out onto a landscaped courtyard which traps the sun heating the maximum number of apartments. The bedrooms overlook this courtyard while the living and kitchen spaces face out to the avenue and boulevard surrounding the building.

As the roof is visible to the apartment blocks surrounding the development, it has also been designed and finished to a high standard as though it were the fifth façade. Likewise, a co-generation system has been incorporated in the development, reducing heating costs and as such, electricity usage.

Recovering its former glory

Diplomatic apartments in London

The brief for the project was to totally refurbish the property owned by the Spanish State is located in the district of Pimlico, near Victoria Station, London. The building which had previously been used as a nursery had remained unoccupied for several years and was in poor condition.

The Spanish Ministry of Foreign Affairs & Cooperation commissioned Idom to carry out the renovation project, the conversion of the property into two apartments for diplomats, based in the Spanish Embassy in London.

The building, a classic “mid-terrace town house”, built in Victorian times is in a listed area and as such is subject to stringent regulation. The objective from the outset was to return the building to its original splendour, restoring its domestic use and eliminating the many additions that had altered the interior over the years.

In the restoration process, traditional techniques were used, both on the façades and the noble parts of the interior. The installations of the building were replaced in their entirety, in order to increase the level of comfort and reduce energy consumption.

Transforming the favelas of Rio de Janeiro

Regeneration of unplanned neighbourhoods

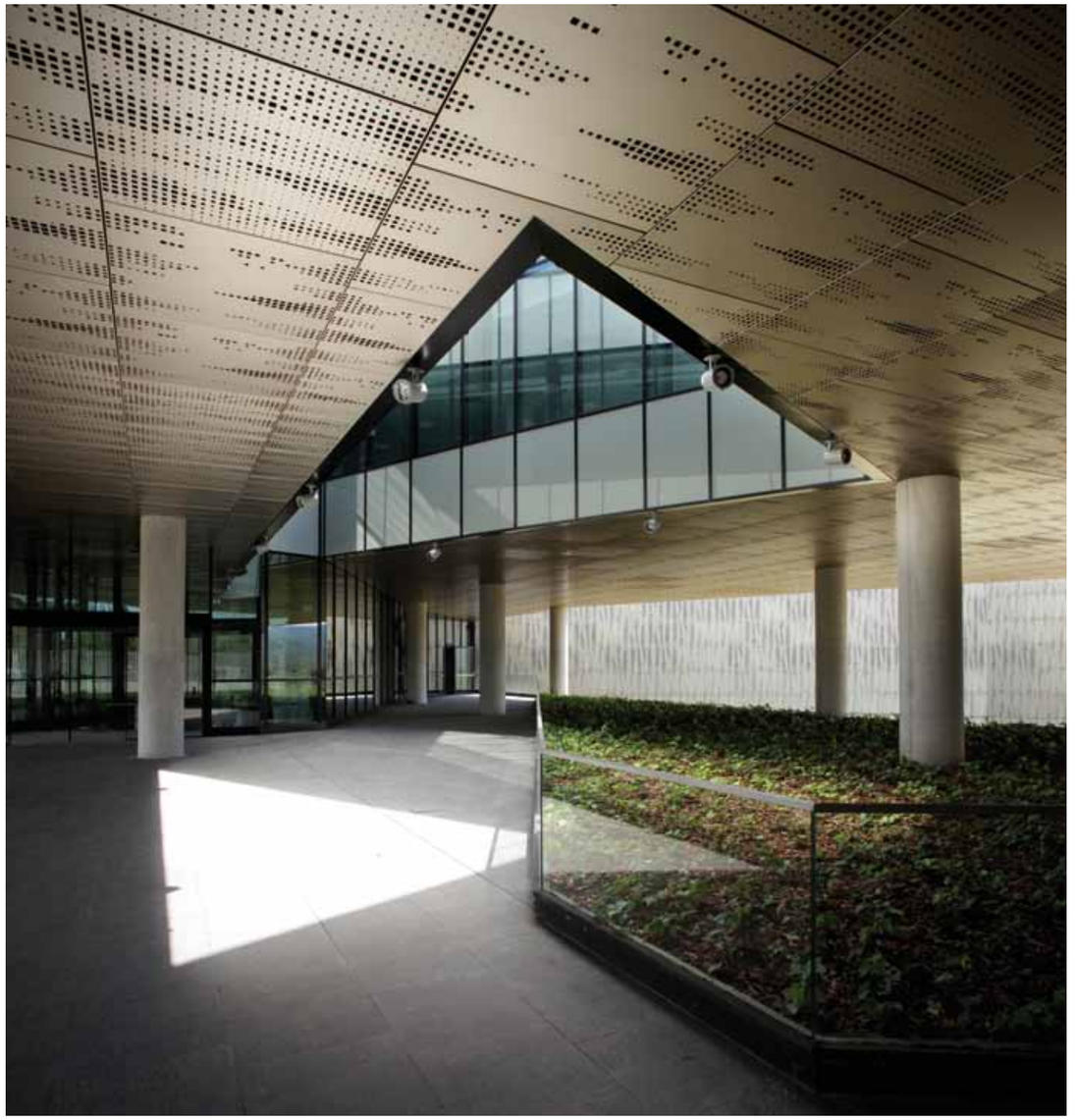
On the occasion of the Fifa World Cup 2014 in Brazil and the 2016 Olympics in Rio de Janeiro, the city of Rio intends to regenerate the unplanned, slums on the outskirts of Rio, commonly known as favelas, integrating them into the city, and provide public services, turning them into quality neighbourhoods, through architectural design.

To this end, the Institute of Brazilian Architects (IAB) has grouped the 215 favelas of Rio into 40 groups and has entrusted their transformation to as many teams of architects, selected from the 174 teams that have entered into the competition. The project is equipped with a generous budget of 3,500 million euros.

One of those selected was the Idom ACXT team, which has submitted a proposal which envisages the creation of living spaces and places for sports and leisure activities, integrating this neighbourhoods with the rest of the city, and with the public transportation system, limiting the formation of ghettos.

The proposed approach of Idom ACXT is comprehensive and proposes along with an architectural solution design, an innovative approach that includes social management and economic viability for the project.

ACXT
Data Processing Centre in Catalonia
Architect// ACXT
Client // Silc Inmobles



Technology in the midst of Nature

Data Processing Centre in Catalonia

The new Data Processing Centre of La Caixa is located in the Technological park of Cerdanyola del Vallés, an area immersed in nature. This has been one of the principal reasons to minimize the volume of excavation and utilization of ground space. This building, CPD number 1, contains more than 6,000 m^2 of space dedicated to data processing, as well as parking and contingency office space, 'coupling facilities', 'testing rooms', and workshops.

The typology of the building requires the highest technological functionality, prioritizing flexibility, scalability and energy efficiency. In the formal and functional sense, the main challenge has been to fit on a triangular plot, a rectangle of 100 x 43 metres housing six technology rooms (12 x 29 m) per floor. The office area, the only space with a certain scope for flexibility has been elevated to allow for a garden space on the ground floor giving access to the building, running perpendicular to the technical rooms meeting the avenue.

