

Communication Network

News for the people of **FCC**

J S S U E
27
2015

Sewerage of Barcelona example of innovati3n

ERESEIGUALDADPOLITICADAD
ONRESPONSABILIDADGO
ONPARTICIPACION
IPODERECHOSVISION
ERESERELACIONES
STICIA PERSONAS
IGUALDAD
C3DIGO 3TICO

Declaration of adherence to the FCC Code of Ethics



FCC donates more than 17 tonnes of food and basic products to the Food Bank







Cover

Alcantarillado de Barcelona, ejemplo de innovación



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FCC completes restructuring

of Board of Directors with the appointment of three independent Board Directors

On 27 February, FCC completed the restructuring of its Board of Directors which began in January with representatives from Control Empresarial de Capitales S.A. de C.V.

On this occasion it was the turn of the independent Board Directors, as was announced at the time. Manuel Gil Madrigal, Henri Proglio and Álvaro Vázquez de Lapuerta have replaced Oliver Orsini, Gonzalo Rodríguez Mourullo and Gustavo Villapalos. The highest governing body of the Citizen Services Group has been reduced to 12 members after the exit of Larranza XXI S.L., represented by Lourdes Martínez Zabala, as was anticipated after the restructuring of B1998.

The three new independent Board Directors of FCC were selected by means of a prestigious Board Director selection firm.

Manuel Gil Madrigal, a Law and Business Administration graduate (E-3) from ICADE, is a founding member of the company Tasmania Gestión. In the year 2000, he was also founding member of the financial company N+1 and has been a board director of Ezentis, Funespaña, General de Alquiler de Maquinaria (GAM) and Campofrío, amongst other companies. Throughout his professional career, he has also held the position of director of Capital Markets at AB Asesores Bursátiles, partner at Morgan Stanley and auditor at Arthur Andersen.

Henri Proglio, a graduate from the School of Business Administration (HEC) in Paris, will become chairman of Thales as of next May. He is currently on the Board of Directors at Natixis Banque and Dassault Aviation. He was also chairman of energy 'giant' Électricité de France (2009-2014) and Veolia Environnement (2003-2009), as well as board director of FCC, Grupo Lagardère and Vinci, amongst other companies.

Álvaro Vázquez de Lapuerta, a Law and Business Administration graduate (E-3) from ICADE, is currently a partner at the firms Akiba Partners and Meridia Capital Partners. He was Chief Executive Officer for Spain and Portugal at Dresdner Kleinwort and Managing Director and Head of

Investor Relations at securities firm BBVA Bolsa. He previously held other positions of responsibility at JP Morgan in Mexico, New York, London and Madrid.

Further to these appointments, the Appointments and Remuneration Committee approved the appointment of **Miguel Martínez Parra** as new Chief Executive and Chief Financial Officer. A graduate of Business and Economics with a diploma in Business Strategy Development from the University of Anáhuac (Mexico), Martínez Parra was, until joining FCC, Director of Finance and Social Infrastructure at the Mexican infrastructure company Impulsora del Desarrollo y el Empleo en América Latina S.A. de C.V. (IDEAL). He previously held the position of Credit Analyst Manager and Head of Investor Relations at Grupo Financiero Inbursa S.A.B de C.V.



New Board of Directors

Dominum Desqa, S.A. (Esther Alcocer Koplowitz)

Chairwoman

Proprietary director

Samede Inversiones 2010, S.L. (Esther Koplowitz Romero de Juseu)

First vice-chairwoman

Proprietary director

Juan Béjar Ochoa

Managing Director - second vice-chairman

Executive director

EAC Inversiones Corporativas, S.L.

(Alicia Alcocer Koplowitz)

Proprietary director

Dominum Dirección y Gestión, S.A.

(Carmen Alcocer Koplowitz)

Proprietary director

Inmobiliaria AEG, S.A. de CV

(Carlos Slim Helú)

Proprietary director

Inmuebles Inseo, S.A. de CV

(Juan Rodríguez Torres)

Proprietary director

Alejandro Aboumrad González

Proprietary director

Gerardo Kuri Kaufmann

Proprietary director

Manuel Gil Madrigal

Independent Board Director

Henri Proglío

Independent Board Director

Álvaro Vázquez de Lapuerta

Independent Board Director

Francisco Vicent Chuliá

Secretario (no Consejero)

Felipe Bernabé García Pérez

Vice-secretary (non-Board member)



CONOCE EL COMITÉ DE RESPUESTA

ACLARA TUS DUDAS Y ENVÍA SUGERENCIAS SOBRE EL CÓDIGO ÉTICO

CONSULTA CÓMO OPERA

A QUIÉN DIRIGIRLAS



Declaration of adherence to the FCC Code of Ethics

Ethics should be a part of every company action and activity. Our group is committed to Integrity as one of the four basic behaviour principles, jointly with Efficiency, Doing things well, and Proximity.

We are currently witnessing greater social demand for ethics, transparency and commitment on the part of companies. The legislator has recently intervened to regulate the penal responsibility of organizations that fail to exert due control to prevent criminal acts.

Beyond the company's commitment to ethics and greater social and legal demands, the way that we behave is clearly reflected in the Group's reputation. The current transformation process at FCC requires not only a human team that is global, responsible, and committed to results, but one that is most particularly group whose behaviour is exemplary.

Our Code of Ethics (see attached document) is the company's main standard governing the relationship between FCC employees to our stakeholders.

Much progress has been made since the Code of Ethics was approved in 2008. Over these past years, FCC's Board of Directors and Response Committee have promote training programs and bolstered the communication systems and research protocols to comply with the demanding scenario of the market in which the Group operate. It is time to shore up the employees' personal commitment with the company's ethics compliance system.

We should all be aware of and respect or ethical framework in our work environment and denounce those disloyal behaviours that we observe. To this end, the Response Committee provides all employees with



RECUERDA TU COMPROMISO
CON NUESTRO
COMPORTAMIENTO ÉTICO

ENTRA AL CÓDIGO ÉTICO
DEL GRUPO FCC



CÓDIGO ÉTICO

COMUNICA LOS
INCUMPLIMIENTOS
DEL CÓDIGO ÉTICO

ENTRA AL CANAL ÉTICO
DEL GRUPO FCC



an ethics channel to report, without fear of retaliation, any presumed non-compliance that we observe with regards to FCC's Code of Ethics.

In order to encourage greater knowledge and understanding of this code, and particularly to show third parties that you know that you behave in accordance with the Group's guiding principles, you will find a site called "Adherence to the Code of Ethics" in the top right side of the first page of the corporate FCCone intranet page.

Thanking you for your certain collaboration, receive my warm regards,

Juan Béjar Ochoa
Second vice-chairman
and CEO of FCC

The screenshot shows the FCCone intranet interface. At the top, there's a navigation bar with 'Español', 'Notificaciones (0)', 'Tareas (2)', 'Favoritos', 'Aplicaciones', and 'Quién es quién'. Below that, the user 'JUANA CRESPO JIMENEZ' is logged in, with stock market data for FCC (11,056, +1.82%) and IBEX35 (11,420.1, +0.74%). The main content area is titled 'Inicio - Declaración de adhesión al Código Ético del Grupo FCC'. It features a blue header 'Declaración de adhesión al Código Ético del Grupo FCC' and a text box containing the following text: 'Confirmando que conozco, comprendo y asumo los principios, pautas de conducta y efectos del Código Ético del Grupo FCC en su versión de febrero de 2012 y que en el desempeño de mis obligaciones profesionales, actúo de manera conforme a las directrices exigidas en el mismo. Asimismo, conozco que el Grupo FCC ha establecido un procedimiento de consulta y notificación de materias relativas al Código Ético, supervisado por el Comité de Respuesta, y que mi obligación es comunicar aquellos incumplimientos del Código Ético de los que tenga conocimiento.'

Adherence to the Code of Ethics



Letter from the Chairman

on the occasion of the celebration of International Women's Day, 8 March



As in every year, the commemoration of International Women's Day encourages us to reflect on the progress achieved by women, to demand more changes, and to celebrate the courage and determination of those women who have played and continue to play a key role in the history of their countries and communities.

The theme chosen by the U.N. this year, «Empowering Women, Empowering Humanity: Picture it!» recreates a world where each woman, each girl, can choose their future and make their own decisions in societies free of violence and discrimination.

At FCC, these principles have been permanently incorporated in our lines of action. Throughout 2014, we continued to take major steps in that direction:

- We subscribed the Diversity Charter, an agreement to which companies and institutions adhere voluntarily thereby reinforcing and affirming our commitment to the basic principles of equality, non-discrimination at work, support for diversity and respect for

the differences among people. These principles are very much a part of our corporate identity and with which we feel particularly committed.

- We signed, jointly with other Spanish companies, the Collaboration Agreement with the Ministry of Health, Social Services and Equality in order to adopt measures to increase the presence of women in executive jobs, management committees, boards of directors, in order to advance towards a more balanced and just presence.

We also publicly assumed the commitment, in response to the European Platform for Action on Parity to support and encouraged the balanced participation of men and women in our Board of Directors.

One of our main actions in 2015 in this respect was to subscribe last March, jointly with MCA-UGT and COO, the 2nd Equality Plan of FCC Construcción which incorporates improvements in the field of conciliation and communication.

All of these have been important steps in a long road ahead.

A road in which all of us at FCC are involved in, particularly the more than 12, 239 women who with our male colleagues and collaborators make it possible every day.

A road where the 1601 women who joined our Group over the course of 2014 will find less obstacles than those who came before them.

An enriching and diverse road where knowledge and capabilities are not restricted to any sex, as underscored by the 49 FCC female employees who are working abroad developing projects.

A road where – I am certain – the first to prove with their example and attitude that change is possible are the 172 women who hold managerial positions within the Group. I encourage everyone, men and women at FCC, to defend the achievements of women, to recognise the challenges ahead and to focus on their rights because – we must not forget – that when a woman advances and makes progress, we all do.



Purple for equality

On the occasion of the celebration of International Women's Day, the water management municipal services in Fraga (Huesca), Ibiza and Oviedo, managed by FCC Aqualia, in collaboration with municipal corporations, celebrated the event by tainting the water of their public fountains purple.



From left to right: our colleagues at the Oviedo Service; Rosa, Lucía, Sonia, Ana and Mercedes, accompanied by Alfonso, the manager of the department (5th on the right) and the city's mayor, Agustín Iglesias (6th on the right), who was accompanied by all the councilwomen of the local government. These included the councilwomen for Water, Equality, Social Services, Culture, and Social Centres.



The fountain at Fraga's Town Hall was tainted purple. In the photograph, the head of the service, Juan Castellano (on the right) with the Councilman for Urban Planning Juan Castaño.



The mayor of Ibiza, Virginia Marí (in the centre) took part in the event jointly with Eduardo del Castillo, manager of the Balearic Island regional office (on the left) and the head of the department, Toni Saez.

The new FCC Group Procurement Policy and Regulations

On 27 February of this year, the FCC Group Board of Directors approved the creation of a new Central Purchasing Body for the Group and parent company which will be in charge of negotiations, procurement, and control of the purchase of material and services, always searching for the best conditions for the company and optimising planning of projects and/or contracts, resources, and controlling the budgets and results.

The Policy and Regulations, to be implemented over the coming months prevail over any other Purchasing Regulations that may exist in the FCC Group. Compliance will be mandatory throughout the entire organization and the document must be signed as proof of its acceptance. Some of the key aspects worth mentioning are:

- Decision-making based on traceable and transparent processes.
- Encouraging the concurrence and competency of suppliers. There should be at least three similar and technically valid bids. The contracts will be awarded to the bid with the lowest cost.
- The Economic and Financial Corporate Departments will not pay any invoice for orders that have not been issued and/or validated by the Purchasing Department.
- The purchasing departments of the divisions must report to the Group's Corporate Purchasing Department.
- Regulations and protocols



Consulta la Nueva Política y Normativa de Compras en el Grupo FCC

[Accede](#)





.A.S.A. adopts the global FCC Environment brand

.A.S.A. begins a new phase. Its historical .A.S.A. brand has been changed to the global FCC Environment brand thereby taking yet another step towards its full integration in the FCC Group of which .A.S.A. has been part since 2006.

By introducing the FCC Environment brand for its entire range of .A.S.A. services in the 8 countries where it operates, the FCC Citizen Services Group underscores the important role of .A.S.A. in its strategic plans, particularly within the framework of the in-

ternationalisation process of the entire FCC Group.

The company will continue to be the platform for growth of the Environment Division in Central and Eastern Europe and will pursue its mission and keep its legal trade name under the international FCC Environment brand which has been operating in the United Kingdom since 2012.

It will also maintain its logo, "Service for the Future" thereby combining the brand change with the evolution of its corporate profile in line with the strategic re-orientation towards waste management and citizen services.

.A.S.A. enters the new year with new brand and a stable performance

The year 2014 showed distinctly how a company can profit from its regional diversity and international synergies. "Although the economic background in a lot of our countries has not been in our favour", states the CEO of FCC Environment CEE (formerly .A.S.A. Group) Björn Mittendorfer, "we have managed to achieve consolidated sales of 355,7 M EUR."

This result means a slight growth in comparison to the previous year. The growth was driven especially by Poland, in which we were able to double our collection

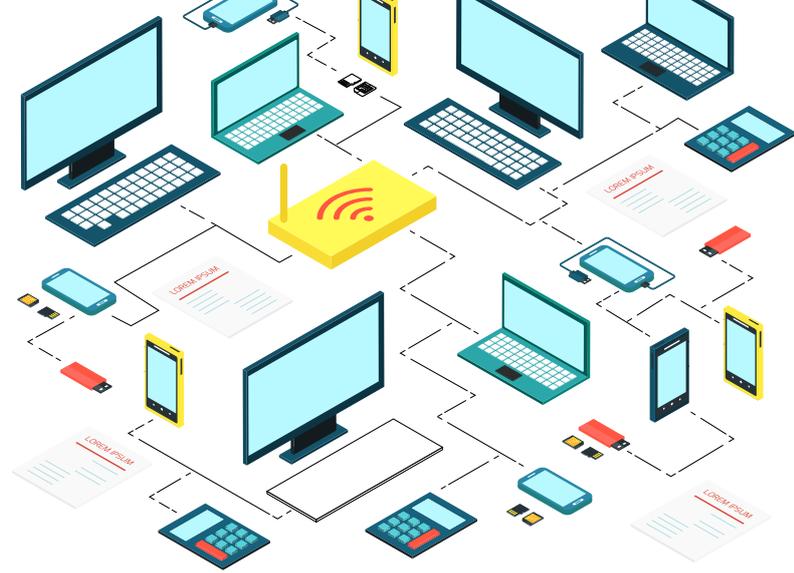
area and have benefited from our new regional treatment plants in operation. Boosting commercial and industrial waste collection and disposal in Serbia contributed to historical results in this country and strengthened our market position.

"In early 2015 we started to change our brand and logo ".A.S.A." to that of our parent company "FCC Environment". With this step we are now fully integrated in the FCC Group and will benefit from the global brand FCC", explains Mittendorfer.

.A.S.A. represents the environmental services and citizen services sectors of FCC in Central and Eastern Europe. By introducing FCC Environment in this area, FCC expresses the importance of .A.S.A. concerning their future development strategy, especially in connection with the internationalization process of the whole FCC Group. FCC's growing plans are focused on environmental services and water. .A.S.A.'s expertise reinforces that international development.



FCC's presence in social networks



FCC already has its profiles in LinkedIn, Twitter, Facebook and YouTube, as well as in the websites Infojob, the leading Spanish job opportunity site, and the Ciudadano Activo (Active Citizen) blog.

We participate in these communication channels because we believe that social networks today are the best vehicles for transmitting information for employees, clients, and friends to enable them to keep up-to-date on the day-to-day events at FCC.

FCC has nearly 27,000 followers at LinkedIn, the largest professional online social network with more than 300 million members in over 200 countries. In Twitter, we have about 10,000 followers and 1,300 in Facebook. We had 183,000 visits in YouTube and almost 12,000 visits at the Ciudadano Activo blog.

Our goal in these channels is to keep all of our follower informed of news that may arise on new contract awards, main contracts, progress achieved in projects, re-

search projects, etc., and to discuss novel- ties in the different sectors related to FCC and share experience and knowledge with other professionals.

Besides, from these social networks, you can connect with other companies, interact with other people, and transmit our defining corporate values.

Damos la bienvenida a FCC Construcción en México, Chile y Perú

vive one | Un espacio para ti, para todos

One lands at FCC Construcción in Mexico, Chile and Peru

One, FCC Group's intranet, has just landed in Mexico, Chile and Peru. The platform was launched by a multidisciplinary team of staff from the Human Resources, Communication and Marketing, and IT System teams.

