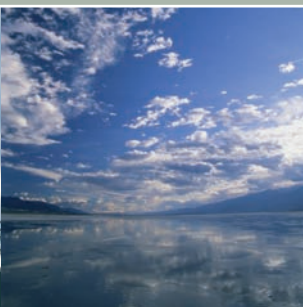
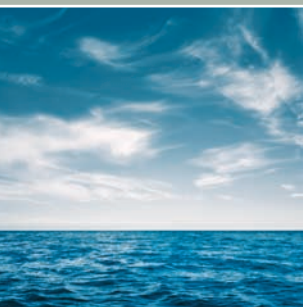




*Environmental Report* **2005**

*Environmental Report* **2005**



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# *Introduction*



*In 2000, FCC Construcción presented its Environmental Report, the first in the building sector, and since then it has been published every two years. Last year, we were also the only building company in the world with a Sustainability Report, GRI "in accordance".*

*Our interest in communication has always led us to search for means to present society with the results of the efforts we make to understand and reduce our environmental impacts and, even more, the consequences of our actions on our surroundings (social, environmental and technological).*


*In order to maintain a more fluid contact over time, we have decided to alternate the publication of the Environmental Report and the Sustainability Report to maintain the dialogue and to provide those interested with more continuous information. Thus, we will continue to publish the Sustainability Report in even years and this one, more specifically environmental, in odd years.*

*In the search for new, more effective means of managing the environment, another important new aspect of this Environmental Report is the recently implemented mechanism for collecting environmental information from our projects by specific computerised means that provide more complete and fuller information more quickly, with greater reliability. We continue to refine the system.*

*Much remains to be done. We are aware of this. And this awareness is probably our best weapon for improvement. Knowing our medium and the possible effects on it allows us to act effectively to prevent them. We know the benefits that arise from our actions and it is necessary to evaluate them to be able to enhance those that provide a more positive balance in our environment.*

*We have made great efforts to promote good practices, which we see as a new way to build and to think and not a just an extra to traditional processes. When we build, we want to contribute to increasing well-being and to provide greater benefit to all those interested in our activity: to our surroundings. But we do not want to stop there. We do not want to limit ourselves to blind undertaking without being able to impose criteria, advise, support growth and prosperity. We want to contribute to the definition of what is a better world and for this we are involved in preparing sustainable building standards, participating in international groups, taking part in working committees, supplying what we learn and what we know.*

*Sustainable development is not an aesthetically convenient, fashionable expression. It is already a way of living in the world, an integrated strategy in our business, to guarantee our survival and our ability to create economic value, as well as an ethical undertaking with ourselves, with our shareholders, with society in general and with the planet itself.*



**JOSÉ MAYOR OREJA**  
Chairman of FCC Construcción

*Purpose of this document*  
*Environmental activity and policy of*  
*FCC Construcción*  
*The environmental management system*  
*The role of FCC in sustainable building*



## PURPOSE OF THIS DOCUMENT

The purpose of this report is to tell society about the actions carried out by FCC Construcción with regard to the environment, by summarising the most important aspects of the company's undertakings with regard to the management we carry out for our surroundings in an attempt to bring us closer to those who may be interested in our activities.

This is a voluntary declaration to show the progress in our activity and its relationship with the environment and to make us visible and understandable to those who are involved in or affected by it in whatever way, describing our environmental management within the process of continuous improvement in which we are immersed.

FCC Construcción wishes to use this environment report to promote dialogue with a wide variety of interested parties. The opinions and suggestions of our clients, employees, shareholders, suppliers and sub-contractors, government departments, universities, partners and the public in general helps us to improve the effectiveness of our actions.

After describing the company and its environmental policies, the report emphasises the importance of the environment as a strategic factor for FCC Construcción, within which it carries out its activities and whose variations and impacts directly affect them, as well its role within this changing and always undefined scenario of sustainability.

It identifies the main environmental figures for our activity and includes those more directly related with some of the most important environmental factors affected, before revising the main actions undertaken and the results from various areas of action.

Finally, and with the aim of improving our environmental behaviour by the use of good practices, it describes the efforts being made to reach a higher level than that required by legislation and other external undertakings, efforts which form the basis of the environmental activity of FCC Construcción and which are, one year more, the basic subject of this report.



*This is the 4th environmental report prepared by FCC Construcción  
See [www.fccco.es](http://www.fccco.es)*

## ENVIRONMENTAL POLICY AND ACTIVITY OF FCC CONSTRUCCIÓN

FCC Construcción is the company within the Fomento de Construcciones y Contratas, SA group that specialises in building.

Being responsible for this activity, it carries out a very wide range of work, both civil engineering and building, on which it stamps its seal of quality and seriousness in the development of and complying with its contracts. Its work includes the normal areas of building to which it applies the most advanced technologies while taking scrupulous care of the environment.

Since the building of the Gerona to Olot railway in 1909 to the various sections of the Madrid to Barcelona high-speed line; from the use in 1910 - for the first time in Spain - of tarmac surfaces and, in 1921, of asphalt, to the new terminal for the Madrid Barajas airport, FCC Construcción has been both a witness and protagonist in the development of building activity in Spain in the 20th century and has the will and means to continue to be so in the most outstanding way in the 21st century.

Large building work by FCC Construcción, such as the Picasso Tower and Puerta de Europa towers in Madrid, the World Trade Center in Barcelona and the Sciences Museum in Valencia have become reference milestone in the main Spanish cities. In just the 1990s, it built some 100,000 homes with a built-up surface area of 11,000,000 m<sup>2</sup>.



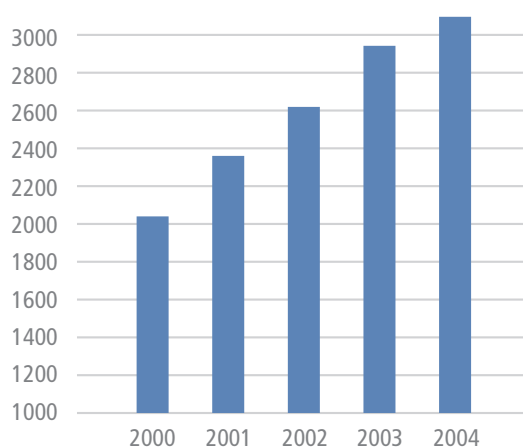
*Linear works always mean a sore spot in the landscape. However, a correct design, integration into the morphology, and adaptation of the route to the existing geomorphologic elements decreases the need for clearings and embankments, thereby minimising environmental impacts*

Since it was founded, the parent company has had a culture of diversification which is faithfully reflected in FCC Construcción, which is a majority shareholder in more than 40 national and foreign companies operating in the building sector in general, in engineering, infrastructures maintenance and concessionaires, to give some examples.

Its financial capacity allows it to participate in the most important bidding for government tenders, either for spread payments, total payment of the price or those financed as concessions, including toll motorways.

FCC Construcción's international activities over last few years have involved in many different types of work in Portugal, Greece, Italy, Monaco, Morocco, Canada, Mexico, Panama, Puerto Rico, Barbados, the Dominican Republic, Jamaica, Argentina, Chile, Peru and Colombia and it has started various activities in the eastern Europe.

CONSOLIDATED BUSINESS FIGURES (Millions of euros)



**ENVIRONMENTAL POLICY**

FCC Construccións activities with regard to the environment are centred on:

- Compliance with the laws, standards and the applicable company undertakings.
- The use of suitable planning to reduce important environmental impacts.
- Continued improvement using analysis and the minimising of environmental incidents caused by its activities and actions to prevent pollution, reduce waste and optimise the consumption of resources.
- The involvement of interested parties (clients, sub-contractors and our own personnel) in environmental management.

## THE ENVIRONMENTAL MANAGEMENT SYSTEM

Environmental management is carried out in all work contracted by FCC Construcción as well as in those premises of the company whose activities affect the environment, with the environmental function distributed throughout all levels of the organisation and its hierarchy and fully integrated in the company's management system.



As with the management of the company in general, environmental management in the FCC Construcción is organised into four basic levels: Sustainability Committee, Divisional Committees, Area Committees and Branch Committees. These include all the company's directors with the chairmen at each level being members of the committee in the next higher level.



The summary of the environmental plan for each project is contained in two basic documents:

### 370 "Environmental aspects and actions"

This identifies and evaluate aspects, actions to be carried out and references to development documents as well as the legislation applicable to each aspect.

### 371 "Environmental objectives"

This contains the good practices to be implemented in the project and their tracking. They go beyond external requirements - they are adapted to the project and the effort made is proportional to the effect achieved.

The development and implementation of both documents is integrated with quality and safety through the purchasing specifications, the building procedures, the work instructions and the inspection programmes directly applied in the project. The real commitment of all those involved in these processes is fundamental for the correct operation of the system and, therefore, both the workers and the external collaborators receive the necessary training and follow the directives set for this purpose in the project planning.

Environmental management is therefore fundamental to the prior identification of those environmental aspects that most frequently appear in our work.

In order to facilitate the identification and application of the measures to be adopted, aspect and actions are grouped and classified into the following categories: nature and landscape, water, dangerous substances, soil and sub-soil, noise and vibration, urban medium and land planning, atmosphere, wastes and environmental accidents.

Evaluation criteria have been developed for all of these regarding their effect on various types of work both by size (or intensity of appearance) as well as importance (or sensibility of the environment to their presence) which finally provides the degree of importance of each aspect which, as part of the integrated planning, is carried out in all projects.



*To support environmental management, a series of basic environmental management guides have been developed for building, roads, dams, canals and pipelines, maritime work and in others aimed at various types of action: management of emissions, noise and vibrations, tips, wastes, re-use and recycling in building, management of resources and actions in natural spaces, all designed for carrying out work with the greatest respect for the environment in which they are located*

Once the environmental aspects have been chosen and their potential impacts are known, and the most important ones for a project identified among them as a function of their properties and environmental conditions, the criteria have been defined for planning the actions in the project, uniform throughout the company, because only a joint and uniform action achieves real results while occasional and diversified efforts, while being praiseworthy at the individual level, cannot achieve either better building or better overall environmental behaviour in the sector.

Since it was implemented in 1998, the environmental management system has continued to grow and consolidate itself, with its influence extending to a wider concept of the environment, its actions deepening and increasing their undertaking and improving the quality of actions for our own satisfaction and that of society.

## THE ROLE OF FCC IN SUSTAINABLE BUILDING

FCC Construcción is immersed in a process in which sustainability is the background theme for all its activities, almost unavoidably. The aim is to constantly improve building to satisfy all interested parties as far as possible. The basic purpose of development is to benefit the public and its surroundings and this, which seems obvious when stated, has very important implications for carrying out our activity and it is necessary to understand it fully in order to act coherently with this idea.

In the now classical version of sustainability, social, financial and environmental interests are balanced with the idea that organisation, action and the design carried out survive over time with guarantees for the future and for the satisfaction of private and public interests. The concept is sufficiently wide to cover different aspects of reality and, therefore, to apply it to the planning itself.

There are directives and guides on this road which orient and propose specific guidelines for behaviour for better social, environmental and economical actions. Standards, methods, guides to good practices and criteria for "good building." It is here that we can decide where the world we build is more sustainable thanks to the infrastructures we provide and the work we carry out, whether the planet is more or less viable because of each action, each undertaking, in each project.

Overall planning must not lose sight of partial focuses so that it is necessary to harmonise all perspectives. Given that the building phase involves companies that have an important influence on the sustainability of the result, in FCC Construcción we have understood that sustainable building is achieved by a sustainable building company and we have set out to achieve this.

We have set up active communication channels with the interested parties and the achieving of results in the areas of safety at work, client satisfaction, collaborators and other interested parties. We have adopted the necessary measures to integrate our activity effectively in the natural world in which it is carried out. We have obtained satisfactory financial results, increasing activity and diversifying areas of action. All this has been carried out with the classical criteria of searching for a balance between the three components - financial, social and environmental - that allow these parameters to be sustained and improved over time.

But FCC Construcción's undertaking is not limited to the blind following of a series of externally inherited guidelines; we wish to contribute to the development of standards and



*In projects that produce important quantities of waste, such as tunnels, more sophisticated cleaning devices are sometimes installed for neutralising pH, decanting, sludge drying, etc, to meet quality requirements that are above those required*

recommendations that define the road to be followed. We wish to provide our knowledge and experience and to contribute to a better reality. Building that is more respectful of the environment, more sustainable, can only be achieved with clear directives in which we builders actively participate, suggesting possibilities, involving ourselves in the process and supplying answers and perspectives. A sustainable company acts in a sustainable way. This is a basic and necessary criterion. But, unfortunately, it is not sufficient. So that the external framework is also sustainable, it is also necessary to sustainably avoid carrying out unsustainable actions, for which reason FCC Construcción has also undertaken to define this exterior framework.

For this reason, FCC Construcción participates in many working areas to develop these necessary standards for sustainable building. It is currently involved in working groups within the ISO/TC 59/SC 17 Committee for Sustainable Building as well as in the Spanish AEN/CTN 41/SC 9 for "Sustainable Building."

European Commission mandate M/350 EN to CEN gave rise to the constitution of CEN/TC 350 "Sustainability of Construction Works," programmed for the "Development of Horizontal Standardisation Methods for the Evaluation of the Environmental Component in Buildings," and FCC Construcción is also involved in work being carried out within this area, within the "Environmental Performance of Buildings," "Building Life Cycle Description," "Product Level" and "Task Group: Framework" working groups.

A new working group (AEN/CTN 41/SC 9/GT 5 "Sustainability in Infrastructures") has recently been constituted within the Sustainable Building Sub-committee with the purpose of covering the matter of sustainability in civil engineering in general, the management of which is the direct responsibility of FCC Construcción.

As can be seen, the environment in which FCC Construcción's activity moves is also one of the company's concerns. We understand that locally responsible behaviour is not sufficient, that it is not enough to have a company sustainability perspective within a restricted meaning. That sustainability implies moving to the outside world and trying to change it, to define criteria and lines for action, policies to make this world more human, more durable, more sustainable.

