

ebe group



EXCELLENCE BY EXPERIENCE



 **COMMUNICATION NETWORKS**

 **TIC INFRASTRUCTURES**

 **AUDITING COMMUNICATION NETWORKS**

 **INSTALLATIONS ENGINEERING**

 **COMPREHENSIVE PROJECT MANAGEMENT**

 **QUALITY ASSURANCE**

 **ENERGY EFFICIENCY**

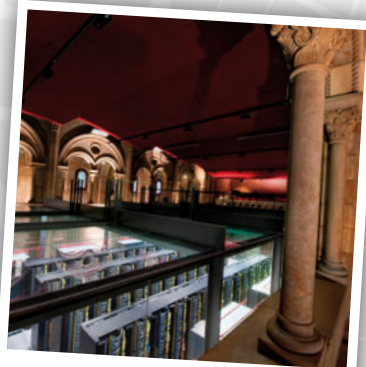
 **ENERGY MANAGEMENT**

 **INDUSTRIAL SAFETY**

 **SMART CITY**



If harmony arises from the combination of reason and emotion, we are connected to it when we go through Barcelona. In its buildings, on its streets and in its infrastructures we have provided as much as our knowledge and vision have been capable of generating. Meanwhile, our heart has felt, in every need solved, the emotion of doing something which is bigger than ourselves, which goes beyond us because it is always at the service of others, of the community.