More than 120 users from FCC Construcción in Mexico, Chile and Peru can access this multidirectional communication channel which provides all current information on the Group, integrates the main processes and systems of the company, optimises costs, unifies the support and the user's experience, and standardises the help function.

One arrived in Central America in October: with more than 359 employees from Panama, Costa Rica, Nicaragua, and Guatemala having access the new platform.

Changes in the IT infrastructures at FCC

We implement this initiative in order to raise awareness and to inform FCC users on the progress achieved in the program that is transforming the Technological Infrastructures of our company.

FCC and HP, in accordance with the agreement signed in June 2014, kicked off a new phase of collaboration, framed under a transformation program that allows FCC to benefit from technological infrastructures aligned to the current requirements of our activities.

The main objective of this program is to simplify and standardise technological infrastructures management to provide agility and flexibility when tackling new technological challenges.

In the coming weeks you will learn about what has been accomplished over the past few months and most recently.

Estamos transformando nuestras Infraestructuras Tecnológicas

Conoce el avance del programa





Communities

From a parakeet
to a drone..

Smart management

of the **sewerage network**
in **Barcelona**

The Environment division was awarded a contract put out to tender by the City Council of Barcelona contemplating maintenance of the city's sewerage system until 2022. FCC has been managing this contract since 1911 in what can be described as the beginning of a fruitful public-private collaboration model which generated a methodology that creates value for the residents, the City Council and companies.



This contract gave rise to FCC's diversification process which has been developing over a period of more than 100 years. The service will be provided under a "smart philosophy" linked to resilience, defined as the human capacity for assuming and surmounting extreme situations.



One of the drones used to perform sewer inspection tasks.



FCC's Environment division will continue to manage the sewerage system in Barcelona after winning the new contract put out to tender by the local City Council and will be providing this service until 2022. The Company surpassed by a wide margin the points of the other companies that bid for the contract. The innovative solutions proposed by FCC under the smart service concept based on efficiency, technology, the expertise of its employees and the experience accumulated over the years after working for more than 100 years in this field, made it possible for the company to submit a bid that could not be surpassed by the other competitors. This tender for the provision of public services has been the most ambitious, actually demanding that companies propose smart initiatives for the execution of the contract.

The sewerage maintenance contract in Barcelona is a clear example of public-private collaboration, where the City Council becomes the real sponsor and driver of new proposals, and a company takes

up the challenge of providing innovative yet realistic solutions. The City Council of Barcelona has become one of the main drivers of smart solutions for the provision of public services. These dynamics pose great challenges to companies by increasing the demands in comparison with the traditional method for performing the work. It also creates the suitable conditions so that companies can innovate and create new technologies. It is a real wager for private-public collaboration based on the smart philosophy rather than the low-cost concept. It represents a wager for a strategic long-term vision, quality, innovation and efficiency, quite different from the short-term concept of an "auction", quite

common in most public tenders. The new contract is a clear example of innovation in the provision of a traditional and mature service, which is essential for the development and welfare of a city.

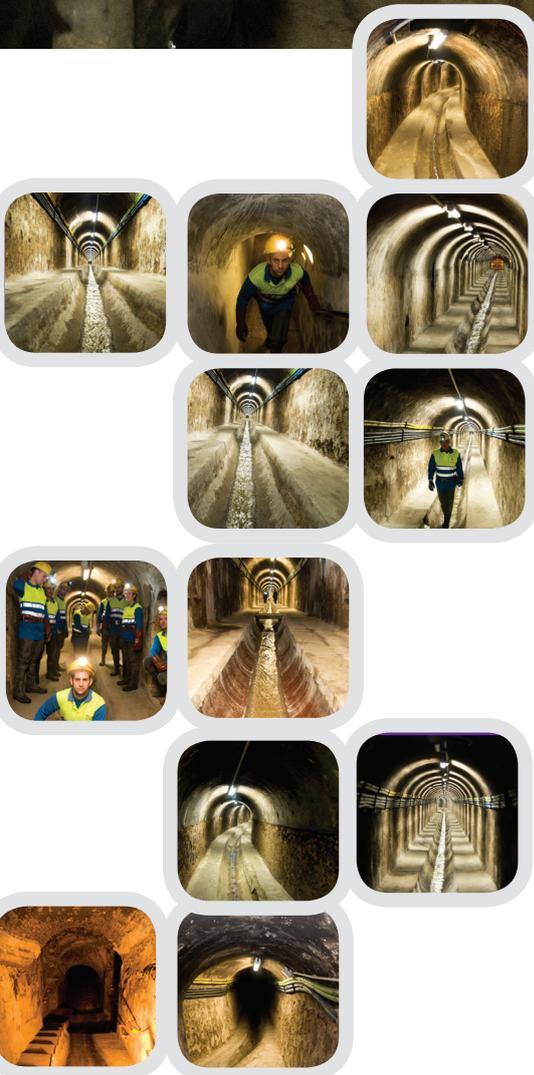
Innovation examples

In the early days of the first management contract for the sewerage system in Barcelona, which started to be provided in 1911, before going down to the sewers to perform different types of tasks (repairs, cleaning, inspection...), the operators would place a parakeet in a cage and, with a rope, would lower the cage to check the levels of toxic gases in the area where they planned to go down and work. At the first signs of lack of oxygen, the area was ventilated and the workers waited until the atmosphere did not pose a threat to the health of the men or of the parakeet. Over the years, this rudimentary method evolved into the current one, an example of technology put at the service of smart services. The FCC proposal includes the use of drones and robotised machines to perform the sewer inspection tasks and the most difficult jobs or to enter areas where access is the most difficult.

Sustainability will come first

Moreover, all the work contemplated in the contract will be performed under the concept of sustainability, as evidenced by the development of a fleet of electric vehicles that will be used for carrying out the day-to-day work. FCC is the undisputed market leader in this technology applied to the pro-

“ The new contract is a clear example of innovation in the provision of a traditional and mature service, basic for the development and welfare of a city ”



Figures

Some of the key figures worth mentioning are:

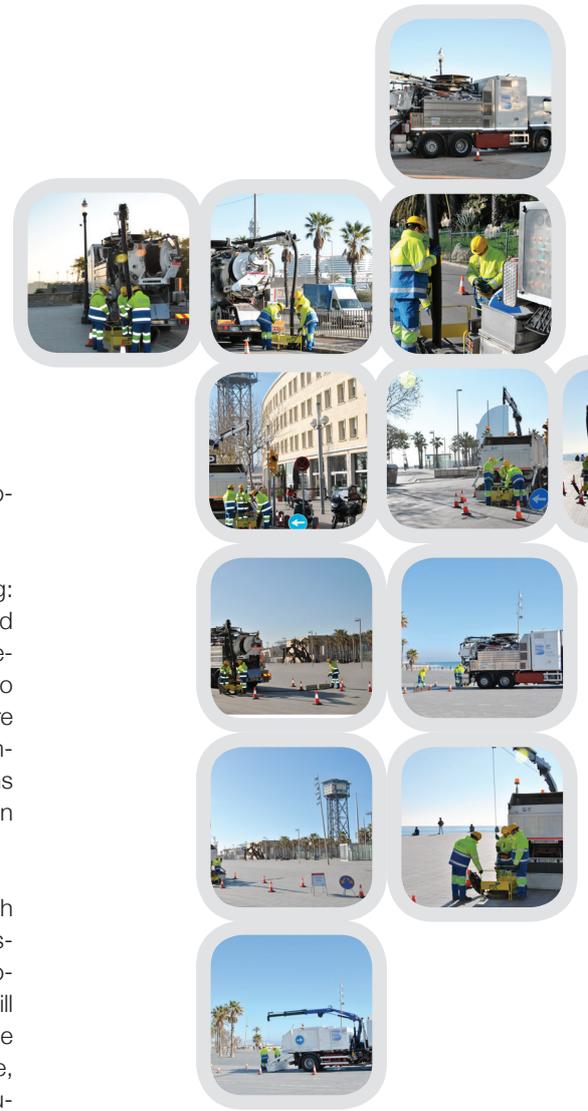
- 843 km of visitable sewerage networks
- 689 km of non-accessible sewerage networks
- 62,307 gutters
- 42,425 wells
- 13 underground deposits for retaining rainwater
- 2 controlled flooding zones

processes that we have to carry out; we had to change our chip”, as expressed by members of the FCC Medio Ambiente branch office. “The great difference, however, is the way that we perform our work, something intangible that the competition cannot copy and which enables us to face challenges as demanding as the one posed by Barcelona’s City Council”, they said.

Within the context of the new contract, FCC will work to meet certain objectives and results on the basis of several pre-defined indicators that serve as the baseline. The service, instead of being a static one, will be dynamic, thereby rendering the various tasks more dynamic. Since it will be necessary at first to perform a preliminary inspection, the model will be built in order to foresee and manage the future of the sewerage networks. In short, it will be possible to forecast the habits and customs of the residents and of certain variables based on events such as rainfall or the different seasons, as well as Christmas and other ho-

vision of different types of public services in cities. As a result of the demands outlined by the City Council, the Company has invented a new concept for “addressing a contract of these characteristics” by taking an important technological leap. It was necessary to optimise existing resources as much as possible to become more competitive. “The requisites of the City Council has forced us to innovate all the work

“ FCC will provide inspection, sewer cleaning, beach cleaning, maintenance services and the project service, in addition to other services ”



liday. “The situation will be under control since the information obtained and accumulated will enable us to forecast situations and anticipate the solution to any possible problem”, the Barcelona branch office explained.

843 kilometres of sewers

One of the most relevant figures in the contract corresponds to the management of 843 km of visitable sewerage networks and 680 non-accessible sewers, with 42,425 wells, 62,307 gutters (canals under the edge to let the water escape), 13 under-

ground rainwater deposits, and two controlled flooding areas.

FCC will provide several services, including: inspection; cleaning of the network and cleaning of the shores (beaches); maintenance and project services; in addition to other services such as recording the entire non-accessible network, all strictly complying with occupational safety regulations in relation to all the tasks to be performed in confined spaces.

All of these services will be performed with state-of-the-art technology and work systems to facilitate the tasks of the professionals who perform these tasks, which will also improve the safety of people and the service level and its quality. For example, the use of ultrasound sensors to measure the thickness of sediments which were

Josep Tàrraga, a competent authority

Thanks to his training at Universidad Politécnica de Cataluña in construction as a quantity surveyor, and his experience at FCC, Josep Tàrraga became an authority in all types of construction systems in underground projects. As a result of his scientific, curious, and innovative character, he was constantly innovating at the sewerage system maintenance department, gaining the professional respect, appreciation, and trust of his clients and collaborators.

After joining the Group in 1966, he was a project assistant, head of the technical office of the Studies department of the Barcelona regional office, head of the sewerage projects in Barcelona and,



from 1980 until the end of 2014, he was the manager of the sewerage contract in Barcelona.

Tàrraga was involved in preparing tender offers for the Barcelona sewerage system in 1970, 1986, 1995, 2005 and 2015.



developed by Universidad Politécnica de Cataluña; voice recognition software to be used in the inspection services; drones to inspect the collectors and to detect offshore spills; five different types of electric trucks with FCC's proprietary technology for cleaning; and robotised machines for performing difficult tasks.

Thanks to the solutions proposed by FCC to comply with the specifications of the contract put out to tender by Barcelona's City Council, the current city's sewerage management system is one-of-a-kind. Undoubtedly in the future this system could be applied to other cities and towns that really want to wager on smart services and which generate the necessary framework for the development of this concept and its application to public services.



Business



FCC Aqualia is awarded four contracts in Mexico and Chile worth a total of **108 million euros**

FCC Aqualia, the water management company of the Citizen Services Group, bolsters its positioning in Latin America after winning four new contracts: two in Mexico and another two in Chile. The awarded contracts, achieved through the company's subsidiary, Aqualia Infraestructuras, consolidate its diversification, since they are related to supply and purification operations for the mining and petrochemical industries.

With these new contracts, valued at EUR 108 million, this FCC subsidiary further strengthens its position in these two countries, in which it has already undertaken important projects in recent years. For FCC Aqualia, these projects represent “another step forward in the company's diversification and they are proof of our know-how and capacity to take on challenges of diverse natures: providing water services to both the general population and to industry”.

Cutzamala

The Cutzamala (Mexico) project faces the challenge of expanding their supply grid with another line in order to guarantee the supply of drinking water to areas on the outskirts of Mexico City. The system currently has a capacity to deliver 20 cubic metres of drinking water per second, making it the largest in Latin America.

Over the next two and a half years, FCC Aqualia, working in alliance with the Hermes Infraestructura group, will handle the

construction of a steel pipeline measuring 2.3 metres in diameter, which will cover a distance of 18 kilometres. The contract is worth some 66 million Euros.

Río Mezcalpa

On another front, the Mexican corporation, Pemex, through its subsidiary, Pemex Gas, and Petroquímica Básicas, has awarded FCC Aqualia the project for renovation work on the intake system in the Mezcalpa River, in the state of Tabasco, which is used to supply water to the Cactus and Nuevo Pemex gas processing centres. A budget of 15 million Euros has been allocated to this project, which involves completely renovating the mechanical, electrical and automation systems, as well as the control measures for the collection and intake of water, with an installed capacity of 3.6 m³/sec., in addition to enhancing the civil engineering work.





The drinking water treatment plant in Cutzamala.



Steel pipes.



Control building.

Other projects in Chile

FCC's water management company has also been chosen by the Chilean company, Codelco, to perform groundwater treatment services using a nanofiltration plant for the Ovejería hydraulic barrier in Huechún, Metropolitan Region.

Worth 12 million Euros, the contract contemplates the engineering, construction and commissioning of a nanofiltration plant with a production capacity of 100 litres per second, as well as operation and maintenance for a 12-year period. The aim is to ensure guaranteed quality water intake with a low dissolved salt content. The Colina and Batuco communities, to the north of the Santiago de Chile metropolitan area, will benefit from the construction of the new Cadellada treatment plant, to be built by FCC Aqualia. The new plant, with a treatment capacity of 330 litres per second, will handle the needs of nearly 150,000 residents.

This turnkey project, valued at 15 million Euros, includes the design, equipment, construction, commissioning and temporary operation to take place over a year and a half. Subsequently, the company will offer operational assistance for one additional year.



FCC Industrial wins contract for the Medellín-San Marcos line in Colombia

FCC was awarded a contract by Energía de Bogotá, S.A. The subsidiary of the Citizen Services Group specialising in industrial projects was awarded the contract, in consortium with Eléctricas de Medellín Comercial S.A. for the construction, assembly, testing and roll-out of three high voltage transmission lines stretching over approximately 390 kilometres from Medellín-Virgina-Alfárez-San Marcos (500 kilovolts) as well as the south-western reinforcement line from Juanchito to Pance (230 kilovolts). The project, worth more than 44.5 million Euros, is expected to be completed in 30 months.



This new project is in addition to other contracts recently awarded to FCC such as the one for refurbishing the central

control station of Metro de Medellín, and the installation and commissioning of the signalling systems for the northern zone of Line A of the metro.

country, and is executing a turnkey project for the replacement of the sub-stations of Phase I of the Remos program in Colombia.

“ The Citizen Services Group has been operating in Colombia since the 1980s ”

Thank to this award, the Group's industrial projects division becomes a supplier of comprehensive solutions, based on stable relations with the leading public and private clients in the country. The company is also involved in the civil works and electro-mechanic assembly of the 500 kV line in Nueva Esperanza, in the north of the

Presence in Colombia

The Citizen Services Group has been operating in Colombia since the 1980s. At that time, it was involved in the construction of the Medellín Metro and is currently working on a project at the Bogotá River and building the control tower at the El Dorado Airport.

The Bogotá River project involves the cleaning, revamping and recovery as a public space of the river (in the Sector Alicachín Stretch I) for Corporación Autónoma Regional de Cundinamarca, the central department in the country. The contract contemplates the widening of the riverbed over a 40 Km stretch next to the western part of the capital. The objective is to improve the quality of water, prevent flooding, and re-

cover the riverbed as a multifunctional and leisure area.

The new control tower at El Dorado Airport will stand 80 metres tall, with more than 2,500 metres of floor space and foundations built with prefabricated piles. El Dorado is the airport in Latin America with the greatest volume of cargo and the third in terms of traffic, with more than 20 million passengers each year.

The Mersey Bridge wins two international prize

The Mersey Bridge, built by FCC, was awarded the European Road Deal of the Year prize, organized by IJ Global's magazine (Infrastructure Journal and Project Finance Magazine) which rewards excellence, the achievements and innovation in energy infrastructures and project finance. The entire consortium team was present at the award ceremony.

The project also won the prize given by the PFI publication "European Infrastructure 2014", as acknowledgement of one of the best international finance projects. Antonio de Santiago, director of FCC Concesiones, collected the prize and said that "this prize implies a recognition for our work in one of

the most important infrastructure projects worldwide. It is unique and highly relevant project not only for FCC but also for the entire south-west part of the United Kingdom. It implies an economic and social boost for the entire region and also improves the quality of lives of its residents. The results will be excellent thanks to the magnificent teamwork".



