

Our Goal:  
Thinking Ahead



We are Pioneers



# CEO Message

## Overlooking the crisis

*In 2009 the solid order intake of the previous years has allowed us to stabilize our work volume. The year has ended with satisfying results despite the global downturn due to the financial crisis. These results may have decreased compared to our 2008 figures (-10%). The world's attention has been focused on Dubai, as the spectacular growth in the emirate has come to a brutal standstill. However as this emirate represents just 12% of our global activity, we were only mildly affected.*

Ferrari World  
Abu Dhabi - UAE  
Architect: M/s Benoy

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## Challenges and opportunities

BESIX nevertheless completed the majority of the works on the highest tower in the world, now called Burj Khalifa.

The Middle East as a whole has accounted again for near 50% of our global business volume and contributed in a major way to our net earnings.

We have actively turned our attention to the Kingdom of Saudi Arabia, a country which we trust to be active in the course of 2010. The potential in this country should largely compensate the lost potential in the Gulf. In 2009, some major projects in Belgium, the Netherlands and France have been finalized. In our home market, our regional companies,

Jacques Delens, Vanhout, Wust, Cobelba and Lux TP have performed very well. Not only did they maintain their volume; they also managed to secure their continuity to a large extent. The integration of Franki Foundations has been difficult. They are first in line to undergo the consequence of an economically negative environment. Our real estate activity has excelled with record sales in the residence sector. Their land bank has the required reserves to continue their development for the years ahead.

## Prospects

As anticipated, our 2009 order intake has not been in line with the previous year's evolution. The backlog was more-over impacted by the cancellation of some important contracts obtained in the past.



The work volume ahead of us is however sufficient to look with confidence at the near future. Renewing our order book will be one of our priorities in 2010.

## Safety

Our safety record has again improved and we continue to target the zero accident goal.

## Human Capital

Against all odds, we have been able to maintain employment for our workers and employees. We have sustained the training programme for our staff and trainings in various skills, as we want to continue investing in our human capital: our men and women.

## Corporate

2009 has been marked by our hundred years of existence. The celebrations in Brussels and Abu Dhabi have been carried out in a style that befits BESIX Group's stature. 2009 was also the year that BESIX Foundation took off. In its first year of activities, the BESIX Foundation supported 25 projects of which 18 were suggested by colleagues. The projects supported concerned Education, Construction and/or Environment. They are both in Belgium and abroad (India and Africa) and will help several thousands of beneficiaries.

Johan Beerlandt

# Consolidated Key Figures 2009

*“After five years of continuous growth, 2009 was a year of consolidation and of strengthening the balance sheet.”*

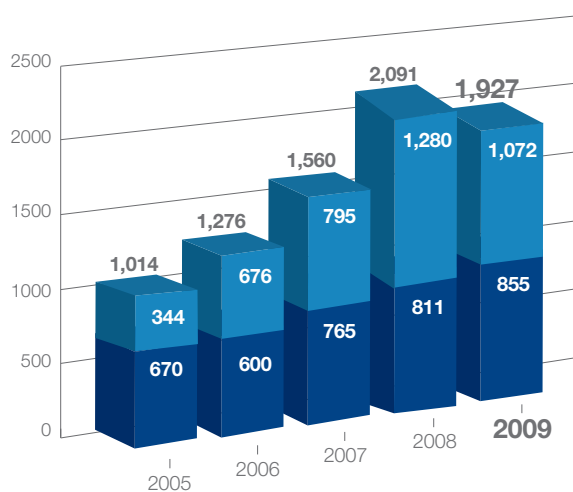
*Paul Mouton, CFO*

	2005*	2006*	2007**	2008**	2009**	2010
Turnover	1,014.0	1,275.8	1,560.2	2,091.3	1,926.8	
EBITDA	52.4	77.6	88.9	132.0	126.4	
EBITDA (%)	5.2%	6.1%	5.7%	6.3%	6.6%	
EBIT	30.8	49.8	54.8	88.4	78.2	
Net result	36.2	40.6	51.6	75.0	67.3	
Return on sales (%)	3.6%	3.2%	3.3%	3.6%	3.5%	
Order book 01/01	1,364.0	1,590.0	1,712.0	2,318.0	3,627.2	2,423.0
Equity	129.5	152.8	200.9	267.6	311.3	