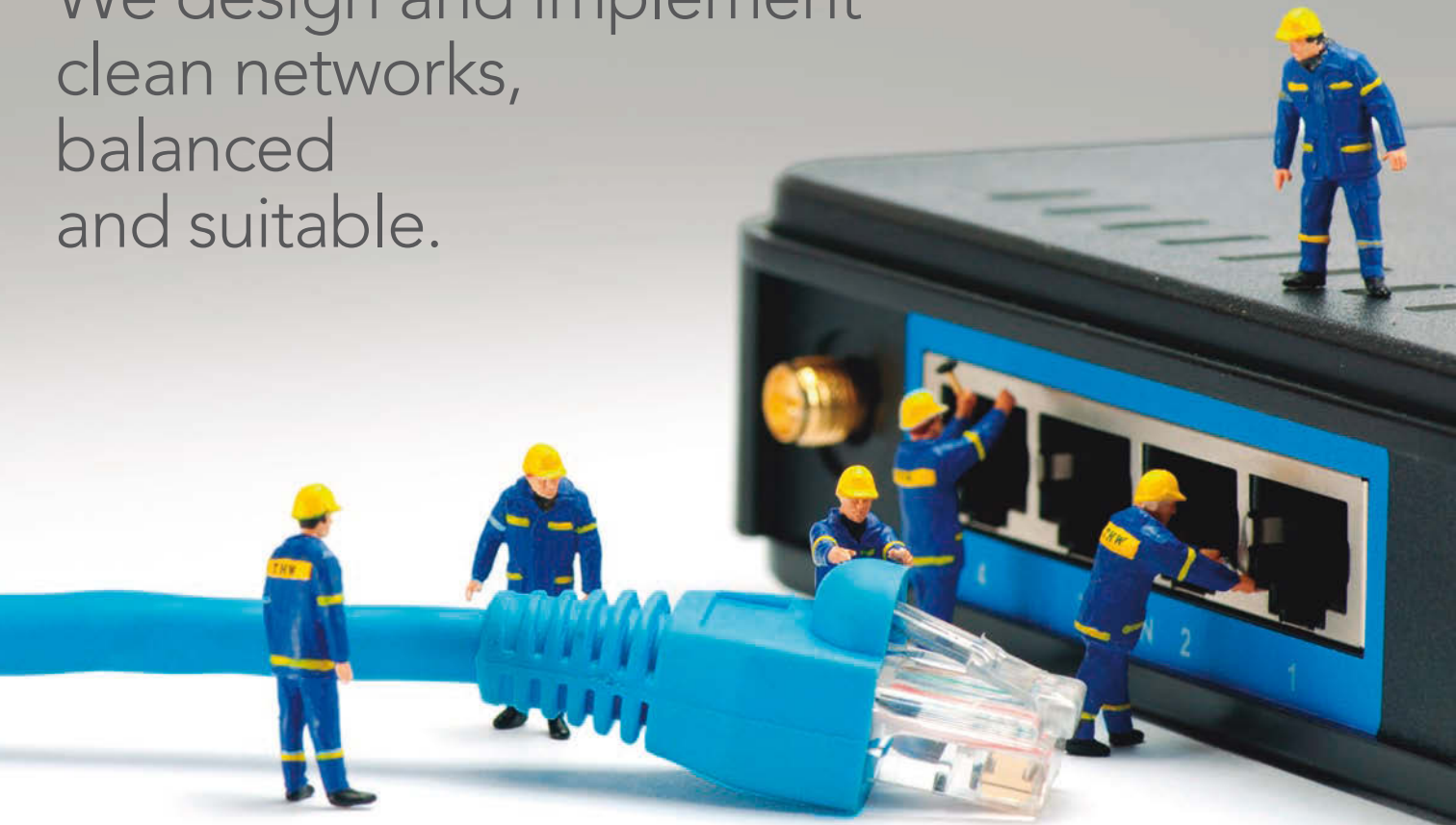


Barcelona Supercomputing Center (BSC)



CosmoCaixa

We design and implement
clean networks,
balanced
and suitable.



*As if for one instant we could dress boots capable of walking leagues, we jump and respectfully go into the premises of the **University of Barcelona**, in its original place, in Plaza Universidad. As carriers of winds of modernity, we are going to install a new-generation communication network and its first wifi aerals. We engineers, work hand in hand with craftsmen, especially cabinet makers. Floors, furniture, decorations on walls and ceilings must not suffer any damages due to the arrival of what is new. Here, where so many lessons have been given, we keep on learning that only the knowledge which is shared and delivered to the community matters.*

Extract from the *ebegroup story*, located in www.ebegroup.net

Installation of structured wiring, fibre optic cable, network electronics and wireless technology

Installations of structured wiring (standards ANSI/TIA/EIA and ISO/IEC)

- Project and execution of wiring categories Cat-5, 6 and 7.
- Projects and execution in optic fibre MM and SM.
- Connectivity improvements in network cabinets V/D (sanitation).
- Certification and audit of existing structured wiring networks.

Wiring in urban and interurban routes

- Projects and execution with pair wiring.
- Projects and execution in optic fibre SM.
- SOS pole routes (copper, FO).
- Routes with coil-loaded cables (breakdowns and maintenance).
- Wiring certifications and audit in urban or interurban networks.

Wireless environments (Wireless networks)