“ European Road Deal of the Year ”

“ PFI European Infrastructure 2014 Prize ”





The San Marcos Viaduct, built by FCC, receives the Lieberman Prize for Best Works Project

The works project of the San Marcos Viaduct, Engineer Gilberto Borja Navarrete Bridge, in Mexico, spearheaded by FCC, has been awarded the Lieberman Prize for Best Works Project by the Mexican Chamber of Construction Industry (CMIC) through the Foundation of Construction Industry for Technological Development and Productivity (FIC).

Officially named after the Engineer Gilberto Borja Navarrete, this project crosses the San Marcos River and is the second tallest viaduct in the world, reaching 225 metres in height and 850 metres in length divided into 7 different bridge spans of up to 180 metres. When laying the foundations of the highest column, six thousand cubic metres of concrete were poured at once, out of the 64,000 used for the entire viaduct. More than 10,000 tonnes of steel were used and excavation works of 350,000 m³ were carried out to facilitate the laying of the foundations.

The Lieberman Prize for Best Works Project is an annual award which acknowledges and praises the professional skills, effort and creativity of a construction company,

with regards to the following: overcoming problems, organisation, staff skills and integration, excellent quality, construction solutions, profitability, use of appropriate methods and technology to achieve the Best Works Project.

Among those attending the award ceremony held on 11 March at Expo Bancomer de Santa Fé (Mexico), were various Mexican

Organised by the Kuwait Oil Company

FCC's industrial waste division invited to the workshop on soil decontamination technologies

Guests at the award ceremony

Several Mexican authorities attended the awards ceremony, including the Secretary of Communications and Transport, Gerardo Ruiz Esparza; the Under-Secretary of Infrastructure of the SCT, Raul Murrieta Cummings; the President of the Mexican Chamber of Construction Industry (CMIC), Gustavo Arballo; the former President of the Chamber, Luis Zárate Roche; the President of the College of Civil Engineers of Mexico, Víctor Ortíz Ensástegui; Eugenia Hernández de Lieberman (widow of Leopoldo Lieberman, Eng.); the Chairman of the Board of Directors of ICA, Bernardo Quintana Isaac; Gilberto Borja Suárez (son of the engineer Gilberto Borja Navarrete who gives his name to the viaduct).

Attending on behalf of FCC were: Eugenio del Barrio Gómez, Head of Business Development in Latin America; Enrique Díaz Valdés, Country Manager at FCC Construcción Mexico; David Arribas Mazarracín, Head of Department of Bridges 1 (Structures) of FCC Technical Services; Rafael Carrasco Ruiz de la Fuente, Head of Technical Services of FCC Construcción Mexico; and Daniel Carmona Campos, Head of Construction Division at FCC Mexico.

authorities and FCC representatives, as well Gilberto Borja Suárez, son of Gilberto Borja Navarrete after whom the project was named. David Arribas, head of the Bridges 1 (Structures) area of FCC's Technical Services, explained in his presentation the engineering project and the development of the bridge which was built entirely by FCC Construcción's Technical Services.

The Kuwait Oil Company (KOC) organised a workshop on soil decontamination technologies where companies from all parts of the world, experts in this industry, participated, including FCC Ámbito, FCC's subsidiary specialising in industrial waste treatment and management. The objective of this seminar was to exchange information between KOC and the companies on the technologies available and market capabilities for resolving the problems of the environmental damages resulting from the invasion of Kuwait by Iraq during the 1991 Gulf War.

KOC, through the Kuwait Environmental Remediation Program (KERP) is organizing forthcoming tender offers for the execution of the measures required to try to tackle the challenge of treating from 8 to 12 million M³ of contaminated sand before the end of 2020 with funding from the United Nations. To achieve this, it plans to hire companies with proven technical expertise, such as FCC Ámbito, that apply the most reliable technologies available that can be adapted to the tough conditions of working in the desert.



The enormous amounts of crude oil, spilled as a consequence of the destruction of more than 700 wells in the oil fields of Kuwait, created 114 km² of oil lakes. It is estimated that there are about 26 m³ of sand which were contaminated by the oil spill which should be recovered by means of specific treatment technologies.



FCC takes part in the international conference for Infraportos South America, held in Brazil

The largest event in the Latin American port sector, Infraportos, took place in Sao Paulo (Brazil) between 7 and 9 April and was attended by and had participation from FCC representatives.

FCC participated in this international conference which brings together professionals from the port infrastructure sector, by setting up a stand and giving a talk on the Port of Açu. The talk was presented by Antonio Piqueras, Açu project manager, and Francisco Esteban Lefler, Director of Innovation and Technology at FCC Construcción.

The aim of Infraportos is to facilitate communication between ports, terminals and port operators with manufacturers of equipment and technology at a time when the port infrastructure sector is experiencing a notable economic increase, driven by the need to boost productivity, efficiency and competitiveness of the country's ports.



FCC Construcción, solidly positioned in the region with large-scale projects such as the Port of Açu in Brazil or the Port of Callao in Peru, has boosted this major event aimed at developing the port sector by sharing experience in an area where FCC is considered as one of the leading companies.

With a significant announcement for national infrastructure and development, the Federal Government promised an investment

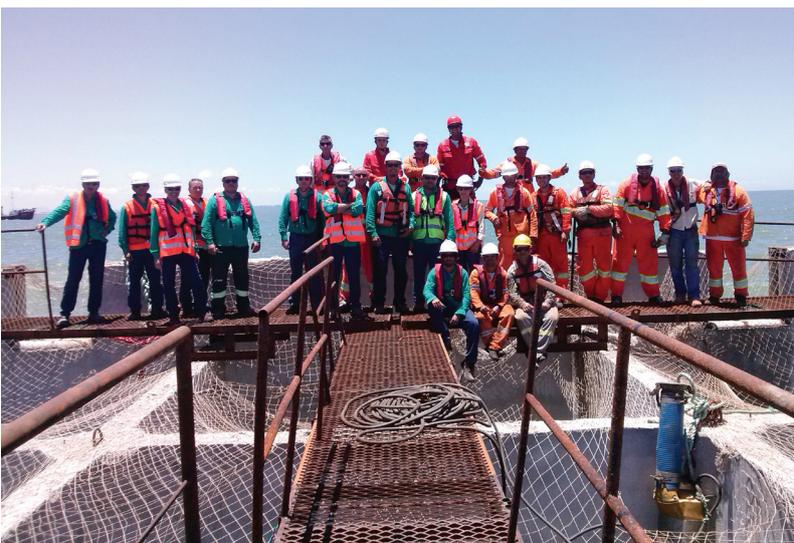
boom in the port sector. It announced investments of R\$ 54.2 billion (€ 16.6 billion) until 2017, and according to the document from the Special Secretariat of Ports, the new investments will be used for leases and private-use terminals (TUP), with R\$ 31 billion (€ 9.5 billion) staggered between 2014 and 2015 and R\$ 23.2 billion (€ 7.2 billion) between 2016 and 2017.

The last caisson of the seawall works at the Port of Açu in Brazil is anchored

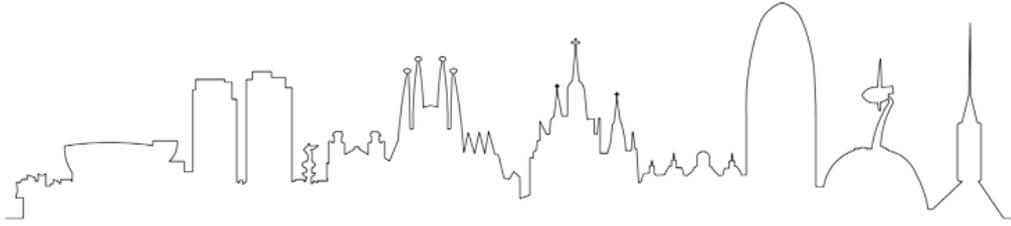
The construction works of the mixed-use TX1 terminal at the Port of Açu continue to make good progress and are approaching the final stages.

The last caisson of the main seawall alignment, number 38, was anchored on Saturday 14 March. There are only 3 caissons left to be anchored, corresponding to one

of the 3 inner berths. To date, 44 caissons out of a total of 47 have been anchored.



International Workshop on BARCELONA'S EXPERIENCE IN RESILIENCE



An event organized by:



CITY
RESILIENCE
PROFILING
PROGRAMME



UNOHABITAT
FOR A BETTER URBAN FUTURE



International seminar on urban changes in Barcelona

FCC participated in Barcelona's Experience in Resilience, an international seminar to share the resilience model of the city of Barcelona. Barcelona's Experience in Resilience represents a unique opportunity for cities, private companies and research groups to get together and share experiences, work in a network, and find points in

common that make it possible to implement new initiatives in the field of urban resilience.

Jesús Pajares, the head of the Machinery Department of the Environment Division, participated on behalf of FCC in the Planning Urban Resilience session and on his own behalf in the Resilience Governance session.



¡Cuidate!



Mejoramos las condiciones del seguro de salud

Descúbrelo en FCC one





Santiago Lafuente, manager of Zone I, at the opening session of the workshop with Mar González, chairwoman of the Press Association of Burgos; Juan Antonio de Miguel, manager of Aguas de Burgos; and Clara Navío, chairwoman of APIA:

Training workshops for local journalists in Salamanca and Burgos

The Asociación de Periodistas de Información Ambiental (Association of Environmental Information Journalists, APIA Spanish acronym) in collaboration with FCC Aqualia, proposes guidelines for informing on the environment and water management.

Representatives from the mass media in Salamanca, members of APIA, and a group of Communication Sciences students from the University of Salamanca participated in the first session of the Environmental Information Workshop for local journalists.

The workshop was opened by Fernando Martínez, the dean of the Communications faculty; Elena Martín, chairwoman of Asociación Salmantina de Periodistas (ASPE); Clara Navío, chairman of APIA; and Ángel Capellán, manager of FCC Aqualia in Salamanca who applauded the initiative and highlighted the company's commitment

to training and information “to achieve the greatest transparency” in the sector. Capellán also thanked the facilities provided by the local City Council, who owns the water services and the facilities, which collaborated with the company in the organization and development of the workshop.

The sessions held during the morning covered topics such as the contents and supports of environmental journalism, the relationship with information sources on environment related issues, and the method for reporting different issues when one is not a specialist. In this respect, Juan Pablo Merino, head of FCC Aqualia's Corporate Communications and Marketing, described the peculiarities of information in the water sector and, what he believes, are the main ideas that a local journalist must understand in order to provide information of water management: water is a basic public good which must be managed by a specialised company with the maximum transparency. On the company's relationship with the media, Juan Pablo underscored “the

importance of mutual trust” and the need to check information “so as not to generate alarm on an issue as sensitive as water management as a public service”.

Besides the sessions, the journalists had the opportunity of visiting the El Marín wastewater treatment plant and the potable

“ The journalists also visited several plants to learn about water management in detail ”



Some of the journalists touring the FCC Aqualia facilities.

Por el periodismo de medio ambiente



Fernando Martínez Vallvey, dean of the Communication Faculty, gave the opening speech; Elena Martín, chairwoman of the Press Association of Salamanca (ASPE); Clara Navío, chairman of APIA; and Angel Capellán, manager of FCC Aqualia's office in Salamanca.

water plant at La Aldehuela, facilities owned by the local government and managed by FCC Aqualia, where they were welcomed by the respective managers of these plants, Teodoro García and Juan Ignacio Jiménez.

Reporting on the environment

Burgos also hosted an Environment Information Workshop for local journalists, organized by APIA and by the Press Association of Burgos. On this occasion, Aqualia, the sponsor of the workshop, was accompanied by Aguas de Burgos, the company

that provides this service locally, in order to ensure the success of the event.

Santiago Lafuente, manager of Zone I, was present at the inauguration session together with Mar González, chairwoman of the Press Association of Burgos; Juan Antonio de Miguel, manager of Aguas de Burgos; and Clara Navío, chairwoman of APIA. In his presentation, Lafuente highlighted "the increasing importance of information on water management in the mass media", regardless, he said, of "whether the company is public or private". He coincided in this aspect with the representative of Aguas de Burgos, who underscored "the municipal company's long history of public-private collaboration".

Collaboration

The workshop is in keeping with FCC Aqualia's collaboration with APIA to disseminate information and to build awareness among the community in general and journalists in particular on the activity conducted by the company: end-to-end management of the water cycle; domestic, industrial, and agricultural.

FCC Aqualia was represented by Alberto García, head of Communications, who gave a speech entitled "The Thrilling Challenge of Reporting on Water". During his presentation, García described some of the difficulties that local media could encounter when reporting on the water service and some of the good practices that could be useful for reporting in a rigorous manner.

After the sessions of the first day of the seminar, the group visit the potable water treatment plant in Arlanzón, 25 km from Burgos, which provides water supply to the city. During their visit, the guests were escorted by technicians of the local company and by the manager of Aguas de Burgos.

People



Banco de Alimentos

**FCC donates more than 17 tonnes
of food and other essential products**



FCC employees from the various regional offices throughout Spain have donated more than 17 tonnes of non-perishable foods, other essential items and hygiene products to the Banco de Alimentos (Spanish Food Bank charity) as part of the outreach campaign "Operation Kilo".

This social action, promoted by the Citizen Service Group in collaboration with the charitable organisation Banco de Alimentos, was carried out between 16 and 20 March, during which FCC employees voluntarily donated products such as baby formula,



cereals, pulses, canned foods, rice, pasta, nappies, etc.

The donated products were delivered to different food banks belonging to the Spanish Federation of Food Banks (FESBAL), which has fifty centres that are responsible for distributing food amongst the most vulnerable families and people in Spain.

The work carried out by FCC volunteers has been instrumental for the execution of "Operation Kilo", given that the collaborators wanted to take part by not only contributing food items, but also by delivering them to the regional offices of the Banco de Alimentos in other cities.

The fundamental work carried out by FESBAL has been awarded the Prince of Asturias Award for Concord for its active contribution towards the fight against hunger.

FCC, in line with its social commitment, wanted to support this solidarity initiative which aims to raise awareness on the shortages in our surroundings and to help those most in need.



“Operación Kilo” organised by Banco de Alimentos FCC Employees thanked for their donations

Banco de Alimentos has expressed its gratitude to FCC employees for their donations during the “Operation Kilo” campaign which totalled more than 17 tonnes of food and essential products. The charity sent thank-you letters to the various regional offices of the Citizen Service Group throughout Spain.

The Banco de Alimentos Foundations ensured that the multiple donations received from the different FCC regional offices will contribute to mitigating the serious situation of many people, particularly impoverished due to the long economic crisis.

The food and products donated will be distributed to other charities that provide aid to people in need through the homes,

social dining rooms, and other charity activities.

Banco de Alimentos also reminded us that besides these specific campaigns, such as “Operation Kilo”, donations are welcomed throughout the year at their facilities located nationwide.



Fundación Pan y Peces expresses its appreciation



A batch of the food donated by FCC employees during Operación Kilo campaign was delivered to Fundación Pan y Peces which helps more than 500 families in the Madrid Autonomous Region giving them a cart full of basic food.

This foundation also sent a letter thanking all employees on behalf of the foundation and of the more than the 2,000 people who are aid recipients.



FCC launches the “Tapones solidarios para Nacho” campaign

FCC launched the solidarity recycling campaign in Barcelona to help Nacho, a boy who lives in Santa Coloma de Gramanet (Barcelona) and suffers from Dent Syndrome, a rare genetic disease linked to the X chromosome of which there are only 14 cases in Spain.

His mother Eva is a clear example of tireless dedication. Ever since her son was diagnosed with Dent Syndrome, she has not ceased to fight to ensure that her son is cured. When doctors suggested that she try to find the funds to be able to start investigating the rare mutation of her son's diseases, she did not give it a second thought and immediately started to collect plastic caps.

We want help Nacho's mother and decided to launch a campaign in all FCC offices in Barcelona in order to collect as many plastic caps as possible to send these to the boy's family so that scientists can start to begin investigating Nacho's diseases.

Everyone who wants to collaborate in this project can deposit plastic caps in the containers that have been placed in your offices for this purpose.

Your collaboration will help to promote research in this very rare disease.



TAPONES SOLIDARIOS PARA NACHO

Ayúdanos en la investigación de la enfermedad de DENT
para conseguir un medicamento

NACHO NOS NECESITA

 **asdent**
Yo, colaboro :)

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TAPONES SOLIDARIOS PARA NACHO

Ayúdanos en la investigación de la enfermedad de DENT
para conseguir un medicamento



FCC's Legal Services celebrates its 1st Professional Seminar

FCC Legal Services celebrated its first Professional Seminar on 18 and 19 February to provide a current vision of the Company, the work that it carries out, and on its new organization. During these two days, they shared experiences and the motivation skills aimed at all professionals who are part of this team.