In the “Old City” of Montevideo

Refurbishment & extension of the corporate headquarters

In its strategy of international business development, the BBVA has decided to extend and refurbish its headquarters in Uruguay, located in the historic centre of Montevideo, ‘Ciudad Vieja’. The project includes the interior renovation of two historic buildings, preserving the protected elements, and the construction of a new building on the site between both buildings. The total area of the project is 9,000 m2 approx.
The works must be carried without interrupting the daily activities of the bank.

The challenge has been to consider the logistics required for the 300 people who work at headquarters and the correct running of the offices.

During bank opening hours, special attention has been paid to the building activities that may generate nuisances, excessive noise or dust. The careful planning of a shift work schedule, also operating on weekends, is the key to meeting the deadline. The Data Processing Centre in the building will be the last area to be dealt with, to reduce to a minimum any interference with the day to day operation of the Bank.

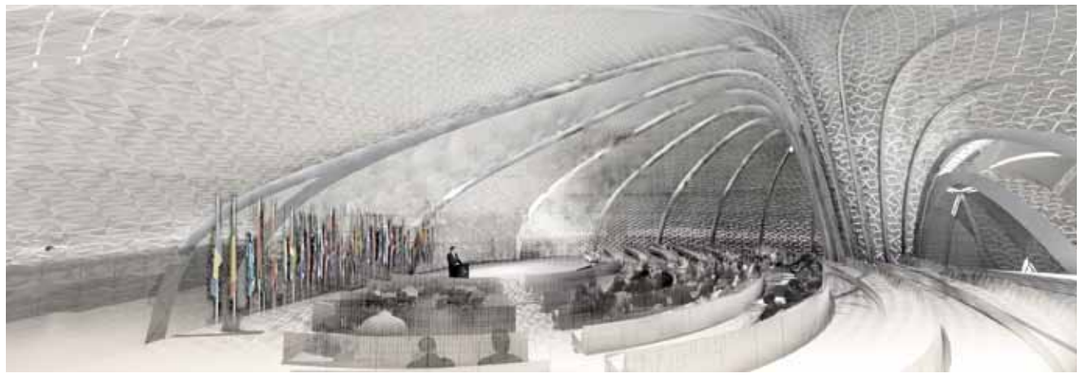
07 Spaces for building society

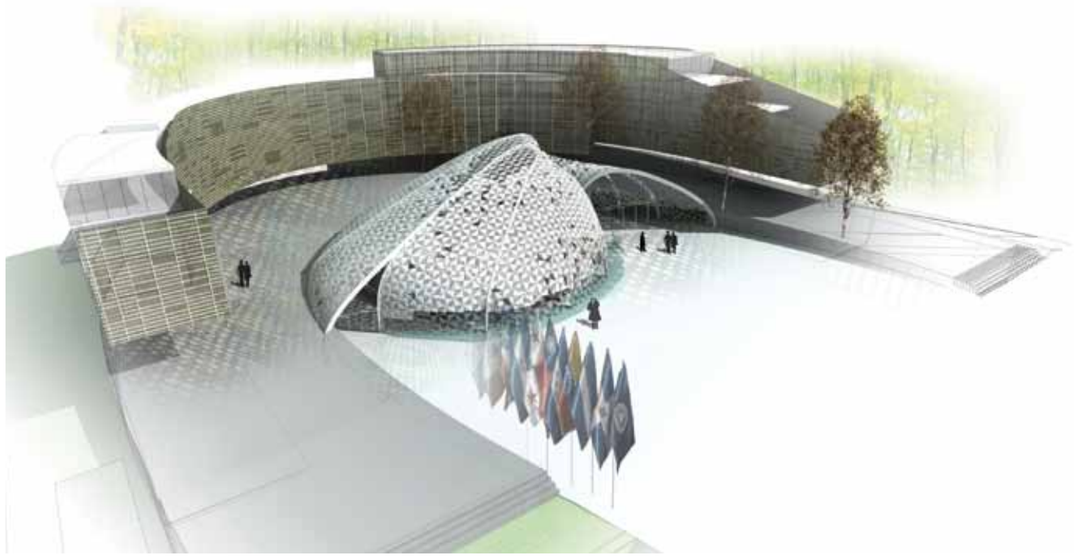
“We offer solutions which are creative, practical and sustainable”

Manuela Casado
Architect

ACXT

Basic and detailed design
of the Central American Parliament
Architect // ACXT
Client // BCIE-PARLACEN.
Central American Bank for Economic Integration
and Development-Central American Parliament





Under the volcano

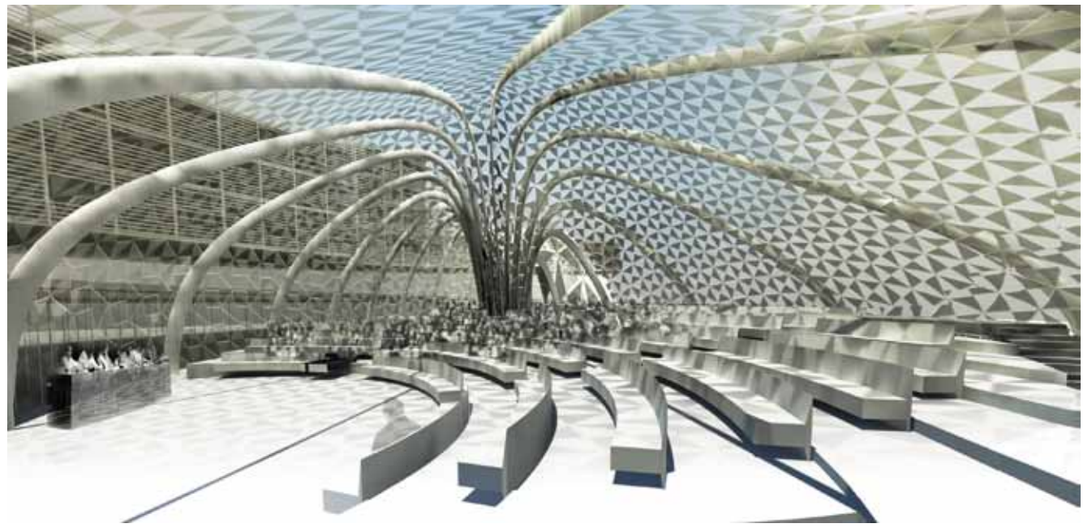
Basic and detailed design of the Central American Parliament