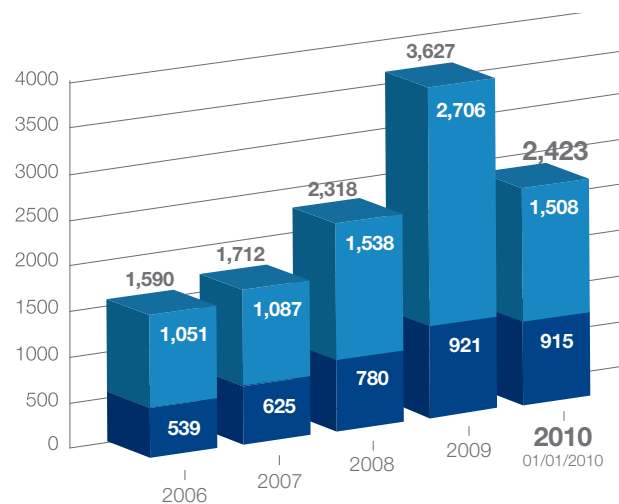
\* BGAAP  
(Belgian Generally Accepted  
Accounting Principles)

\*\* IFRS  
(International Financial  
Reporting Standards)

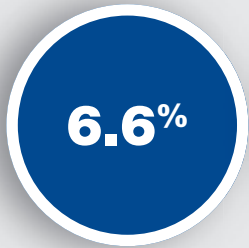
**EVOLUTION OF TURNOVER** (in '000 €)



**EVOLUTION OF ORDER BOOK** (in '000 €) on 01/01



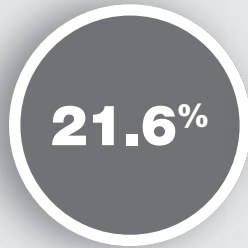
## EBITDA



## CASH SITUATION



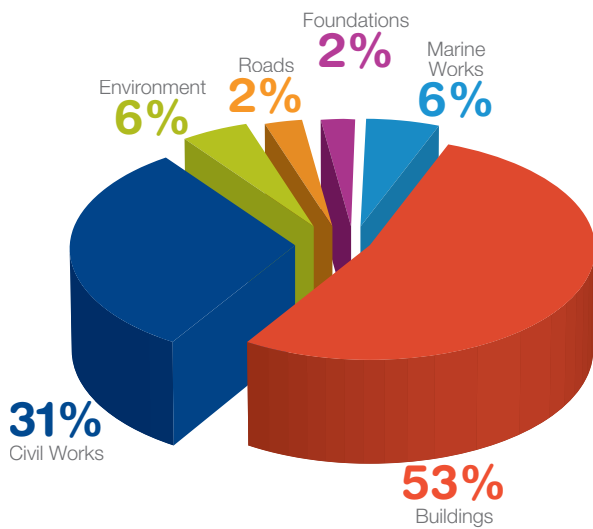
## SOLVENCY RATIO



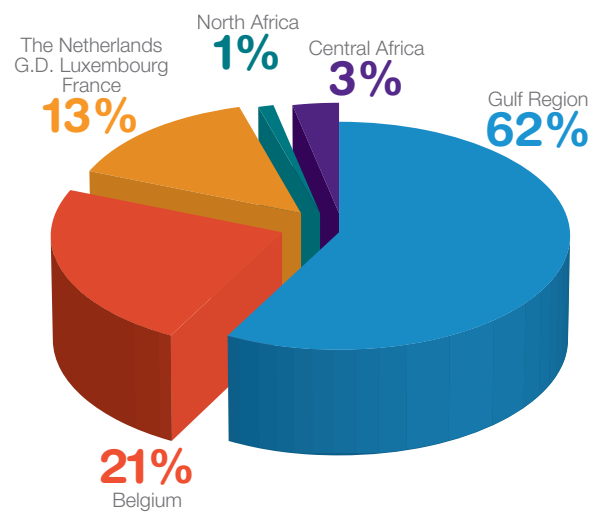
## LIQUIDITY RATIO



## ORDER BOOK BY SECTOR



## ORDER BOOK BY REGION



# A Century of Building Experience

*Created on January 13th, 1909 as the 'Société belge des Bétons et Planchers tubulaires (Brevet Herbst)' and based in Antwerp, the BESIX Group celebrated its centenary in 2009!*

Several events took place in 2009 pointing up immense accomplishments, tightening the links between colleagues and consolidating relations with our clients. These events took place in Belgium but also in the United Arab Emirates.

On January 13th, 2009, the Palais des Colonies in Tervuren provided employees the setting for the BESIX Group's centenary celebration.

This 'historic' event was marked by an exceptional reception and took place in a festive atmosphere. On September 11th, a show themed "the bridge" was organized in Brussels and truly lived up to our expectations. The evening took place at the Brussels Expo, the biggest exhibition park in Belgium. Politicians, captains of industry and other distinguished guests witnessed an amazing show hosted by Luc Petit, Art Director. In his speech that evening, Johan Beerlandt, Chief Executive Officer explained: "The bridge symbolizes the link between the continents where we operate, different cultures, different generations, but also the bridge between ideas and the concrete accomplishments of our projects! This is the passion that has enthused me throughout the years..."