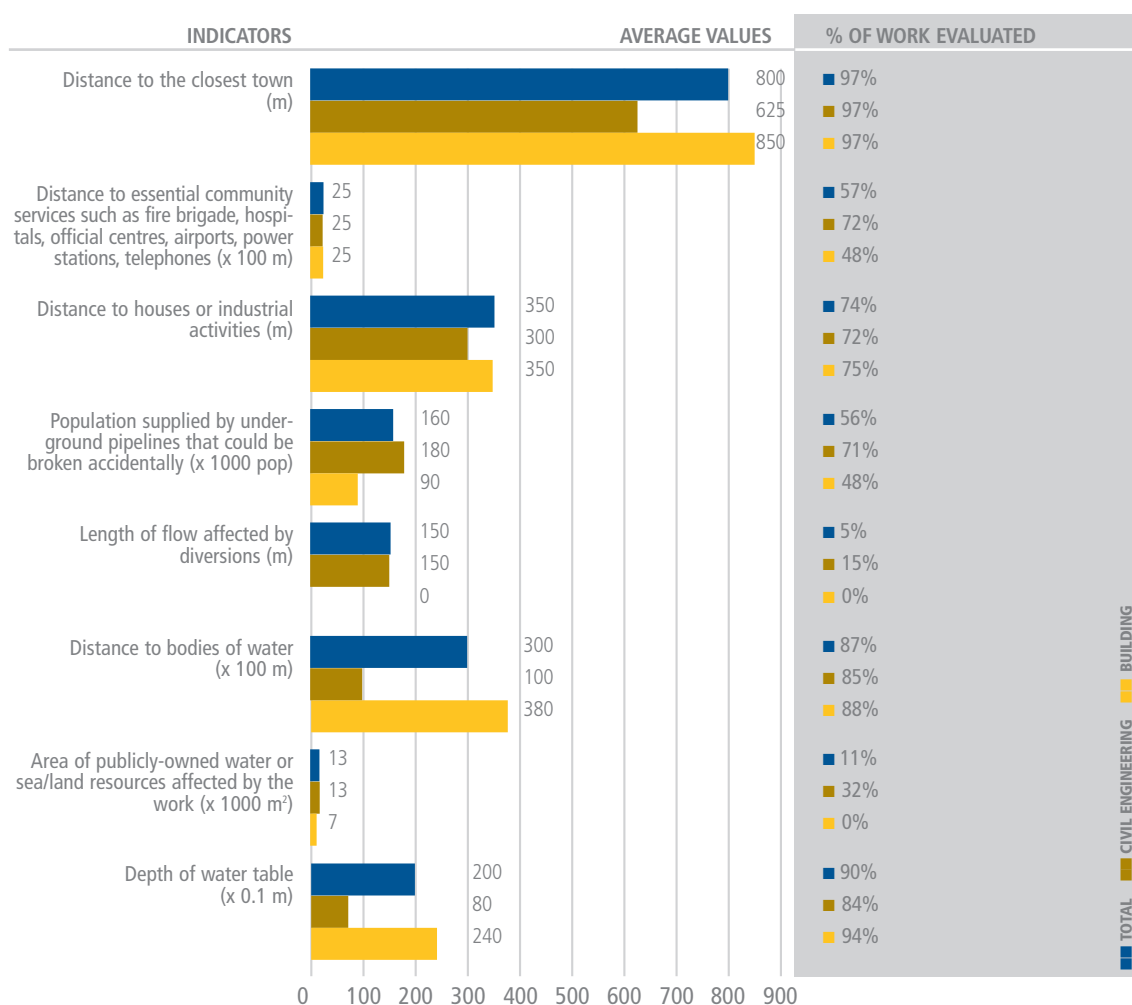
*Main figures as environmental indicators  
in building*

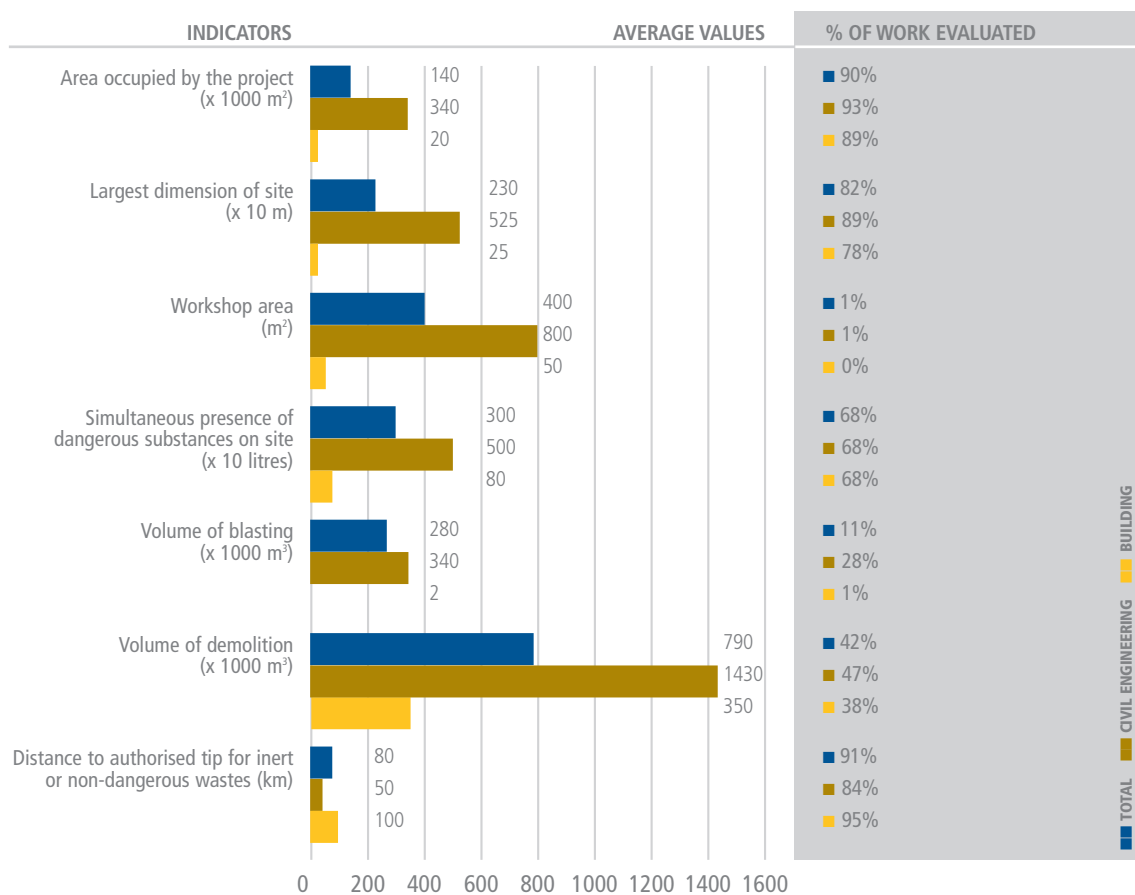


## MAIN FIGURES AS INDICATORS

As a snapshot of the features of our work, the following gives some of the most important average figures for civil engineering, building and of the company overall over the last year. These data give an idea of the quantities handled in the sector and are important to understand the interaction between building and the environment.

*Because of its size, civil engineering involves the appearance of new landscapes that must be integrated into their surroundings to supply a new resource to the environment and greater material, environmental and social wealth*

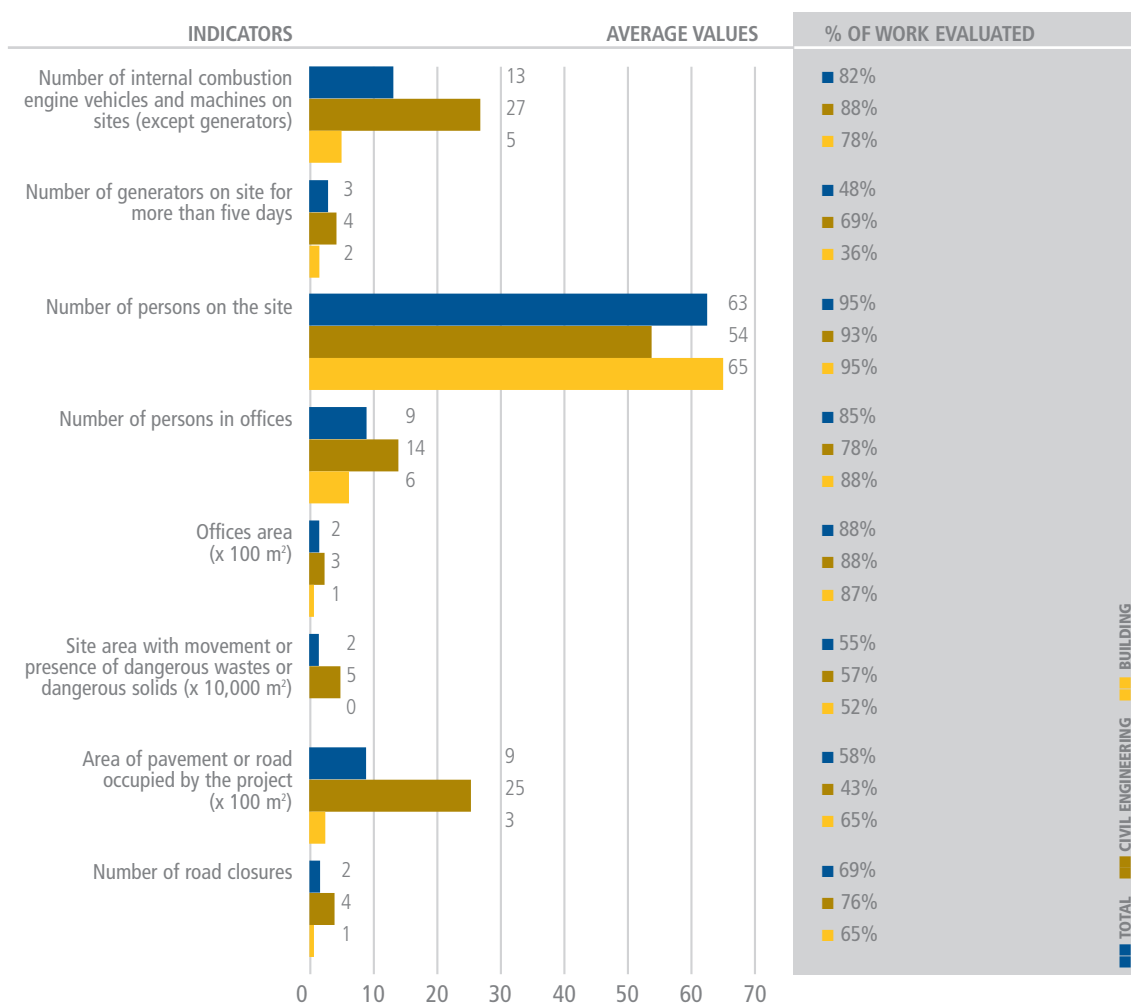




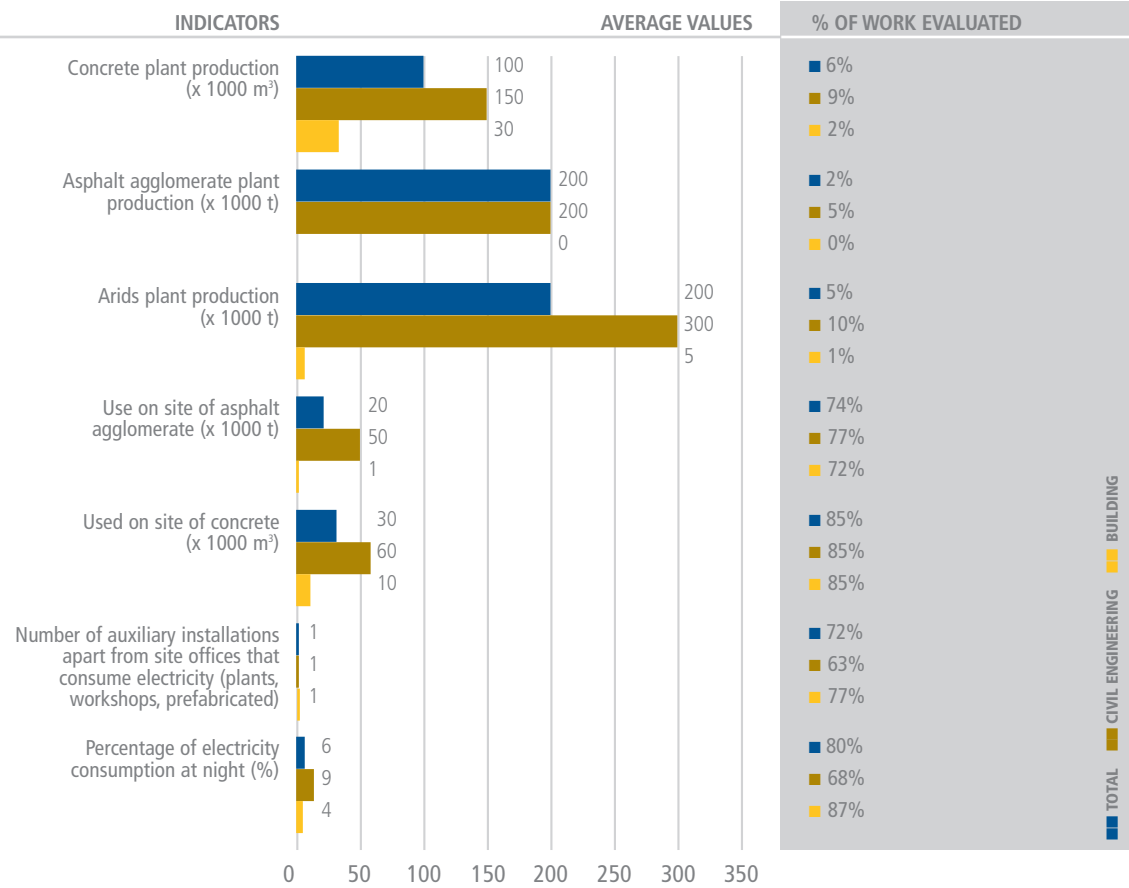
*The topsoil must be carefully removed and stored with the necessary care for later use in restoring and conditioning*

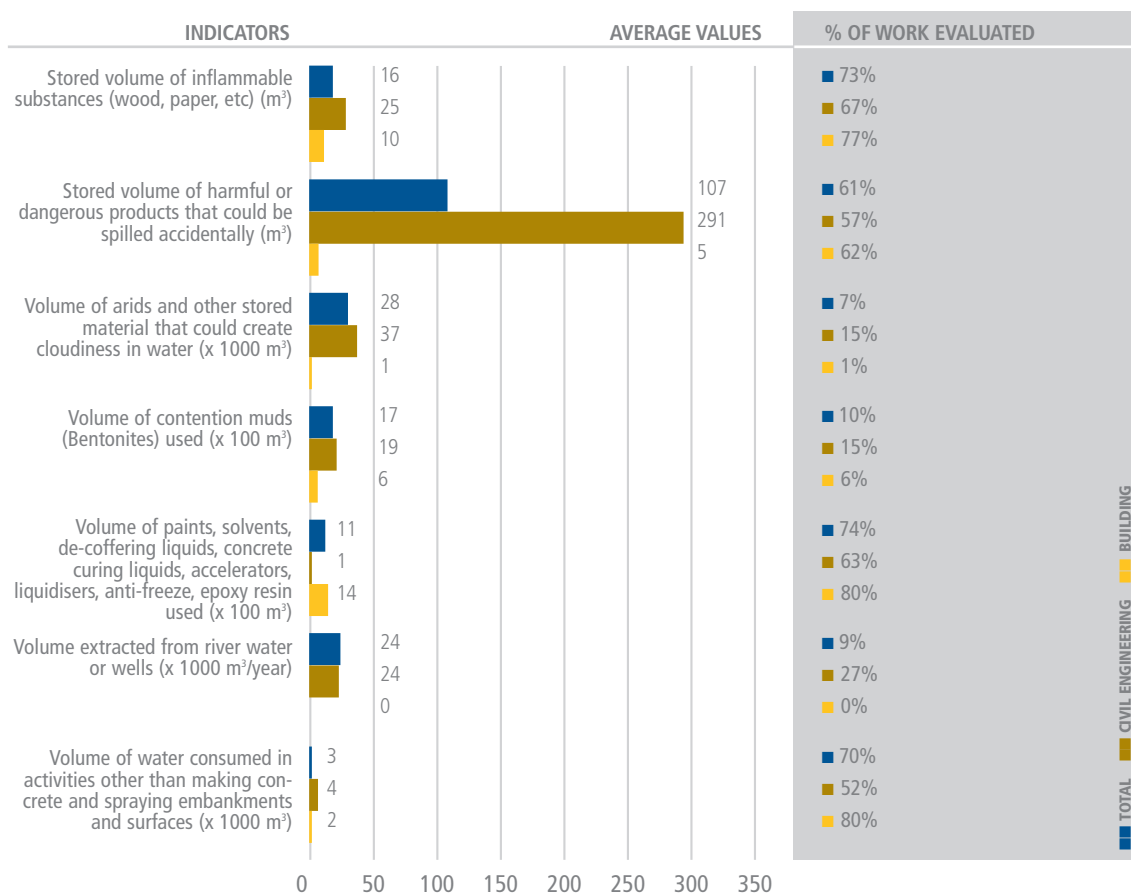


*The sprinkling of tracks and stockpiles is the most classical, simple and effective way to keep down dust on sites*



*The combination of natural elements such as water in artificial environments is a resource for bringing nature closer to man and for improving results by integrating the man-made with the natural*





Where it is possible, the rational sorting of wastes into different types facilitates their recovery and re-use or recycling, avoiding tipping



## ENVIRONMENTAL IMPACTS IN BUILDING

The building sector is not especially pollutant when carrying out its work and the pollution is not especially dangerous. Building consists of carrying out what has previously been decided, planned and designed. And its impacts are temporary and normally disappear when activity ends although they affect the environment, especially with regard to:



*Wherever possible, the soil from the same site is the most recommendable for restoring it because of its greater landscaping and ecological integration with the surroundings*

- Alteration of nature and landscape.
- Atmospheric pollution and emission of noise and vibration.
- Effect on waters.
- Alteration of the soil and sub-soil and handling of dangerous substances.
- Interaction with the urban environment and land planning.
- Consumption of power, materials and generation of waste.
- Possible environmental accidents.