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Felipe Bernabé García, secretary general of FCC, was in charge of inaugurating the event. During his speech, he described the Group's transformation and stressed enthusiasm, motivation, and effort to look towards the business and create value. He was followed by José Cerro, general manager of FCC's Legal Counsel, who explained, from his personal perspective, the way that a multinational company's legal counsel should function and the work of an international lawyer. He also stressed supporting the business, exchanging knowledge, and encouraging initiative, imagination, hones-



Felipe Bernabé García, secretary general of FCC, gave the opening speech.



José Cerro, managing director of FCC's Legal Counsel, during his speech.



Juan Béjar, vice-chairman and CEO of FCC, during his presentation.



Guillermo Guerra and Alberto Alonso (on the left and right, respectively), partners at Baker & McKenzie, with José Cerro and Felipe Bernabé.



Federico Briano, partner at Linklaters.



Juan Fernández-Armesto (left) and David Arias (right), arbitration experts, after their speech, accompanied by José Cerro.

day of the seminar with his speech entitled "Enthusiasm makes the difference" and impressed the audience with his reflection on enthusiasm, optimism and hope.

The events of the following day took place at the Las Tablas headquarters. The presentation, made by Alberto Alonso and Guillermo Guerra, partners of the legal law firm Baker & McKenzie, was entitled "Remarks on the Law of Capital Companies". After a brief pause for the coffee break, Federico Briano, a partner at Linklaters, highlighted the process involved in issuing a prospectus. Lastly, Juan Fernández-Armesto and David Arias, arbitration experts closed the seminar with an interesting debate.

Lastly, Juan Béjar, vice-chairman and CEO of FCC, made a presentation on the evolution of the Citizen Services Group over the past few years and the transformation that has taken place during this time. He described, at the end, "the new FCC that we are building", emphasizing the new equity and financial structure, the development vectors in the different businesses, the corporate culture, and the Group's historical values as well as the transformation leverages for facing the future.

ty, and a sense of humor. He ended his speech by describing the new organization of FCC's Legal Services.

Luis Galindo, managing partner of the law firm Galindo & Asociados, closed the first

The new structure of FCC Group's Legal Services

The CEO, at the proposal of the managing director of the Legal Counsel, with the approval of the secretary general and the general manager of Organization, in order to optimize resource, align them to the Strategic Plan and business needs, have approved a new structure for the Legal Counsel of Central Services and the principles for providing international legal services which are applicable to the entire FCC Group.

Structure of the Legal Counsel of Central Services

The structure of the Legal Counsel of Central Services will be as follows:

• Advisory and Litigation Department

Its functions include: legal support for Central Services (consultations on law, contracts, and litigation), monitoring divestment contracts, and support for the Group's Legal Counsels when necessary.

Mar Sáez Ibeas will be the manager of the Advisory and Litigation Department.

• Financial and Special Projects Department



The functions of this department are: leading the legal structure of corporate finance transactions, controlling compliance of finance agreements, and support for the Business Group's Legal Counsels (finance, Project Finance, issues...). The head of this department has not been appointed yet.

• Coordination and Control Department

Its functions are: coordination of legal issues with the different units of Central Services and the Business Groups, support to the FCC, S.A. Board and Board of Directors and of its subsidiaries, handling and management of the Group's powers of attorney, and, in general, advisory services on corporate issues, quality control of the in-house and external Legal Services, control of the Group's expenses for external lawyers and legal management of the brand.

Cristina López Barranco will be the manager of the Coordination and Control Department.

The Corporate Legal Counsel and the Litigation Legal Counsel will cease to exist. Litigation will be handled by the Legal Counsels of the Business Groups; relevant legal or arbitration processes will be controlled and coordinated by the managing director of the Group's Legal Counsel.

The attached Annex 1 on the descriptive flowchart and the functions of the Group's Legal Services.

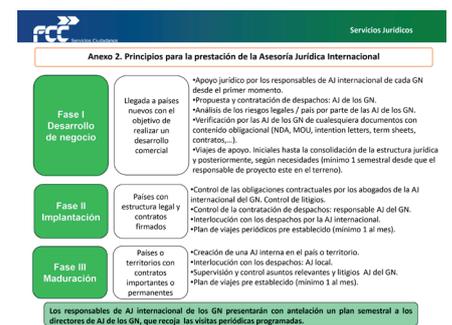
Organizational and performance principles of the international legal services

The principles governing the Group's international legal counsels are approved with the objective of minimizing the implicit risk involved in conducting business abroad. The fundamentals for the provision of international legal services are as follows:

- International legal counsels will be organized and structured for each Business Group in order to align them to their respective needs. In any case, the standard principles of the FCC Group will be applicable.

- Broken down into three phases: business development, implementation, and mature business.
- The International Legal Counsel of the Business Group will provide full support and will be in charge of assessing the legal and contract elements (including the hiring of law firms and supervising their work) for the international development of the business.
- The assessment of legal risks and the analysis thereof will be carried out by the managers of the Legal Counsels of the Business Groups and through their International Legal Counsels. All documents, regardless of the type or class of such documents, involving contractual obligations will be previously checked by the Legal Counsel and by the Business Group.

The Attached Annex 2 provides an outline of the three business implementation phases.



A life dedicated to water management



Miroslav Kyncl resigns as the manager of SmVak with the unanimous recognition of the sector in the Czech Republic.

Miroslav Kyncl, the managing director until now, has recently resigned his post at SmVak after more than 40 years dedicated to managing water supply and treatment companies. He will be replaced at the Czech Company by Anatol Pšenička who has been working in the sector since 2000 firstly in Veolia, as the deputy general manager and managing director of several of its water companies. Pšenička later worked in Suez where he reported to the General Directorate in the Czech Republic for Corporate Development.

Miroslav Kyncl's relationship with the world of water dates back to his years as an adolescent when he decided to study Chemistry at the Chemistry and Technology University in Prague. After graduation, he began his career in 1962 as a chemist at the Nová Huť Ostrava metallurgical plant. His curiosity for issues relating to nature made him specialize in inorganic chemistry and water technology. Afterwards, in 1965 the young Kyncl started to work in the water com-

pany which later became the current limited company Severomoravské Vodovody a kanalizace Ostrava a.s.. (SmVaK).

The year 1989, after the fall of the communist regime, marked a turning point for our protagonist. Thanks to his experience in production management, he was appointed manager of the embryonic company of SmVak. The challenge, not a simple one, was to adapt the company to the new rules of the market economy in force in the country.

The following milestone in Miroslav Kyncl's career was in 2006 when the Czech Company became part of the Aqualia Group which, at that time was starting its strong international expansion. "This posed a great challenge –Kyncl confessed- since the new situation made it necessary for SmVaK to develop a policy for collaborating with a strong and experienced partner". After analyzing the situation, the head of the company became convinced that it was necessary to hire well-trained personnel. As a consequence of this, Kyncl promoted a cooperation agreement with the Ostrava Technical University, the entity where he collaborated as a professor for 20 years.

Miroslav Kyncl recently decided to resign his job as the managing director of SmVaK "with the idea of relaxing a bit and make room for the younger generation". Nevertheless, the Czech company will continue to count on his experience and knowledge

since he will remain as an important member of its Board of Directors. He will spend the rest of his time immersed in his other passions: teaching at the university and gardening.

“ Miroslav Kyncl leaves his job as managing director of the Czech subsidiary, SmVak, after more than 40 years' experience and the recognition of the sector ”

“ Anatol Pšenička, with 15 years' experience in the industry in managerial positions in Veolia (Czech Republic) and then Suez, will replace Kyncl ”



The snow storm in Reinosa blocked transport in this city in Cantabria.

Goodbye winter!

FCC Aqualia professionals struggle against bad weather

Against wind and snow... citizen services come first

Even though the snow storm and the cold weather has tested the normal water supply in several cities and towns in the north of Spain, the extraordinary work of FCC Aqualia's professionals have minimised the consequences for the population of Calahorra and Reinosa which were among the cities most affected by rain and snow.

The cold wave and storms this past winter affected most of the Iberian Peninsula and made it difficult to carry out the work of the municipal water services which, in many cases, had to face extreme situations. Two such examples were the cities of Calahorra (La Rioja) and Reinosa (Cantabria), where rain and the cold weather tested the capacity of the teams and people who are involved in the day-to-day public service related tasks.

The main problems were experienced at the Calahorra waste water treatment plant where the situation was of maximum alert



Image of the plant when the water started to flood its interior and when the equipment was dismantled and lifted.



In the photo, a scene when, following the contingency plans, the ancillary equipment is introduced in the Calahorra Drinking Water Treatment Plant.

due to the historical rise of the Ebro River as it passes through this city in La Rioja. The weather forecasts for major rainfall made the department take action to handle certain control and contingency related tasks. When the moment arrived, the FCC Aqualia team in Calahorra had all the ancillary energy generation and water pumping equipment ready.

The available staff at the department was always prepared and ready, both the personnel at the network as well as at the drink-

ing water treatment plant, the head of production, with the support of other people from neighbouring departments and the emergency teams. When the water reached the maximum levels at dawn and during 7 hours, the operators remained isolated in the interior of the plant working in order to prevent the facilities from being flooded with the risk of having to stop producing tap water and, therefore, the normal water supply. Activity during these hours was frenetic, dismantling and lifting the pumps to prevent them from sinking or preventing at the last moment having to turn off the transformation centre and the high-voltage inter-province grid which supplies the plant. These actions were worthy of the express recognition of the city's town council.

The population in Reinosa witnessed a historical snowfall, the heaviest in recent years. Snow reached a level of a meter and a half and made it extremely difficult to provide services. Besides these two cities in the north, many others experienced the storm although, thanks to the work of the FCC Aqualia professionals, water supply was not interrupted without any incident worth mentioning. Bravo!!

Miguel Ángel Peñas, between cleaning tasks and women's handball

He works at the cleaning contract for the Renault factory in Valladolid, part of the Castile-León branch office of the Environment Division.

Throughout history, there has always been someone who wins and, consequently, someone who must lose. Generally, the great and the strong are usually the ones who win while those who lose are the small and the weak.

And, as in any major feat, there is always someone who carries on their shoulders the weight of glory and, in some cases, immortality.

Miguel Ángel Peñas, is an FCC employee who enables us to enjoy those ephemeral

and insatiable moments when the women's handball team achieves victory. The merit, however, belongs to the team members who, from the first to the last, are all amateurs.

Miguel Ángel has witnessed the winning nobleness of small teams. It does not matter to him how complicated it may be since he is always willing to achieve the glory reserved for the great, through "work, humility, enthusiasm, and by having everything under control". It is not a dream; he has actually made it possible for a team made up of amateurs, the Aula Cultural, to reach the Honour Division. This is not the first time, however, that he achieves this. A few years back he



enabled another team, the Carobels Cleba León to ascend to another division. To be able to sit atop the Olympus you first have to win the major leagues, and this is only possible in the Olympic Games. Besides, he is also the trainer of the local women's national





handball team and now, in charge of RFEBM of the Objective: Tokyo 2020 Group which aims to strengthen the Spanish teams for the forthcoming Olympics. He has designed a working group comprising 15 players, from 16 to 20 years of age, to monitor their progress in order to supplement the Guerreras team in Tokyo 2020.



At FCC, we have always encouraged and supported social initiatives and that is why we made it easier for Miguel Ángel and thank him for the dedication and work that he carries out with the girls from the handball teams. He described his relationship with the company in an interview with the newspaper El norte de Castilla: “Fortunately, up to now, FCC has been great and I have always had the facilities to perform my job and also be able to attend the competitions”. Even Cayetano Cifuentes Junquera, the President of Club Deportivo Balonmano Aula wanted to thank FCC for all the support and the facilities it has provided its trainer “to be able to perform his work as the trainer in our club thanks to which we have been able to play in to top national female handball category which would have been impossible without his understanding, collaboration and generosity”.

“ Miguel Ángel Peñas made it possible for an amateur team to climb to the Honour Division ”



Social Responsibility

FCC Construcción signs its 2nd Equality Plan with the trade unions CCOO and UGT

“ The new Plan applies to all of FCC Construcción, including its subsidiaries and affiliates and extends to all of the Company’s employees

”

On 9 March, FCC Construcción and the Metal, Construction, and Similar federation attached to UGT (MCA-UGT) and Construction and Services federation, attached to CCOO, the Company’s 2nd Equality Plan. The scope of application of this new Plan is all of FCC Construcción, including subsidiaries and affiliates, and extends to and covers all of the Company’s employees.

The plan comprises several measures aimed at achieving equal treatment and opportunities for men and women and eliminates any hint of sex-based discrimination. To achieve these goals, it contemplates

several actions focusing on: recruitment, promotion, training, remuneration, conciliation and co-responsibility, the prevention of sexual harassment and mobbing, gender violence, health and social well-being, and communication. Measures and positive actions will be proposed in all these areas to accomplish the defined objectives. Moreover, a monitoring plan was designed which includes annual reviews to assess the scope of the measures and to program the strategy for the following year.

Incorporation of two new chapters: health and occupational well-being

Among the novelties of this Second Plan, is the expansion of the chapter on conciliation to incorporate concept such as flexibility and co-responsibility in order to build awareness on the idea that equality is a social issue that affects both men and women. Two new chapters were included on health and occupational well-being as part of the concept of prevention and communication which reflects the importance of preserving equality in language and audio-visual communication.

Reinforcing the commitment to equality

The execution of this 2nd Equality Plan reinforces FCC Construcción’s and FCC Group’s commitment to equality between men and women and incorporate new measures on communication, health and occupational well-being, and significantly deepens all the others with the conviction that this Equality Plan should contribute as an efficient instrument to effective equality of women and men.



II Plan de Igualdad de FCC Construcción



CCOO
construcción
y servicios

FCC
Construcción

UGT MCA

The agreement was signed by Vicente Sánchez, secretary general of the Construction and Services federation of CCOO, and by Carlos Romero, secretary general of the Metal, Construction, and Similar federation of UGT, Industry Federation by the trade unions while Ana Villacallas, general manager of Organization, and María Sánchez, head of Human resources at FCC Construcción, signed on behalf of FCC.

This new plan, which was signed on International Women's Day, is a continuation of the plan that was originally signed on 19 November 2008 and will be in force until 31 December 2018. Before this new plan was designed, the situation was diagnosed and this made it possible to have a true picture of the workforce, detect the needs, and define the improvement objectives.

The execution of this agreement is yet another wager for effective equality in the Construction division of the FCC Group which, for many years, has implemented a code of principles and ethical values developed through programs, in-house procedures, and positive measures aimed at creating an atmosphere at the workplace that fosters respect among employees,

equal opportunities for men and women, and the integration of diversity; concepts that imply a growing commitment to sustainability and corporate social responsibility.

This agreement is in keeping with the initiatives that are being developed by both trade unions for promoting measures aimed at defending and encouraging equal treatment and opportunities for men and women and the elimination of discrimination based on sex.

“Fill your world with life”

New edition of FCC Aqualia’s contest for children throughout Spain

Coinciding with the celebration of World Water Day, FCC Aqualia launched the 13th edition of the international drawing contest which incorporates several novelties and is being developed through the www.llenatumundodevida.es website.

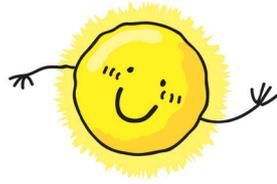
FCC Aqualia organised the new edition of its International Children's Contest coinciding with the celebration of World Water Day on 22 March. The theme this year is “Fill your world with life” to highlight the importance of the responsible use of natural resources, including water, to contribute to the sustainable development of our surroundings.

Children in 3rd and 4th grade from the cities and towns throughout Spain where Aqualia provides its services are eligible to participate. In order to encourage children's skills in the use of new technologies and to contribute to sustainable development by avoiding the use of paper, the contest will be developed through the microsite www.llenatumundodevida.es. Children will find at this site many illustrations (animals, plants, rivers, fountains...) so that they can re-create their ideal environment and add the name that they like the most.

The organizers of the contest say that the objective is to “create an ideal place and bring it to life by bringing water, people, animals, and plants, in the same way that their water company does every day”.



XIII CONCURSO INTERNACIONAL
DE DIBUJO INFANTIL

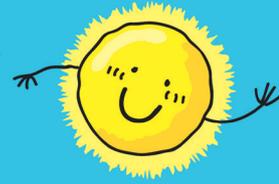


Llena tu mundo de vida



WWW.LLENATUMUNDODEVIDA.ES

XIII CONCURSO INTERNACIONAL
DE DIBUJO INFANTIL



Llena tu mundo de vida



WWW.LLENATUMUNDODEVIDA.ES

The scope of the contest is international since, besides Spain, the contest is open for children from Portugal, Italy and the Czech Republic where FCC Aqualia manages the end-to-end water cycle in several towns and territories.