On October 28th, during an Economic Mission to Saudi Arabia and the U.A.E., BESIX Group celebrated its 100 years (of which more than 4 decades in the Gulf area) in Abu Dhabi in the presence of captains of industry, local dignitaries and their Royal Highnesses, Prince Philippe and Princess Mathilde of Belgium. The 100 years' existence of BESIX Group not only means a century of building experience but also shows a passion for building. This passion, shared with the staff in all BESIX Group companies has transformed concepts into reality thanks to cooperation of all clients, architects, consultant and others. These challenges succeeded thanks to true team spirit.



*Created on January 13th, 1909 as the 'Société belge des Bétons et Planchers tubulaires (Brevet Herbst)' and based in Antwerp, the BESIX Group celebrated its centenary in 2009!*

## **A book as witness to the Group's history**

On this occasion, the Group published the first volume (1909-1989) of a book about its 100 years of history.

## **"BUILDING EXPERIENCE" - The centennial history of BESIX, a Belgian construction company"**

BESIX has passed through the years, ever present, discovering new territories, introducing new technologies and justifying its reputation as a pioneer. Volume 2 (1990-2009) will be published in 2010.

1. Centenary event  
Tervuren - Belgium

2. Centenary event  
'The Bridge' show  
Brussels - Belgium

# BESIX Foundation Building a Better World



**332,000 Euros and more than  
125 colleagues involved in 2009.**

**In its first year of activities,  
the BESIX Foundation has supported  
25 projects of which 18 were  
suggested by colleagues.**

1. Solidarity Day  
Wavre - Belgium

2. Roof of Sahel project  
Subsaharian Africa

3. Pope project  
Thallakulam - India



**BESIX Foundation supports charities  
by giving them financial support  
and by sponsoring them so they can  
achieve their goals. The foundation  
also encourages volunteer work  
among BESIX Group's employees.**

**Education, Construction and/or Environment**  
are the common themes of the supported projects.

We are building a school and a dispensary in India. In Africa we are building a school and supporting a sustainable construction technique as well as a large water access project.

In Belgium we are supporting associations that support young people or children through educational programmes.

We also assist other associations that help handicapped people through vocational training and environmentally friendly projects.

Sharing skills is enriching and it's even better when volunteers get to know one another and work together. That's why volunteering is also one of the strengths of our Foundation. Staff members have helped tremendously with some projects and Solidarity Days were organized in Belgium.

This year more than 125 colleagues gave their time and enthusiasm to support the Foundation's work: helping, building and cooking for underprivileged people or giving their time to work on environmental projects.

A sports project was also presented and supported by the BESIX runners' team for the 20 km through Brussels.

For more information:  
[www.besixfoundation.com](http://www.besixfoundation.com)

Thanks to its Foundation,  
BESIX Group also  
participates in Building  
a Better World.



Each Site is  
a New Challenge





# Corporate info



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1. Ferrari World  
Abu Dhabi - UAE  
Architect: M/s Benoy

2. Qipco Tower  
Doha - Qatar

3. Guillemins Railway Station  
Liège - Belgium  
Architect:  
Santiago Calatrava  
Photo: eltgv@alainjanssens

Key Events 2009

Areas of Activity

Corporate Governance

Board of Directors and Committees

Building for Sustainability

Health, Safety and Environment

Human Resources

Engineering

# Key Events 2009



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## Historic New Year's celebration

**On January 13th, 2009.** This "historic" event was marked by an exceptional reception for all Group employees at the Palais des Colonies at Tervuren.

## Daskalides in Ghent

**January 2009.** BESIX achieved the construction of a new residential building in Ghent.

## Connecting Rio Wele rivers banks

**March 2009.** The BESIX Group started the construction of 2 twin bridges over Rio Wele in Equatorial Guinea.

## Laureate of the "Global Water Awards 2009"

**On April 27th, 2009.** The Global Water Intelligence (GWI) Awards 2009 were conferred, in presence of Al Gore, former Vice President of the United States and Nobel Prize Winner. BESIX Sanotec (in partnership) and Six Construct were proclaimed "winner of the year" in the category "Water deal of the year" for the Project Independent Sewerage Treatment Plant (ISTP2) in Abu Dhabi.

## Call for BESIX expertise at the Port of Tanger

**On June 17th, 2009.** The contract for the design and construction of the new infrastructures of the Tangier Med II Harbour was awarded to a consortium including BESIX, providing further confirmation of its expertise in marine works. His Majesty Mohammed VI launched the construction and extension works of the new port.

## Qipco Office Tower, best tall building in the Middle East & Africa

**On July 11th, 2009.** The Qipco Office Tower was awarded the 2009 prodigious accolade for the Best Tall Building in the Middle East and Africa by the Council on Tall Buildings and Urban Habitat (CTBUH).

## Doha Convention Centre, two in total

**July 2009.** The first section of the raft has been successfully cast on a Convention Centre and BESIX was awarded the construction of another Convention Centre.