To minimise impacts, the planning for each undertaking identifies the environmental aspects involved and evaluates their relevance according to the size or amount of pollution or alteration and the importance or sensitivity of the surroundings that receive the impact.

The following shows a summary of data for 220 projects whose information has been processed this year, showing how many environmental aspects are identified as really or potentially present in the projects and which of them are important.

GENERAL DATA	CIVIL ENGINEERING	BUILDING	TOTAL FCCCO
AVERAGE NUMBER OF ASPECTS IDENTIFIED PER PROJECT	50	41	44
AVERAGE NUMBER OF IMPORTANT ASPECTS PER PROJECT	14 (28%)	5 (12%)	8 (19%)

GROUPS OF ENVIRONMENTAL ASPECTS	% OF PROJECTS WITH IMPORTANT ASPECTS IN EACH GROUP		
GENERATION OF WASTES	67% (52/78)	79% (112/142)	75% (164/220)
LAYOUT OF TERRAIN/URBAN MEDIUM	69% (54/78)	48% (68/142)	55% (122/220)
USE OF NATURAL RESOURCES	58% (45/78)	36% (51/142)	44% (96/220)
GENERATION OF NOISE AND VIBRATION	58% (45/78)	24% (34/142)	36% (79/220)
ATMOSPHERIC EMISSIONS	64% (50/78)	20% (28/142)	35 % (78/220)
TIPPING OF WATER	38% (30/78)	30% (43/142)	33% (73/220)
ENVIRONMENTAL ACCIDENTS	44% (34/78)	25% (35/142)	31% (69/220)
OCCUPATION OF RIVERS OR SEA BEDS	33% (26/78)	1% (2/142)	13% (28/220)
EMISSION OF RADIATION: USE OF RADIOACTIVE SOURCES	0% (0/78)	0% 0/(142)	0% (0/220)

The most important environmental aspects in each group for most projects are:

CODE	DESCRIPTION OF ASPECT	ENGINEERING		TOTAL FCCCO
		WORK	BUILDING	
R-22	Generation of dangerous wastes from paints, solvents, stripping liquids, polishing liquids, epoxy resins, accelerators, liquefiers, plasticizers, anti-freeze, de-coffering liquids and concrete curing liquids outside specifications	37%	65%	55%
U-06	Operations that cause dirt at the entrance and exit of sites, muds and loose material	54%	39%	44%
R-28	Generation of dangerous wastes from empty polluted containers (paints, solvents, oil, glue, stripper, de-coffering liquids, silicone, aerosols, explosives, etc)	32%	42%	39%
N-41	Consumption of electrical power	38%	32%	35%
V-03	Tipping of sanitary water	15%	27%	23%
A-09	Dust raised by moving machinery	45%	4%	19%
W-05	Noise caused by earth movement: excavation and filling, embankments and cuttings	40%	7%	19%
A-06	Dust raised by earth-moving: excavation and filling, embankments and cuttings	40%	6%	18%
A-10	Dust raised by transport of earth and rubble	38%	6%	18%
U-07	Spillage of granular material during transport	37%	7%	18%
M-02	Potential fires in storage areas for inflammable substances (wood, paper, etc)	19%	15%	17%
R-23	Generation of dangerous waste in land contaminated by spillages of chemical products from the site, Diesel fuel and lubricating oils	26%	11%	16%
W-02	Noise caused by demolition	18%	12%	14%
R-05	Generation of non-dangerous wastes, packaging	5%	18%	13%
N-02	Consumption of water for sprinkling embankments and surfaces	27%	4%	12%
U-02	Interference with traffic outside the site	28%	4%	12%
N-21	Consumption of Diesel fuel, petrol, fuel oil, coal	27%	1%	10%

*Suitable segregation, organisation on the site, indication of waste storage points and clear signposting, are factors that helped the better management of wastes on the site*



# *Good environmental practices*



## GOOD ENVIRONMENTAL PRACTICES

Starting in 2000, FCC Construcción has planned the adoption of practices that respect the environment and that go beyond those required by law as a strategic objective in all its projects.

For this it has implemented a system for adopting good practices which adds to the legal, contractual or any other requirements on the road to a real improvement in environmental quality in building, practices that guarantee a better environmental result. This is the principle that inspires the dynamic of the good practices adopted: to guarantee better real results.

In an activity as diversified and dependent on the environment as building, where the product is always a prototype, where there are no permanent stable processes to facilitate the setting up of indicators, it is not possible to systemise the adoption of the same measures for preventing or correcting impacts because of their unequal application in different projects, vulnerable as a function of the properties of the medium and of the project itself.

Therefore a series of good practices in building has been designed that projects select and implant as far as they can be applied. These good practices are given different weightings according to their importance, that is, those that provide a greater benefit for the environment, the intrinsically best ones, are worth more; and those newest good practices that require greater effort for the project, either because of the investment they require or the research, management or inventive effort they imply, are also valued.

The real scope of the good practice adopted is also taking into account so that a higher degree of implementation, a greater generalisation for the measure adopted, more interventions or a greater scope of the good practice mean a higher value.

*Generally, water from processes and washing may be used for later processes, reducing the consumption of this resource, or tipped after treatment to reach limits that are acceptable for the environment. In both cases, possible pollution of the subsoil is controlled*



In principle, each project can choose the good practices considered most suitable for or applicable to it as a function of the activities to be carried out. This avoids the pitfall of the enormous range of types of project which prevents the generalisation of good practices for all of them. Thus, if a project involves blasting, an elastic blanket may be spread over the surface to be blasted to limit the generation of dust and flying materials but this good practice it is not applicable to a building site where no explosives are used. The list of good practices increases each year with new measures and gives rise to new possibilities or provides new ideas for each project to choose “its” good practices.

The evaluation of selected good practices is carried out on the basis of the standardised quantification of the following parameters:

- **Importance:** indicates the relevance of the good practice for the medium, giving it a value of more than 3 when it is greater and the minimum value of 1 when it is less.
- **Goal:** shows its degree of development, giving a value of over 3 when the implementation is more generalised or the best technologies are applied and the minimum value, 1, when the degree of application is less.

The result of classifying the implementation by importance provides a score, the real indicator of the behaviour/effort (in applying the good practices) carried out by the project. The purpose is to add together the points from the good practices implemented for a total of 50 points as an average in our projects, without including those required by law or by the project contract.

Good practices have been implemented within the following environmental areas:

- RELATIONSHIP WITH SOCIETY (training/behaviour of persons, communication and recognition)
- ATMOSPHERIC EMISSIONS, GENERATION OF NOISE AND VIBRATION
- TIPPING OF WATER
- OCCUPATION, POLLUTION OR LOSS OF SOIL
- USE OF NATURAL RESOURCES AND GENERATION OF WASTES
- LAYOUT OF LAND (Biological diversity, urban medium)

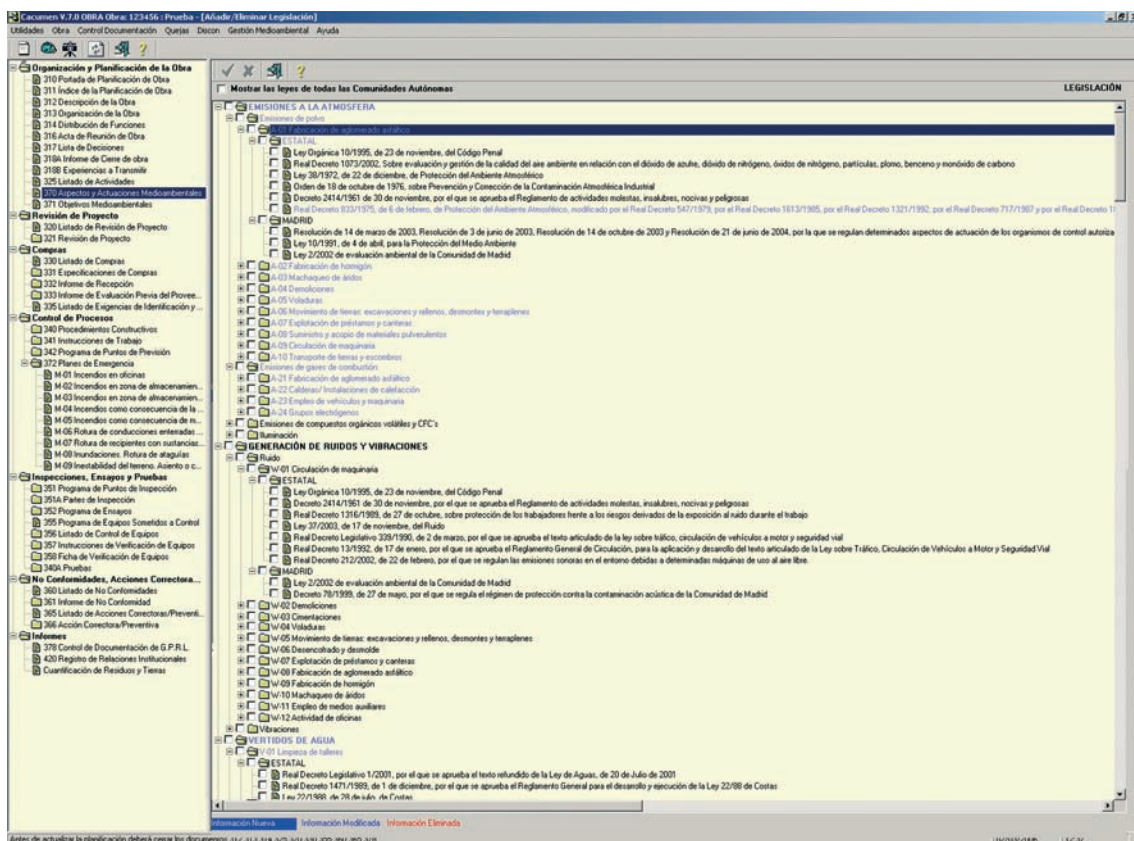
*Surface run-off washes away soil for many purposes around projects and carries them to river beds, increasing their cloudiness. Barriers of geotextiles work very well as filters to prevent this pollution*



Tracking information on good practices is in itself a very valuable group of indicators that show the company's environmental performance in matters of greater importance and, in fact, have performed the basis of the environmental information in the Sustainability Report and in the various editions of the Environmental Report.

Until now, this information was available on the sites and was sent to the Quality and Training directorate on various media, requiring manual integration, but at the start of 2005 a new environmental module was implemented using the CACUMEN computer application in order to, on the one hand, systemise and facilitate the preparation of the environmental plan carried out by the projects themselves and the company's centres and, on the other, to improve the reliability and validity of the data, facilitating more complete environmental information for society with the possibility of keeping this information permanently updated.

The new environmental model allows:



- The easy identification of the project's environmental aspects using a checklist for selecting those parts of the projects that may affect the environment and evaluating their importance in order to strengthen efforts on the most significant ones.

*The effectiveness of spraying water on tracks to reduce dust is approximately 80 % and could be increased with the use of additives*



- The selection of the applicable environmental legislation for each aspect, knowing its requirements.
- The preparation of a programme of actions to comply with the legal and other requirements.
- The control and management of wastes generated on site using the site wastes book and the origin and destination of earth and rubble.
- And helps the planning, tracking and control of environmental good practices used in the project.

All the information generated in each project and that is used for suitable environmental management forms part of a large database which, at the company level, allows its environmental pulse be taken and actions taken to improve and report to society. The strict system of internal audits and the controls of data in the various integration processes also validate its veracity.

The data given below show absolute values for projects that apply the good practices referred to but it is important to note that these data are relative, according to the projects in which the good practices can be applied. This explains some values which, at first sight, may seem excessively low: they show the percentage of projects that have carried out the action over the total number of projects, and not over those that really could implement them.

The collection of this last datum, the number of projects in which strictly speaking they could have been applied and in which they are still not available, started in 2006 and will be available for later reports, thus improving the quality of the information supplied.

The tracking of these good practices using the data collected in this way makes it possible to reach some especially significant conclusions, notable among which are:

- In 96 % of the projects, over 60 % of the sub-contractors have received environmental talks.
- In 96 % of projects, the areas affected by the site installations were restored by cleaning and removing elements foreign to the environment or with no later use, with the written and/or graphical planning of the actions, including de-compacting the earth and the suitable landscaping of the site to match its surroundings.
- Accesses were limited in 86 % of projects with written or graphical planning of road accesses, respected throughout the site, including the signposting of those in situ and even, on occasions, restricting road access to the ones that already existed.
- In nearly 85 % of projects, the tipping of inert wastes has been reduced by 15 % compared to the volume forecast in the design.
- In 85 % of projects, the areas occupied by the work were limited with written/graphical documentation of the areas that may be occupied by machinery and personnel, with physical barriers or signposting for these areas.
- In 75 % of projects, inert wastes were sorted into four or more categories for individual management.
- Measures to prevent dirt at the entrance and exit to the site were used in 79 % of projects, sweeping the site entrance and exit systematically and sometimes cleaning truck wheels before they exited to the public roads.
- The generation of dust was reduced in 89 % of projects through the frequent or occasional spraying of tracks and stockpiles with water.

The following gives the data collected from projects during 2005.

*It is known that one of the greatest impacts of linear works is the barrier effect but resources are available to minimise this and must be used when society so requires. Permeability based on underpasses and overpasses is even greater when tunnels are used to maintain the pre-existing surroundings*



**RELATIONSHIP WITH SOCIETY**  
*(Training/behaviour of persons, communication and recognition)*

Social aspects, both with regard to our own staff and with affected collaborators and third parties, is of capital importance in the system. In fact, the weightings assigned to them are among the highest. Thus, aspects such as the training necessary so that the company's personnel effectively carry out their work with maximum respect for the environment, dialogues with interested parties or the incorporation of sub-contractors into the dynamics of environmental protection, making them responsible and aware of the role they can and should play, are some of those that have the highest levels of planning.

The good practices carried out in this area are:

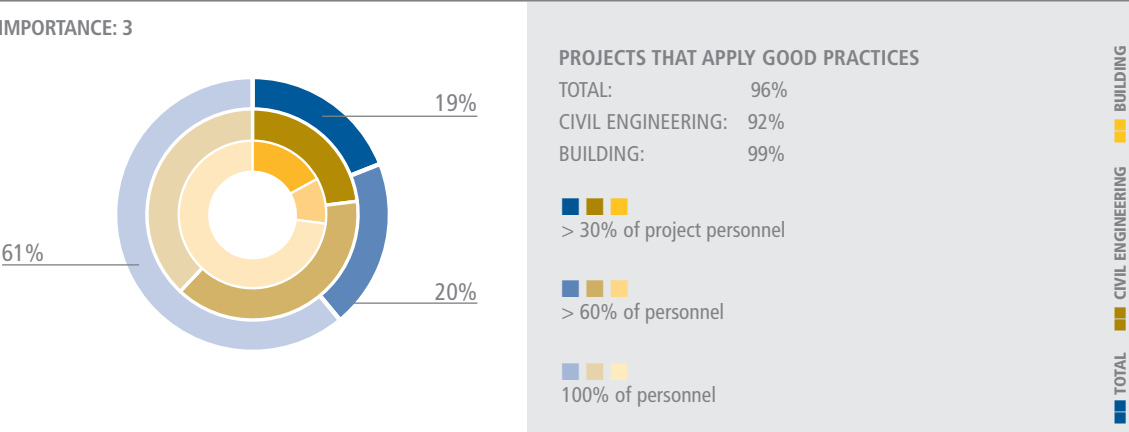
**Environmental training**

Being aware that training is the first and key step towards the later deployment of measures with maximum effectiveness, FCC Construcción has set up an extensive training plan that is basic to the process of respecting the environment.

The main course relating to environmental management is called Environmental Awareness and Training. It lasts for 20 hours and has been given to almost all the technicians involved in decision-making processes with environmental impacts as well as on many occasions to those in recycling, given the speed at which environmental conditions change and the need for up-to-date information and training.