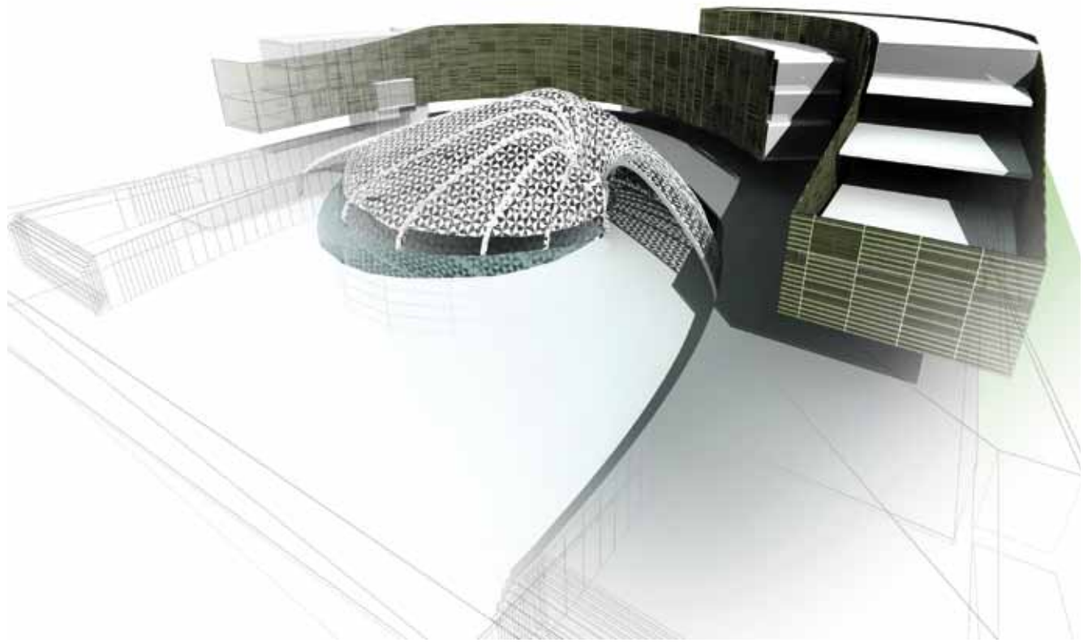
With the adage “Under the Volcano”, ACXT-Idom won the competition for the best design for the Headquarters of the Central American Parliament in Guatemala.

The proposal is embodied in a central element that functions as the core, around which everything revolves. This central element takes on the shape of a snail, with a natural geometry lending itself to the function of a meeting place, conducive to the dialogue of a parliament.

This form brings together all other elements necessary for a parliamentary building, without neglecting the omnipresent view of the Guatemalan volcanoes: ‘Fuego, Acatenango, Pacaya & Agua’.

The Parliament expands into an outdoor plaza creating ringed enclosures for the holding of extra ordinary meetings, aside from the parliamentary sittings held in the main hall.





United Nations Headquarters in Geneva

Adapted to the present, preserving history

The Palais des Nations is a unique place that housed the headquarters of the League of Nations, United Nations germ. Currently, 3,000 people work there, in a gross area of approximateley 265,000 m^2. The Palais des Nations holds a significant cultural legacy, including all League of Nations documents, UNESCO Memory of the World Register.

Extensive renovation must be carried out to create a modern and sustainable work environment, and plans are being developed to manage and execute the restoration of the Palais.

Idom carried out the Conceptual Engineering and Architectural Study of these renovation plans during a sixth month period until March 2011. During this study, Idom has sought to analyse the current situation and come to certain conceptual conclusions on the actions to be undertaken, in order to comply with the objectives of the Organization. Idom has also prepared the cost estimate for the works to be carried out during the implementation.

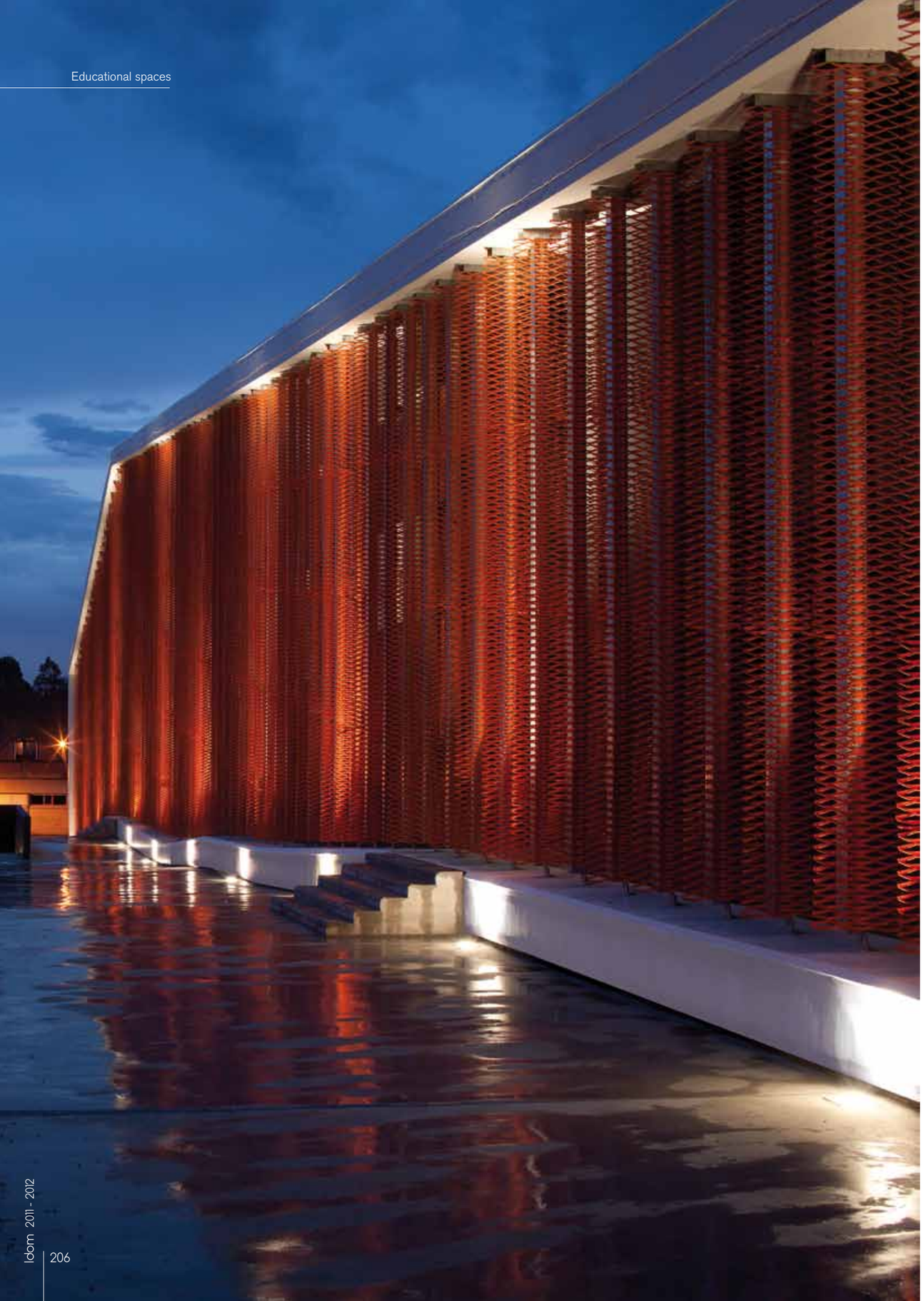
The balance between heritage and the energy efficiency objectives have defined the guidelines for the works. With recent funding provided from certain member states, UNOG is planning to carry out selected actions to reduce energy consumption. Idom has again provided services to UNOG, to select the most effective projects. Until October 2011, Idom studied actions to analyze costs and benefits in terms of energy savings and CO_2 emission reduction. Idom has used specific energy software such as LESOSAI to verify the compliance with MINERGIE, the Swiss standard.