## Second Coentunnel, launch of construction

**On September 7th, 2009.** The official start of the construction of the Second Coentunnel took place. This large DBFM (Design, Build, Finance, Maintain) project, awarded to a consortium in which BESIX has an 18% share, includes the construction of a second tunnel, the renovation of the old one and its maintenance for 30 years. The opening is scheduled for 2012.

## Heysel Grand Celebration

**On September 11th, 2009.** A show themed "the bridge" celebrated BESIX's centenary at the Brussels'Expo. The 100 years'existence of the BESIX Group not only means a century of building experience but also shows a passion for building.

## Liège-Guillemins, a "new look" station

**On September 12th, 2009.** The SNCB-Holding inaugurated the new Liège Railway Station which

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offers a direct rail link to major cities in Belgium and neighbouring countries. Wust, in consortium, was heavily involved in the renewal of the railway facilities and in structural work on the passenger building and the parking garage on the Colline de Cointe side.

### Square Brussels opens

**On September 20th, 2009.** The Square Brussels Meeting Centre was inaugurated. This centre with its avant-garde appearance, accessible via an original glass cube, offers a total area of 30 000 m<sup>2</sup>. A prestige reference for Europe's capital ! BESIX and Jacques Delens teams took part in this exceptional construction.

### Mazagan Beach Resort, second resort in the Azur Plan

**October 2009.** Inauguration of the Mazagan Beach Resort. This Moroccan 5-star hotel with more than 500 bedrooms, built by BESIX and SOMAGEC, is part of a resort which also has an 18-hole golf course, a spa, a casino and a choice of restaurants on a 250 ha. site.

### First ever Formula 1 Race in Abu Dhabi

**On November 1st, 2009.** On a brand new race track on Yas Island, the formula 1 pilots battle for the 1st prize. The track in line with BESIX projects: marinas, bridges and Ferrari World, an original curvy shape, a 170 000 m<sup>2</sup> red roof with the world's largest Ferrari logo, a building so huge that it could cover the entire Olympic Stadium of Beijing.



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### The Maastoren, a new landmark in Rotterdam

**November 2009.** BESIX completed the 165 m tall skyscraper comprising 44 floors with a total of 69 000 m<sup>2</sup> and 637 parking spaces. This tower is Netherlands' tallest office building.

### Cairo's new place to be

**December 2009.** The 5-star Fairmont hotel is operational and the Nile City Project is totally completed. This 'core & shell' project, realized in partnership with Orascom, has a surface area of 55 000 m<sup>2</sup>.

### Exclusive new hotel

The Jacques Delens Entreprises signed with the Norwegian group Olav Thon a contract for the construction of a complex including a hotel of 405 rooms, 33 apartments and 2 000 m<sup>2</sup> of commercial spaces in Brussels.

### Khalifa Tower, Dubai, the tallest building in the world

**On January 4th, 2010.** In the centre of Downtown Dubai, the Khalifa Tower (Burj Dubai Tower) is definitely the world's tallest man-made structure. At the height of 828 metres, the Burj Khalifa has reached 160 floors. This impressive building is the Tower of the records: 370 000 m<sup>3</sup> of concrete poured, 30 000 t of rebars, 150 000 m<sup>2</sup> of glass, 4 000 t of structural steel. With the completion of the spire pipe jacking in January 2009 and the completion of the cladding in September 2009, the tower was inaugurated by His Highness Sheik bin Rachid Al Maktoum on January 4th, 2010.

1. Global Water Award 2009 Ceremony

2. Qipco Tower  
Doha - Qatar

3. Square Brussels meeting centre  
Brussels - Belgium  
Architect: A2RC

4. Guillemins Railway Station  
Liège - Belgium  
Architect: Santiago Calatrava  
Photo: eltgvc@alainjanssens

5. Ferrari World  
Abu Dhabi - UAE  
Architect: M/s Benoy

6. Burj Khalifa  
Dubai - UAE  
Architect: Skidmore,  
Owings & Merrill





# Areas of Activity

The BESIX Group is a group of industrial companies operating in construction, roads, infrastructure, environmental, concessions and property development sectors. Founded in 1909, the Group has a record of regular and impressive growth. It profiles itself as a multi-services group.

Celebrating its century of building experience, the Group has built up a solid international reputation, with experience in some fifty countries. Today it is working in fifteen countries on four continents.

In addition to the activities of BESIX, Cobelba, Jacques Delens, Lux TP, Socogetra, Vanhout, West Construct, Franki Foundations Group Belgium and Wust in the European Union, the Group is also present in Eastern Europe, North and Central Africa, in the Middle East, via Six Construct, in Central Asia and the Caribbean. The BESIX Group has over 19,000 employees worldwide.



 countries where the Group is active  
 countries where the Group was active



**100 years**  
of experience

**+ 85 years**  
of experience  
internationally

# Corporate Governance

*BESIX Group follows the Belgian recommendations on good corporate governance for non-listed companies.*

*These recommendations are implemented essentially as follows :*

The **vision and mission** of the Group and its companies are regularly reviewed, in particular by the Board of Directors and its Executive & Strategic Committee, with objectives set accordingly. The Group has also adopted governance rules for itself and its various constituent companies .