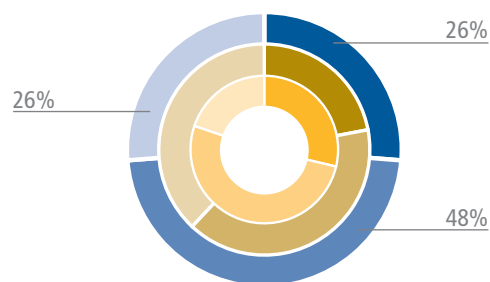
An ambitious training plan for site foreman has also been developed, since these are key personnel to guarantee an effective environmental management as they form the level of personnel closest to the undertaking.

FCC CONSTRUCCION PRODUCTION PERSONNEL (UP TO FOREMEN) WHO HAVE TAKEN THE 20-HOUR ENVIRONMENTAL TRAINING COURSE PROGRAMMED BY THE COMPANY



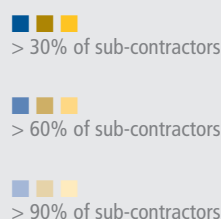
SUB-CONTRACTORS WHO HAVE RECEIVED ENVIRONMENTAL AWARENESS AND TRAINING TALKS OF AT LEAST ONE HOUR FROM FCC CONSTRUCCION RELATED TO THE SUB-CONTRACTED ACTIVITIES

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

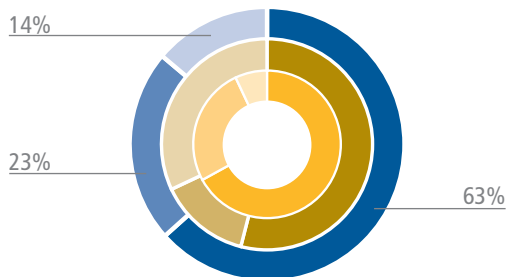
TOTAL:	96%
CIVIL ENGINEERING:	97%
BUILDING:	95%



BUILDING  
CIVIL ENGINEERING  
TOTAL

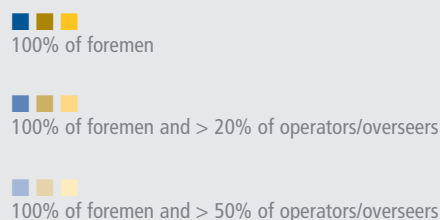
ENVIRONMENTAL TRAINING OF AT LEAST 4 HOURS' DURATION FOR PRODUCTION PERSONNEL FROM FOREMEN TO OPERATORS

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	51%
CIVIL ENGINEERING:	37%
BUILDING:	59%



BUILDING  
CIVIL ENGINEERING  
TOTAL

## Communication

As part of its policy, FCC Construcción considers communication with society to be of priority in three ways:

- For establishing a relationship with the interested parties.
- Internal information flow (upwards and downwards).
- Image of FCC Construcción in society.

Information flow mechanisms have been set up that provide for both the entry and exit of information to and from FCC Construcción with the possibility of transmitting and receiving information within the company.

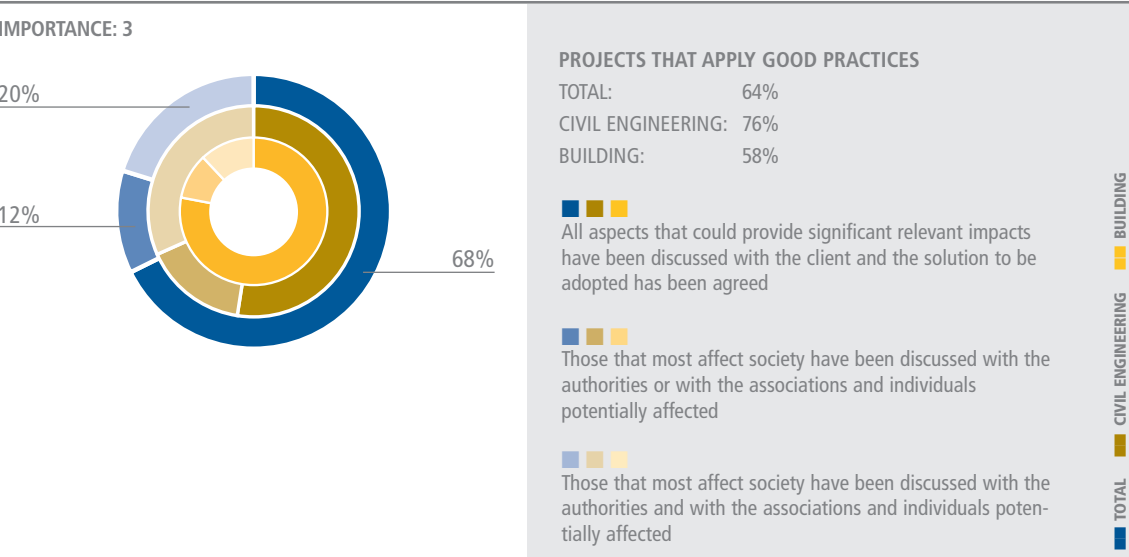
The possible environmental affects arising from the project have been given special consideration as well as the potential risks of environmental impact arising from the development of the project

or activity. In these cases, the site management communicates with the environmental and local authorities where required to do so by law:

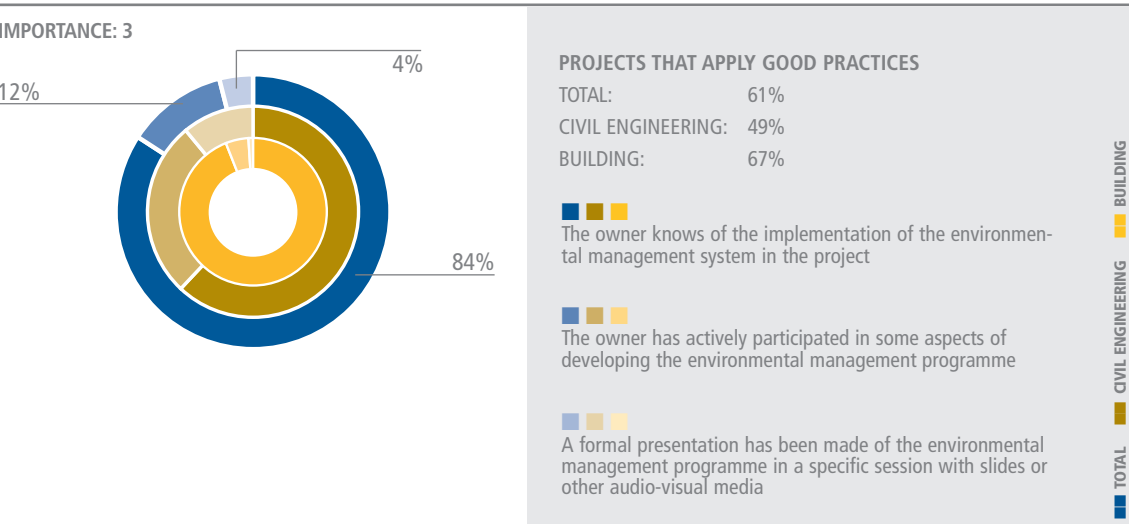
- Actions arising from undertakings that could have marked environmental effects.
- Proposals for minimising the risk.
- Emergency plans.

The revision of project contract requirements has appeared as a valuable management tool in this sense as it allows the incorporation of environmental criteria in the design, improving - sometimes substantially - the environmental result of the actions.

RELATIONSHIP WITH INTERESTED PARTIES

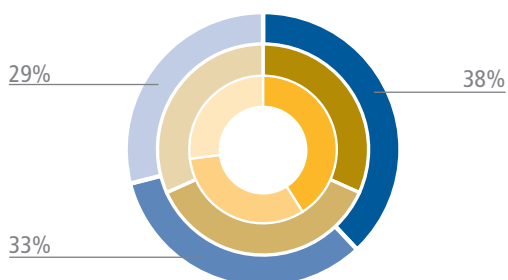


INVOLVEMENT OF THE OWNERS IN ENVIRONMENT MANAGEMENT



## COMPLAINTS AND CLAIMS

IMPORTANCE: 3



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	79%
CIVIL ENGINEERING:	72%
BUILDING:	82%



All the complaints and claims received have been discussed with the affected persons



The solutions to be adopted have been agreed with them

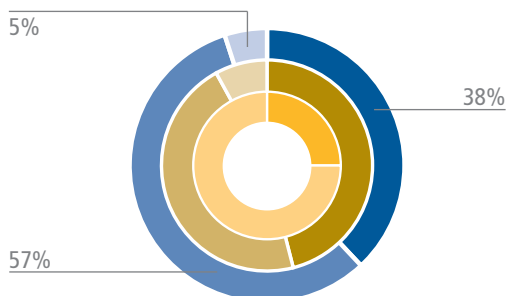


These actions have been carried out and there is written acceptance from at least 50 % of the cases

BUILDING  
CIVIL ENGINEERING  
TOTAL

## ENVIRONMENTAL IMPROVEMENTS INTRODUCED IN THE ORIGINAL PROJECT

IMPORTANCE: 3



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	10%
CIVIL ENGINEERING:	17%
BUILDING:	6%



An environmental improvement has been proposed for the original project but it was not finally admitted



An environmental improvement to the original project has been admitted

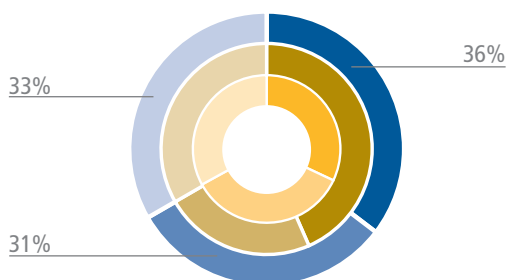


More than one environmental improvement to the project has been admitted

BUILDING  
CIVIL ENGINEERING  
TOTAL

## ADOPTION OF ENVIRONMENTAL SIGNPOSTING ON THE SITE THAT HELPS TO INFORM AND MAKE AWARE THE PERSONNEL WORKING ON THE SITE

IMPORTANCE: 2



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	48%
CIVIL ENGINEERING:	40%
BUILDING:	52%



Standard environmental waste signposting is used throughout the site

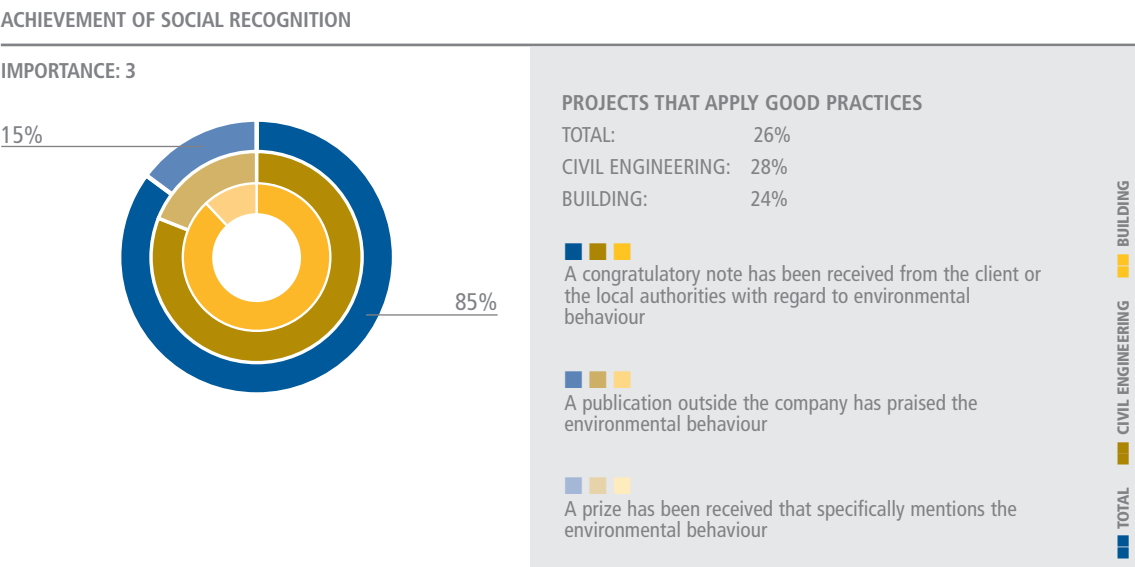


Complete standard environmental waste signposting is used throughout the site



Complete standard environmental waste signposting is used throughout the site together with awareness posters

BUILDING  
CIVIL ENGINEERING  
TOTAL



***Involvement of suppliers***

Another factor of great weight is the inclusion of suppliers and sub-contractors in environmental management.

FCC Construcción defines the lines for correct environmental behaviour, sets the criteria, designs the processes and communicates the requirements to which they are subject to all parties involved in their development.

This establishes the need for communicating to the sub-contractors working with it the generic guidelines for behaviour through the systematic distribution of its “Environmental Behaviour Code.” Environmental requirements are also set in all purchasing specifications, telling suppliers what is expected of them and evaluating their actions.

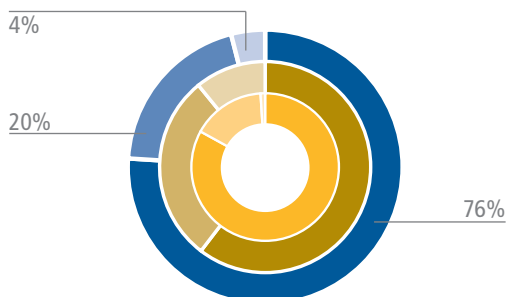
But they are not only informed of and required to comply with FCC Construcción’s standards in all projects. Aware of the importance of suppliers and sub-contractors in the correct environmental undertaking of projects, FCC Construcción sees it convenient to pass on technology and training to suppliers and has set as a requirement for all its projects the obligatory giving of training (beyond the necessary information) to the personnel of sub-contractors whose activity has clear environmental repercussions.

*The suitable signposting of the natural values surrounding the site results in both greater awareness of the personnel and greater respect for and care of the environment*



#### SUB-CONTRACTORS WHO APPLY AN ENVIRONMENTAL MANAGEMENT SYSTEM

IMPORTANCE: 2



#### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	56%
CIVIL ENGINEERING:	51%
BUILDING:	58%

At least one sub-contractor has an ISO 14001 or EMAS certificate

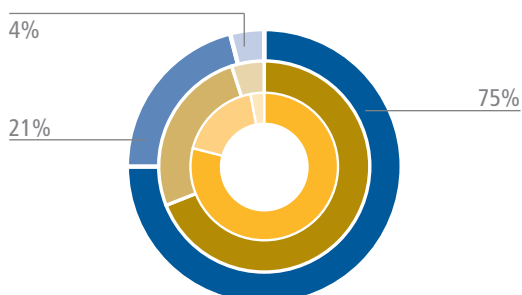
As above, > 10%

As above, > 25%

TOTAL CIVIL ENGINEERING BUILDING

#### SUB-CONTRACTORS' ENVIRONMENTAL BEHAVIOUR

IMPORTANCE: 3



#### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	49%
CIVIL ENGINEERING:	56%
BUILDING:	45%

> 30% of sub-contractors carry out actions related with the optimisation of wastes, have the relevant permits and licences and have contractual environmental requirements with which they comply

> 75% of sub-contractors carry out actions related with the optimisation of wastes, have the relevant permits and licences and have contractual environmental requirements with which they comply  
or  
> 30% of sub-contractors carry out actions related with the optimisation of wastes, have the relevant permits and licences and have contractual environmental requirements with which they comply, and in addition, nonconformities arising from their actions either do not occur or are identified and reported by them

> 75% of sub-contractors carry out actions related with the optimisation of wastes, have the relevant permits and licences and have contractual environmental requirements with which they comply, and in addition, nonconformities arising from their actions either do not occur or are identified and reported by them

TOTAL CIVIL ENGINEERING BUILDING

☐ Each type of waste has a destination:

- Dangerous wastes: an authorised handler of dangerous wastes.
- Urban wastes: to the local council.
- Inert waste, earth and rubble: re-use on the site itself, on the other sites, for valuation or to the tip.
- Non-dangerous wastes (wood, metals, glass, etc): re-use on the site itself, to a handler, valuer or tip.

If, as a sub-contractor or supplier, you cannot demonstrate that the wastes you generate and remove from the site go to one of these destinations, you must leave them in the signposted areas.

☐ Do not mix wastes. There is a series of containers on the site. Place the wastes in the appropriate container. This will help the recovery or recycling of many of them or prevent increased danger or difficulty in handling them.