Thirteen years committed to education

The international children's contest has been disseminating knowledge of the comprehensive water cycle during the past thir-

teen years, showing them that by simple day-to-day gestures, they can contribute to a more efficient use of this natural resource.

The initiative involves children, schools, professors, the media, cities and towns, and public administrations who disseminate the message of environmental commitment which, even though focused mainly on the young public, reaches the entire population. "It is our contribution for training and building awareness in the community in general, and specially in children, in the good use and care of water", Juan Merino, manager of FCC Aqualia's Communication and Marketing Department, said. After thirteen editions, this initiative is well known since more than 350,000 children and 10,000 schools have participated", Merino added.

Children can go to www.llenatumundodevida.es and create their ideal composition. The deadline for presenting their work is 15 May. The names of the winners will be announced on 5 June, the International Environment Day, in all FCC Aqualia offices, in its website www.aqualia.es and in the contest's microsite.

The awards include 10 individual prizes, a tablet for each winner; 300 prizes for the

runner-ups, each of which is the educational game "My first orchard", and a prize of 1,000 euros for educational material that will be given to the school that presented the winning work made by all the children in their classes.

“ The contest aims to build awareness on the efficient use of water ”

Welfare for the environment and animals

“ .A.S.A. Abfall Service AG supports the new „TierQuarTier“ from the City of Vienna ”

The new Vienna „TierQuarTier“ located in the 22nd district of Vienna opens its gates on March 10th. Around 450 dogs, cats and small animals will find a temporary home there. One third of the construction costs are raised from the City of Vienna through donations. One of the donors is .A.S.A. Abfall Service AG. On the occasion of the opening, .A.S.A. handed over a cheque of 5.000 € to the Viennese councillor for the environment and animal welfare Ulli Sima.

„It's not a coincidence that in Vienna the protection of animals and environment is consolidated. For a living social responsibility, also aspects of environment and sustainable thinking should be part as well as



Maga Ulli Sima (Vienna's councillor for the environment and animal welfare), Dr. Bertrand Laub (.A.S.A. Abfall Service AG).

the principle of welfare of human being and animals”, says Dr. Laub from .A.S.A. Abfall Service AG. The .A.S.A. Abfall Service AG and the City of Vienna have been sharing a reliable and cooperative partnership for 20 years in the fields of waste management and disposal.

The „TierQuarTier“ in Vienna is one of the state-of-the-art animal protection competence centres in Europe and corresponds to its high requirements of a contemporary animal care. The area of total 9.700 m² gi-

ves a temporary home to more than 150 abandoned, exposed and run away dogs, about 300 cats and hundreds of small animals like hamsters, guinea pigs or rabbits.

“ Donation for the start of the „TierQuarTier“ on the occasion of the opening on March 10th ”

”



Panama

FCC collaborates with the “My School First” program

In keeping with FCC’s Corporate Social Responsibility Plan in Panama, last February, the Citizen Services Company delivered to the Panamanian government the revamping project that had been executed at Instituto Rubiano, as part of the “My School First” program. This initiative was executed as part of the collaboration agreement signed by the FCC Group and the Panamanian Government aimed at improving the work conditions and the development of the country’s educational community.

Instituto Rubiano is one of the largest schools in Panama City’s San Miguelito district, which currently has 3,000 students in the morning and evening classes.

Miguel Jurado, Chairman of FCC Construcción, was present at the signing ceremony of the cooperation agreement among FCC Construcción, the Ministry of Education, and the Secretariat for Economic Affairs and Competitiveness of the Presidency of

the Republic of Panama. He stressed the importance that the FCC Group attaches to “social projects for young people aimed at providing them with a better education at well-equipped schools”.

On 2 March, Instituto Rubiano opened its doors in the presence of the president of the Republic, Juan Carlos Varela. Students, teachers and executives enjoyed the visit of the president and proudly showed the new installations.

Work carried out

Among the works executed by FCC, the revamping of the classrooms, pavilions, and ground floor, where more than 9,000 square meters of tiles were placed, are worth mentioning. Spaces were refurbished based on a new design concept that included the installation of more than 200 windows, new furniture in the classrooms in five pavilions, dining rooms, gymnasium, and baths, as well as the redesign of the façade, halls and the administrative areas of the institution.

FCC also cleaned the sanitation network up to the discharge point at the sewerage system of the Instituto de Acueductos y Alcantarillados Nacionales (IDAAN), and also replaced and adapted the sanitation equipment. It also adjusted the electricity cables of the infrastructure for the installation of 74 new air conditioners.

La Valdeza, Panama

FCC organizes arts and crafts courses using recyclable materials

In keeping with the corporate principles and corporate social and environmental responsibility, FCC and the Instituto Nacional de Formación y Capacitación para el Desarrollo Humano (INADEH), launched the third arts and crafts course aimed at the communities living close to the Valdeza quarry located in Panama's La Chorrera district.

The course, which aims to encourage recycling among the community to benefit the environment, is focused on creating arts and crafts using recyclable and reusable materials.

Sewing classes

Besides this course, FCC jointly with INADEH have also organized two sewing classes where students learned how to make garments and articles for the home.



FCC reaffirms its commitment in 2015 to the development of communities by maintaining and strengthening strategic alliances with government institutions to benefit the residents in the areas close to the projects.

Become a Friend of the Prado Museum

FCC, in collaboration with Fundación Amigos del Museo del Prado (the Friends of the Prado Museum Foundation) is making the Friends of the Museum membership card available to the staff. The card enables users to enjoy favourable conditions for vi-

siting the collections and exhibits in one of the world's best museums.

Among the many benefits, you can obtain free and preferred tickets for the museum and to the State Museums attached to and

managed by the Ministry of Culture, receive tickets for those who accompany you and participate in training and other activities organized by the museum.

These favourable conditions are the result of the close collaboration of FCC since 1997 with the Fundación Amigos del Museo del Prado.

Being part of this group also implies the satisfaction of supporting a project that contributes to the conservation, study, and dissemination of the rich cultural heritage housed in the Prado Museum.





En 100 años
prestando servicios
a los ciudadanos
hemos visto cambiar
muchas cosas, la
primera al propio
ciudadano.



En FCC diseñamos y construimos infraestructuras, recogemos, reciclamos y valorizamos residuos urbanos e industriales, limpiamos calles, cuidamos parques y jardines, mantenemos el mobiliario urbano y suministramos agua en 5.000 municipios de todo el mundo desde hace más de 100 años. Al principio éramos unos pocos preocupados porque millones de personas disfrutasen de un lugar mejor donde vivir. Hoy son esos millones de personas los primeros que se preocupan por crear un lugar mejor donde vivir.

Lo estamos haciendo juntos.

Well-being

FCC Servicios Ciudadanos

Campaña Seguridad Vial y Movilidad Sostenible
12 Meses, 12 Lemas, 1 Objetivo

Enero.
Climatología adversa.

CONDUCCIÓN CON HIELO

CONDUCCIÓN CON NIEVE

CONDUCCIÓN CON LLUVIA

CONDUCCIÓN CON NIEBLA

CONDUCCIÓN CON VIENTO

ACCIDENTE CON HIELO

FCC Servicios Ciudadanos

Campaña Seguridad Vial y Movilidad Sostenible
12 Meses, 12 Lemas, 1 Objetivo

Febrero.
Uso del móvil.

Al volante, el 99% de tu atención no es suficiente.

Ojos en el camino (en un cine de China)

USA - Texting while driving

Carril para peatones adictos al móvil

Multa por conducir manipulando el móvil: 200 euros y la pérdida de 3 puntos del carné de conducir.

Road Safety and Sustainable Mobility Campaign

12 Months, 12 Themes, 1 Objective

Traffic accidents are one of the major causes of mortality and serious injuries in the world and in Spain. According to figures provided by the Dirección General de Tráfico (DGT), there were 89,519 traffic accidents in our country with victims, of which 1,680 died (five deaths per day), 10,086 were hospitalised, and 114,634 suffered slight injuries.

In 2014, 1,129 people lost their lives in inter-city roads and, so far this year, we surpassed that figure and only in the month

of February, 167 deaths in inter-city roads were recorded.

Of the total of work-related traffic accidents of the victims, 835 (which implies 22% of the total serious work-related road accidents) and 181 were mortal work-related traffic accidents (32% of the total of work-related accidents).

In view of this situation, several branch offices of FCC Medio Ambiente, led by Lavante II MA and Aragón-La Rioja MA, decided to develop, among the various activities that they have been carrying out within the framework of FCC's Strategic Road Safety Plan, to launch an annual campaign entit-

led: Road Safety and Sustainable Mobility Campaign. 12 Months, 12 Themes, 1 Objective

Objective

- Generate the awareness of a company as a space that promotes health in general and, in particular, road safety and sustainable mobility.
- Provide information to employees on issues related to road safety and sustainable mobility.



Urban Solid Waste (USW) plant in Las Marinas



Campaña Seguridad Vial y Movilidad Sostenible
12 Meses, 12 Lemas, 1 Objetivo

Marzo.
Drogas y Alcohol 0,0



Los efectos que no conoces. La conducción y las drogas.
<https://www.youtube.com/watch?v=1tjpe3hRMJA>



Si bebes No conduzas. Stevie Wonder 1985.
<https://www.youtube.com/watch?v=yym85CaFvWE>



SHÉ Adió mamá.
<https://www.youtube.com/watch?v=f7z1QhKqg88>

Limite legal alcohol	Conductor General: 0,5 g/l en sangre y 0,25 mg/l en aire	Conductor profesional: 0,5 g/l en sangre y 0,15 mg/l en aire
Limite legal drogas	500€ + 6 o 4 puntos (superar limite legal alcohol)	
Multas alcoholemia y drogas	1.000€ + 6 puntos (reincidente o más del doble limite legal alcohol o presencia de drogas)	
Delito (sin daños ni víctimas)	Más de 1,2 g/l en sangre o 0,60 mg/l en aire. Prisión de 3 a 6 meses y retraso de carné de 1 a 4 años.	



Campaña Seguridad Vial y Movilidad Sostenible
12 Meses, 12 Lemas, 1 Objetivo

Abril
Camiones y Furgonetas



Locuras al volante

<https://www.youtube.com/watch?v=1tjpe3hRMJA>



Tu profesionalidad: Seguridad para todos

<https://www.youtube.com/watch?v=1tjpe3hRMJA>

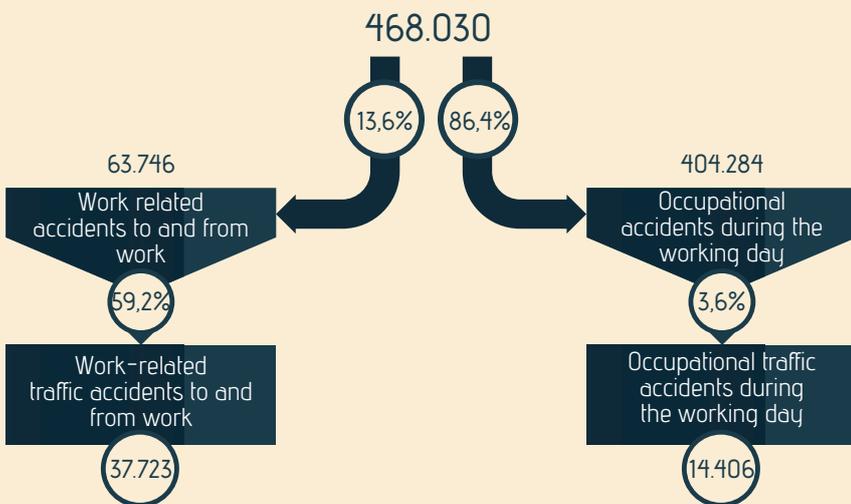
Los camiones y la falta de espacio. Si el conductor de un camión de grandes dimensiones se ve obligado a abrirse hacia la izquierda antes de entrar en una glorieta, o invadir un segundo carril dentro de ella para no subir al bordillo, deberá respetar la prioridad de los conductores que circulan por el carril que necesita ocupar e indicar, primero con el intermitente izquierdo ese desplazamiento y después con el derecho el cambio de dirección a la derecha.

Conducir vehículos con la carga mal acondicionada o con peligro se cae. Circular con un vehículo cuya carga ha caído a la vía, por su mal acondicionamiento, creando grave peligro para el resto de los usuarios. Causar daños a la infraestructura de la vía, o alteraciones a la circulación debidas a la masa o a las dimensiones del vehículo, con independencia de la obligación de la reparación del daño causado. Creación de grave riesgo para la circulación (DELITO). Prisión de seis meses a dos años o multa de doce a veinticuatro meses y trabajo en beneficio de la comunidad de diez a cuarenta días.

Graves: multa 200€ + 4 puntos. Muy graves: multa 500€ + 4 puntos.

Breakdown of work-related traffic accidents by type of accident

Total work-related accidents in 2013



52,129 occupational traffic accidents
11% of the total occupational accidents

- Encourage a critical attitude in respect to non-compliance with road safety regulations.
- Reduce the number of traffic accidents to and from work.

Focused on

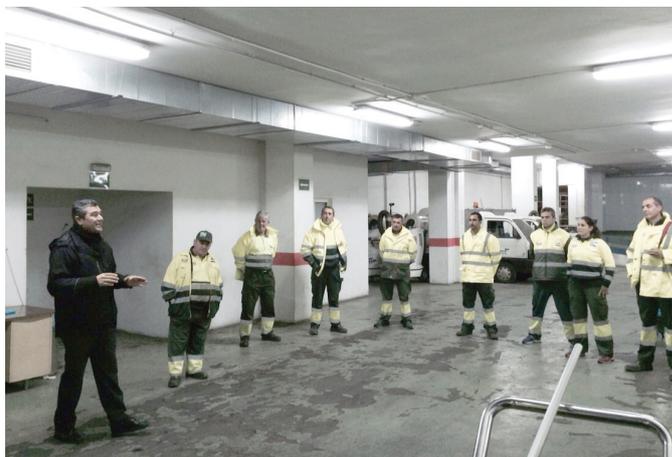
- Individual or company means of transport for travelling to and from work.
- Professional drivers who use Company vehicles for performing the services that have been assigned to them.

Methodology

The campaign consists of distributing information periodically (posters, leaflets, etc.) in



Talk at the work centre of the Levante II Branch Office of the Environment Division.



12 months, 12 themes

- January:** Bad weather.
- February:** Use of cell phone.
- March:** Alcohol and drugs.
- April:** Speed control.
- May:** Bicycle and motorcycle riders.
- June:** Trucks and vans.
- July:** Distractions.
- August:** Safety belt.
- September:** To and from work.
- October:** Alcohol and drugs
Local holidays.
- November:** Safety distance.
- December:** Actions in the event of accident or breakdowns.

all work centres, placing this information in areas that workers frequent the most (dressing rooms, dining rooms, etc.).

Five-minute talks, related to the theme of the month, are also organised by middle management before the start of the working day.



Fire-fighting

The colleagues at the Segovia regional office of the Environment Division of Castile-León, have taken an interesting course on fire-fighting which took place at the firemen's park of the city of Segovia's Fire Extinction Department. The training course will help them resolve real problems that may arise at their workplace in the event of fire and, most importantly, how to prevent them. The simulation also enabled them to learn how fire evolves, how it behaves, and the measures that should be taken.

The first part of the training course focused on how fires evolve and their physical and chemical characteristics; the different methods and extinction agents available; the types of combustion products, their risks and protective measures; the various types of hazardous materials at work and the prevention and protection against fires in cargo trucks.



In the second part of the course, the students were able to perform rescue operations; use different types of portable and mobile fire extinguishers; how to handle the different types of water equipment and how to control spills and leaks of hazardous materials; and the appropriate means for extinguishing fires.



- Fuego de Clase A.**
Son fuegos de combustibles sólidos, y generalmente de naturaleza orgánica donde la combustión se realiza normalmente con formación de brasas (madera, tejidos, etc).
- Fuego de Clase B.**
Son fuegos de combustibles líquidos o sólidos licuables (gasolina, grasas, termoplásticos, aceites y parafinas, etc).
- Fuego de Clase C.**
Son fuegos de gases combustibles que, en condiciones normales de presión y temperatura, se encuentran en estado gaseoso (gas natural, metano, propano, butano, acetileno, gas ciudad, etc).
- Fuego de Clase D.**
Son fuegos de metales, generalmente metales alcalinos o alcalinotérreos, aunque también se producen en los metales de transición (Na, K, Mg, Ti, Zr, ...).