: 01 // United Nations Headquarters in Geneva. Exterior
: 02 // United Nations Headquarters in Geneva
: 03 // General Assembly Hall
: 04 // Temporary exhibition area
: 05 // Dome by the artist Miquel Barceló

Educational spaces

ACXT

New teacher training college
in Bilbao
Architect // ACXT
Client // The University of the Basque Country

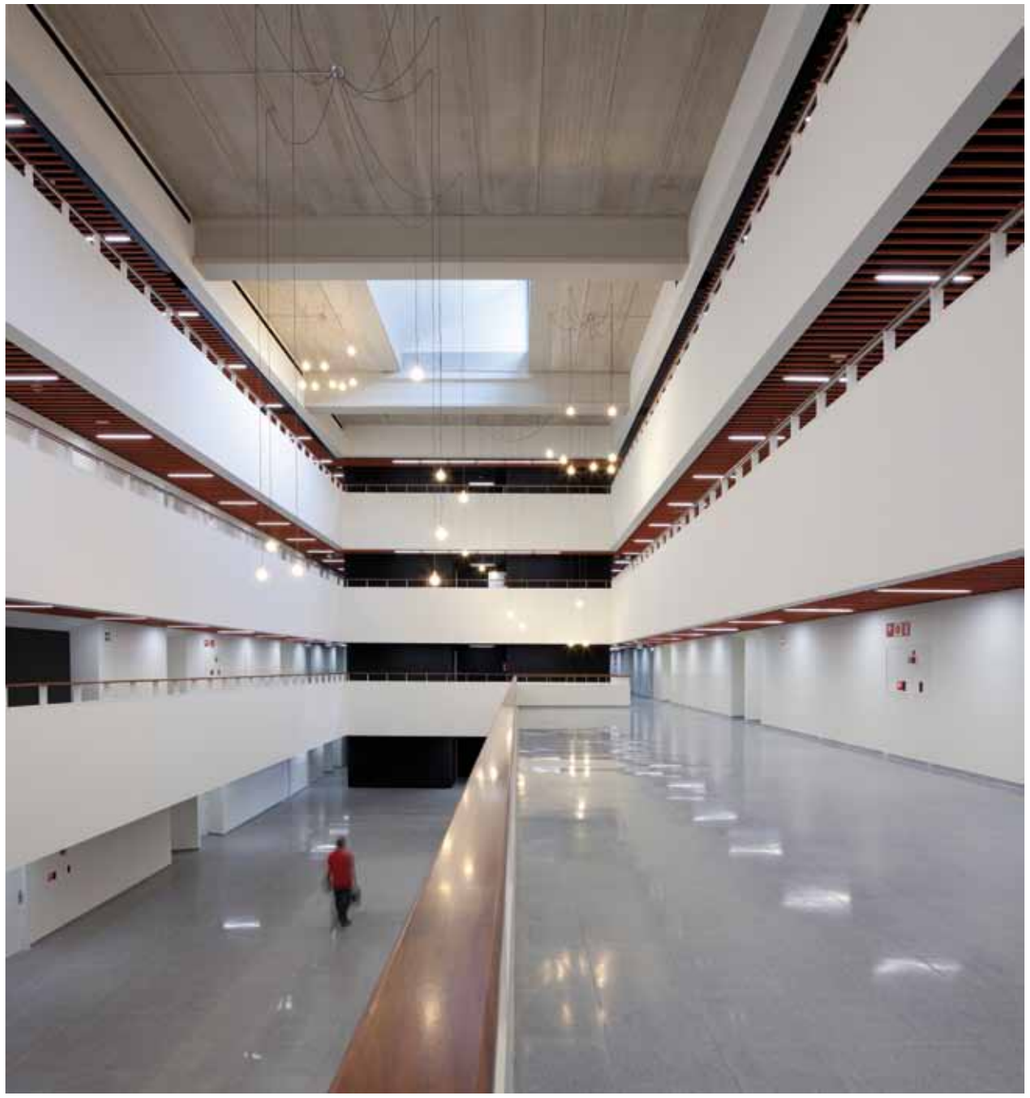


21st century education

New teacher training college in Bilbao

The University teacher training college replaces the old facilities, which date from 1962. The new building is intended as a symbol of the quality of teacher training in the 21st century. The building will allow the faculty to adapt to the new infant and primary school qualifications in the Bologna process, replacing the Diploma in Magisterium.

The building covering an area of 33,669 m^2, has 42 classrooms, 16 workshops, five study rooms, 106 faculty offices, two gyms, 17 workshops, as well as computer areas and space allocated to the management, administration and services of the school. In addition, there is a total of 360 parking spaces distributed on two basement floors.



In the design of the building, a series of measures to increase sustainability have been implemented, such as 'passive' strategies to allow the entry of sunlight in winter and prevent excessive heat in summer. Notable, is also the use of a water harvesting system for rain water, the installation of sustainable lighting and low-temperature boilers. All this will reduce CO_2 emissions by over 450,000 kilograms per year with an estimated saving of 107,000 euros in energy consumption.

Improving vocational training

Training centres in the construction sector

The construction sector in Spain still accounts for 7% of GDP. Increased competitiveness in the construction sector will only be possible through training. This is why the Construction Education Foundation has decided to create new vocational training centres.

The Foundation has signed a framework agreement with Idom, for the project management of the new buildings, for the period 2011 - 2012, including the review of the projects, contract management (specification, competition, reports and awarding) of the construction (time, cost, performance, quality, documentation) and handover.

The Construction Education Foundation is a private non-profit organisation that aims to promote vocational training and improve health and safety in construction. It is financed by quota contributions from the companies in the sector.

In February 2011, work began on the new centre in Valladolid. In April, the construction of the training centre in Orense commenced, and in July, building began on the Construction Education Foundation territorial building in Madrid. Other centres in Santander, Bétera, Las Palmas and Santiago de Compostela are planned, pending approval.