☐ Dangerous wastes must be stored in suitable containers, labelled and protected, with a retaining cover to prevent spillage. Advise the environmental co-ordinator if more than six months have passed since the start of storage. They may pollute soil and water and affect health.



☐ Machinery oil must be changed in the workshop whenever possible and a receipt obtained from the workshop for the delivery of the used oil. If oil must be changed on site, ensure that spillages are prevented and deposit it in the signposted places. It may pollute soil and water and affect health.



☐ When you see a stain of oil or other dangerous product on the ground, ensure that the polluted soil is removed and is handled as a dangerous waste.

☐ If asbestos appears during demolitions or excavations, advise the environmental co-ordinator. Working with asbestos is highly dangerous to the health and must be carried out by an authorised company and a work plan approved legally.



www.fccco.es

## ENVIRONMENTAL BEHAVIOUR CODE

Issue 04 – 14 February 2005

### FCC CONSTRUCCIÓN'S ENVIRONMENTAL POLICY

Actions by FCC Construcción are centred on respect for the environment through:

- Compliance with standards, laws and other applicable undertakings by the company.
- The setting up of a plan to reduce important environmental impacts.
- Continued improvement by analysis and minimising environmental incidents arising as a result of its activity and pollution prevention actions, reduction of wastes and optimising the consumption of resources.
- The involvement of the interested parties (clients, sub-contractors and own staff) in environmental management.

FCC Construcción has implemented an environmental management system according to the international ISO 14001 standard in all projects and those centres of the company whose activities affect the environment.



The purpose of this document is that both company staff and sub-contractors working for FCC Construcción are aware of the importance of following the environmental policy, the procedures and requirements of the environmental management system, the important environmental aspects, the real potential impacts associated with their work, their functions and responsibilities and the potential consequences of failing to follow the set procedures.

*The involvement of everyone, the working area in which order is enhanced, increased awareness, reminders of our responsibilities in caring for the environment, facilitate improved environmental management and give more satisfactory results for all*



## YOUR INVOLVEMENT IS VITAL; DON'T BREAK THIS CHAIN

There is an environmental co-ordinator on your site. If you have any doubt as to how to act, ask him.

The indications marked ☒, below concern those aspects of your activities that may negatively affect the environment on this site.

☐ The site must be clean and tidy at all times. This is your responsibility as well as that of everyone. Do not throw things to the ground, take care of the general tidiness of installations, collect anything that is not in its proper place. Cleanliness and tidiness on the site favour the collaboration of everyone.



☐ Do not make dust or unnecessary noises especially at times when it is particularly annoying if you can avoid it. Dust is a nuisance to persons, wildlife and plants. Noise can have important harmful effects on the health of persons and wildlife.



☐ Drive and move your machinery within the limits of the site and place your installations and stockpiles in the spaces provided for them. Otherwise, you compact, destroy and deteriorate the soil and its plant coverage, which are limited and valuable resources.

☐ Use scarce natural resources suitably, such as water, electricity and materials. Resources are limited and their exhaustion has irreparable environmental effects, such as the loss of biodiversity.

☐ Quarries, gravel pits and loaned material cannot be opened or used without the knowledge of the environmental co-ordinator who must obtain the necessary permits and carry out the measurements and inspections required by law. Their incorrect use may cause excessive levels of dust, noise, alteration and loss of soil, alteration of the landscape, have effects on underground water, and affect traffic outside the site.



☐ Blasting may not be carried out without the authorisation of the environmental co-ordinator who must have obtained the necessary permits. It causes noise and vibration, flying material and dust.

☐ Asphalt agglomerates, concrete, cement soil and arids plants must not be installed without the knowledge of the environmental co-ordinator who must have obtained the necessary permits and made the measurements and inspections required by law. They generate dust, noise and vibrations, alter the landscape and may pollute soils and water.

☐ Tips must not be opened nor used without the knowledge of the environmental co-ordinator who must have obtained the necessary permits as required by law. They cause dust, noise and vibrations, loss of soil and alteration of surface drainage, of water, landscape and traffic outside the site.

☐ Tipping must not be made into rivers, the soil, streams, sanitation systems or into the sea without the knowledge of the environmental co-ordinator who must have obtained the necessary permits.

☐ Water used for washing concrete mixers must be returned to the plant within the mixer itself. Otherwise, the mixers must be washed according to the instructions of the environmental co-ordinator, as with the washing of concrete channels, containers and hoses. This water, with a high pH content, pollutes water and the soil and may cause damage in the treatment plants if tipped into the public sewerage system.



☐ Water must not be taken from rivers, springs or aquifers, supply systems for irrigation ditches and channels without the knowledge of the environmental co-ordinator who must have obtained the necessary permits. This may cause pollution at the inlet point, alter the water table and deny water to other users who have priority.

☐ Areas that are less than 100 metres from a river or the sea may not be occupied without the knowledge of the environmental co-ordinator who must have obtained the necessary permits. These areas are protected to prevent damage to water, the soil, flora and fauna.

☐ It is forbidden to cut roads, occupy road protection areas, cut streets, occupy pavements or public ways or to place rubble containers on public roads without the authorisation of the environmental co-ordinator who must have obtained the necessary permits. It causes a nuisance.

☐ It is forbidden to light uncontrolled fires or bonfires, either directly on the soil or close to inflammable or dangerous substances or where they could cause a fire or annoy neighbours. Especially, the burning of plastics on the site produces highly poisonous gases.

☐ Do not store dangerous substances on the ground or close to the public sewerage system without measures to prevent spillages (bucket) and without the knowledge of the environmental co-ordinator. They must be correctly packaged, labelled and protected. Handle the packaging with care, avoid spillages and always warn when a leak or deterioration is found in it in the container. They could pollute soil and water and affect health

☐ Do not store fuel on the ground or close to the public sewerage system without measures to prevent spillages and without the knowledge of the environmental co-ordinator who must have obtained the necessary permits. They may contaminate the soil and water and affect health.

☐ Products whose packages have one of the following danger labels are dangerous substances and their wastes and used packages are dangerous wastes.



C Corrosive



E Explosive



O Inflammable



Xn Harmful  
Xi Irritant



T Toxic  
T+ Very toxic



F Easily inflammable  
F+ Highly inflammable



N Dangerous to  
the environment

Some of the most common dangerous substances on sites are: lubricating oils, paints, solvents, epoxy resins, accelerators, liquefiers, plasticizers, anti-freeze, de-coffering liquid and concrete curing liquids, Diesel fuel, brake fluid, lubricating greases, detergents, aerosols, batteries, mercury and sodium fluorescent lights, asbestos.

☐ Vehicle entrances and exits must be signposted, trucks must be covered with canvas and public roads must be protected to avoid deterioration and dirt (washing of wheels, street sweeping).

☐ Trees may not be cut without the authorisation of the environmental co-ordinator who must have obtained the necessary permits.

☐ The good organisation and signposting of the site will help to provide order and facilitate the understanding of and compliance with environmental behaviour by everyone.



*The publication of behaviour standards for the personnel on the site is essential for the correct environmental management in agreement with its values (notice: Posters translation is not included)*

As can be seen, efforts regarding training, relationships with society and the integration in one way or another of sub-contractors within the environmental management system, giving them greater weight and allowing them more points for developing a good practices along these lines, are awarded.

Depending on the features and circumstances of the project, the application of good practices in this area throughout 2005 has been unequal, with the training of company staff and those of sub-contractors and the perception of a special awareness regarding complaints and claims that may be received being the outstanding points.

## **ATMOSPHERIC EMISSIONS, GENERATION OF NOISE AND VIBRATION**

The following good practices have been implemented in these areas.

### ***Atmospheric emissions***

Although atmospheric emissions are not one of the greatest problems in building, we do generate dust and noise during our activities, environmental aspects that are increasingly important in evaluating those on sites, as seen in previous sections.

However, the activities carried out, the use of internal combustion engines in machinery, the installation of asphalt agglomerate plants, etc, also cause the emission of gases to the atmosphere which are being considered and corrected traditionally in our projects (not only because of the Kyoto agreement).

Notable among the good practices being implemented in this area is the fact that nearly 90 % of FCC Construcción's projects involve spraying tracks and stockpiles to reduce dust emitted to the atmosphere, caused by the movement of machinery or by the work on the site itself.

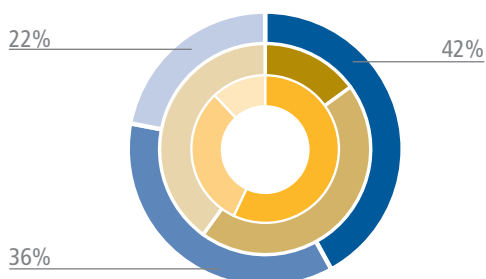
Some of the good practices are not applicable in many projects (dust removal equipment in building work, for example) which explains some of the low application percentages. In others, effort must be made to achieve their more widespread application.

*Damp drilling with water injection on the face and the collection of the outgoing muds reduces the generation of dust*



#### REDUCTION OF DUST BY SPRAYING TRACKS AND STOCKPILES WITH WATER

IMPORTANCE: 2



##### PROJECTS THAT APPLY GOOD PRACTICES

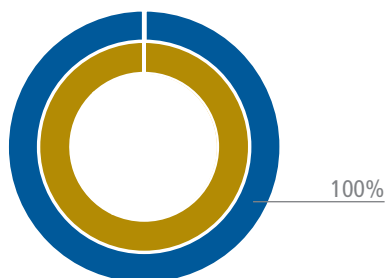
TOTAL:	89%
CIVIL ENGINEERING:	89%
BUILDING:	89%

■ ■ ■ Sporadic application  
■ ■ ■ Frequent application  
■ ■ ■ Systematic application

TOTAL CIVIL ENGINEERING BUILDING

#### USE OF ADDITIVES IN SPRAY WATER TO CREATE SURFACE CRUST, PAVING OF TRACKS AND OTHER LASTING DUST CONTROL PRACTICES

IMPORTANCE: 1



##### PROJECTS THAT APPLY GOOD PRACTICES

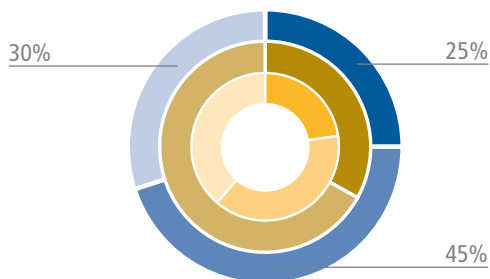
TOTAL:	0%
CIVIL ENGINEERING:	1%
BUILDING:	0%

■ ■ ■ Sporadic application  
■ ■ ■ Frequent application  
■ ■ ■ Systematic application

TOTAL CIVIL ENGINEERING BUILDING

#### USE OF SCREENS TO PREVENT DUST DISPERSION

IMPORTANCE: 1



##### PROJECTS THAT APPLY GOOD PRACTICES

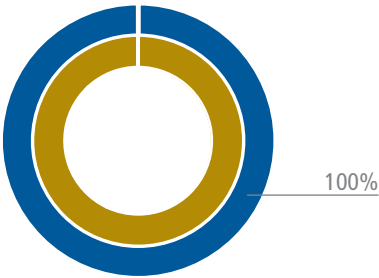
TOTAL:	89%
CIVIL ENGINEERING:	89%
BUILDING:	89%

■ ■ ■ In more than 30 % of the perimeter of the site where the dust is generated  
■ ■ ■ As above, more than 60 %  
■ ■ ■ As above, more than 90 %

TOTAL CIVIL ENGINEERING BUILDING

USE OF MOLECULAR CRUSHERS IN THAT INSTALLATIONS THAT GENERATE DUST, SUCH AS ARIDS TREATMENT PLANTS, ETC

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 0%  
CIVIL ENGINEERING: 1%  
BUILDING: 0%

Crushers in more than 30 % of dust generation points

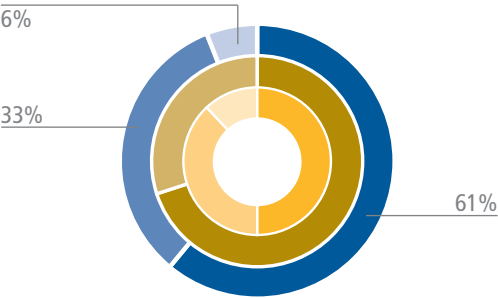
As above, more than 60 %

As above, more than 90 %

TOTAL CIVIL ENGINEERING BUILDING

USE OF DRILLING MACHINERY WITH DUST DAMPING SYSTEM, USE OF WATER CURTAIN IN THE OUTLETS OF VENTILATION DUCTS OR OTHER SYSTEMS FOR COLLECTING DUST

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 8%  
CIVIL ENGINEERING: 13%  
BUILDING: 6%

Implementation in one activity

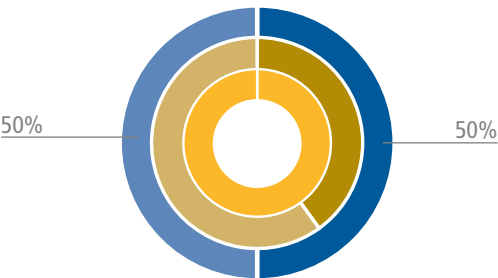
Implementation in two or more activities

Implementation in five or more activities

TOTAL CIVIL ENGINEERING BUILDING

IMPROVEMENT OVER THE LEVELS REQUIRED BY LAW RELATING TO CONTROLLED PARAMETERS (OPACITY OF DISCHARGES, SUSPENDED PARTICLES, ETC)

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 3%  
CIVIL ENGINEERING: 7%  
BUILDING: 1%

Systematic obtaining of pollution levels better than those required in more than 5 % of all controlled parameters

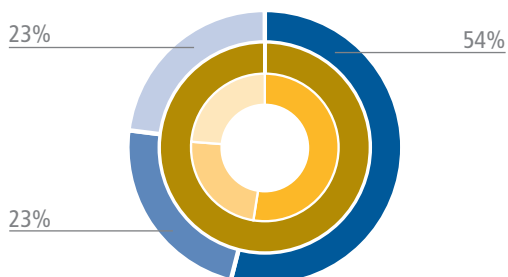
As above, in more than 15 %, or in more than 30 % of half of the controlled parameters

As above, in more than 30 % of all the controlled parameter

TOTAL CIVIL ENGINEERING BUILDING

#### USE OF DUCTS FOR TIPPING RUBBLE FROM HEIGHTS AND COVERING OF CONTAINERS WITH CANVAS

IMPORTANCE: 1



#### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	15%
CIVIL ENGINEERING:	1%
BUILDING:	24%

**In more than 30 % of containers**

**As above, more than 60 %**

**As above, more than 90 %**

BUILDING  
CIVIL ENGINEERING  
TOTAL

### Generation of noise and vibration

Noise is an important problem in building - although it is temporary - due to the difficulty of reducing it significantly. Therefore, all measures adopted, with their greater or lesser effectiveness, are normally useful.

The procedures and technological possibilities available today do not allow the desired levels to be reached. Therefore, efforts are concentrated on actions that indirectly cause lower sound levels or that directly reduce the nuisance for those affected, depending on the time of day and the activities being carried out and the uses and customs in the affected area.

The decision to adopt these measures is influenced by the surroundings and their greater or lesser sensitivity to noise as well as the type of activities being carried out on the site and their susceptibility to the incorporation of various solutions.

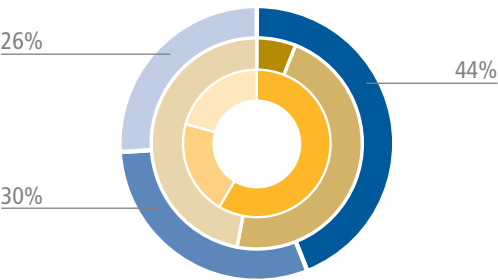
Although the good practices in this area are normally difficult to apply, either because of high cost or because they need highly specialised physical equipment that goes against the nomadic character of building, actions are frequently taken in our projects such as the use of measures to reduce inevitable noises in machinery arising from their operation, such as the use of modern machinery with the CE, the consideration of the environment and its requirements in the work programme, or the use of silencers, barriers and other reduction means.