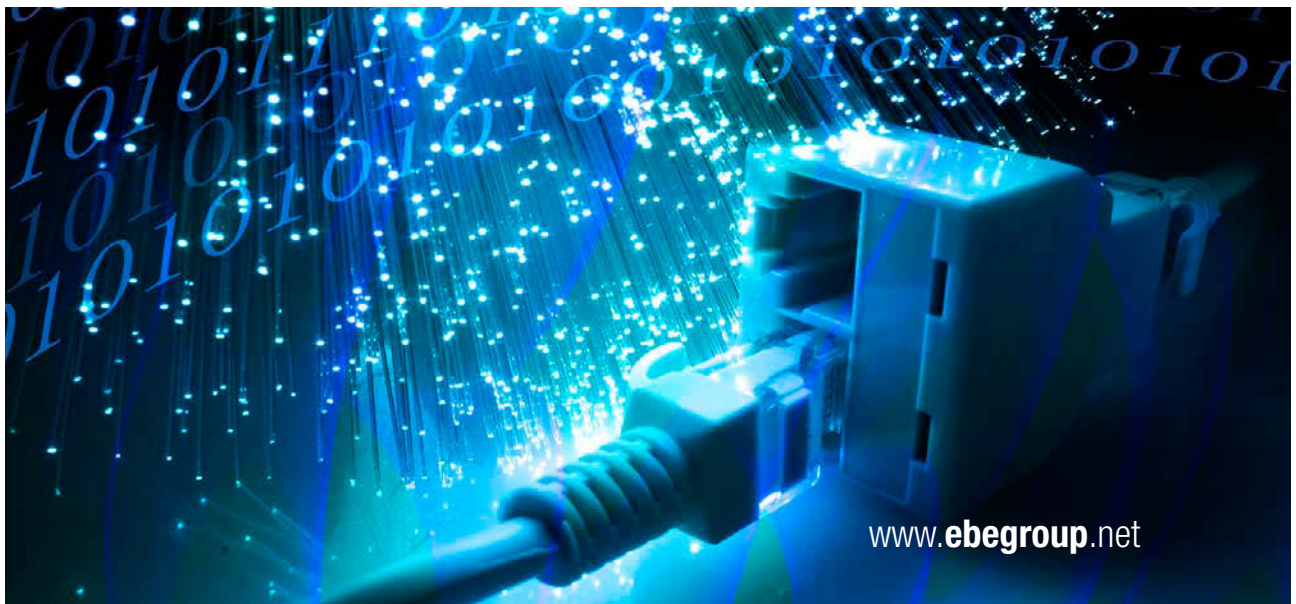
- Indoor and outdoor projects.
- Wireless point to point.
- Wireless point multipoint.
- Manageable telepower systems.

Network electronics

- Switching solutions.
- Routing solutions.

Telephone switchboard

- Projects and execution with analogical/digital switchboards.
- Projects and execution with IP switchboards.
- CTI (Computer Telephony Integration/Computer).
- Telephone/intercom system with analogical switchboard.





**Your
strategic
data,
at home,
with you.**



*We hardly move, but we do so unable to avoid feeling really small in front of the magnificence we perceive. In the **Barcelona Supercomputing Center** with the Supercomputer Mare Nostrum, we carry out the technical study to define the viability of connecting the CPDs in Campus Norte with the Supercomputer. Everything is lush, from the processing capacity to the energy consumption. Our smallness does not prevent us from doing our best to provide solutions, although at the same time a reflection appears. Everything is so impressive. Yes, will we really always be able to have it at our exclusive service?*

Extract from the *ebegroup story*, located in www.ebegroup.net

Data Processing Centre (CPD)

Technical rooms for communications (STC) and UPS

Data Processing Centre (CPD) and Technical rooms for communications (STC)

- Projects for room enclosures.
- Air conditioning projects.
- Projects for fire detection and extinction.
- Projects for access control.
- Technical partitions and floors.
- Environment control (manageable).

Uninterruptible Power Supply (UPS)

- Medium and high capacity equipment.
- Parallel/redundant equipment.
- Battery life extension.
- Management, supervision and maintenance.
- Backup generators.
- Floor plan without electrical noise (floor for computer networks).
- Electrical boards with remote control (remote control for control panel).





Become aware.

Get the knowledge
to act.



*We don't have to walk too much. Right here we see the **Olympic Stadium in Montjuic** and our task is to measure time. We have to install on site data transmission lines for the official Seiko timekeeping of the olympic events. We soon realise that our inventiveness was going to be put to the test. A legend, the son of the wind, Carl Lewis, is waiting for us. We fully feel the responsibility of those who have to find answers to unexpected questions. Our hearts will never forget the immense happiness felt when checking that we did it, yes! We were able to measure time! The installation method we conceived at the tracks was able to perfectly establish the necessary alliance with relentless Cronos.*

Extract from the *ebegroup* story, located in www.ebegroup.net

We audit and certify the performance of your networks and copper connections, optic fibre and wireless

Every migration to a new hardware must be supported by the wiring infrastructure. If your wiring network is not updated or you do not know its performance, we audit it with state-of-the-art scanning equipment, to find the best solution to your needs or, otherwise, to advise you to implement totally or in part a new wiring system according to standards.

