



Cover picture

San Marcos, the Second-Tallest Viaduct in the World

**LAST
ISSUE**

This is the last bulletin FCC Construcción is going to post. From now on all the news from FCC Construcción will be appearing in Red de Comunicación, the FCC Group magazine, which you will be able to find on our web site starting in January. We at the Corporate Management Office for Institutional Relations wish you happy holidays and the very best for the new year.

Leading News



CONTRACT AWARDS

New Terminal at Cádiz Harbour
[Page 3](#)



FINISHED PROJECTS

Álava/Araba Penitentiary Now in Operation
[Page 4](#)



CSR

Launching of the CETIEB Project
[Page 8](#)



Contents

CONTRACT AWARDS

[FCC Signs the Contract To Build the New Terminal at Cádiz Harbour](#)
[FCC To Build Ciudad Hospitalaria in Panama](#)



FINISHED PROJECTS

[Hospital de Torrejón Throws Open Its Doors](#)
[New Álava/Araba Penitentiary Now in Operation](#)

ALPINE

[ALPINE Finishes Boring Pinglu Tunnel in China](#)



EVENTS

[FCC Participates in Qatar's 40th Anniversary Gala](#)
[FCC Employees Organize a Golf Tournament](#)

CSR

[FCC Contributes to the Arts. LABoral. Art and Industrial Creation Centre](#)
[FCC Hosts the Madrid Launch of the CETIEB Project](#)
[FCC Signs a Sustainable Building Refurbishment Accord](#)



CURRENT EVENTS

[Project FÉNIX, a Solution for Emergency Situations](#)
[San Marcos, the Second-Tallest Viaduct in the World](#)

CONTRIBUTIONS

[Ergonomics, the Side of Prevention That Nobody Knows, by Cristina García](#)



FCC To Build Ciudad Hospitalaria in Panama for 587 Million Dollars



Architect's conception of Ciudad Hospitalaria.

FCC will prepare the design and develop the area, and it will also provide the construction, financing and equipment for the Ciudad Hospitalaria mega-project, Central America's biggest healthcare structure ever.

The Social Security Treasury of the Republic of Panama has issued its final decision on the tender for bids to build Ciudad Hospitalaria. The winner is Construcciones Hospitalarias, a consortium pairing FCC Construcción with FCC

Construcción de Centroamérica, and the contract is worth 587 million dollars (around 440 million euros). The turnkey project is slated to be completed within three years.

FCC Signs the Contract To Build the New Terminal at Cádiz Harbour

The Cádiz Bay Harbour Authority has awarded the contract for the construction of the new container terminal at Cádiz Harbour to a joint venture featuring FCC. The project is a strategic step in the reorganization and fostering of harbour-related business in the city.

In its first phase, the new contract, which is worth 91 million euros, calls for the development of a new 22-hectare terminal, with 590 metres of quay and a 320-metre-long seawall. The water depth around the new terminal will be 16 metres.



Architect's conception of the new terminal

New Álava/Araba Penitentiary Now in Operation



Álava/Araba Penitentiary

The new Álava/Araba North Penitentiary was inaugurated in September last in the presence of Secretary-General Mercedes Gallizo of Penitentiary Institutions, representatives of Sociedad Estatal de Infraestructuras y Equipamientos Penitenciarios (SIEP), including its

chairman, Ángel Martínez Sanjuán, the national government's deputy in País Vasco and other personalities.

Álava/Araba Penitentiary, situated inside the municipal limits of Iruña de Oca and built by FCC, has a floor area of 87,658 m². Its 720 cells are arranged

into eight 72-cell modules and four smaller, 36-cell modules, making a total of 12 modules.

Hospital de Torrejón Throws Open Its Doors



Hospital de Torrejón

President Esperanza Aguirre of the Community of Madrid, accompanied by Javier Fernández-Lasquetty, head of the regional Health Department, recently inaugurated Hospital de Torrejón de Ardoz.