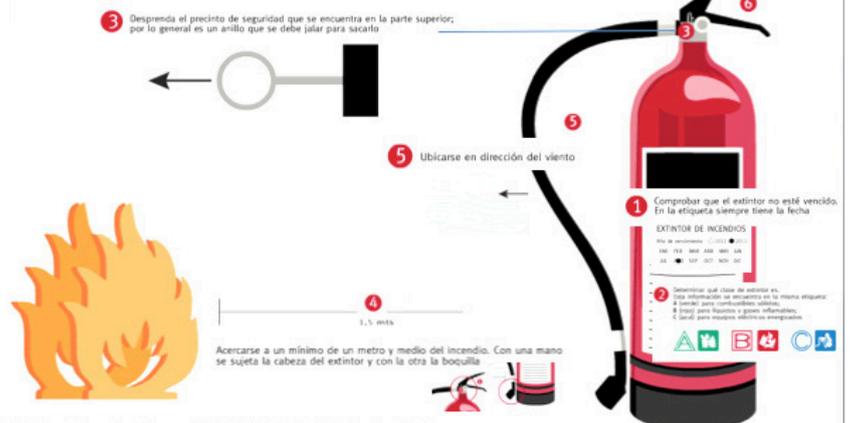
Fuego de Clase E.
Son fuegos que tienen por combustible aceites y grasas, tanto vegetales como animales, y que se encuentran principalmente en cocinas industriales, de restaurantes o domésticas. (Esta clase de fuego se identifica como K fuera de Europa, principalmente en Estados Unidos y su área de influencia).

Debemos hacer mención también de aquellos fuegos que se producen y/o desarrollan en presencia de tensión eléctrica, materiales o elementos empleados en la producción, transporte o consumo de la energía eléctrica.



Estos fuegos han sido considerados en algunas ocasiones como una clase específica de fuego, eran los denominados "Fuego de Clase E".

Usar un extintor



FCC designs the School Manual on Road Safety for Schools in Alcobendas

As part of its activities to promote road safety and within the framework of the collaboration agreement with the City Council of Alcobendas, FCC designed school manuals on road safety which are distributed among the students who visit the Road Safety Education Park in Alcobendas. For this course, 800 manuals were distributed among primary school students.

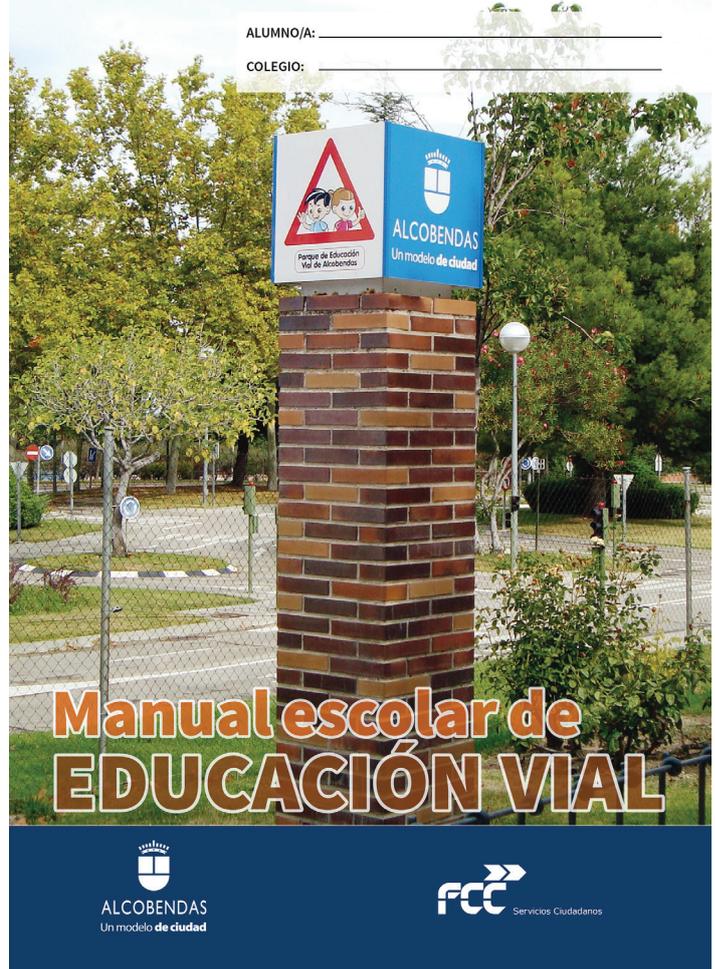
The first part of the manual includes a letter of presentation from Ignacio García de Vinueza, the mayor of Alcobendas, expressing his gratitude to FCC for its support, followed by a text on road safety, mobility and traffic, describing the concepts that the students are able to put into practice at the park's circuit.

In addition, the last block of the manual includes information of FCC activities and commitments, drafted in a friendly and fun way, explaining the end-to-end water cycle, including the Hidrokid comic book; information on taking care of the environment as told by the Green Commando, and several good habits for a healthy life.

Collaboration

The collaboration between the City Council of Alcobendas and FCC in recent years has consisted of providing the park with elements and the installation by the company of city furniture, a shed for the circuit, simulation elements, and other items. Two road safety seminars were organized for the children and family members of FCC personnel who attended the theoretical and practice courses where both the City Council and FCC were able to explain and transmit their commitment, projects, and actions in relation to mobility and road safety. The close contacts between the Company and the local government makes it possible to have an

ALUMNO/A: _____
COLEGIO: _____



“ 800 manuals were distributed among students in the second cycle of primary school in various schools that visit the Park every week

”

open collaboration relationship, generating activities with the common objective of preventing traffic accidents with the conviction of the important work involved in teaching, training, and educating students on the values of road safety and mobility.



Committed to the **safety** of our employees

FCC Construcción obtains the OHSAS certificate for its activities in Mexico, Panama, Colombia, Chile and Abu Dhabi.

The FCC Construcción Occupational Safety and Health Management System, awarded OHSAS 18001 international standard certificate in countries such as Mexico, Panama, Colombia, Chile, and Abu Dhabi.



“ The scope of this certification includes construction and civil works construction projects and energy and industrial activities ”

Protecting the safety of people is essential for the global strategy of our Company and, accordingly, being awarded the international OHSAS 18001 certificate marks a milestone in the history of FCC Group in its quest for excellence in people management.

In a year in which FCC Construcción has consolidated a large part of its international business in Latin America and the Middle

East, its Occupational Safety and Health Management System was awarded the international standard OHSAS 18001 certificate in countries such as Mexico, Panama, Colombia, Chile, and Abu Dhabi. The scope of this certificate includes the development of construction, civil works projects and energy and industrial activities.

The OHSAS 18001 certificate ensures the ongoing improvement of the safety and health management system by: contributing to reducing occupational accidents; increasing productivity; strictly complying with occupational hazard prevention regulations; and encouraging a preventive culture through the transversal integration of the corporate prevention management system.

Once again, the commitment and talent of our Company's human team has made it possible to make great strides in consolida-

ting the business internationally, becoming fully involved in implementing the mandatory standards to bolster our international presence, such as the OHSAS 18001 standard.

In la Valdeza, Panama

FCC launches an initiative to prevent diabetes



Residents in the La Valdeza and 18 de Abril communities as well as FCC collaborators attended a talk last January in which information was provided on diabetes, which,

according to statistics, is the fifth cause of death in Panama.

Medical personnel from the Nicolás A. Solano Hospital in La Chorrera made the presentation aimed at building awareness among the residents and company personnel on this diseases which affects thousands of Panamanians.

Important information was discussed and delivered on diabetes, its possible causes, symptoms, prevention measures, and food recommendations.

Occupational Safety Award for FCC Industrial



FCC Industrial was awarded a prize by Fremap Castellón. The low rate of accidents at the Gasoductos Enagas joint venture and the implementation of good safety and health practices were the reasons for being awarded the prize by Fremap.

This award underscores FCC Industrial's firm commitment to safety and health whenever it conducts its activities.

The joint venture is involved in construction activities and the roll-out of oil and gas projects, executing projects for Enagas such as the Musell Llanea gas pipeline (currently under construction) and the twinning of the Campo Gibraltar pipeline, the Tivissa-Paterna and the Yela-Villar de Arnedo pipelines, all completed and in operations.

Do you know **Ivitalia?**

The health platform that collaborates with us and that each month publishes its bulletins in our prevention portal.

commendable habits and tricks so that you can enjoy while you take care of yourself.

Access the news letter and obtain information on health, nutrition, physical activity, how to take care of yourself and prevent diseases, as well as the most healthy and re-



“Primero la Vida”, a road safety campaign in Central America sponsored by FCC Construcción

FCC Construcción in Central America has launched an awareness-building campaign on safety and health. “Primero la Vida” (Life comes first) aims to create awareness by disseminating, through different capsules and messages, the most important aspects of safety and health.

The first message of the campaign emphasises the use of the safety belts in personal and cargo vehicles and aims to build

awareness among drivers that buckling the safety belt can save lives.

As part of the campaign, posters were distributed in Panama, Costa Rica and Nicaragua and stickers referring to the campaign were pasted on vehicles.

Besides this visual support, a course was organised for the teams with the objective of making them become involved in an issue that could mark a difference in their work day.

This initiative is part of the occupational safety and health plan launched in the pro-

**PONTE EL
CINTURÓN**
PRIMERO LA VIDA



jects currently being executed in Central America. FCC maintains strict safety and health controls so as to reduce hazards and to make workplaces safe.

Do your eyes feel **dry**?

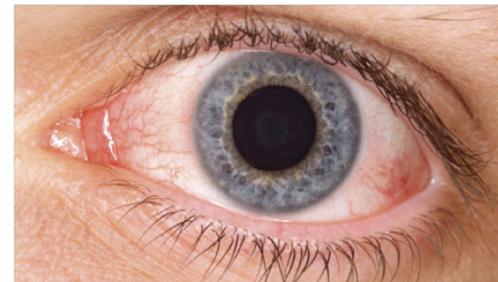
Did you know that...

- It is necessary to differentiate between the “Dry Eye Syndrome” and eye dryness, since the former is a pathology that must be diagnosed and treated by an eye doctor.
- It involves a reduction or alteration of tear production.
- It is very common in women due to hormonal changes and, therefore, alterations are common during adolescence, pregnancy, breast-feeding, and menopause.

- Tear production could diminish due to the use of computers or by spending too much time looking up close during working hours.
- There are several types of eye drops to mitigate the sense of dryness. Nevertheless, it is necessary to choose the right one. The use of eye drops not adapted to a patient’s actual needs could even increase the symptoms.

Go to your eye doctor if...

- Your eyes are red, itch, burn, you have cloudy or tired vision, etc. The sense of dry eyes may not be noticed since this could be the cause of your symptoms.



- You start to notice that you cannot tolerate your contact lenses as you did before. These can be adapted to ones that you can use longer and are more comfortable by choosing the material that are most suitable to your needs.
- If you experience symptoms associated with the screen of your computer, tablets, etc., such as headache. By improving tear production, these symptoms could diminish.



Anisakis, a hidden parasite

Nieves Casado Escribano, a professor at Universidad de Alcalá and with a degree in parasitology, sent us this video so that we could prevent Anisakis parasites. Many people are not aware of it as evidenced by the numerous cases that are being detected.

One of the most important measures for controlling this infestation, is to inform the population on the risks of eating fish that is either raw or undercooked which contain life larvae. The video aims to make it possible for people to identify this parasite in the fish that they buy and bring home and, most importantly, to learn about the measures that should be taken to prevent anisakiasis infection.

The video shows how these parasites may be present in the fish that we eat every day, how to eradicate them, and the possible consequences of ingesting these parasites.

Anisakis poses a risk for human health in two senses: though the infection caused by eating fish that is not cooked or through allergic reactions to the chemical substances that these worms leave in the fish.

About anisakis

Anisakis is a parasite that can be found in fish. Its larvae enter the human digestive system when we eat raw or undercooked fish and could prevent digestive disorders and allergic reactions that could often be quite serious.

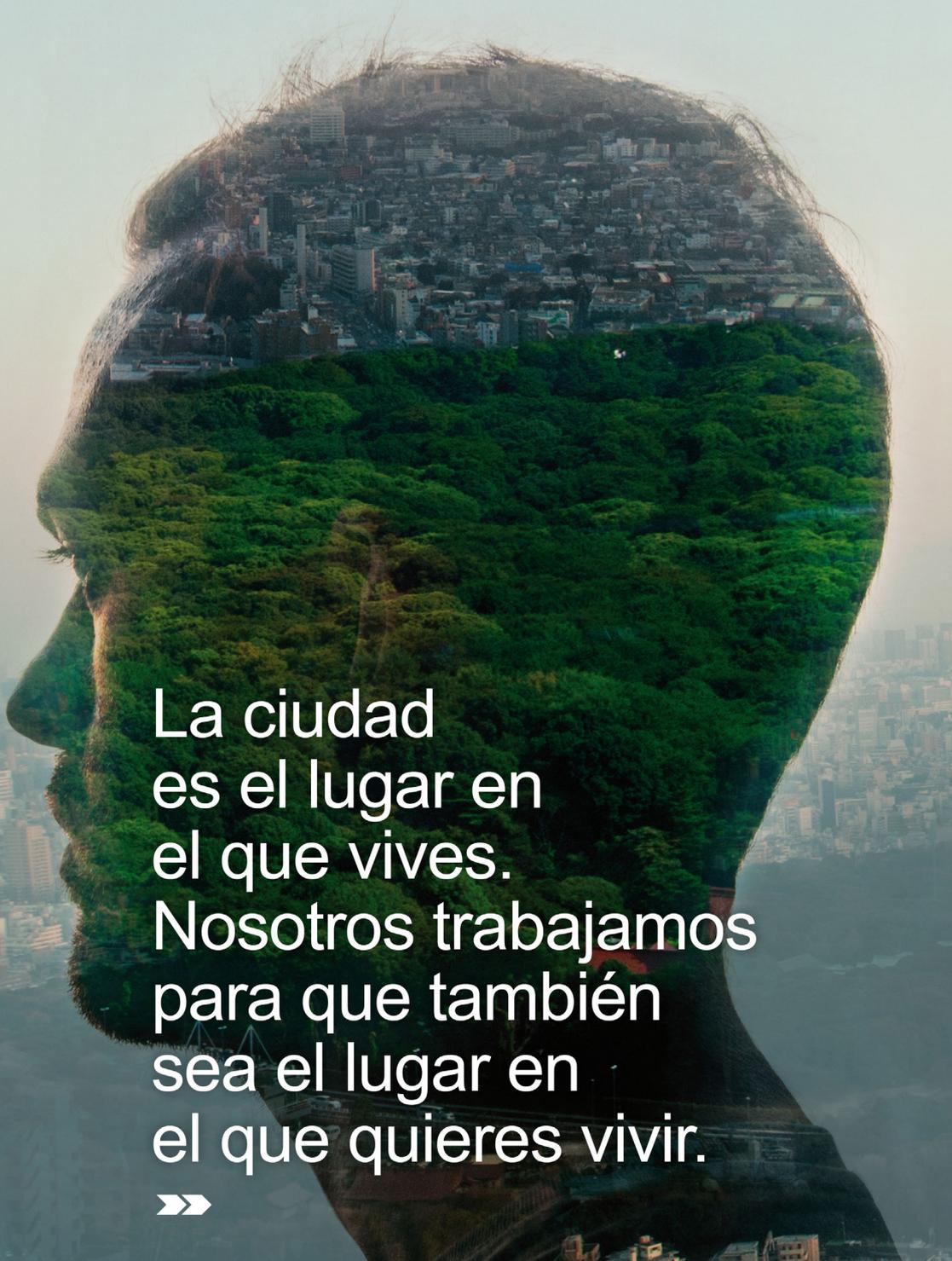
Human anisakiasis is a public health problem and has been increasing in recent years. The guidelines for reducing the risk involves the entire food chain, from the practices of capturing or collecting food and its subsequent handling, to recommendations for consumers.

What happens if we ingest this parasite?

When we eat raw fish or fish that has not been cooked sufficiently, the larvae of the worm, still alive, could penetrate the organism and attach itself to the digestive tube. The infection could also occur when we eat smoked or dry fish or fish that is cured in brine.

The countries with the highest rate of this disease are those that consume the most amount of fish, such as Japan, associated with the consumption of sushi; Scandinavian countries, because of cod liver; Holland, due to mackerels; and in Latin America as a result of the consumption of ceviche. In Spain, it is particularly associate with the consumption of hake, anchovies, and sardines.





La ciudad
es el lugar en
el que vives.
Nosotros trabajamos
para que también
sea el lugar en
el que quieres vivir.



En FCC trabajamos día a día gestionando el agua, encargándonos de la limpieza viaria y del mantenimiento de las zonas verdes; así como de los residuos, algunos de los cuales los convertimos en fuente energética. Cada día más ciudadanos cuidan el lugar donde viven y así mejoran la calidad de vida de todos. Y nosotros colaboramos a que se sientan orgullosos de su gran hogar.

Lo estamos haciendo juntos.