Likewise, when making a change of cabinet or rack due to extension, sanitation, CPD restructuration, or an update of the whole wiring infrastructure in the company, we can also advise you to minimize the effects this change may have on the network users.





THE SEARCH FOR COMFORT IS INALIENABLE, ALSO IN FACILITIES



*We go down the mountain slope, towards the imaginary perpendicular central line in the city and we walk into the **CosmoCaixa** building, where we design installations and advise in terms of security. We know that many times it is the children who enjoy it; we vividly feel that we are at the service of their intellectual and cultural development, in short, as people. We want to be a warranty that everything is safe, reliable and in that way the girls and boys feel taken care of, assisted. Our countenance has the same excited look as the one of the many surprised little faces in front of what they discover at every step, for them, for their smiles, our tasks becomes important, we know and we do our best.*

Extract from the *ebegroup* story, located in www.ebegroup.net

Design and edition of installation projects

Electricity in medium and low voltage

- Execution of electrical installations in industry.
- Execution of electrical installations in the service sector.
- Manufacturing, assembly and maintenance of electrical equipment for control and protection for the industry.
- Supply and assembly of Transformation and Distribution Centres.
- Installation calculations with advanced software. For the design, analysis, simulation, control, optimization, automation and operation of electrical power systems of generation, transmission, distribution and industrial systems.

Lighting

Thermal installations

- Air conditioning.
- Heating.
- DHW (Domestic Hot Water)
- Industrial cooling.

Fire protection installations

Installation legalisation

- Process the necessary documents to legalise installations in official agencies.

Inspection and industrial obligatory control


Renewable energy installations

- Solar thermal.
- Solar photovoltaic.
- Eolian and minieolian.
- Geothermal.
- Biomass.

Advice for the design and execution of temporary installations: trade fairs, exhibitions, stands, etc.

- Installation design.
- Assembly supervision.
- Legalisations and permit processing.
- Supply management.





We turn
designed
realities
into realities
tailored
to your needs.



*A new jump takes us to the slope of the other mountain which presides over Barcelona: the Tibidabo. We set off from a place full of yesterday and which is also today, to get to another which is today and which brings us tomorrow with big strides. In the modular building of the **Science Park in Barcelona** we are in charge of the installation of a 6-category network for the laboratory of magnetic resonance imaging. Our work team counts on the stimulating presence of students of our training courses. Once again we learn, we fit in a high performance multidisciplinary team which makes us feel both apprentices and masters. Maybe everything has to be like that from now on, that we all are called to teach something provided that we never want to stop learning.*

Extract from *ebegroup story*, located in www.ebegroup.net

Executive engineering - Project management

We guarantee the economic and delivery management, as well as quality in the projects

PROJECT MANAGEMENT

- **DELIVERY TIME ASSURANCE:** delivery time control, anticipate problems, assure stages accomplishment to avoid the possible penalties due to the non-accomplishment of delivery times from the developer.
- **ASSURANCE OF THE MAXIMUM VALUE CONTRACTED:** Cost control, make sure the job will be done for a value equal or less than the amount contracted. Control and follow-up of equipment orders, control and follow-up of subcontractors. Revision and reason for every invoice.

Work executive management

Work safety and health coordination

We take care of operation and maintenance

Building maintenance management FACILITY MANAGEMENT.

- **COMMISSIONING:** Assurance of the start-up of all the installations and equipment, it includes the integrated implementation of the necessary techniques and procedures to verify, inspect and test all the operating installations and project equipment, during assembly and much before delivery, to avoid last minute surprises, such as obsolete installations, equipment which does not work, etc.