*Blankets placed on the surface when blasting prevent flying material and the generation of dust*

SUITABLE MAINTENANCE OF MACHINERY OPERATING ON THE SITE

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

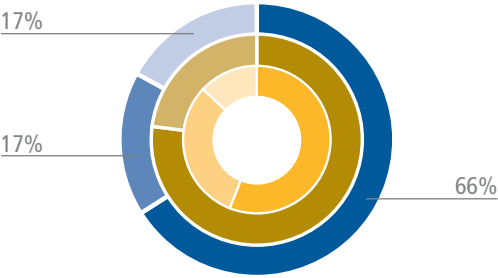
TOTAL:	25%
CIVIL ENGINEERING:	23%
BUILDING:	27%

- Preventive maintenance in at least 30 % of machines operating on the site
- Preventive maintenance in at least 60 % of machines operating on the site
- Preventive maintenance in at least 90 % of machines operating on the site

TOTAL CIVIL ENGINEERING BUILDING

NIGHT LIGHTING THAT RESPECTS THE ENVIRONMENT

IMPORTANCE: 1



PROJECTS THAT APPLY GOOD PRACTICES

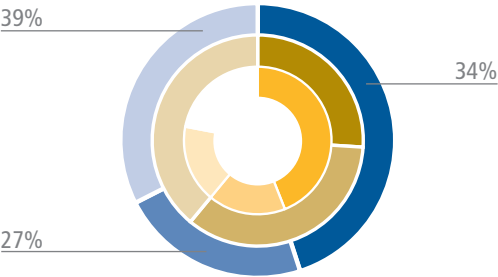
TOTAL:	14%
CIVIL ENGINEERING:	17%
BUILDING:	12%

- Directional instead of area lighting over at least 30 % of the area or automatic switching on and off
- Directional instead of area lighting over at least 60 % of the area or automatic switching on and off
- Directional instead of area lighting over at least 90 % of the area or automatic switching on and off

TOTAL CIVIL ENGINEERING BUILDING

SUITABLE CONTROL OF VEHICLES' SPEED ON THE SITE

IMPORTANCE: 1



PROJECTS THAT APPLY GOOD PRACTICES

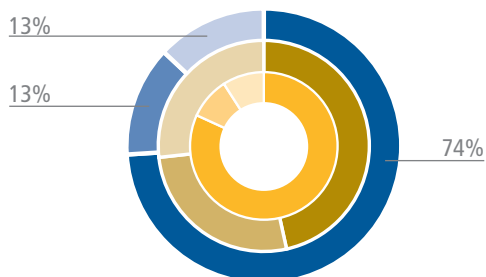
TOTAL:	19%
CIVIL ENGINEERING:	31%
BUILDING:	13%

- More than 30% of the tracks on the site have speed limit signs
- As above, more than 60 %
- As above, more than 90 %

TOTAL CIVIL ENGINEERING BUILDING

**USE OF DEVICES TO REDUCE NOISE AND VIBRATION IN INSTALLATIONS OR MACHINERY ON THE SITE, WITH SILENCERS, ANTI-NOISE BARRIERS, SHOCK ABSORBERS, ETC**

IMPORTANCE: 3



**PROJECTS THAT APPLY GOOD PRACTICES**

TOTAL: 32%  
CIVIL ENGINEERING: 20%  
BUILDING: 38%

■ ■ ■  
Presence of these devices in some equipment that is considered critical

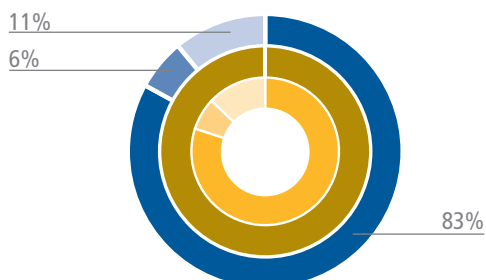
■ ■ ■  
As above, in 50 % of the equipment considered critical and in 50 % of that used at night

■ ■ ■  
As above, in 100 % of both critical equipment and that used at night

BUILDING  
CIVIL ENGINEERING  
TOTAL

**RUBBER LINING IN HOPPERS, MILLS, SIEVES, CONTAINERS, BUCKETS, ETC**

IMPORTANCE: 2



**PROJECTS THAT APPLY GOOD PRACTICES**

TOTAL: 8%  
CIVIL ENGINEERING: 4%  
BUILDING: 11%

■ ■ ■  
Presence of rubber lined elements

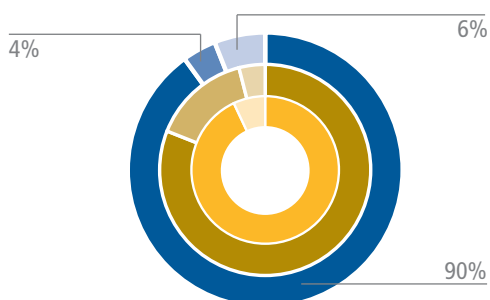
■ ■ ■  
More than 30 % of these elements are protected against noise

■ ■ ■  
As above, more than 60 %

BUILDING  
CIVIL ENGINEERING  
TOTAL

**CONSIDERATION OF ENVIRONMENTAL CONDITIONS IN THE WORK PROGRAMME**

IMPORTANCE: 2



**PROJECTS THAT APPLY GOOD PRACTICES**

TOTAL: 51%  
CIVIL ENGINEERING: 35%  
BUILDING: 60%

■ ■ ■  
Limitation of noisy activities to times when they cause less nuisance

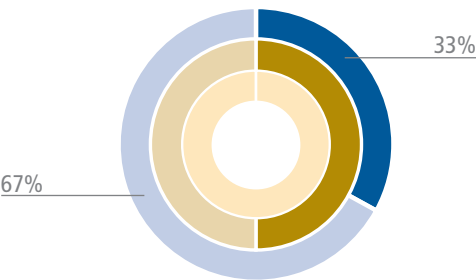
■ ■ ■  
Limitation of noisy activities to times or the year when they cause less nuisance

■ ■ ■  
Frequent temporary interruption of work as a function of external conditioners

BUILDING  
CIVIL ENGINEERING  
TOTAL

REDUCTION OF THE EFFECTS OF BLASTING

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	1%
CIVIL ENGINEERING:	3%
BUILDING:	1%

Protection of the area affected using rubber blankets, placement of intermediate barriers between the area affected and the origin of the blasting or protection using canvas, meshes or any other device of sensitive elements

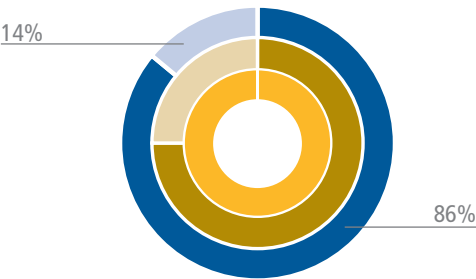
In addition, use of low-density explosives

In addition, reduction of the quantity of explosives using micro delay in blasting or preparation of de-coupling or spacing out the explosives

TOTAL CIVIL ENGINEERING BUILDING

IMPROVEMENT OVER THE LEVELS REQUIRED BY LAW FOR CONTROLLED SOUND LEVELS

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	3%
CIVIL ENGINEERING:	5%
BUILDING:	2%

Systematic obtaining of sound levels better than those required by 5 %

As above, more than 15 %

As above, more than 30 %

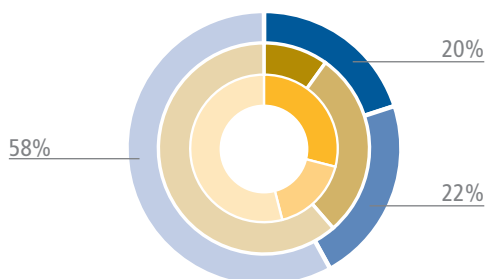
TOTAL CIVIL ENGINEERING BUILDING

Controlling sound levels in especially sensitive surroundings allows corrective or preventive measures to be adopted such as placing the noisiest activities in protected areas or respecting times that are less harmful to the area to be protected



## USE OF MODERN MACHINERY

IMPORTANCE: 2



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	2%
CIVIL ENGINEERING:	28%
BUILDING:	17%

Percentage of machinery with CE mark (own and that of sub-contractors) above 30 %

As above, more than 60 %

As above, more than 90 %

BUILDING  
CIVIL ENGINEERING  
TOTAL

*The use of conduits to remove rubble from upper floors allows it to be removed effectively and cleanly with control over the storage points and reduced dust. Generally, any measure that simplifies environmental management for the personnel on the site is effective*



WATER DUMPING

Water

Water is one of the most valuable resources we use. The shortage of water, one of our society's greatest problems, is especially visible during these times of drought and restrictions.

FCC Construcción's actions are designed to increase the efficiency and effectiveness of the use of water by reducing consumption and increasing the re-use of processing water.

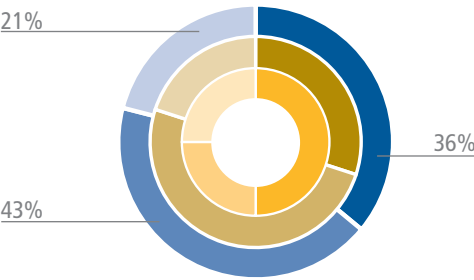
Naturally, the concept of sustainability in handling water and the search for better results in terms of energy, social, and financial, employment, environmental resources etc, demands different methods in different projects depending on the conditions of the environment.

The waste output is initially decanted before passing to neutralisation ponds using carbon dioxide at the exit from the tunnel, removing suspended solids and reducing the pH



USE OF PORTABLE TREATMENT PLANTS OR REUSABLE PREFABRICATED SETTLING PITS FOR TREATING SEWERAGE WATER

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

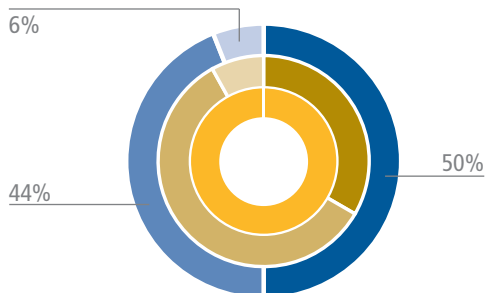
TOTAL: 13%  
CIVIL ENGINEERING: 27%  
BUILDING: 6%

- Installed in at least the outlet with the highest flow
- Installed in at least 50 % of the points that generate waste
- As above, with elements recovered from other sites

BUILDING  
CIVIL ENGINEERING  
TOTAL

#### WASTE DECANTING RESERVOIRS WITH OR WITHOUT THE USE OF ADDITIVES IN THE OUTFLOW OF WASTES AND PROCESS WATER

IMPORTANCE: 2



##### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 7%  
CIVIL ENGINEERING: 16%  
BUILDING: 3%

■ ■ ■  
That control greases and suspended solids

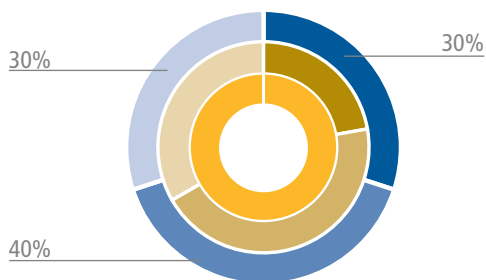
■ ■ ■  
In addition, pH

■ ■ ■  
In addition, that the waste has no colouring

BUILDING  
CIVIL ENGINEERING  
TOTAL

#### AUTOMATIC TREATMENT OF PH IN BASIC WASTES

IMPORTANCE: 3



##### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 5%  
CIVIL ENGINEERING: 12%  
BUILDING: 1%

■ ■ ■  
Neutralisation with HCl, H2SO4 or CO2 in at least one tipping point

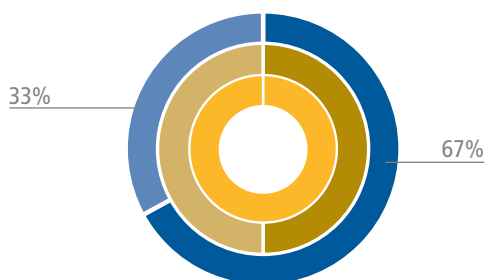
■ ■ ■  
As above, in 50 % or at least two tipping points

■ ■ ■  
As above, in 100 % or at least three tipping points

BUILDING  
CIVIL ENGINEERING  
TOTAL

#### IMPROVEMENT IN CONTROLLED PARAMETERS OVER THE LEVELS REQUIRED BY LAW OR BY THE TIPPING PERMISSION

IMPORTANCE: 3



##### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 1%  
CIVIL ENGINEERING: 3%  
BUILDING: 1%

■ ■ ■  
Systematic obtaining of pollution levels better than those required by more than 5 % of all parameters

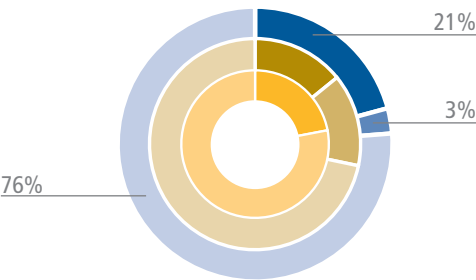
■ ■ ■  
As above, by more than 15 % or by more than 30 % of half of the controlled parameters

■ ■ ■  
As above, by more than 30 % of controlled parameters

BUILDING  
CIVIL ENGINEERING  
TOTAL

RE-USE OF CONCRETE MIXER WASHING WATER

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	16%
CIVIL ENGINEERING:	9%
BUILDING:	19%

Re-use on site for spraying tracks

Re-use on site for later washing of mixers

Re-use in the concrete plant

TOTAL CIVIL ENGINEERING BUILDING

*The use of means to a contain turbidity when carrying out work near water is necessary in specific locations and is highly effective*



OCCUPATION, POLLUTION OR LOSS OF SOILS

Environmental management of soil

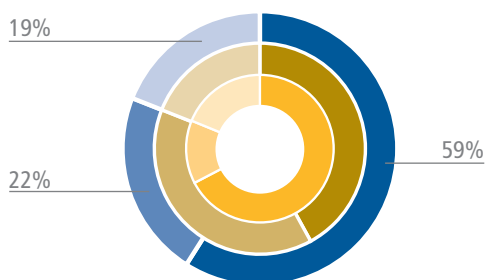
Soil is the most valuable resource affected by the building sector and for this reason it has been given greater importance, which is why it appears in other sections such as those relating to the use of natural resources and the generation of wastes.

The first effect is the occupation and pollution of soils, followed by compacting above the strict requirements of the undertaking or the abandoning of areas that have been temporarily occupied by the work.

At first glance, the graph of the use of these good practices shows the importance given to it. In fact, in the great majority of them, all proposed measures are applied, notable among which, because of its universal use, is the restoration of areas affected by the temporary installations on the site.