The ceremony was attended by representatives from regional and local politics, FCC CEO Baldomero Falcones and FCC Construcción's general manager, Avelino Acero.

The new hospital, in the Henares River Corridor, was built by a joint venture in which FCC is a partner. The hospital will care for a population of 136,000, all inhabitants of the city of Torrejón de Ardoz and adjacent cities and towns in the corridor, such as Daganzo and Ajalvir.

The hospital will shoulder 95 percent of the healthcare needs of the patients in its area and will be equipped with a wide range of medical and surgical spe-

cializations and latest-generation diagnostic tools in order to do so. Hospital de Torrejón's facilities include 250 beds, 10 operating rooms, 12 dialysis stations and six delivery rooms. All these additions will help provide better service for this area of the Community of Madrid.

ALPINE Finishes Boring Pinglu Tunnel in China

FCC's Austrian subsidiary has finished boring the world's longest single-drive TBM tunnel, in China.



Workers at the conclusion of tunnelling operations

PINGLU TUNNEL

*Over 25 kilometres
long.*

*4.2 metres in
diameter.*

After five years' hard work, the boring of Pinglu Tunnel has finished. Pinglu Tunnel, more than 25 kilometres long and 4.2 metres in diameter, will ensure a reliable water supply for the regions of Datong, Shuozhou and Pinglu, where water is a scarce resource. The tunnelling work is part of the Yellow River Water Diversion Project, and it has a budget of 50 million euros. For the construction of the tunnel, which has been excavated through a very adverse geological substrate, 85,000 concrete segments cast at the site were used, and more than 400 local

workers participated in the tunnelling work.

FCC Participates in Qatar's 40th Anniversary Gala



40th Anniversary Gala

FCC participated in the 40th Anniversary Gala celebrating the founding of the state of Qatar, held in Doha on 19 September last.

The event took place in the iconic Doha Sheraton Hotel. The FCC team in Qatar, led by Iván Morales, participated in the Gold Sponsor category.

The gala was organized by the Qatar Chamber of Commerce, gathering domestic and foreign companies to celebrate the fact that the state of Qatar is now 40 years old. Among those attending there were members of the Qatari government, such as the ministers for Trade, Energy and Industry, and Trade and Finance, plus other authorities of the country's public life, as well as big multinational names from the energy and building sectors.

FCC has opened its new offices in Doha, the nerve centre from which it will be coordinating all its projects in the Near East. Now a stable presence, FCC has taken up a strategic position in this country, which will be hosting the FIFA World Cup in 2022.

FCC Employees Organize the Second "Friends of Golf" Tournament



Friends of Golf

The second "Friends of Golf" Tournament, organized by FCC employees, was held in October. People from the different areas of the group participated.

The event, organized for the second year running by a group of FCC workers, gave employees, families and friends an excuse to gather at the Palomarejos Golf Course

in Talavera de la Reina.

As on other occasions, the event was run with the cooperation of firms from a number of different sectors.

FCC Contributes to the Arts. LABoral. Art and Industrial Creation Centre



Art and Industrial Creation Centre

laboral Centro de Arte y Creación Industrial

Art and Industrial Creation Centre

The La Laboral. Centro de Arte y Creación Industrial Foundation is the organization that oversees LABoral, an art centre in Gijón that FCC supports as an associate corporate member. The foundation promotes artistic creation as a vital part of society's development. Since LABoral was opened in 2007, it has been encouraging dialogue between art and industry.

LABoral has been working locally, enjoying the cooperation of internationally recognized artists and, of late, local artists as well. Nevertheless, the people in charge have a more-universal outlook in mind and have pushed the centre onto the international stage, where it stands shoulder to shoulder with the world's foremost galleries and museums.

Recently LABoral received the 2011 Award for the Best Web in Asturias, offered by the El Comercio newspaper. In addition, LABoral's web site has received further acknowledgement.