Study and management of tenders and contracts

Building refurbishing

- Comprehensive management of refurbishing, study, analysis of the present situation, improvement proposals, surface optimization, profitability analysis for change of use, suitability of the materials used.





*How difficult it is to be now in Montjuic without paying a thankful tribute to the memory of our days in **Palau Sant Jordi** together with the Japanese Arata Isozaki's team. We cooperated in the implementation of the public address system. This was a highly difficult installation, but we felt much more, we felt that those Olympic Games were really going to approach cultures, as they were already doing with us, that cooperating and sharing with somebody different is by no means doing it with somebody distinct, external.*

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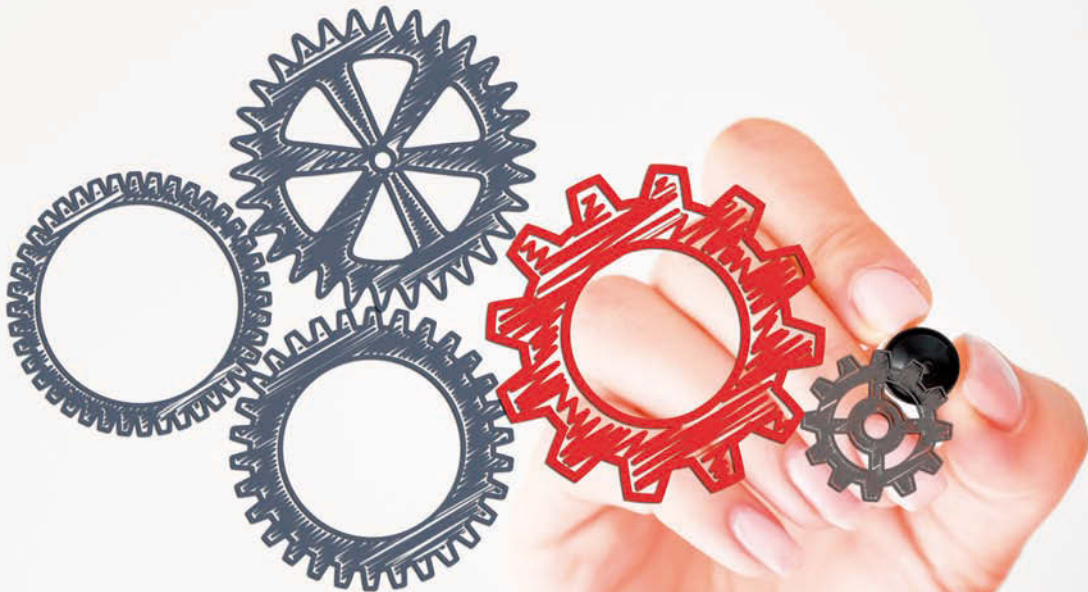
Quality assurance

COMPREHENSIVE PROJECT AUDIT

- Verification that the designed project agrees with the measurements and the budget contracted to avoid last minute surprises and decisions during the execution, which always costs us more money. Analysis of the possible improvements for the project, suggesting constructive solutions more adequate and economical which will represent a reduction of the final cost.
- Auditing and certification of projects according to international standards.
- Project optimization, searching for savings in the final budget.