Knowledge

FCC supports

the Ministry of Agriculture, Food,
and the Environment



in the fight against climate change

Collaboration signees:

FCC Medio Ambiente, Castile-León Branch
Office: Javier Rivas and Javier Vázquez de
Prada.

FCC Medio Ambiente, Coordination and
Development Department: Catherine Milhau
and María Elena Mínguez.

On 3 February, the manager of the Castile-León branch of FCC's Environment Division, Javier Rivas Gavela, and the Ministry of Agriculture, Food, and the Environment

MAGRAMA) signed the sales agreement for the verified reductions of greenhouse gas emissions (GGEs) generated by the project "Degasification of the controlled deposit of solid urban waste of Gomecello (Salamanca)", chosen as a Climate Project. Over the next four years, the Ministry will purchase the reduction achieved of GGEs which will total approximately 400,000 Euros.

Wager for new opportunities: the Climate Projects

The Climate Projects are promoted through the Carbon Fund for a Sustainable Economy, FES_CO₂, created pursuant to Act 2/2011 of 4 March, on the Sustainable Economy



Signature of the Project /Climate 2014 Project. At the centre, Susana Magro, Manager of OECC next to Javier Rivas and Alfredo Sanchidrián of the FCC Medio Ambiente branch in Castile-León.

and governed by Spanish Royal Decree 1494/2011 of 24 October. The objective of this initiative is to encourage the reduction of greenhouse gas emissions in sectors not regulated by the Emission Trading Rights UE ETS) in Spain ("diffuse sectors").

This incentive implies a payment for the reduced and verified tonne of CO₂ (tCO₂) which FES-CO₂ makes to the developers of each of the selected Climate Projects. In the 2014 edition, the payment was fixed at





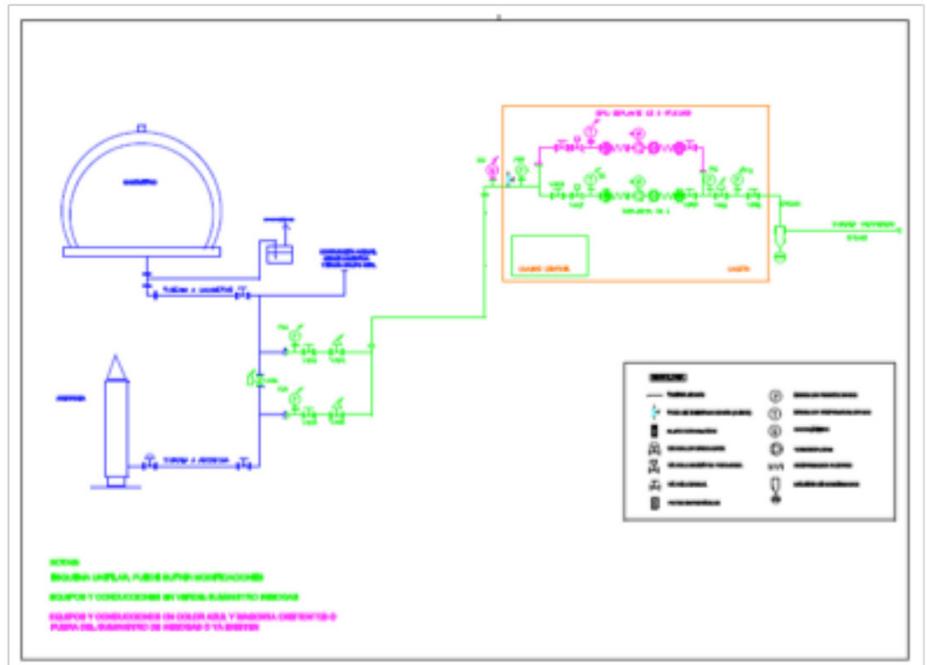
Aerial photograph of the complex and the outline of the connected degasification system.

7.10 € per tCO₂e during the first four years of the life of the project.

If the 128 climate projects that were selected in the first three editions, only 9% pertains to GGE reduction initiatives at solid urban waste treatment and elimination sites and, of these, half were promoted by private companies.

FCC is ready

FCC's Environment Division was able to wager on the Climate Project (FES CO₂) initiative sponsored by MAGRAMA in February 2014 thanks to the work carried out in calculating and monitoring GGEs as of 2002 with the implementation of the EPER Register (since 2008, PRTR – European Registry of Contaminating Emissions and Transfers), as well the knowledge and expertise in landfill site decontamination and the recycling of biogas of the waste treatment and elimination technicians.



The State Registry of Contaminating Emissions and Sources, PRTR, is a tool that makes it easier for the public to have access to information on the emission and transfers of contaminants and waste who live outside the area where the industrial installations are located. It also makes it possible to monitor the evolution of the situation, show the progress made in reducing contamination, define the priorities, and assess the progress made. This registry applies to the landfill sites that we manage and which comply with the following specifications: “Landfill sites for

all types of waste that receive more than 10 tonnes per day or which have a total capacity of more than 25,000 tonnes, excluding landfill sites for inert waste”.

The Coordination and Development Department of FCC Central Services, jointly with the direct collaboration of the managers of the landfill sites, calculate every year the

emissions of the landfill sites managed by the company in order to report these to the State Registry of Contaminating Emissions and Sources (PRTR).

The quality of the results obtained has improved over the years and as a result of the experience acquired thanks to the use of calculation methods based on internationally recognised prestigious models that make it possible to align the model to the specific characteristics of each waste elimination installation. These calculation methods have been certified by several scientific entities such as the Centro de Investigaciones Energéticas, Medioambientales and Tecnológicas (CIEMAT), Universidad Autónoma de Madrid and Universidad de Huelva.

The protocol for monitoring and for analysing the information gathered at each landfill site, in-depth and personalised, enables us to calculate with precision the future production of methane gas. In this way, we can detect those facilities with high energy potential and wager on viable biogas energy recovery that make it possible to reduce greenhouse gas emissions and promote the generation of renewable energy.

The chart below shows the trend in the reduction of greenhouse gas emissions and energy generated from biogas at the landfill sites managed by FCC Medio Ambiente in Spain:

Monitoring all of these parameters will ensure the implementation of a strategy for reducing the carbon footprint of the organization, reliably and efficiently, in which methane emissions correspond to 43% of Scope 1.

Citizens, companies and authorities of Ávila committed to the reduction of CO₂ emissions

Separating waste, maintaining the schedule for depositing such waste, controlling the consumption of water and other changes are key steps for reducing CO₂ emissions. That is the way things are being done in Ávila, the first city in Spain where FCC is working on assessing the load of carbon dioxide emissions of companies and individuals.

Catherine Milhau, manager of the Coordination and Development Department of FCC Citizen Services, unveiled this initiative at the 18th Seminar on Innovation and Sustainability, "The Environmental Footprint in Urban Services" which was organized last March in Ávila, jointly with the city's mayor, Miguel Ángel García Nieto.

In her speech, "Ecoefficient Management of Services", Milhau explained the Company's work on the study of the environmental footprint produced by the

daily waste collection, street cleaning, gardening, irrigation, and other activities in a city. The aim of this project, promoted by the European Commission as part of the European Covenant of Mayors, is to reduce CO₂ emissions to air by 20% by the year 2020.

The FCC executive highlighted the importance of education and residents' involvement in preventing emissions. "Measuring the carbon footprint in order to reduce greenhouse gas emissions, besides representing an environmental improvement for companies and the population, is also economical", she underscored.

For many years, the Citizen Services Group has been involved in sustainable development, a commitment that, as Milhau explained, can be "confirmed quantitatively and is not a mere philosophical concept".

The European Compact of Mayors aims to encourage the cities and towns of the European Union to improve their energy efficiency, increase the production of renewables, and improve the management of urban solid waste by reducing CO₂ emissions to air by 20% by the year 2020. This compact is, therefore, a political commitment to achieve a reduction of CO₂ emissions jointly with other players.





As follows from the aforementioned, FCC's Environment Division has the experience and the appropriate tools for promoting the "Degasification of the controlled deposit of solid urban waste of Gomecello (Salamanca)" project and see its project selected in the "Climate Project 2014" edition.

Technical description of the "Degasification of the controlled deposit of solid urban waste of Gomecello (Salamanca)"

The CTR landfill site in Gomecello is owned by GIRSA (Consortio para la Gestión Integral de los Residuos Sólidos de la Provincia de Salamanca) and is operated by FCC. This landfill site contains 598,516 tonnes which have been dumped there from 2007 to 2013, estimating a figure of 1,038,760 for 2018. These tonnes of waste contain a percentage

of biodegradable material that could produce methane under anaerobiosis conditions. Under the current pre-project conditions, methane produced by the breakdown of the waste is sent to the atmosphere since this landfill site does not have an active system for capturing biogas.

The objective of the project is to capture the biogas produced at the landfill site of the Gomecello waste treatment plant (WTP). The entire zone of the waste deposited from 2007 to 2013 will be degasified over the coming years. This will be performed by drilling new vertical wells and/or by digging horizontal wells to maximise the capture of biogas in the entire site. The system of interconnected wells will channel the biogas to a collection station for its subsequent energy recovery and the surplus gas will be burned in a torch. These biogas combustion system will oxidise the methane within the system thereby preventing emissions to air.

In order to decide the most suitable solution for treating the biogas at the WTP in the Gomecello landfill site, tests were performed at the site last June based on preliminary studies to learn about the energy potential of the biogas and determine its possible recovery, also learning about the needs of the electricity generation engine at the biomethanisation plant and the energy consumption of the waste treatment plant. The conclusion arrived at was that approximately 10% of the

biogas could be recovered and the rest will be burned, although this is just a preliminary estimate and there could be more that could be recovered.

Based on these preliminary studies and the information obtained in the test, a project for degasifying the landfill site has been designed with the technical advice of the Treatment and Elimination of Waste Department of FCC Medio Ambiente and the work to be performed has been awarded to the company Inbiogás.

Pioneer and unique water management project in Europe

Smart Water Santander



Nueva Montaña pilot zone where the Smart Water project was deployed.

FCC Aqualia has been providing services to Santander pursuant to an administrative concession agreement dating back to 1 April 2006. The objective of the above-mentioned agreement is the administrative concession for the management of the city of Santander's Water Supply and Sewerage Service for a 25-year period.

This service is provided to 100,050 clients and supplies water to a population of approximately 178,500 inhabitants in Santander. In the nearly nine years of activities in Santander, FCC Aqualia, jointly with the City Council of Santander, has made major investments for improving, enlarging, and upgrading the infrastructures and in technological implementations that have resulted in a significant improvement of the services provided.

Over the past few years, the City Council of Santander has been promoting technological innovation as an essential aspect for the city's economic development. These efforts in the water sector have resulted in the

Smart Water Santander Project, developed by FCC Aqualia, which implies an extraordinary step forward in water management.

Example of the management change (Chart 1)

During the first half of 2014, a project was implemented in a pilot neighbourhood with more than 1,100 clients (about 5,000 users) which are benefiting from this new service since the project, implemented here almost a year ago, is completely finished and 100% in operations.

The deployment of a network of sensors, whose data are hosted in a software platform, makes it possible to predict the performance of the supply and sanitation

Gráfico 1





Íñigo de la Serna (right), mayor of Santander, the key player in the “Smart Water” presentation.

systems, monitor the quality of water, and know the figures of each supply point in real time, thereby enabling the development of advanced business management strategies.

The sensors installed can be classified into two types:

- Network sensors.
- Household sensors that enable the remote reading of the users’ consumption in real time.

FCC Aqualia, based on the first types of sensors, is able to know in real time all the functional parameters of the Supply and Sanitation network.

- Global input flow to the sector.
- Input pressure in the sector. By adapting this pressure to the existing level of consumption at each moment, in an autonomous M2M manner, implies enormous benefits in parameters such as the reduction of leaks, energy savings and, in short, a more sustainable management of the system.

The chart below, obtained from the software platform shows how the water pressure is adjusted at all times to the input flow

demanded by the network, all of which is done automatically (Chart 2).

- Parameters of the sanitation network, such as the level of the collectors and gutters.
- Parameters of service quality, chloride, PH, turbidity and conductivity.
- Functional parameters of the mechanic elements of the system, such as the wastewater pumping stations.

The aspects described above represent the complete monitoring of the networks which means that the management company, in this case, FCC Aqualia, is able to

Gráfico 2

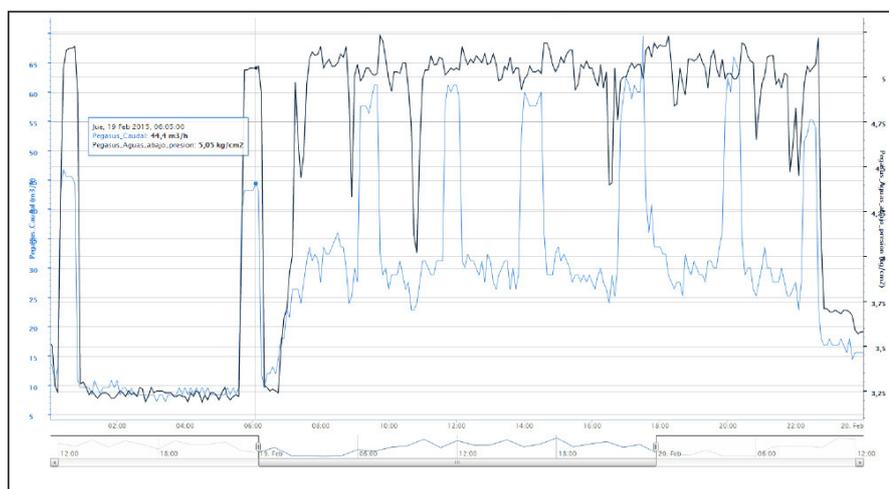
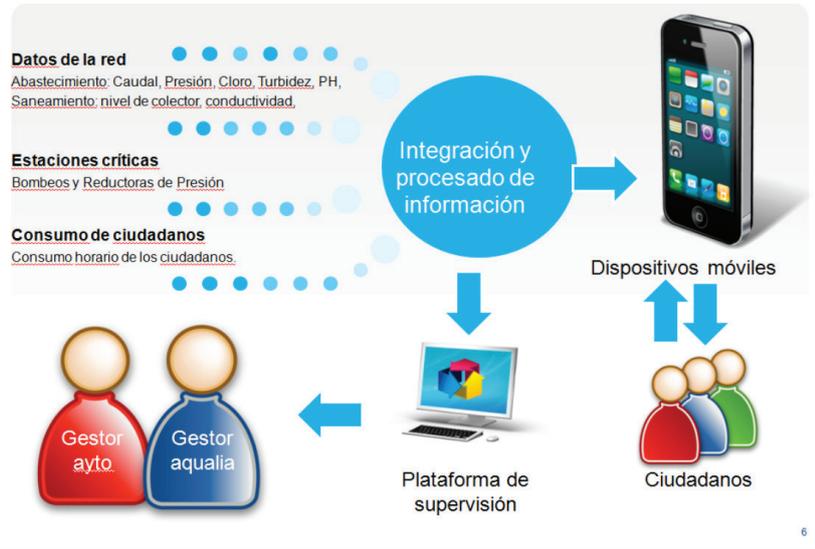


Gráfico 3



Gráfico 4



obtain a large amount of quality information the treatment and analysis of which is making it possible to considerably improve the services provided and the possibility of making this information available to the user through an application for their smartphones and tablets, information that was not put at their disposal previously.

By merely downloading this totally free app, users in Santander will have the following at their disposal:

- Their consumption curve over their chosen period, with a minimum one-hour gap, which means that, instead of having 4 consumption data, they can now have 8,760 data on an annual basis.
- Compare their consumption in the different periods that as determined by the users.

- Compare their consumption in relation to the average consumption in their neighbourhood which implies an important initiative by knowing their water expenses and to assess this situation.
- Water quality data in real time.
- Two-way communication in real time between the user and FCC Aqualia. This means that the user can send a message or report any type of incidence and this means that FCC Aqualia can immediately implement the protocol, and vice versa, since the app provides the user with a mailbox for receiving messages such as: notice of service interruption, billings, notices on excessive consumption, etc. (Chart 3).

The outline of the management model is as described in Chart 4.

The future of Smart Water

Thanks to the success and excellent acceptance of this project, the second phase is currently being developed. This phase involves the implementation of the sensor system in another neighbourhood in the city, expanding the coverage of this new service to another 1,200 inhabitants, incorporating new utilities that are being prepared for the app. Perhaps one day, this system will be expanded throughout the entire city of Santander.

Conclusions

The urban development of cities is moving towards a future where new technologies will be completely implemented to provide more information and to encourage the participation of all consumers, all of which will result in more efficient, smart, and sustainable cities.

El agua es sinónimo de vida. Y para nosotros también de innovación, responsabilidad y compromiso.