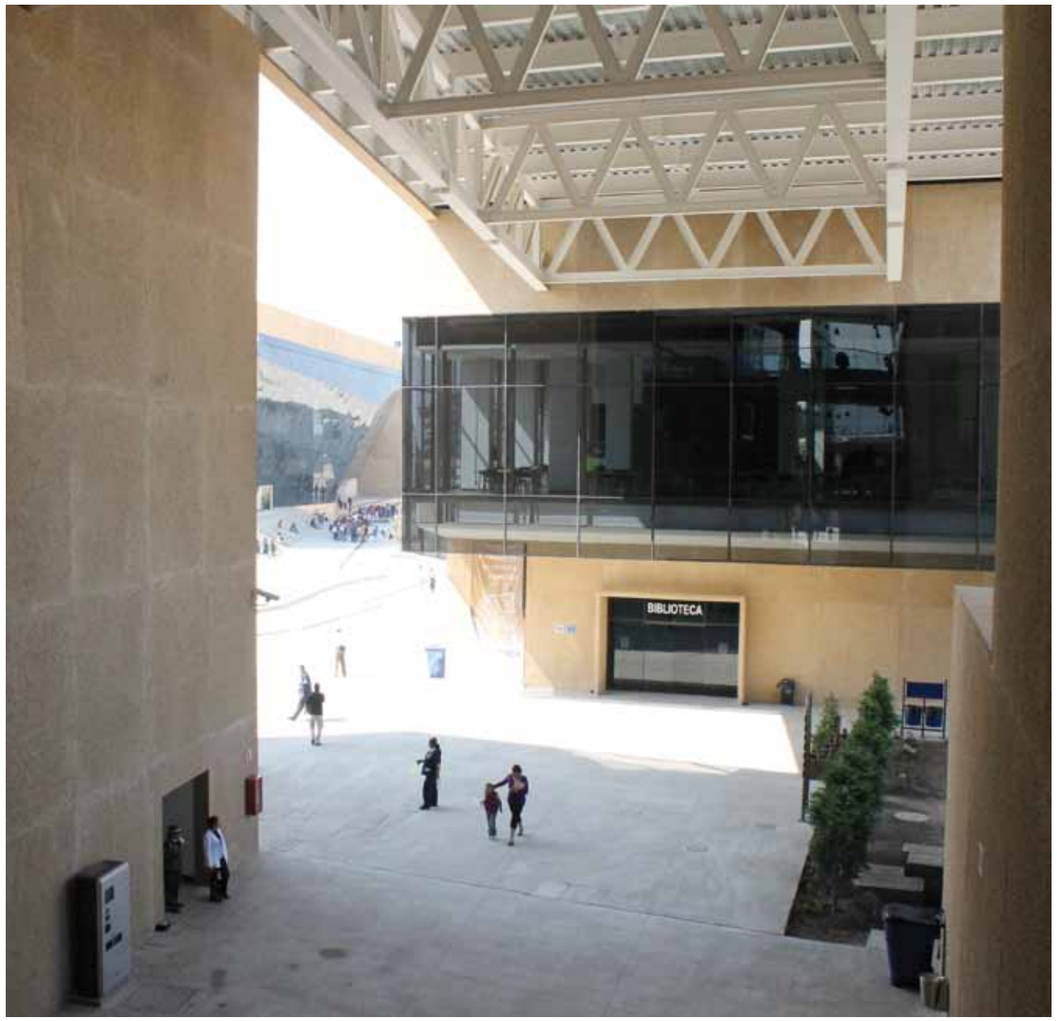
: Photo // Training centre, Villanueva de Gállego in Zaragoza, Spain

Valuing historic heritage

Bicentennial Cultural Centre in Mexico

Texcoco is a municipality in the state of Mexico. A municipality of enormous historical wealth, Texcoco is home to the 11,000 year old remains of mammoths, the sacred mountain, Tlaloc, and surrounding archaeological area, and the baths of the poet-king, Nezahualcoyotl.

Five years ago, the state authorities decided to build a large Cultural Centre to promote the development of over 6 million people living in the Texcoco area of influence through artistic, literary and historical training activities.



The Bicentennial Cultural Centre was inaugurated in mid-2011. The complex is comprised of four buildings, including a theatre with capacity for 1,200 people, 8,500 square feet of museum space, a library with capacity for 50,000 volumes and 40 workshops areas, as well as auditoriums.

In 2009, Abengoa Mexico and Inabensa, along with the Mexican company, Concretos y Obra Civil del Pacifico were awarded the design, construction and operation of the Centre. Idom has carried out the project supervision of the works for Abengoa.

08 Strategic thinking

“We help our clients achieve their goals while minimizing risks”

Marta Axpe

Engineer in Automation and Industrial Electronics
Consultant

Photo: Claudia Garmendia, Javier Erice, Marta Axpe & Eneko Zarraoa

The investment cycle

Focused on ROI

Idom supports its clients at every stage of investment:

From concept to operation, through design and construction.

In Idom Consulting, we link strategy
& reality focusing on return on investment

Strategy

Only realistic strategy design permits profitable investment decisions.

Our technological background and global experience enables Idom to develop the most advanced methodologies for strategic consulting.

Decision

Strategy is the basic input for the functional design, physical design and the definition of management and financing models.

The multidisciplinary teams of consultants, architects and engineers that Idom Consulting is able to assemble can design action-oriented strategy for success.

Design & Construction

Idom is proud of its more than half a century, successfully implementing projects on a worldwide scale.

Meeting deadlines and budgets is our greatest asset, backed up by our experience and the advanced Project Management methodologies we use.

Exploitation

We work in management consulting and systems to ensure the effectiveness and efficiency of processes.

This knowledge of all aspects of operation and day to day running, is the key to ensuring strategic and physical designs focused on increased return on investment (ROI).

Idom Consulting offers its services
based on five disciplines of knowledge
that support the improved competitiveness
of regions & corporations:

Strategy
Competitiveness
Urban & Territorial Planning
Operations
& Systems

Strategic Consulting

"The strategies that we design and implement to compete in the global markets are measurable, realistic & bankable"

Xabier Manterola

Industrial Engineer
Management Program (PDG), IESE
Master in Business Administration, ESEUNE
Postgraduate in International Business, New York University

Achievable strategies

Strategic ambition is conditioned by the vision of the business and the constraints of the investment risk. Our experience in many sectors and international markets allows us to combine knowledge and successful methodologies. In addition, the contribution of the multidisciplinary team of engineers and architects offered by Idom guarentee the technical expertise to design quantified realistic strategies to minimize risks. We combine strategic knowledge with technical and financial support, to design specific strategies to improve competitiveness.

STRATEGIC THINKING IN THE PRIMARY SECTOR

Reducing costs.
Cooperative Group. Spain.

SECTOR RESTRUCTURING

Study of industry consolidation. Spain.

INDUSTRIAL STRATEGIES

Strategic thinking for the business development and expansion of a leading steel company. Europe & Latin America.

HEALTH SECTOR STRATEGY

Strategic Reflection 2014. Cancer Institute, Hospital, public health network. Spain.

: Image //

Strategic planning for Osakidetza, Onkologikoa, Osatek & Txagorritxu Hospital.

Management Models

The organizations developed with the assistance of Idom Consulting respond effectively to the objectives, functions and resources provided. We align strategy, processes and functions to organizational design and corporate integration systems, without losing the logic of integration with the environment. We design process management models or projects adapted to the strategy and business characteristics, in accordance with the client, to ensure successful implementation. We also believe that the Balanced Scorecard is a necessary adjunct to management, providing people at different levels with the monitoring and decision making tools necessary to effectively do their job.

DEFINITION OF A NEW PUBLIC BODY

Creation of national body for mobility & road safety. México.

DESIGN & IMPLEMENTATION OF AN R&D+i CENTRE

Leading World Industrial Group. Spain.

SETTING UP OF BUSINESS DEVELOPMENT AGENT

Basque Iron and Steel Cluster. Action Plan 2015. Spain.

REDESIGN OF COMPANIES

Reorganization of public companies affiliated to the Ministry of Industry of the Autonomous Government. Spain & Latin America.

Photo: Isabel Luquin, Nuria Gómez Merchan, Koldo Bersategui

Sectoral diversification & internationalization

Idom Consulting has assisted numerous companies in the analysis of sectors, to identify niche opportunities. Additionally, the feasibility and potential of possible industrial projects in various sectors and geographies have also been analysed.