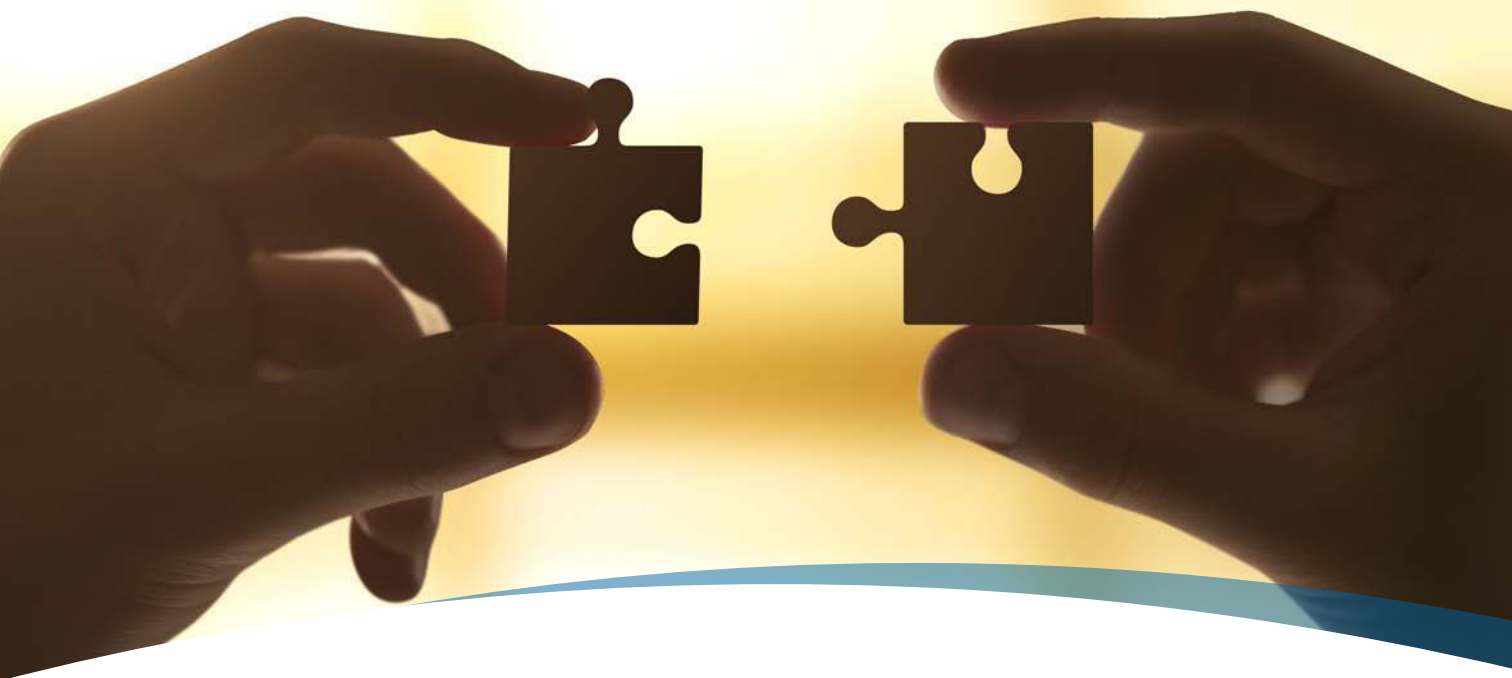
WORK QUALITY CONTROL

- Checking and assurance that the work is executed according to the project and regulations.
- Quality control for materials, analysis and verification of the suitability of the materials used.
- Inspection during the execution and edition of specific reports to deliver to official agencies such as banks, insurance companies, public administration, etc.
- Structure valuation and edition of the corresponding pathology report. Materials used. Use and suitability.



IMPROVEMENT IN EFFICIENCY IS AN ACT OF RESPONSABILITY.

We all win.



*We walk away, we leave the city limits, to get to the place where the city would be inconceivable without it, as alone and isolated as obsolete. We are in **Barcelona Airport**. Our task is to suggest energy efficiency measures, of distinct and clear savings. We do so while we get into the entrails of a pharaonic work which is one of the biggest engineering works ever done in our country. Our admiration does not prevent us from noting, here and there, optimization measures. There is way to go, there is much way to go in this and we should walk it the sooner the better.*

Extract from the *ebegroup* story, located in www.ebegroup.net

Services to improve energetic efficiency in installations

- Electrical pricing studies and electrical power optimization.
- Energy audits: consumption and cost analysis, study of energy-consuming equipment and systems and technical-economic proposals to improve efficiency.
- Technical diagnostics.
- Measurement and verification campaigns.
- Monitorization.
- Energy certification in buildings.
- Training.