The Group Board of Directors plays an **active and regular role**, assisted by advisory committees, in supporting the CEO and management, in the operating and financial control of the Group and its constituent companies, and in safeguarding their interests, in particular in the event of a crisis or conflict ; the Board of Directors is composed so as to ensure balance and independence, with four external directors, including the chairman. Decisions are taken collegially and the functioning of the board is regularly reviewed.

#### **Advisory committees**

are set up within the Board of Directors. These prepare the information to be discussed at board meetings and formulate opinions for it :

- *The Remuneration & Appointment Committee* focuses on the consolidated annual and semi-annual accounts and on the unconsolidated accounts, in liaison with management and the company auditor. It also keeps on the internal control systems, major risks linked to the activities of the company and its constituent companies and their good governance.
- *The Executive & Strategic Committee* focuses on the vision and mission and the resulting strategic objectives of the Group and its constituent companies, as well as their implementation.
- *The Remuneration & Appointment Committee* monitors and assesses the work of the senior managers of the Group and its constituent companies, and the human resources policy of the Group and its companies.



BESIX Headquarters  
Brussels - Belgium

To ensure quality performance, proper reporting and a collegial spirit, the management of the Group and its constituent companies implements the Group's strategy. This strategy is defined by the Board of Directors and implemented by the CEO. To this end, management is represented on the Executive & Strategic Committee.



# Board of Directors and Committees

## Board of Directors

Baron Jean Stéphane<sup>1</sup>  
Johan Beerlandt<sup>2</sup>

Chairman  
Vice-Chairman,  
Chief Executive Officer  
Vice-Chairman  
Director  
Director  
Director  
Director  
Director  
Director  
Director

Nassef Sawiris  
Philippe Muûls<sup>3</sup>  
Luc Vandewalle  
Baron Philippe Vlerick  
Jean-Jacques Delens<sup>4</sup>  
Philippe Quoilin<sup>5</sup>  
Karim Camel-Toueg  
Nicolas Estay

End of mandate: June 2010

Baron Paul de Meester

Honorary Chairman

## Audit Committee

Luc Vandewalle (Chairman)  
Philippe Muûls  
Baron Philippe Vlerick  
Fadi Kiama

## Remuneration & Appointment Committee

Baron Jean Stéphane<sup>1</sup> (Chairman)  
Johan Beerlandt<sup>2</sup>  
Nassef Sawiris

## Executive and Strategy Committee

Johan Beerlandt<sup>2</sup> (Chairman)  
Nassef Sawiris  
Werner Dekkers  
Jean-Jacques Delens<sup>4</sup>  
Jules Janssen<sup>6</sup>  
Paul Mouton<sup>7</sup>  
Philippe Quoilin<sup>8</sup>  
Karim Camel-Toueg

Chief Executive Officer  
  
Chief Development Officer  
Managing Director (BESIX Real Estate Development)  
General Manager (Construction)  
Chief Financial Officer  
Chief Operating Officer (Contracting)

Frédéric de Schrevel<sup>9</sup>  
Geert Aelbrecht<sup>10</sup>

Secretary General  
Group Human Resources Director

1 Permanent representative of Innosté SA

2 Permanent representative of Bevafin SA

3 will be succeeded by Yves Windelincx by June 2010

4 Permanent representative of Nemofin SA

5 Permanent representative of ManCo Investment Company SCRL

6 Permanent representative of Philippe Quoilin SPRL

7 Permanent representative of Sheep Management SPRL

8 Permanent representative of CJ Projects SPRL

9 Permanent representative of Arthepa SPRL

10 Permanent representative of Gacco SPRL

# Building for Sustainability

*In 2009, the Group further committed itself to operating as a player of responsible and sustainable development, aiming continuously at integrating its missions and values into its development and operations.*



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## **BESIX Foundation For a Better World**

**Jean-Jacques Delens**  
**Managing Director**  
**BESIX Real Estate Development**

*"Through the BESIX Foundation we recognize the impact we have on the community and show our willingness to be a positive actor in the improvement of our common environment. The BESIX Group wanted to build something sustainable to celebrate its centenary. Since its creation last year, BESIX Foundation has already invested in 25 humanitarian projects both in Belgium and abroad."*

## Missions

- To offer its clients a total and 'tailor-made' service.
- To use the know-how and creativity of our in-house engineering department to produce innovative solutions.
- To offer a consistent and complementary structure compatible with a long term approach.
- To incorporate the different companies under the banner of a common identity.