These awards are a token of the kind of recognition that has been earned by the LABoral team's on-line strategy, embodied in the new website design for www.laboralcentrodearte.org

The new web site is strongly pro-social networks and has been conceived as a platform for artistic experimentation integrated into LABoral's own activity.

FCC Hosts the Madrid Launch of the CETIEB Project



Launching of CETIEB

CETIEB

“Cost-Effective Tools for Better Indoor Environment in Retrofitted Energy Efficient Buildings”

On Tuesday, 8 November, a meeting was held in Madrid to launch CETIEB, “Cost-Effective Tools for Better Indoor Environment in Retrofitted Energy Efficient Buildings”. The manager of Innovation and Technology at FCC CONSTRUCCIÓN, Francisco Esteban Lefler, was in charge of welcoming the project’s participants on behalf of the entire FCC Group.

CETIEB is an R&D project funded by the European Union under the Seventh Framework Programme, and it is coordinated by the University of Stuttgart. Along with FCC, the participants include undertakings

and research centres such as Schwenk Putztechnik GmbH and the Fraunhofer Institute from Germany; RED, Università Politecnica delle Marche and STAM from Italy; the Commissariat à l’Energie Atomique et aux Energies Alternatives from France and Delap & Waller Ecoco Limited from Ireland.

FCC Signs a Sustainable Building Refurbishment Accord

Málaga City Council, acting through the city’s Municipal Housing Institute, has signed an accord with the Consortium for Sustainable Refurbishment, a group of five firms from the energy and building sectors led by FCC.

The accord sets the outlines for cooperation between the Málaga Municipal Housing Institute and FCC in its capacity as leader of the consortium in charge of the Sustainable Building Refurbishment

RDI Project. The consortium is made up of corporate members URSA, OPLAN, ENERGESIS and METALES EXTRUIDOS, and prestigious academic institutions are participating in the consortium as well, including the University of Málaga, the University of Sevilla, Madrid Polytechnic University and the Eduardo Torroja Institute.

Sustainable Building Refurbishment is an RDI project approved by the Spanish

Ministry of Science and Innovation’s Industrial Development Centre. It consists in a comprehensive system of measures aimed at achieving target climate and environmental comfort levels in buildings using a minimum of energy resources and incorporating sustainability criteria into the use of materials.

San Marcos, the Second-Tallest Viaduct in the World

FCC completes construction of the piers for Mexico's San Marcos Viaduct



San Marcos Viaduct, Mexico

Pier number 4 is 208 metres tall, making this viaduct the second tallest in the world after Millau Viaduct in France.

The viaduct is located in Mexico, on the Nuevo Necaxa/Ávila Camacho section of the corridor between the Federal District of Mexico and Tuxtán. It will thus make travel easier between the capital and the Caribbean coast.

This 36-kilometre-long section of road

(built by FCC México in a joint venture with the Mexican firm ICA) arrows through the eastern Sierra Madre in a tricky mountainous region that has required the construction of six tunnels and seven viaducts measuring a total of over six kilometres in length.

San Marcos Viaduct, designed by FCC Construcción's Technical Services, is 850 metres long and features spans 180

metres long. All lanes of the motorway crossing the viaduct share a single deck that is 18.7 metres wide.

Project FÉNIX, a Solution for Emergency Situations

FCC presents its new satellite assistance system for the Community of Madrid's Forestry Brigades



On 14 October the new tool was presented at the Forest Fire Operations Centre in Buitrago de Lozoya. The tool was designed and developed by FCC subsidiaries Matinsa and FCC Industrial to provide better assistance for the Community of Madrid's Forestry Brigades in emergency response situations.

A practical demonstration of the tool was given, attended by the head of the regional Department of the Presidency and Justice,

Regina Plañiol. She stated that having a tool like FÉNIX, which uses satellite communications and is guaranteed to be operational 24 hours a day, is a big step in the right direction. The application passed its trial period last summer with flying colours, and it will go into operation next winter.

Project Fénix

FCC Industrial's systems division and Matinsa joined forces two years ago to fashion this modern system for personnel management and assistance in emergencies and accidents in hard-to-reach forest environments.