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Energy.

In **harmony**
with your needs.



*This is maybe our private sacred mountain. Just a little further down, in its slope, the fantasy of the **Montjuic Fountains** awaits us; they are much more than water and colour. Here, side by side with perfect phosphorous bronze pumps dating back to 1928, we install a communication system for the fountain and water nozzles emergency calls and control sites from the Palacio Nacional to Plaza España. Nothing to say, just pay tribute to the inventiveness capable of generating so much beauty and magic, and also feel proud of offering our work to it and to those who enjoy it.*

Extract from the *ebegroup story*, located in www.ebegroup.net

Energy management and ISO 50001

The general approach for energy management is that the savings achieved are reinvested in new measures and actions that produce more savings.

Energy diagnostics

- Identification and analysis of systems and sub-processes.
- Identification of energy consumption and y execution of energy balance and energy use flow chart.
- Establishing the base line for demand and consumption.
- Identification and follow-up of legal requirements.
- Consumption assessment.

We establish short-term measures which can require small investments, and amortization assessment. Execution and/or supervision of operating and maintenance plans.

Improvement plans: improvement opportunities, energy purchase and contracting management, training programmes, etc.

Assessment, control (energy accounting) and management of maintenance, operation and improvement plans.

Establishment of long-term measures and investments.

Design, implementation and certification of energy management systems according to ISO 50001 to all organizations which wish to improve the energy efficiency in their projects and assure compliance.

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Taking care of **people**
is taking care
of **everything.**



*We set off, but we do not want to leave the line of sea that draws the horizon while it wraps us with its culture. We almost fall into its waters, we are in **Puerto de Barcelona**, a flow of goods beyond imagination circulate through it on powerful, noisy conveyors. Everything in the port is alive, up to the point that some things, like soy, have a risk of generating an explosive atmosphere. Our task is to study its transformation avoiding dangerous conflicts in doing so. The tide of life that the port takes from the sea only has to bring about new life.*

Extract from the *ebegroup story*, located in www.ebegroup.net

ATEX

Edition of the document of explosion protection

- Risk zone classification.
- Assessment of explosion risk.
- Determination of prevention and protection measures against explosions.
- Equipment selection according to regulations.
- Work instructions: execution and implementation.
- Work permits: execution and system implementation.
- Specific training plans about explosive atmospheres.

Equipment certification ATEX – CE mark and compliance declarations

- Execution of the technical document.
- Information to be included in your instruction manual.
- Tests to be carried out on the machine/equipment.
- Component certification.
- Necessary preventive measures.

ATEX updating for equipment dated before 2003

Characterisation essays for substances in official laboratories



INTELLIGENTLY
efficient.
NECESSARILY
sustainable.