Idom Consulting analyses the cost structure, the dynamics of the target market, production and commercial activities, and the different possibilities offered by business models, to provide investment recommendations and action plans. This analysis is more important for sectors distinct from traditional activity, and for new markets in countries where opportunities have been identified.

PRODUCTION PLANTS IN EMERGING MARKETS

Analysis of the hazardous industrial waste treatment market.
Morocco , Spain & Latin America.

DIVERSIFICATION IN NEW TECHNOLOGY SECTORS

Characterization of the business and definition of its appeal. World market.

PARTNER SEARCH FINANCING & MARKETING OPPORTUNITIES

Technology company, floating wind turbines. Europe.

SEARCH FOR NEW TECHNOLOGY PRODUCT OPPORTUNITIES

Analysis of marketing opportunities for optical inspection systems for a technology centre. Spain and France.

Financial strategy

The experience in industrial and infrastructure sectors, that Idom possesses has resulted in different clients trusting in us, to perform technical and financial 'due diligence'. These clients range from private investors and banks to other financial sector entities. Idom Consulting has supported these clients in seeking investors for business projects, identifying potential agents and analysing the project appeal and alignment.

In relation to public administrations, Idom has participated in the definition of projects of public-private partnerships (PPP, PSP, etc.), and advised various clients in the private sector on the submission process for such projects. In this area, the work undertaken by Idom includes the technical and economic analysis of the project. Idom can offer the technical knowledge of all areas of the Idom group; identifying potential investors and the selection criteria, and accompanying the client in the tender bidding process (tender documentation, draft contracts, advice on negotiations, and recommendation of selection/award procedure).

IDENTIFICATION & ACQUISITION OF COMPANIES

Identifying opportunities and sales process management. France.

SUPPORT IN PUBLIC PRIVATE PARTNERSHIP (PPP) PARTICIPATION

Definition and implementation of PPP models. Mexico.

INVESTMENT STRATEGY FOR MULTILATERAL FUNDS

Setting priorities for investment in infrastructure and technology. MENA & ALA.

INVESTMENT IN RENEWABLE ENERGY

Fund management in renewable energy. World Market.

illustration: Lakchmi Salcedo

Development & Competitiveness

"We design public policies in business, technology and science to improve the competitiveness of regions and corporations"

Marta Álvarez Ochoa

Graduate in Economic Science
MSc. Economic Development, School of Oriental and African Studies, London University
PMP, Project Management Institute

Science & Technology

The scientific and technological development at an international level is presented as an effective means to meet the great challenges of our time, such as climate change, energy efficiency, aging and chronic diseases, mobility, or pandemics, among others.

This involves the creation of new multidisciplinary formulas and policies of a transforming nature in the areas of competitiveness, science and technology, that promote public-private cooperation towards effective solutions.

FUNDING OF SCIENCE & TECHNOLOGY

National Council for Science and Technology (CONACYT). Mexico.

KNOWLEDGE INFRASTRUCTURE BUILDING

Portfolio of investments in infrastructures and technology. MENA and ALA.

INTERNATIONAL TECHNOLOGY COOPERATION

Interamerican Development Bank (IDB) Washington. USA.

R & D +i MEASUREMENT SYSTEMS

Spanish Foundation of Science & Technology (FECYT). Spain.

Regional & Enterprise Competitiveness

The phenomenon of globalization has made evident, the great influence that business and microeconomic factors have on the competitiveness of regions. At the same time, the rapid growth that some countries and regions are experiencing shows that the foundations of their competitive advantage is shifting from competing in costs to differentiating themselves in knowledge and the ability to innovate. In this context, business activity becomes more complex; companies become highly specialized and need to be part of knowledge generation networks in order to maintain their competitive position internationally.

PROGRAMME TO IMPROVE COMPETITIVENESS (PROMECE)

Competitiveness programme for IMPIVA. Valencia. Spain.

PROGRAMME TO FOSTER DESIGN MANAGEMENT IN SMEs

Enisa-DDI, Government of Spain.

SME INTERNATIONALISATION

Brazilian Agency for Industrial Development & European Commission. Brazil.

BUSINESS COMPETITIVENESS & INNOVATION

PROCEI Programme.
PROMÉXICO & European Commission.
Mexico.

Programme & Project Management. Management for results

Project & Programme Management as a discipline is becoming ever more important, with the need for governments and organizations to manage increasingly complex actions, with limited resources.

Issues such as transparency, efficiency, effectiveness, sustainability and impact require professional management of programmes and projects, that is supported by information systems, ensuring the expected results for the client and society.

SME COMPETITIVENESS PROGRAMME

Interamerican Investment Corporation (IIC). World Bank Group. Washington. USA & Colombia.

PROJECT MONITORING BASED ON QUALITY

European Commission. Brussels.

PROJECT MANAGEMENT OFFICE (PMO) FOR THE INDUSTRIAL MODERNISATION PROGRAMME

Algerian Ministry of Industry & European Commission. Algeria.

PROJECT MANAGEMENT OFFICE (PMO) PROGRAMME FOR THE MANAGEMENT OF THE ALGERIA PARTNERSHIP AGREEMENT WITH THE EUROPEAN UNION

Ministry of Commerce. Algeria
& European Commission. Algeria.

Region & City

"City planning requires a comprehensive approach, based on a vision and long-term strategy that triggers economic and social development through the design of innovative proposals"

Antonio Fernández

Graduate in Economics and Business Studies
General Management Program (PDG), IESE

Strategic Regional & Urban Planning

The lack of planning in aspects of development and competitiveness has led to deprived urban areas without a future.

Consistent spatial and urban redesign has to come from the intrinsic character and competitive advantage of each territory.

With this vision, we promote social cohesion and sustainable economic development incorporating environmental aspects, involving the community in defining plans and integrating existing government structures, both public and private.

In this way, consistent and bankable proposals will be defined, ensuring the viability and resilience of the development.

INTEGRAL SUSTAINABLE URBAN DEVELOPMENT IN LATIN AMERICA

Inter-American Development Bank (IDB), Mexican Federal Government and private developers. Mexico.

METROPOLITAN COORDINATION

Sharing of municipal strategies for metropolitan development coordinated. BID - Ministry of Housing. San Jose, Costa Rica.

URBAN SUSTAINABILITY

Extending the green belt of Vitoria. Spain.

IDENTIFICATION OF OPPORTUNITIES FOR THE ECONOMIC DEVELOPMENT OF CITIES

Strategies focused on city competitiveness and generating economic dynamism. Different cities, Mexico.

Urban Renewal & Redevelopment

Our global experience has shown that successful cities have based their development on enhancing their local comparative and competitive advantage.

The growth of cities, and the goal to be sustainable must be based on the generation and attraction of jobs and talent.

RESHAPING FAVELAS

Rio de Janeiro and Sao Paulo. Brazil.

INFORMAL SETTLEMENTS IN DEVELOPING COUNTRIES

Redesign of neighbourhoods in Luanda. Angola.

REVITALIZING THE HEART OF THE CITY

Ho Chi Minh City. Vietnam.

ECONOMIC CITY

Enhancement of industrial assets: Transfer, business model and action plan for the redevelopment of a central brownfield.