## Values

- To promote a shared vision of the issues, placing the emphasis on skills, expertise, a sense of responsibility, a sense of belonging and entrepreneurial qualities.
- To reconcile individual satisfaction and the development of talent.
- To encourage diversity.
- To maintain a healthy and safe working environment.
- To be involved in the community and support corporate citizenship through sponsorship, with the creation of the BESIX Foundation.



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## Corporate Social Responsibility

In 2009 the Group supported its companies local awareness and initiatives for integrated promotion of people, planet and prosperity in their daily activities. In 2009 in line with previous years, the Group companies did indeed focus on further integration of social and environmental concerns in their business operations, and in several countries beyond those prescribed by law.

The Group strongly believes that Corporate Social Responsibility is first a proximity duty and therefore largely relies on the initiatives and actions developed by its companies in interaction with its own stakeholders.

Several initiatives were accordingly set up, introduced and implemented within the Group companies while other actions were further processed and developed in 2009.

### Quality, Health and Safety

Those extend beyond construction good practices such as the certification and compliance process in quality, health and safety.

In **quality**, the integrated management system in use largely fulfills the ISO 9001 requirements with a wide range of methodologies and practices that

constitute the specific governance direction of the Group, having for example contributed to obtaining the ISO 9001 recertification at the end of the year for BESIX Contracting.

While **health and safety** remains a driving indicator strongly related to construction project requirements with the key objective of zero tolerance, 2009 was also the year of more environmental awareness in the Group companies, resulting e.g. in BESIX Contracting following Six Construct into an ISO 14001 certification process.

### Major internal and external challenges

The Group is further convinced that Corporate Social Responsibility shows a transversal dimension where not only all companies but also local initiatives and actions contribute to key challenges within the Group.

**Externally and within the Group**, those challenges mainly include health and safety performance, citizenship actions in the countries and communities where the Group is operating and the research and development with the promotion of innovative technical solutions in all construction project opportunities that are offered to the Group companies.

The Group's health and safety results have been included in executive and staff performance management and assessment in 2009. Health and safety performance is also promoted and monitored at Group level since it clearly belongs to the Group values.

To conclude and on a pyramidal model, the local and company actions and initiatives as well as the transversal Group key challenges are merging into the Group strategic values, with a strong focus on human capital management and motivation as well as on long-term commitment vis-à-vis all stakeholders.

In order to further build a Group integrated Corporate Social Responsibility approach, a consolidation action plan has been set up and was launched in December, both with consideration for the requirements of Group clients in this respect and on a voluntary basis.

### In the future

The objective of this is to build, as for the Group common identity, a specific approach in 2010 allowing differentiation in **integrating the people, planet and prosperity dimensions of our business** and building further appropriate codes of conduct and action plans according to highest standards as applicable to the construction sector.

*BESIX builds trusted partnerships with its clients. The Group strives for excellence in all its realizations and offers sustainable solutions in line with the needs of its clients.*