#### RESTORATION OF THE AREAS AFFECTED BY SITE INSTALLATIONS

IMPORTANCE: 2



##### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 96%

CIVIL ENGINEERING: 96%

BUILDING: 96%

■ ■ ■  
Cleaning and removal of elements foreign to the environment or with no later use with the written and/or graphical planning of actions

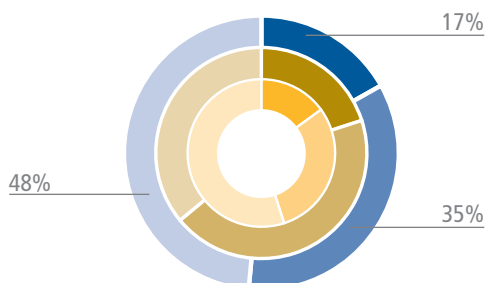
■ ■ ■  
In addition, de-compacting of the soil and landscaping to match the surroundings

■ ■ ■  
The same but adding plants and ornamental elements integrated into the resulting or pre-existing environment

BUILDING  
CIVIL ENGINEERING  
TOTAL

#### LIMITATION OF THE AREAS OF ACCESS

IMPORTANCE: 2



##### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 86%

CIVIL ENGINEERING: 79%

BUILDING: 91%

■ ■ ■  
There is written or graphical planning of road accesses that is respected throughout the site

■ ■ ■  
The same but including physical signposting to delimit them *in situ*

■ ■ ■  
The same but limiting road accesses to existing ones

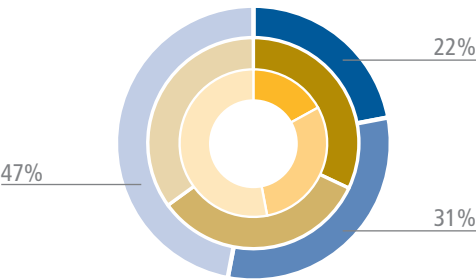
BUILDING  
CIVIL ENGINEERING  
TOTAL

*Decanting ponds form a mechanism that is as simple as it is effective to prevent the pollution and loss of such a valuable resource as water*



LIMITATION OF OCCUPIED AREAS

IMPORTANCE: 1



PROJECTS THAT APPLY GOOD PRACTICES

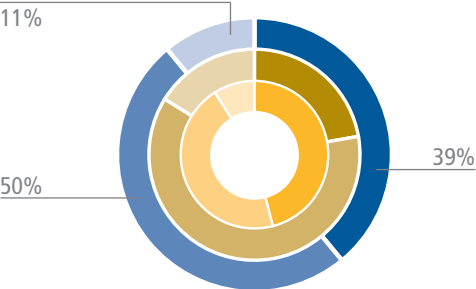
TOTAL:	85%
CIVIL ENGINEERING:	84%
BUILDING:	86%

- There is written/graphical documentation of the areas that can be occupied by machinery and personnel
- In addition, there is physical delimitation or signposting of these areas
- In addition, these areas are limited to the area occupied by the site

BUILDING  
CIVIL ENGINEERING  
TOTAL

PREVENTION OF ACCIDENTAL TIPPING

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	77%
CIVIL ENGINEERING:	65%
BUILDING:	83%

- Containers are available to store dangerous substances or dangerous wastes
- The containers are divided to separate dangerous materials with different properties and the storage of dangerous wastes is centralised at a single point
- There are also platforms or protected areas for handling all maintenance that must be carried out on the site or centre

BUILDING  
CIVIL ENGINEERING  
TOTAL



Topsoil is a scarce and valuable resource which we must try to re-use on the sites themselves. Excesses must not be tipped but used on the site or to improve nearby land

## **USE OF NATURAL RESOURCES AND GENERATION OF WASTES**

### ***Use of natural resources and management of wastes***

When we talk of the consumption of resources, we are talking of the generation of waste. It is not easy to talk of the two items separately. It is neither possible nor useful because they are the same thing. The idea of waste is an idea invented by man. Nature does not know waste. Everything it generates is part of a cycle, everything is incorporated into its processes, which thus makes them highly efficient and in which nothing is left over. On the other hand, many things are left over in our society. Items that we do not know what to do with become a problem and we try to return them but within a new dynamic for which the natural environment is not prepared and which it cannot assimilate. Tips are created, in the best of cases suitably prepared, in many others not, without even the minimum conditions of suitability to the environment or to health.

Throughout history, the concept of waste has changed, undergoing permanent development. Thus what was waste at one time is not waste in another and the value of what used to be left over can be used or, vice versa, the use of that which was once rescued from the tip is today not profitable and it is thrown away.

Wastes generated during building and demolition work (C&DW) have always existed, given that the building activity has always existed practically since man's origins. But lately a new scenario has arisen from the degradation of our environment, of the lack of tips, of the need to optimise the consumption of resources and, closely linked to all of this, the appearance of new legal requirements that impose restrictions and obligations, increasingly noticeable in the building sector.



*Clear signposting of containers, the protection of their contents from being scattered by the wind and a suitable classifying by categories, allow their better and more effective use*

Our activity therefore needs to optimise the management of the wastes it produces and has a responsibility to recover the value they may contain as far as possible, thus preventing their loss and the need to consume the necessary resources to replace them.

Those resources traditionally used in building include inerts, which are used in undertakings and that involve an extraordinary volume. This makes their control and tracking particularly important together with the adoption of practices to minimise them.

Closely related with the consumption of inerts, the generation of wastes is the key point for reduction. They are two sides of the same coin. The wastes generated arise from the resources we consume, and vice versa. They are two closely-linked aspects which frequently share solutions.

FCC Construcción has included among its objectives the reduction of waste in its centres and projects with the double effect of minimising the volume of tipping required and reducing the final need for resources used.

Great effort is required to make the management of wastes and resources with a single and coherent focus fruitful. The flow from one category to another is a desirable solution from the economic and ecological point of view (eco-efficiency) and is the key line along which FCC Construcción has increased its efforts.



*Increased distances in the masses diagram to compensate for earth in embankments and cuttings allows great savings in loans and important economies in tipping*

Resources and wastes are two categories that are clearly complementary on many occasions, especially when earth not taken to the tip is used to avoid loans.

In fact, the good practices proposed for a moderate and conscious consumption of natural resources are both the re-use of inerts from the site itself or from others and the search for a useful destination (other than the tip) for excess inerts, the first achieving satisfying result and the second, very satisfying.

In tracking the good practices referred to, data have been collected for the materials used and for those that come from recycling or from correct environmental management, as summarised in the following table.



*Materials from excavation on the site itself or from other, nearby sites can be treated and made use of, reducing consumption and the generation of tips*

WASTED GENERATED	Forecast amount	Real amount
<b>Empty packaging (kg)</b>		<b>41,838</b>
15 01 10 Empty dangerous wastes packaging		10,929
15 01 10 Empty plastic dangerous wastes packaging		12,094
15 01 10 Empty metal dangerous wastes packaging		18,815
<b>Dangerous solid wastes (kg)</b>		<b>14,417,704</b>
15 02 02 Cleaning mops and rags containing dangerous solids		4,704
16 01 07 Oil filters		1,790
16 05 04 Aerosols containing dangerous solids		5,544
16 06 01 Lead batteries		3,154
16 06 02 NiCad batteries		945
16 06 03 Batteries containing mercury		420
17 05 03 Polluted earth and rocks		14,212,210
17 06 05 Building materials containing asbestos		177,404
17 09 03 Building materials (including mixed) containing dangerous solids		11,327
20 01 21 Fluorescent lamps containing mercury		206
16 01 09 Components containing PCBs		0
<b>Used oils (kg)</b>		<b>41,950</b>
13 01 13 Hydraulic oils		1,130
03 03 08 Engine and mechanical transmission and lubricating oils		38,320
13 03 10 Insulation and heat transmission oils		2,500
<b>Dangerous liquid wastes (kg)</b>		<b>115,887</b>
08 01 11 Paint and varnish wastes containing dangerous solids		707
08 01 17 Strippers or paint/varnish removers containing dangerous solids		0
08 01 19 Water suspensions containing paint or varnish with dangerous solids		0
08 04 09 Glue and sealant wastes containing dangerous solids		520
08 04 15 Watery wastes containing glue and sealants with dangerous solids		19,400
13 07 03 Inflammable liquids		93,624
14 06 03 Solvents and coolants		18
16 01 13 Brake fluids		0
16 01 14 Anti-freezes containing dangerous solids		0
16 01 21 De-coffering liquids, curing liquids, plasticizers, liquefiers		1,618
<b>Inerts (m<sup>3</sup>)</b>	<b>14,087,451</b>	<b>16,690,444</b>
17 05 04 Excess earth or rock	13,440,737	16,182,678
17 01 07 Clean rubble (concrete, mortar, bricks, prefabricated parts, others)	646,714	507,766
<b>Urban wastes (kg)</b>		<b>426,140</b>
20 03 01 Urban wastes and those assimilable to urban		426,140

<b>Other non-dangerous wastes (kg)</b>	<b>30,699,258</b>	<b>65,174,868</b>
01 05 04 Bentonite muds	10,783,500	5,626,800
08 03 18 Printer toner wastes	1,300	367
15 01 06 Non-dangerous packaging	18,105	17,957
16 01 03 Disused tyres	1,890	24,692
16 06 04 Alkaline batteries not containing mercury	3,352	1,041
17 02 01 Wood	681,530	1,082,719
17 02 02 Glass	15,265	22,748
17 02 03 Plastic	68,815	48,470
17 03 02 Bituminous mixes (agglomerates and bitumens)	758,024	728,000
17 04 07 Metals	8,007,598	1,002,057
17 08 02 Plaster	1,270	-
17 09 04 Mixed rubble (mix of non-dangerous wastes)	10,102,181	56,452,100
19 08 05 Waste urban water treatment muds (cesspits and treatment plants)	125,750	3 000
20 01 01 Paper and cardboard	130,612	164,917
20 01 32 Expired medicines, class II biosanitary wastes	66	-

<b>RECYCLED/USED MATERIALS</b>	<b>Forecast amount</b>	<b>Real amount</b>
<b>Excess earth or rock</b>		
To tip (m³)	14,532,557	12,175,227
Used on site (compensation/excavation/filling) (m³)	18,943,951	10,358,236
Used from other sites (m³)	1,270,374	748,119
Used on other sites (m³)	1,989,462	2,946,596
Obtained ex profeso (loans) (m³)	13,739,648	8,533,321
Total excavation (m³)	38,726,902	28,669,687
Total filling (m³)	33,945,112	21,606,936
<b>Clean rubble (concrete, mortar, bricks, prefabricated parts, others)</b>		
To tip (m³)	515,372	285,028
Used on site (m³)	79,420	78,512
Used from other sites (m³)	-	92,035
Used on other sites (m³)	163,000	198,689
Delivered to valuer (m³)	10,706	5,012

*The use of material from the site on the site itself is an ecological priority because it reduces wastes and also financially, through the reduced consumption of resources; it is, therefore, sustainable in the widest sense of the word*



The reduction of the amount of earth sent to the tip is notable. Thus, compared to the forecast, this has been reduced by 16 %, some 2,357,330 m<sup>3</sup> that has not ended up in the tip thanks to the suitable management of wastes and resources. With regard to rubble, this has reached 45 % with 230,290 m<sup>3</sup> of tipping avoided.

There has also been a notable decrease in loaned earth thanks to the use of earth from other sites and a better management of on-site earth, resulting in almost 5,206,327 m<sup>3</sup> less, almost 40 % less than the starting forecast.

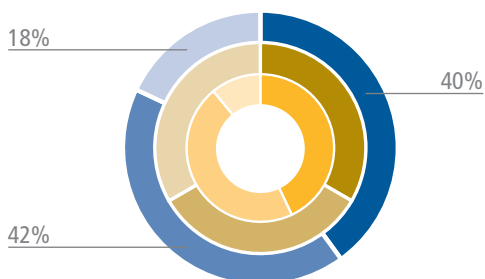
The achievement of these figures is the result of, for example, actions such as the stabilisation with lime of clay soils which would otherwise be sent to the tip and increased loans, changes in slopes for a greater compensation of materials, use of materials from the excavation for the body of dams, increased transport distances to compensate the masses diagram, etc. All these measures form a good example of link between company effort and the search for environmental solutions.

The rational consideration of the use of many natural resources has traditionally been a constant in economic sectors which, such as the building sector, depend for their results on the economy of the various available resources. The innovative part consists now in saving those resources that do not cost anything, that are free or that have no relevance for the particular economics of the project but that do have for the environment overall, such as water, earth, the areas used as tips, etc.

Here, environmental management has systematically included the consideration of these environmental aspects that require the analysis of these parameters in planning the project. The inclusion has been forced of criteria that generally search for a reduction of wastes, the use of non-polluting and less dangerous substances, the encouragement of recovery, reduction in the use of raw materials, efficiency in power consumption and reduction of the risks of accident.

#### RE-USE OF INERTS FROM OTHER SITES

IMPORTANCE: 3



#### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	23%
CIVIL ENGINEERING:	20%
BUILDING:	25%

More than 1 % of inerts (fillings)

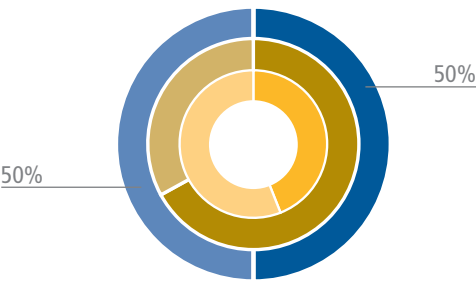
More than 5 %

More than 15 %

BUILDING  
CIVIL ENGINEERING  
TOTAL

USE OF RECOVERABLE ELEMENTS IN SITE PROCESSES SUCH AS REMOVABLE WALLS (TRADITIONALLY OF CONCRETE FOR LATER DEMOLITION) IN ARIDS CRUSHING INSTALLATIONS, ETC

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	6%
CIVIL ENGINEERING:	4%
BUILDING:	6%

Use of some system in at least 50 % of possible cases in carrying out an activity

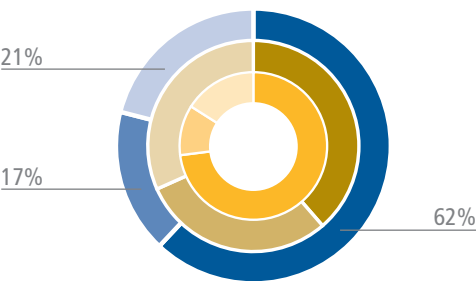
As above, in 2 or more activities

As above, in 5 or more activities

TOTAL CIVIL ENGINEERING BUILDING

REDUCTION OF LOANS COMPARED TO THE VOLUME FORECAST IN THE PROJECT

IMPORTANCE: 3



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	64%
CIVIL ENGINEERING:	59%
BUILDING:	67%

Reduction greater than 5 %

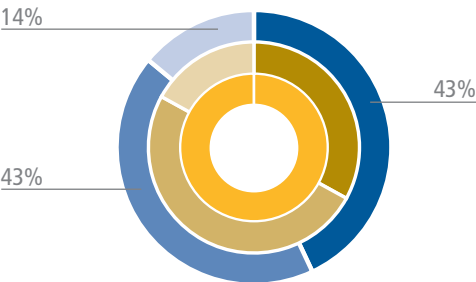
More than 15 %

More than 30 %

TOTAL CIVIL ENGINEERING BUILDING

RE-USE OF WASTES AND RESIDUAL WATERS FROM PROCESSES

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	3%
CIVIL ENGINEERING:	8%
BUILDING:	1%

More than 15 %

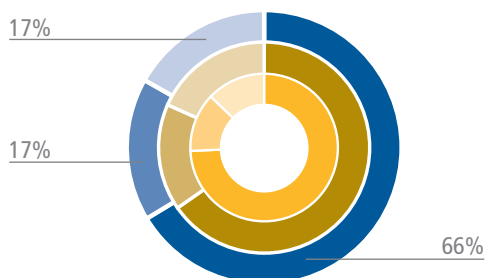
More than 30 %

More than 60 %

TOTAL CIVIL ENGINEERING BUILDING

## RE-USE OF REMOVED TOPSOIL

IMPORTANCE: 2



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 14%

CIVIL ENGINEERING: 29%

BUILDING: 6%

■ ■ ■  
Separation of topsoil in horizontal layers at least 2,5 metres thick

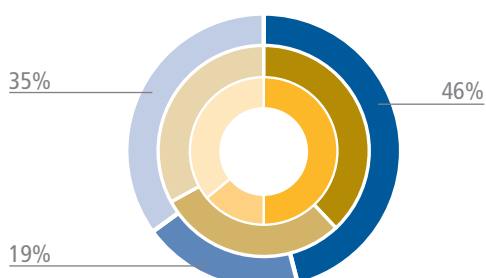
■ ■ ■  
In addition, overturning of topsoil stockpiled for more than six months