Regional Infrastructure & facilities

Equipment is key to determining the success and viability of development. Multidisciplinary capabilities allow Idom Consulting to develop proposals that include both technical feasibility analysis, economic and financial and management models for the successful development of infrastructure and equipment. These services are valued by both public agencies, financial backers and private companies.

ECONOMIC & INDUSTRIAL LOGISTIC CORRIDOR

Fidesur. México.

CARTAGENA EXHIBITION CENTRE

City of Cartagena. Colombia.

SUSTAINABILE MOBILITY

México, Brasil, Colombia, Panamá, Angola, Vietnam, Argentina.

INNOVATIVE REGIONS & CITIES

The Basque Country University Science Park. UPV and Technology Park of Bizkaia. Spain.

Operations & logistics

"The development of efficient flexible supply chains is a key element of the competitive strategies of companies and regions"

Charles Kirby

Graduate in Physics
Management Development Program (PDD), IESE
PMP, Project Management Institute

Operations Strategies

The rapidly changing economic environment, the impact of globalization both on resources and on demand, and the introduction of new information technologies present major challenges in the field of operations. One of the main competitive advantages in this field lies in the ability to define innovative trading strategies in which customer service, flexibility and agility, are balanced with cost efficiency and reliability.

Idom Consulting has developed competitive strategies with a multidisciplinary approach that facilitates rapid implementation.

SCM STRATEGY. STOCK AND WAREHOUSE MANAGEMENT. OPERATION & INVESTMENT

Sports goods distributing company. Spain.

GLOBAL SUPPLY CHAIN DESIGN

Aerospace Company. Asia, Europa, U.S. Spain & Latin America.

INTEGRATED LOGISTICS, PRODUCTION & MAINTENANCE STRATEGY

World leader in the manufacture of wind turbines. Europe.

INVESTMENT DECISION

Mining. Latin America.

Process improvement

In the improvement of processes, Idom Consulting as a member of the Supply Chain Council uses the SCOR ™ reference model, allowing the integration of successfully applied concepts, such as process reengineering, benchmarking and management by indicators, in the framework of multidisciplinary teams.

INTEGRATED PLANNING OF PRODUCTION & SALES

Manufacturing company,
furniture sector. Egypt.

INTEGRATED PROCESSES, CUSTOMER & SUPPLIER

Food distributor. Spain.

LEAN MANUFACTURING

Electrical appliances company. Spain.

MEASURE TO IMPROVE

Food company. Spain.

Logistics infrastructure & sustainable transport

Idom Consulting works with public and private agents in the development of various works in infrastructure and transport logistics, freight and passengers, in making them competitive elements, integrating them into the economic, social and productive systems in the region.

MARITIME LOGISTICS - SSS SHORT SEA SHIPPING

General Coordination of Ports Mexico-SCT. Mexico - USA.

PUBLIC POLICY IN THE FIELD OF TRANSPORT

European Union, Ministry of Transport, Egypt.

LOGISTICS PLATFORM FOR REGIONAL DEVELOPMENT

UNDP. United Nations. Brazil.

SUSTAINABLE URBAN TRANSPORT

Valencia, Alicante. Spain.

Technology & Innovation in the Supply Chain

The application of advanced technologies, both for information, identification and handling of products is a key element for efficiency and profitability of operations in supply chains.

Our independent approach to the suppliers of hardware and software, along with detailed knowledge of the operational problems mean that we can help clients select technologies that offer the best return on investment.

IN-STORE PROCESS AUTOMATION PROJECT WITH RFID

Perfume retailer. Spain.

IN-PLANT ENERGY EFFICIENCY & DATA CAPTURE SYSTEMS

Bottling of beverages. Spain.

REDESIGN OF FACTORY HANDLING SYSTEMS

Manufacturer of meat products. Spain.

ERP IMPLEMENTATION FOR GLOBAL MANAGEMENT OF THE SUPPLY CHAIN

Equipment manufacturer.
Multinational.

Systems and Geosystems

"Our design and implementation of technology solutions is aimed at increasing the effectiveness of management of enterprises and regions"

Íñigo San Emeterio

Graduate in Computer Science
Master in Electronic System Design, Cranfield University
Management Development Program (PDD), IESE
PMP, Project Management Institute

IT Strategy and Governance

Business and competitive strategies require system strategies aligned with the objectives of the business; realistically defined Systems Plans. Idom Consulting has worked in both the private and public sector, maintaining independence in the design of the Information Systems Strategy and provide support in managing their IT projects.

ORGANIZATION AND SYSTEMS STRATEGY FOR THE MODERNIZATION OF THE HEALTH SECTOR

Ministry of Health.
Government of Aragon. Spain.

BUSINESS SYSTEMS PLAN

Multinational industrial group. Spain, China, Germany, France, Mexico, Brazil.

MODERNIZATION OF INFORMATION SYSTEMS FOR CATASTRAL MANAGEMENT

Spanish Public Administration.

STRATEGIC INFORMATION SYSTEMS

Spanish Foundation of Science and Technology (FECYT). Spain.

Business Management Solutions

The complexity of globalization and the dimension that supply chains have acquired make them difficult to manage, without global business information systems. We understand systems as tools to facilitate the management of operational relationships, commercial and corporate, not just internally in the organisation, but also relationships with customers and suppliers. For this we transform management models and then develop systems to suit the client. Idom Consulting has worked on projects for process optimization and implementation of Enterprise Resource Planning (SAP, Systems Collaboration and sharing of knowledge).

NEW LOGISTICS - BUSINESS MODEL

Industrial Group. Spain.

IMPLEMENTATION OF MANAGEMENT OF SYSTEMS MATERIAL NEEDS & INTEGRATION WITH ERP

Bottling Company. Spain.

PROJECT MANAGEMENT SYSTEM

Proméxico. Mexico.

GLOBAL MANAGEMENT MODEL (ERP)

Multinational industrial group.
Spain, China, Germany, France, Mexico, Brazil.

Land management & infrastructure systems

The management of the distribution of large infrastructures actions in the region, require advanced tools for both graphic and alpha-numeric analysis, not just in the taking of decisions, but in the management of the region and infrastructures. Only then, can we perform a complete analysis of the physical and socio-economic aspects that link strategy and reality. Idom Consulting continues to be the leading company in the design, development and implementation of IT solutions for the management of geographic information across multiple sectors.

TERRITORIAL e-ADMINSTRATION

Urban planning (shared) Red.es. Spain.

GEOGRAPHIC INFORMATION MANAGEMENT

OSA Airport System. Spanish airports & Air Navigation area (AENA). Spain.

INTEGRATED MANAGEMENT OF THE EXPROPRIATION PROCESS

Public entity for the managemnt of transport infrastructure. Spain.

URBAN PLANNING & CADASTRAL MANAGEMENT

Valuation service including cadastral for the Provincial Council of Bizkaia (DFB). Spain.

Business Analytics Solutions

Idom has carried out consulting, design and implementation of management systems of indicators, for measuring strategic and operational variables of the business.

TRAVEL MANAGEMENT

Commuter train data analysis. RENFE. Spain.