FENIX works using GPS, and it does not require mobile telephone coverage. Thanks to this technology, FÉNIX enables users to pinpoint exact locations in the field, even in hard-to-reach forest areas. The position coordinates are transmitted by satellite to a control centre, which manages the locating equipment, personnel assignments and missions. All communications run through a central server that stores the positions received from the field thanks to a built-in device called a "SPOT", which each operator carries when the mission begins. Each SPOT transmits via satellite

the exact location of the operator who carries it. These devices, the size of a pack of cigarettes, have been designed exclusively for FÉNIX, and they are good for 72 hours' use. What is more, they are made to withstand extreme conditions.

The data collected by the control centre and stored in the server are deployed in portable units, thanks to software developed by the Systems Division of FCC Industrial. All the data on the personnel in action is displayed on a georeferenced map with pull-down information such as operator names, operator locations and teams. This way, routes and movements can be planned, there is no overlapping among the teams sent to the zone, and help can be sent in more quickly.

Best RDI Project in the First Annual Prevention Awards

On 16 September last this novel tool, the first of its kind in our country, won the prize for the Best RDI Project at FCC's First Annual Prevention Awards.



Ergonomics, the Side of Prevention That Nobody Knows

By Cristina García Herguedas, Prevention Manager, Construction Area



Cristina García Herguedas

Ergonomics is the side of prevention that nobody knows. It is hard to find explicit allusions to the term even in legislation. The National Safety and Hygiene Ordinance of 1971 only skimmed generally over general conditions of lighting, ventilation, temperature and humidity. Later, in 1995, in article 15 of the Occupational Risk Prevention Act, legislation finally gave ergonomics the priority it deserved in job planning, although it was not until Royal Decree 39 of 1997 when the term “ergonomics” was explicitly mentioned for the first time.

According to the Spanish National Job Safety and Hygiene Institute, ergonomics is now in a phase of growing development, due largely to the appearance of a new type of occupational risk and a substantial increase in muscular and skeletal disorders linked to modern lifestyles and working styles. So, the

heretofore infrequently used word “ergonomics” has become part of the workaday vocabulary everywhere, even off the job.

Ergonomics is the study of muscular effort, different postures, repetitive movements, workstation arrangement, the pace of work, environmental conditions such as lighting, noise and temperature and psycho-social factors such as stress and mental fatigue. In short, as Jouvenzal states in his book, ergonomics considers everything that can affect health; i.e., ergonomics seeks a balanced interrelationship of personal aspects, environmental aspects, organizational aspects and, of course, the task being done.

Work is a necessary organized social activity as well as a source of personal satisfaction, and it enables us to attain certain objectives, so engaging in work is one of the most important aspects of human life. Working conditions, like man, have gradually evolved; so too have the aches and pains of work changed, in a transformation that has run parallel with the transformation of working conditions themselves. Therefore, health –as seen from an overall stance– and work must constitute an indissoluble union.

Because health is so closely related with work and more particularly the way work is done, action to avoid occupational accidents and illness must be taken into account. Account must also be taken of how to set up working conditions that are not likely to lead to any sort of physical, mental or social harm.

At the same time, the different requirements of the tasks to be done must be in perfect consonance with the abilities of the people who are to do them.

FCC considers all aspects related with the well-being of its employees to be of the utmost importance, and it promotes healthy work accordingly. To help in this task, the Construction Area’s Joint Prevention Service has tackled the issue of ergonomics and is now involved in running activities aimed at introducing this discipline throughout the company. The action taken so far includes evaluations of environmental conditions and data display screens at several Central Services sites. Similar evaluations will soon be done at all workplaces. Several training workshops have been given on the occupational risks of office work; these workshops will also continue next year. All these actions, their implementation and the follow-up work are covered in a handbook devoted specifically to ergonomics.

Bibliography: M.R. Jouvenzal; *Ergonomía Básica*. Ed. Díaz Santos