■ ■ ■  
In addition, seeding and fertilising of stockpiled topsoil

BUILDING  
CIVIL ENGINEERING  
TOTAL

## REDUCTION OF INERTS TAKEN TO TIP COMPARED TO VOLUME FORECAST IN PROJECT

IMPORTANCE: 3



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 85%

CIVIL ENGINEERING: 77%

BUILDING: 89%

■ ■ ■  
Reduction greater than 5 %

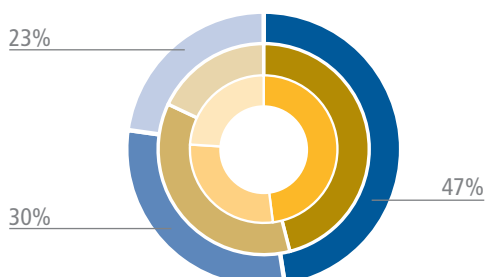
■ ■ ■  
More than 15 %

■ ■ ■  
More than 30 %

BUILDING  
CIVIL ENGINEERING  
TOTAL

## CLASSIFICATION/SEPARATION OF WASTES FROM BUILDING AND DEMOLITION FOR INDIVIDUAL HANDLING

IMPORTANCE: 2



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL: 72%

CIVIL ENGINEERING: 52%

BUILDING: 83%

■ ■ ■  
Wastes from building and demolition are sorted into two categories

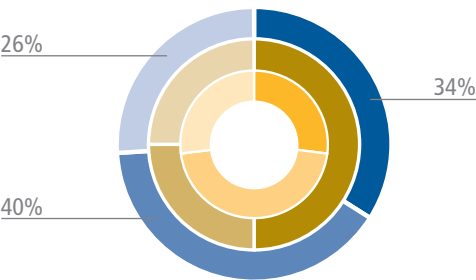
■ ■ ■  
Wastes from building and demolition are sorted into four or more categories

■ ■ ■  
All the wastes from building and demolition are classified and valued

BUILDING  
CIVIL ENGINEERING  
TOTAL

MANAGEMENT OF WASTES FROM EXCAVATION

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

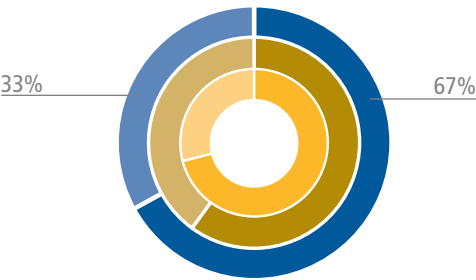
TOTAL:	16%
CIVIL ENGINEERING:	16%
BUILDING:	19%

- More than 1 % on other site for restoration of degraded area
- More than 30 %
- More than 50 %

BUILDING  
CIVIL ENGINEERING  
TOTAL

VALUATION OF RUBBLE

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	6%
CIVIL ENGINEERING:	7%
BUILDING:	5%

- Re-use or recycling on another site or external plant
- Re-use on same site
- Recycling of stones in a plant on the site itself

BUILDING  
CIVIL ENGINEERING  
TOTAL

*Management of dangerous substances and wastes*

Although this aspect has been discussed partly in regard to wastes in general, in the above section, it is useful to go into greater detail regarding dangerous substances and wastes, also two sides of the same reality.

The general practice in FCC Construcción is the suitable management of dangerous wastes, assuming the extra cost involved, compared to the traditional practice of not doing much, in the sector, to mix these with the inert wastes on the site.

Dangerous wastes are not particularly frequent in building but it is necessary to give them special treatment to prevent especially harmful effects to the environment.

Great effort has been made in this area to identify and sort the wastes usually handled in building in order to avoid their possible unsuitable management due to lack of knowledge and a list of these typical dangerous wastes in our sector has been prepared that is used on the sites as a guide.

*For dangerous substances, correct storage, suitable signposting, the preparation of emergency plans for accidents, the usage planning to prevent degradation or deviations from specifications to turn them into wastes and the use of measures to prevent their mixing or increasing their danger are essential*



They are sorted and coded according to the European wastes list (EWL), they are separated into the relevant groups and handled according to current legislation using authorised transporters and handlers.

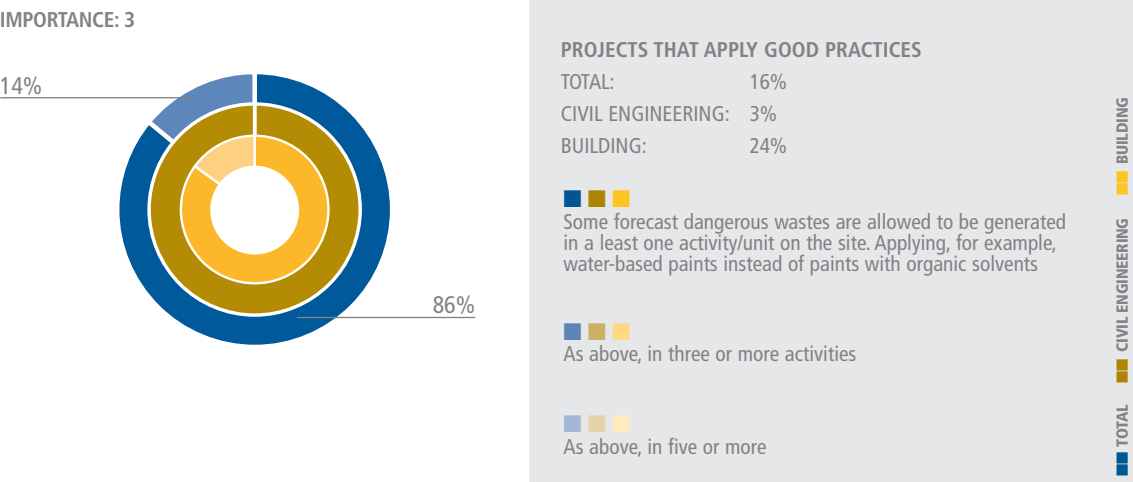
The special consideration for dangerous substances and wastes is clear in the generalisation on sites of the complementary measures to protect against pollution, with sealed containers in storage points for any pollutant liquid that may be spilled and pollute the ground and implementing an emergency plan for accidental spillages or the burning of dangerous substances, in the prevention of any incidents while carrying out the project and the prevision sufficiently beforehand of the measures to be adopted, thus changing the traditional policy of acting “when it happens” into sufficient planning and prevention.

*Selective demolition work allows the wastes that are inevitably generated to be given better destinations, facilitating their use or recycling and preventing the mixing of dangerous wastes with the rest*

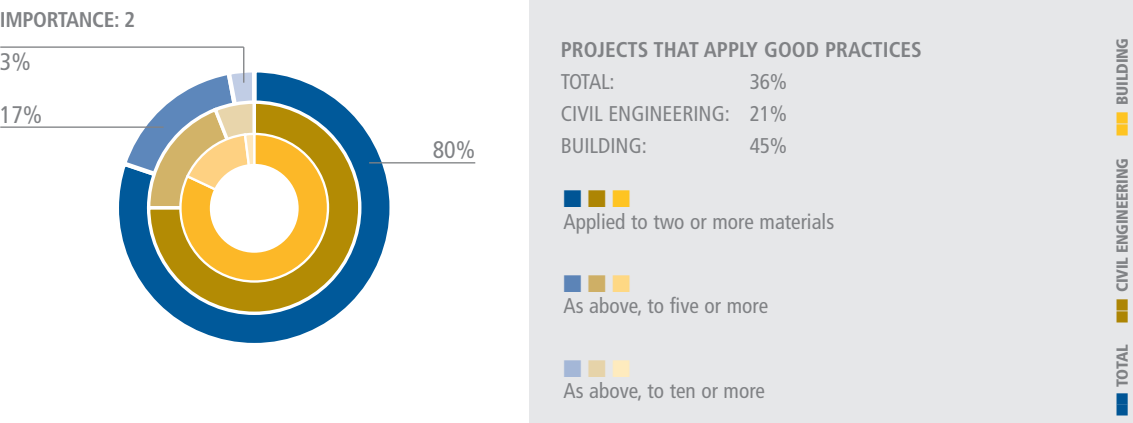


Likewise, the containers for these dangerous wastes have been systemised and detailed, which is basic for the suitable handling of these products, the legislation and the requirements that it imposes for the correct handling, storage, transport and management of them.

CHANGES IN THE DESIGN OR IN THE BUILDING SYSTEM WITH REGARD TO THE USE OF MATERIALS THAT GENERATE DANGEROUS WASTES SUCH AS ASBESTOS, DE-COFFERING LIQUIDS, ADDITIVES, RESINS, VARNISHES, PAINTS, ETC, GENERATING WASTES OF LESS OR NO DANGER



REDUCTION OF PACKAGING WASTE THROUGH PRACTICES SUCH AS REQUESTING MATERIALS WITH PACKAGING THAT IS RETURNABLE TO THE SUPPLIER, RE-USE OF POLLUTED PACKAGING, RECEPTION OF ELEMENTS IN BULK THAT ARE NORMALLY PROVIDED IN PACKAGES, ETC



*The individual and careful handling of each element that is considered valuable in the environment is the key to better results in the project*



## **LAND PLANNING** *(Biological diversity and the urban environment)*

### ***Building and land***

There are areas in which building activity has a particularly strong effect or in which its influence is more strongly seen. Environments that on occasions involve the defence of especially valuable individuals (flora or fauna) or in which it is necessary to consider factors that may alter the normal rhythm of a community to a greater or lesser extent.

Here, under the most general heading of land planning, FCC Construcción has also planned the use of various good practices. Most of these good practices cannot be carried out universally but only on specific occasions, the reason for the limited number of our projects to which they are applied. It is rarely necessary - for example - to move nests or individuals who are threatened by the undertaking of an activity; it is somewhat more frequent to transplant trees, especially in civil engineering.

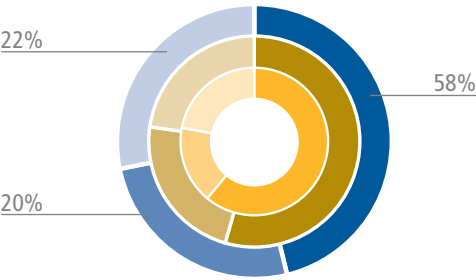
The protection of some examples is relatively more frequent to prevent damage during the undertaking of a project, mainly due to the movement of machinery; this protection is carried out in nearly 20% of cases or means are used to prevent dirt at the entrance to and exit from the site.

*Various measures can be taken to prevent mud and dirt when vehicles join public roads from sites, such as periodic washing and washing undersides and wheels*



PHYSICAL PROTECTION OF INDIVIDUAL ITEMS

IMPORTANCE: 1



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	21%
CIVIL ENGINEERING:	29%
BUILDING:	17%

All individual items affected by the project are protected

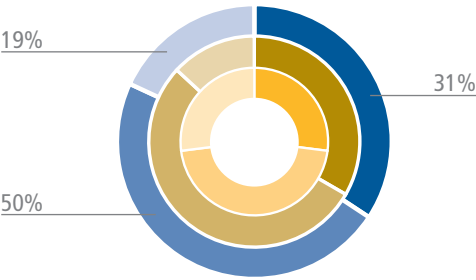
As above, for all individual items

In addition, care and maintenance is carried out

TOTAL CIVIL ENGINEERING BUILDING

TRANSPLANTS

IMPORTANCE: 1



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	12%
CIVIL ENGINEERING:	20%
BUILDING:	8%

An individual item affected by the project is transplanted

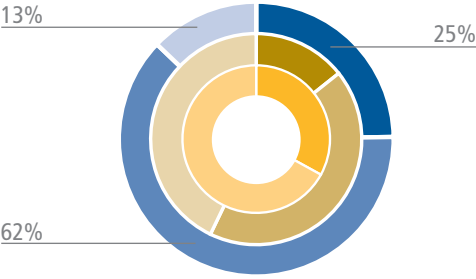
As above, for all individual items

In addition, over 80% of transplants are successful

TOTAL CIVIL ENGINEERING BUILDING

ADAPTATION OF THE PROJECT PLANNING TO THE LIFE CYCLES OF THE MOST VALUABLE SPECIES

IMPORTANCE: 2



PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	4%
CIVIL ENGINEERING:	7%
BUILDING:	2%

The project's forecasts are improved on

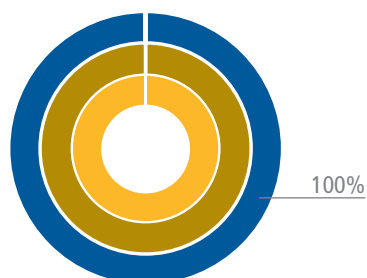
It is not taken into account in the project and it is carried out

In addition, the individuals affected are tracked for more than six months

TOTAL CIVIL ENGINEERING BUILDING

## MOVEMENT OF NESTS OR INDIVIDUALS

IMPORTANCE: 1



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	1%
CIVIL ENGINEERING:	3%
BUILDING:	1%

Some movements are made

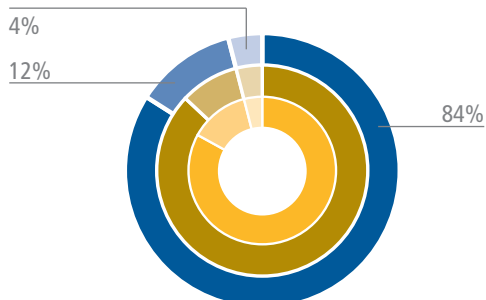
A general movement is made

In addition, the individuals affected are tracked for more than six months

BUILDING  
CIVIL ENGINEERING  
TOTAL

## USE OF MEASURES TO AVOID DIRT AT THE SITE ENTRANCE AND EXIT

IMPORTANCE: 2



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	79%
CIVIL ENGINEERING:	60%
BUILDING:	90%

Entrances and exits are swept systematically

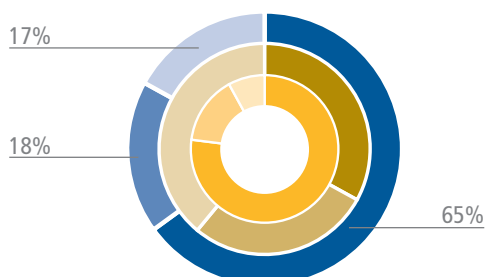
The wheels of all trucks are cleaned before they join the public road

A fixed device is used for the above (water troughs at the exits, sprays, etc)

BUILDING  
CIVIL ENGINEERING  
TOTAL

## OCCUPATION OF PAVEMENTS AND ROADS

IMPORTANCE: 2



### PROJECTS THAT APPLY GOOD PRACTICES

TOTAL:	31%
CIVIL ENGINEERING:	24%
BUILDING:	35%

Protective measures are adopted (fencing, signposting, separation of pavement/roads, etc)

In addition, alternative routes are provided

In addition, the maximum authorisation time or space is reduced

BUILDING  
CIVIL ENGINEERING  
TOTAL

*Following a road*



## **FOLLOWING A ROAD**

In reality, the environment is not entering further into our activity. It has always been there. But we are increasingly aware of it and of the real importance of considering it when carrying out our activity.

The balance between what we can do and the result we achieve is a geometrical space through which we move, searching for greater efficiency, better results for the more rational use of available resources.

During this year we have developed new management tools. We have improved and increased discussions with interested parties. We have increased the effort in projects to apply good practices. We have taken part in various international working groups to prepare standards for sustainable building. We have increased the ratio of materials used in projects to those finally thrown away.

But we have not finished. Sustainability is a process and not an objective. It means doing things, not something that has been finished. It means following a road and not a place to be reached. It is not Ithaca, but the road: the Odyssey, since Ithaca is the end and our wish is not to end but to continue. Because it is the journey that is important, not the arrival, and to travel is precisely what we wish. It is not to have lived but to be living. And to learn, to improve and to grow always.

*Ithaca*

*When you set out on your journey to Ithaca,  
pray that the road may be long,  
full of adventures, full of knowledge.  
(....)*

*Pray that the road may be long.  
May the summer mornings be many  
when with intense pleasure and joy  
you will enter harbors seen for the first time;  
(....)  
travel to many (...) cities  
to learn endlessly from the learned.*

*Always keep Ithaca in your mind.  
Arriving there is your ultimate purpose.  
But do not hurry the journey in the least.  
Better that it last for many years,  
and that finally you anchor at your island old,  
blessed with all that you have gained on the way,  
not expecting Ithaca to give you riches.*

*Ithaca gave you the splendid journey.  
Without her you would not have set out.  
She has nothing more to give you.*

*And if you find her poor, Ithaca has not deceived you.  
Wise as you have become, with so much experience,  
you must have understood already what Ithacas mean.*

KONSTANTINOS KAVAFIS  
(Theofanis G. Stavrou versión)



Av. General Perón, 36 • 28020 MADRID  
Tel: +34 91 514 10 00 Fax: +34 91 514 10 12  
[www.fccco.es](http://www.fccco.es)