ACTIVITY BASED COST ANALYSIS

Publishing group. Spain.

SYSTEM FOR MONITORING THE NATIONAL INNOVATION POLICY

Spanish Foundation of Science & Technology (FECYT). Spain.

BALANCED SCORE CARD FOR THE ANALYSIS OF TECHNICAL ASSISTANCE

SME Competitiveness Programme. FINPYME Colombia.

09 Recognition for a job well done

‘Working with Idom has been easy because we share the same values’

José María Mendizábal
Chief Executive Officer of Pikolín

More than a decade ago, in 1998, Idom began its relationship with Pikolín, with the preparation of an energy audit and feasibility study for a cogeneration process.

From then on, Idom has received numerous commissions from Pikolín, including the design of the storage facilities that the Aragonese Company has located across Spain.

The CEO, Mr Mendizábal points out that the fruitful relationship that Pikolín has built up with Idom over time, is based on trust and good communication with the team members, which “at all times, has been smooth and easy”.

“Idom-ACXT is among the 50 largest architectural firms in the world”

Fernando Pérez Fraile
Director of Idom UK.
President of the Spanish Chamber of Commerce in Great Britain.

The prestigious British magazine, Building Design BD, has published the 2012 ranking of the world’s leading architectural firms. Idom ACXT is among the top 50 in the world and among the 10th largest in Europe. Building Design BD has ranked Idom ACXT, in the world’s ‘Top 5’, in the design of sports facilities, and the ‘Top 10’ in Project Management.

Furthermore, on Friday May 13, 2011, at a ceremony at the Park Plaza, Westminster Bridge, London, Fernando Pérez received the ‘Cruz Europea de Oro’ (European Gold Cross), an award given by the Spanish Association of European Development, to promote the brotherhood and understanding of the people of Europe.

National Engineering Award, Structures Category

Alberto Solozábal, David Alonso & Sonia Salgado.
Members of the winning team

In May 2011, the Board of the Association of Industry Engineers agreed to grant the National Award for Industrial Engineering 2009, in the category of metal structures to Idom. The winning project, “The Iceberg Scene: Expo 2008”, was led by Alberto Solozábal, an industrial engineer from Idom with over twenty years professional experience. On May 30, the winners were received by the Prince of Asturias in the ‘Palacio de la Zarzuela’ and subsequently received the award, at the ceremony held at the Palace Hotel in Madrid.

The Spanish Association of Project Management Awards

On June 22, at the headquarters of the Association of Civil Engineers, in Madrid, Samuel Horche (pictured) recieved the award on behalf of Idom.

The Spanish Association of Integrated Project Management (AEDIP) has distinguished Idom by awarding the company first prize in the AEDIP awards. The award was given for the works which Idom carried out simultaneously, on two Ikea stores, in Jerez de la Frontera and La Coruña.

This award distinguishes both Ikea, as the owner of the properties, and Idom for their work in the Integrated Project Management of these building projects. The works were carried out between 2009 and 2010.

Awards in China & Brazil for the CEIBS building. Beijing.

In 2011, the new building of the 'China Europe International Business School' (CEIBS) received awards from the Architectural Society of China & the Sao Paulo Biennial prize for architecture.

In 2011, the CEIBS (ACXT, Iñaki Garai, pictured here) received an award from the Architectural Society of China and the Municipal Commission of Urban Planning of Beijing. The CEIBS building was also was awarded the Sao Paulo Biennial prize for architecture; along with the 112 emergency call building (ACXT, Marco Suarez).

The work of the Idom director and professor of IESE at CEIBS, Pedro Nueno is intrinsically linked with CEIBS. The Chinese government has awarded Pedro Nueno with the "Friendship Award" in recognition for this work; perhaps the highest award that the Chinese government has conferred on a foreign national.

Photo: José Ramón Blasco

First Prize in the international competition to bring High-Speed to La Coruña

A team of engineers, architects and consultants from Idom further developed this proposal. (see p.122). Pictured here, Jorge Tello & Gonzalo Bernabéu.

On May 12, the decision was made to award the tender for the international invitation call, for the design of the new intermodal station for the high-speed train service. The tender was awarded to the joint venture formed by Idom and Cesar Portela.

The 11-member jury, composed of experts in the field, representing various institutions and agencies, such as ADIF, Xunta, the Town Hall of La Coruña, the Provincial Council, the College of Architects and the Association of Civil Engineers unanimously decided on the proposal of Idom

Award from the Spanish Nuclear Society

During the annual meeting of the Spanish Nuclear Society, Idom was awarded the prize for best presentation on Nuclear Safety.

Photo : David Pifarré, Yolanda Alcaide & Agustín Alemán, members of the team.

The presentation summarised the work carried out by Idom in the last two years, on the revision of the vulnerability of the Ascó nuclear plant to external events. In the work, we have considered the possibility of accidents in nearby facilities and others such as railways, roads and even the impact of aircraft. We have also studied the possibility of the release of explosive products, toxic and suffocating substances, floods, fires, windstorms and much more.

Photography: Laura Guerrero

First Prize in the international tender for the footbridge over the Drava River (Slovenia)

The historic city of Maribor and the International Union of Architects distinguished the civil engineering and architecture teams from Idom for their success.

On the occasion of Maribor as the "European Capital of Culture 2012", the City Council has called for proposals for the design and construction of a new footbridge over the river Drava. 124 proposals were presented from around the world and the resulting winner, was a team formed by Idom and Burgos & Garrido.

Photo: Alexander Bernabeu, director of the winning proposal.

Award from the institute of architects of Brazil & the city of Rio de Janeiro

The contest for the regeneration of the favelas, “Morar Carioca” aims to integrate the slums in the city.

‘We have developed the concept of a balance at different levels - metropolitan, urban and local - proposing an architectural solution, designed to the scale and typology of the actions being carried out, in one of the poorest areas of Rio de Janeiro.’

Photo: Pedro Paes, **Architect**

Photo: Kiko Ferrite. © Idom

10 About Idom

“The person is the central nerve in the development of Idom.”

María Sobradillo
Graduate in Psychology

Photo: Conchi Ortega, Patricia Tobías, Íñigo Vallejo & María Sobradillo

Some important figures

Idom's financial structure is solid and solvent, as corresponds to a business enterprise aiming to establish long-term personal relationships.

2,500
people

300
million euros of revenue

100
million euros contracted services supplied

15
million euros, innovation & training

50%
International acitvity

500
New clients

1,200
Repeating clients

Photo: Marc Potard & Elena Puerta

34
Offices

16
Countries with offices

119
Countries with projects

5
Continents

IDOM IN THE WORLD

The process of internationalization is part of Idom's strategy, building on the company's strong position in the Spanish market.

The map shows all the countries in which Idom has carried out projects and studies for local and international clients.

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Published by:

Idom
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Legal Deposit:
M-

Art direction and graphic design:
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Graphic Images: Jesús Bermejo

Photography:
Alfonso Calza, Aitor Ortiz, Domi Alonso, Jorge Rey, Jose Ramón Irusta, Íñigo Escalante, Irfan Naqi

Portraits:
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Translation:
Brian Dermody & Alexandra Harris

Printing Press:
Gráficas Monterreina