En FCC, a través de Aqualia, llevamos mucho tiempo trabajando en el ciclo integral del agua en más de 1000 poblaciones de todo el mundo. Pensando en sus millones de habitantes, incorporamos las últimas tecnologías que facilitan una gestión eficiente y sostenible. Y así, entre todos, haremos de cada ciudad un lugar mejor donde vivir.

Lo estamos haciendo juntos.

www.fcc.es

 aqualia


Servicios Ciudadanos

Guest-column

By: **María Jesús Kaifer Brasero**
Technical Manager – Industrial waste

FCC maintains its leadership positioning in soil decontamination

Through its specialised subsidiary, FCC Ámbito, FCC maintains a leadership positioning in a field as selective as that of soil decontamination.

An article was recently published in the magazine which explained in detail the project being executed in Sabiñánigo (Huesca), where more than 200,000 m³ of waste, consisting of Lindane mixed with the soil, were transferred and treated.

This is yet another example of an industrial activity that was carried out even before there were any environmental laws and, therefore, the waste resulting from the production process was not contemplated as part of such process.

Industrial waste is not always a small part of the manufactured product; often the relationship is 1 to 1 or even higher. Hence, in the case of Lindane synthesis, one of the three isomers that were produced could be sold and the remaining two were considered waste which was handled incorrectly.

Currently, even some of the industrial processes continue to produce a large amount



of waste, the cost of its management is part of the process and it is the industry's responsibility to ensure that this waste is handled in accordance with the environmental laws in force.

Most of these environmental liabilities originating in industrial processes which were found near urban centres have been removed and managed and the new value of the soil made it possible to tackle the removal

of the waste, its correct treatment, and the subsequent urban planning of the site.

Nevertheless, when the liability is situated far from a city, it is difficult to recover it unless public initiative is involved.



“ Laguna de Arganda is one of the sites where acid sludge, generated by the used oil recycling industry, was deposited

”

Last April, FCC Ámbito was awarded another contract for cleaning another liability, in this case, Laguna de Arganda, in a project put out to tender by Tragsa which, in turn, was entrusted with this project by the Madrid Autonomous Community.

Laguna de Arganda is one of the sites where acid sludge, generated by the industry involved in recycling used oil, was deposited. Part of the process consisted in the acidification of the oil in order to remove the products resulting from its breakdown.

The waste generated by the process, acid tar, was deposited in holes that were excavated in the ground and, in this case, in a former quarry. The acid tar was gradually seeping into the soil and replacing the underground water

This site remained as such since the 80s and was part of the inventory of contaminated soil of the Madrid Autonomous Community. Its upgrading has begun and, in a first phase, the waste will be pumped out and transported to the cement plant for its recovery.

Work began in May and will be completed over the next two years.

FCC Ámbito, through its subsidiary Eco-deal, is also performing this type of work in Portugal. It recently started to upgrade the San Pedro de Cova landfill site, a former coal mine situated in Gondomar (Oporto) where hazardous materials had been deposited.

Ecodeal is currently performing a selective excavation of this waste and expects to remove more than 100,000 tonnes of waste which will be transported to its Comprehensive Hazardous Waste Management installations in Chamusca. There, after the waste has been stabilised, it will be deposited in a safety cell.

The Place

Wastewater Treatment Plant (WWTP) in Ávila





The rebirth of water





Water is one of the most appreciated elements, if not the most. Investing in infrastructures for its maintenance and in measures for its protection is the same as investing in ourselves.

We use water at home for many purposes. When it enters the pipes, it travels through the sewerage network that take the domestic and industrial wastewater to the treatment plants where the hydrologic cycle begins, an essential water recycling process.

One of these plants is the Waste Water Treatment Plant (WWTP) in Ávila which was built in 1990 and has been in operations since 1991. The plant is situated at a site at an altitude of more than 1,100 metres, in a promontory on the right side of the banks of

the Adaja River, the second most important tributary of the Duero River after the Tormes River.

The objective of this installation is to treat wastewater and return it in optimal conditions to the river after removing contaminants such as solid particles in suspension. At that time, it was designed based on 1987 and 1988 figures, and its management capacity was 13,500 m³/day, equivalent to the water consumed by 45,000 inhabitants. The city grew, however, to its current population of almost 60,000 inhabitants and the treatment plant required upgrading to provide better services to Avila's residents.

Growing with the city

As the city of Ávila grew, the wastewater treatment plant required improvements in order to be able to provide an efficient service. In 2002, it was necessary to enlarge the plant and to perform some upgrading work since the ventilation and treatment system became somewhat obsolete.

The last refurbishment of the plan was in 2014 when its treatment capacity was increased to 30,000 m³/day, equivalent to a population of 125,000 inhabitants, and is prepared to reach a total of 37,500 m³/day. In annual terms these figures increase to 11 million m³, equivalent to 350,000 inhabitants. The plant is currently one of the largest in Spain in respect to its treatment capacity.

”

It is also one of the first wastewater treatment plants that purifies 100% of water with hollow fibre membranes (MBR), an advanced technology system installed in the last refurbishment to ensure the highest water quality. As explained by Jaime Lobato, the manager of the Ávila plant, the ultrafiltration technology with membranes is a physical treatment



“ One of the largest plants, with a treatment capacity of 30,000 m³/day, equivalent to a population of 125,000 inhabitants





Water line



Sludge line



by which water passes through the porosities of the membranes. “This way, all the contaminants in the water which are not filtered by the pores, remain trapped and quality of the water is exception, ensuring the maximum quality”, Lobato explained.

These hollow fibre membranes contribute to achieving this double objective and also make it possible to return the water to the river in perfect conditions. Jaime Lobato, who has been working at the plant for seven years, remembers that it was not that long ago that the treatment was quite different. “The primary decanters are now lamination tanks; that’s one of the changes in the process”, he said. “Settling decanters were installed which do what the former ones used to do. The ultrafiltration with membranes was installed in the secondary decanters”, he added. The entire aeration system was replaced with fine air bubbles so that it is possible now to aerate whereas before, the-

re were beaters in the surface that merely beat the water.

Water under control

Applying new technologies not only ensures the quality of the water and the functioning of the plant; it is also essential to be able to pass the strict controls of the Ministry of the Environment as well as other controls. Workers are an essential part of the process and FCC Aqualia has a highly qualified team and the most innovative material resources in the market to perform any type of analytical tests required by the Administration.

Twelve people work at the wastewater treatment plant throughout the entire year, 365 days, in the morning, afternoon, and night shifts. This ensures the proper functioning of the plant and its maintenance. It also ensures that the water poured into the Las Cogotas (58.8 Hm³) and the Fuentes Claras (0.8 Hm³) reservoirs comply with the mandatory health guarantees.

Special administrations have been created to handle water resources, specialised in the protection and the sustainable use of water, a trend that has been reinforced with the implementation of measures and by organizations such as Confederations, UNESCO, State Water Companies (Acuaes and Acua-Med), and others, all of which ensure the fulfilment of the two principles.

Beyond water

Another essential part of this process is the management of resources to increase energy efficiency and self-sufficiency. Sludge and biogas, two of the by-products obtained in this cycle, are totally used.

“ Everything that passes through those pores remains there, ensuring the highest quality of the water that comes out ”

From water up to the last protozoa, everything passes through the laboratory's magnifying lens

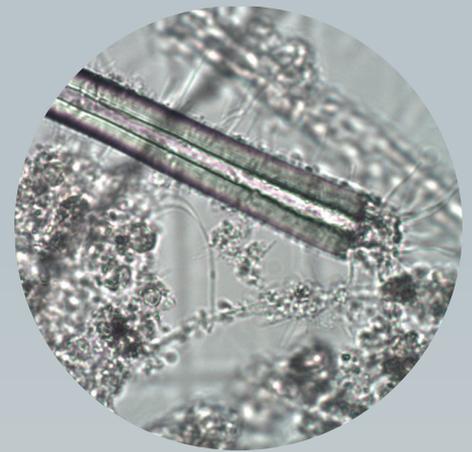
By José Luis Arribas,
Manager of the WWTP laboratory
in Ávila

One of the essential elements of a WWT is a laboratory, where more than 29,000 tests are performed of which 6,500 relate to sludge and soil as required by law. Also mandatory are the tests for industrial waste which total a minimum of 24 samples of effluents each year. Official organisations can take samples without any prior notice whenever they deem it necessary and, accordingly, the laboratory is always ready to demonstrate the strict controls implemented at the Ávila WWTP.

1. The main controls performed at the laboratory are as follow:
 - a. Analysis of the inflow and outflow water.
 - b. Control of intermediate process. Physico-chemical control and microbiological study to detect organisms.
 - c. Control of the sludge and gas lines. The amounts of solids, the pH, alkalinity, acids, etc. of the sludge is analysed. The proportion of methane, CO₂, hydrogen sulphide, hexane, and other substances in biogas are tested.

- d. Samples and control tests of the waste originating in industries as well as the leachate from the provincial landfill site.
 - e. Control waste discharged in the river.
2. Legally mandatory tests of sludge and soil used in agriculture. The WWTP of Ávila performs this function for all of Castile and León, analysing approximately 800 samples of soil and 100 samples of sludge, pursuant to Spanish Royal Decree 1310/1990.
 3. Legally mandatory tests for controlling the other 25 wastewater treatment plants in Ávila, Segovia and Soria.
 4. Eutrophication tests in reservoirs and rivers to determine the amount of algae in the water supply to prevent management problems at the potable water treatment plants as well as odours and taste.
 5. Control of the natural sources not connected to the Ávila service. This is done for recording these tests, issuing reports,

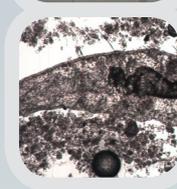
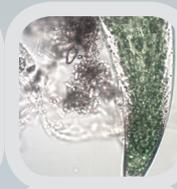




and for downloading the information in Aqualia's and the City Council's website, making them available for consultation.

6. Control the quality of potable water at the branch office, control of incidences, performance of water quality inspections and implement measures whenever water quality problems are detected.
7. Provide information and welcome visitors to the WWTP or to certain departments.
8. Tests that are not usually performed in other laboratories such as microscopic controls:
 - a. Determining the amount of algae, diatoms, cyanobacteria, green algae, etc. mainly for controlling water supply, the lagooning system, and for determining the ecological quality of rivers and reservoirs as contemplated in the Framework Standard.

- b. Calculating the amounts of macro invertebrates especially for determining the ecological quality of the rivers.
- c. Determining the species of microorganisms that generate problems in respect of treatment, odour, taste, and the toxicity of water (some types of algae, protozoa, or small metazoa).
- d. The microscopic state of the aeration basins to determine the origin of functional problems such as the appearance of scum or bulking.
- e. Toxicity tests based on bioluminescence are also performed.



As Jaime Lobato explained, with the refurbishment completed in 2014, a gasometre (reservoir) was created to store surplus biogas, most of which is methane gas, which is used to generate part of the electricity used at the plant (specifically, in the control and monitoring) after burning it in a generator engine. Over the course of 2015, another part of the station will start operations and it is expected that the sludge will be heated more efficiently, producing more biogas and thereby generating more electricity for the plant.

The sludge is also used. Each day, six ten-tonne trucks come to the plant to collect this material, converted into fertilizer, and distri-



bute among farmers who use it to grow cereals. Three-hundred tonnes of this material are produced every week. It is used in the land that is also irrigated by the same water from the nearby reservoirs which collect the treated water.

This is how the cycle ends, where nature, technological innovation, and men work together to ensure that this good can be reused with an optimal quality and, after subsequent processes, can be consumed by the residents of Ávila.

The functioning of a WWTP

Wastewater treatment plants collect water from the sanitation network and returns it to the riverbed with the suitable contamination parameters. These waters, when discharged, are not always totally clean, that is, the water is sometimes discharged into the river with certain parameters that are calculated so that the contamination is eliminated in a natural fashion. This is called natural wastewater treatment which is constantly produced in all rivers, brooks or lakes.

In the case of the Ávila WWTP the process is as follows:

- Before arriving at the plant, water is subjected to an external preliminary treatment which involves the filtering through a screen with 7cm holes to remove the largest pieces of waste (tree branches, stones, wood, cork, plastic materials...). This phase is essential to ensure the appropriate functioning of subsequent processes and to protect all of the plant's electro-mechanical equipment.
- The water flows by gravity into the WWTP. From there, it is pumped to a height of 10 meters so that it can flow on its own weight through the remaining parts of the treatment.
- Water first goes through a preliminary treatment where it is broken down, filtered, and the sand and floating particles are removed. Larger than 3 mm waste particles (stones, sand, food, paper, plastic, cotton swabs for cleaning ears...) are sent to the local landfill site.
- Water then goes through the primary treatment where it flows into primary cone-shaped decanters where solids which are dissolved or in suspension are removed at the bottom and narrow part of the cone.
- It then passes through a rotating drum screen (1mm perforated mesh) for its filtering and then goes to the biological reactor, the heart of a wastewater treatment plant. Several microorganisms – an actual ecosystem – lives in this reactor. They feed on the organic material dissolved in wastewater. Processes for eliminating nutrients (nitrogen and phosphorus) are also implemented.
- For peak flows, separating tanks are used to store water which is subsequently treated when the flow is reduced.
- After passing through the biological reactor, a blower is used to inject air



Jaime Lobato, manager of the Ávila plant.



“ The enlargement has resulted in increased treatment capacity and the replacement of equipment ”



in the aeration basins. This novel rotating machine does not have any bearings and has, instead, bearings and several magnets which makes it levitate thereby avoiding friction and reducing energy consumption.

- The surplus sludge - formed by the microorganisms generated in the biological reactor – and the solids removed during the preliminary treatment, are introduced in the 4,500 m³ anaerobic digester where several reactions take place to produce the digested sludge (future fertilizer) and biogas.
- Lastly, the water passes through an ultra-filtration system in the hollow membrane reactor (MBR) with pores measuring 0.035 microns, which totally eliminate the suspended solids before discharging it into the river.
- The plant has an ultraviolet installation which makes it possible to leave the water ready for use again thanks to a radiation process that damages the genetic structure of bacteria, virus, or other pathogens which eliminates their reproductive capacity.



A pioneer project in Costa Rica

Metropolitan outflow for the treatment of wastewater



The metropolitan area of the city of San José in Costa Rica requires the treatment of wastewater which is currently discharged into several rivers. As a result of this situation, there is an initiative by the Instituto Costarricense de Acueductos and Alcantarillados (AyA), of executing a mega-project for treating wastewater and reducing the level of contamination of the rivers that flow through the city.

FCC Construcción is currently building the metropolitan outflow of the city of San José which will make it possible to transport wastewater to the collectors in the north and south of the plant for its treatment in the Los Tajos WWTP. This mega-project will benefit the more than 450,000 residents and will provide a flow of 7,281 litres per second.

Oscar Rodríguez, the project manager, explained that this outflow will have a “length of 3,100 meters parallel to the Torres River”. The engineer added that “contribution of the outflow to the communities in the metropolitan area of San Jose is significant since it is a pioneer program nationwide for the

treatment of wastewater since the aim is to treat the wastewater from the city which is contaminating the neighbouring rivers”.

Safety, health and environmental plan

The head of the Health, Safety and Environment department of the Outflow Project, Rodrigo Lazo, explained that the project is based on FCC's General Safety Plan. Lazo said that the outflow project is simple, but important because of the hazards entailed since it is necessary to perform excavation work and also work at heights as well as other tasks that require strict controls.

The safety measures implemented include talks aimed at the employees who enter the project site for the first time; weekly training courses of safety; preliminary inspections of the sites where work is going to be performed, and the installation of signals.

In addition, during the execution of the work, several environmental measures will be implemented, including a reforestation plan and a humidifying plan to minimise the amount of dust to which workers in the field are exposed to as well as the population living 100 to 200 metres from the project site.

Social responsibility

Since the project involves channelling through the centre of the city of San José, FCC and AyA meet periodically to inform the neighbours of Carvajal, Solar, and Flor Natalia of when the traffic will be interrupted and on the work schedule to mitigate any possible inconveniences for the residents caused by traffic congestion and noise.





Quality at FCC projects

The quality processes at FCC projects are also strict. In this sense, the engineer Saraí Solís, Quality technician at FCC explained that 2 several controls and quality processes are implemented, just as in any other project executed by FCC". She highlighted one of the aspects, "the control of the temperature of concrete which cannot exceed a temperature of 32°C, applying this to all the structures which are part of the project and one of the requisites of AyA."

Another important aspect is the installation of pipes made of PRFV and malleable ductile iron. The engineer explained that from the moment that these pipes arrived at the project, several aspects were examined, such as the diameter, thickness and physical aspect to verify that they complied with the specifications of the project's owner.

In this way, FCC will contribute a project which will be of great benefit for the well-being of people, all of which is achieved thanks to the teamwork and technological capabilities with a permanent seal of quality.