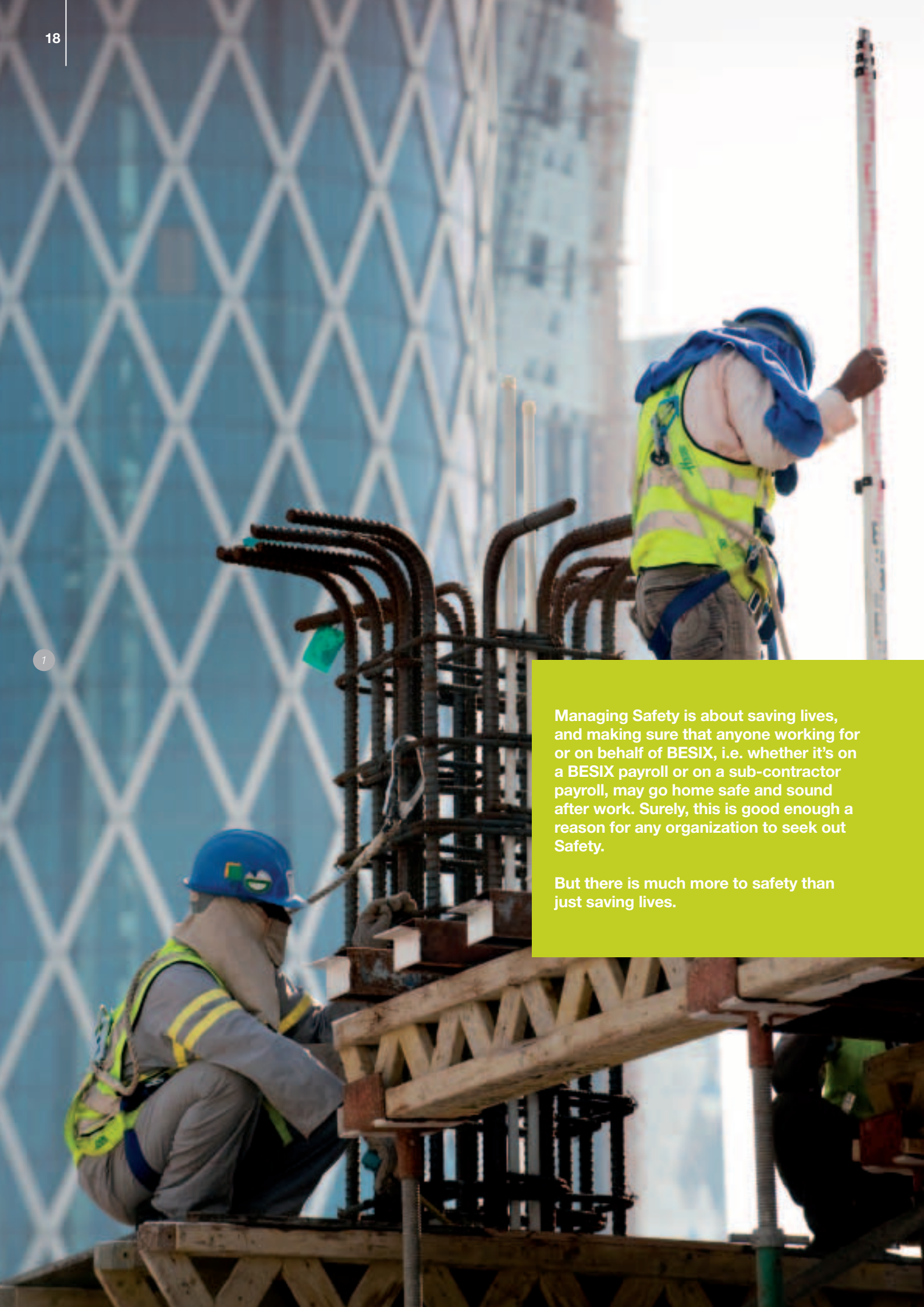
1. Pope project  
Thallakulam - India

2. Allahama Wastewater  
Treatment Plant  
Al Ain - Abu Dhabi - UAE

3. BESIX Headquarters  
Brussels - Belgium



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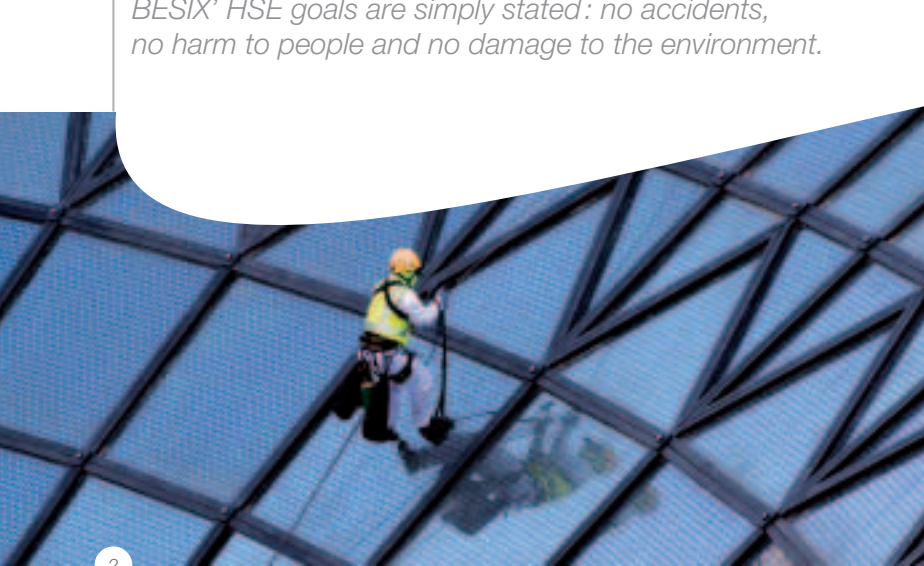
Managing Safety is about saving lives, and making sure that anyone working for or on behalf of BESIX, i.e. whether it's on a BESIX payroll or on a sub-contractor payroll, may go home safe and sound after work. Surely, this is good enough a reason for any organization to seek out Safety.

But there is much more to safety than just saving lives.

# Health, Safety and Environment

## Health and Safety

*BESIX' HSE goals are simply stated: no accidents, no harm to people and no damage to the environment.*



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### A story about Productivity...

Strong safety related processes will often act as a vehicle for improving other key business processes too. Key safety related processes such as developing Method Statements and Risk Assessments, and performing Job Safety Analysis and Pre-Task Briefings, Preventive Maintenance and Regular Inspections are all about **planning the work and working the plan** or in other words executing the work in a controlled manner. Implementing such key processes in a robust manner is about managing risks and thus is about reducing the number of unpleasant surprises. Ultimately it is about **improving productivity!**

Another way of looking at the above is to say Safety Performance is a good barometer for an organization's level of professionalism, for its capability to avoid unpleasant surprises and hence for its ability to maximize productivity and output.