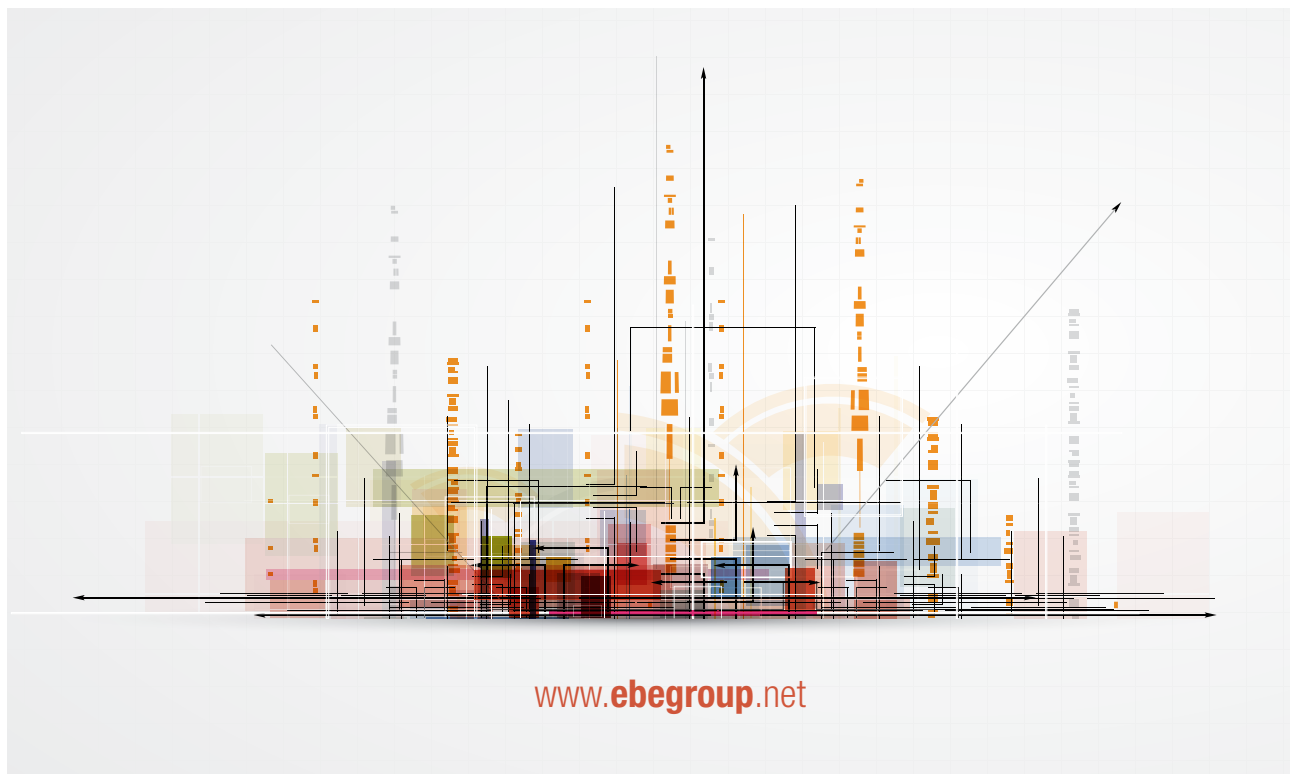


We look again towards **Barcelona**, there is a lot to be told yet, maybe our memory cannot do so now, but there are also in it hotels like Plaza, Catalonia or Hilton, the Gran Teatro del Liceo, the tunnels in Ronda Litoral and also the ones in Vallvidrera, the new faculties of Geography and History and Philosophy, the republic pavillion, Sant Pau hospital, Hogares Mundet, the Medicine faculty in the Hospital Clínico, Palau de les Heures and even the Barcelona town hall itself. Places where we have been able to deliver our knowledge and together with it, our emotion.

Extract from the *ebegroup story*, located in www.ebegroup.net

TIC, Mobility, renewable energies, energy efficiency, public equipments, new cooperation formats, human capital.

- Mobile and land line services, satellite TV, optic fibre computer networks, e-commerce and internet services.
- Smart grids: information management between users and citizen information systems.
- Design, implementation and management of energy efficiency systems.
- Management of intelligent systems for street lighting.
- Electrical vehicle.
- Wireless sensor networks to control pollution levels in the air, radiation levels, lighting levels, the state of noise pollution, traffic in the streets and parking.
- Renewable energies for electricity, heating and air conditioning production.
- Equipment for office and residence buildings where efficiency and careful use of non-renewable natural resources prevails.





Port of Barcelona



Barcelona Airport



University of Barcelona



Palau Sant Jordi

We trust in our ability because we trust in the ability of all the people who know that their knowledge is only useful if it is rendered with respect, humility and love for what they do.



Barcelona Science Park



Montjuic Fountains



Montjuic Olympic Stadium



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