1. Convention centre  
with in background  
the Qipco tower  
Doha - Qatar

2. Ferrari World  
Abu Dhabi - UAE  
Architect: M/s Benoy

3. Emergency drill,  
Ferrari World  
Abu Dhabi - UAE  
Architect: M/s Benoy

### Good Safety is Good Business - No Safety is No Business

In order to continue its journey towards HSE excellence and in order to pursue the aforementioned productivity gains, in the course of 2009 BESIX' senior management has initiated a number of initiatives.

#### 1. Global Safety Time Out:

On May 20th, 2009 each and every construction site, office location, fabrication yard etc. stopped all activity for a two-hour Safety Time Out session. During these Safety Time Out sessions Site Management engaged in an open dialogue with their workforce in order to seek views and ideas about how to take BESIX' safety performance to the next level.

The suggestions that resulted from this can be grouped into six main categories, namely: Leadership and Accountability, Communication and Awareness, Training and Competence, Performance Management, Standards-Practices and Procedures and Working with Sub-contractors.

The results were discussed with all senior and operational line management during a one day session, and were used for setting the priorities for 2010 and beyond.



1. Wathba Wastewater Treatment Plant  
Abu Dhabi - UAE
2. Ferrari World  
Abu Dhabi - UAE  
Architect: M/s Benoy
3. Wathba Wastewater Treatment Plant  
Abu Dhabi - UAE



### 2. Global H&S Auditing Campaign:

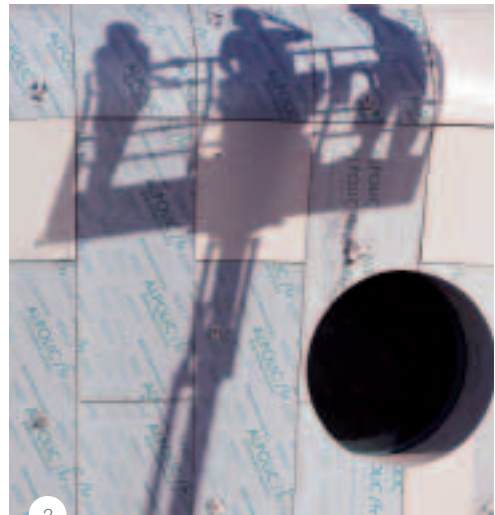
Over a three month period a detailed H&S audit was conducted at each and every construction project, worldwide. The audits were aimed at identifying key areas for improvement, in relation to the H&S management system as well as technical safety issues. The results were used as a basis for setting out the strategic direction for the H&S programmes and activities.

### 3. Senior Management Safety Conference:

BESIX' Group Top Management gathered for a Safety Conference with the aim of discussing the key outputs from the above Safety Time Out sessions and from H&S Audits, and identifying key indicators for building a strong safety culture.

## A story about Job Safety Analysis...

Job Safety Analysis (JSA) has been the main theme of safety training since the Safety Time Out sessions in the BESIX Middle East (ME) Region. Six Construct's Top Management made the decision to train all construction managers, technical engineers, project engineers, site supervisors, section leaders and safety staff on how to prepare a JSA and on how to use it for conducting a Pre-task briefing of construction teams.



The JSA training takes two days, the first day covers the theory whereas the second consists of a practical session.

Each course has a maximum of six people, which ensures that all students receive appropriate coaching during the practical session and that everyone's full participation can be monitored by the instructor. The second day is concluded with a confirmation test during which each student has to complete an individual JSA for a task or activity that the participant is currently carrying out on site. Within two weeks of returning to site the students are required to complete a further two JSA's, which are then recorded in the site JSA register for reference and audit.

Since the launch of the initiative BESIX Middle East has seen a fall in the accident frequency rate. By the end of 2009 all site supervisors will have attended the JSA training, all new employees will be trained as soon as possible upon arrival in the Middle East Region.

A similar training programme is being rolled out to the other regions.

### VCA\*\* certification...

On April 3rd, 2009 BESIX has successfully passed an external recertification audit of its Safety Management System and was awarded with a new certificate VCA\*\* 2008/05 incl. BTR (VCA = Safety, Health, Environment Checklist for Contractors, BTR = railway addendum). This certificate is valid for a period of 3 years and the implementation of the management system will be verified yearly by means of external audits. With this certificate, BESIX will continue to be able to participate in various projects within the Benelux-France region where such a certificate is required by the Client, e.g. the Petrochemical & energy industry.

By obtaining the BTR (railway) addendum, BESIX is qualified for the realization of projects related to railway infrastructure in the Netherlands and Belgium.



# Safety Awards and Prizes...

In the course of 2009 various BESIX companies have received one or more Safety Awards. Some of which are listed below :

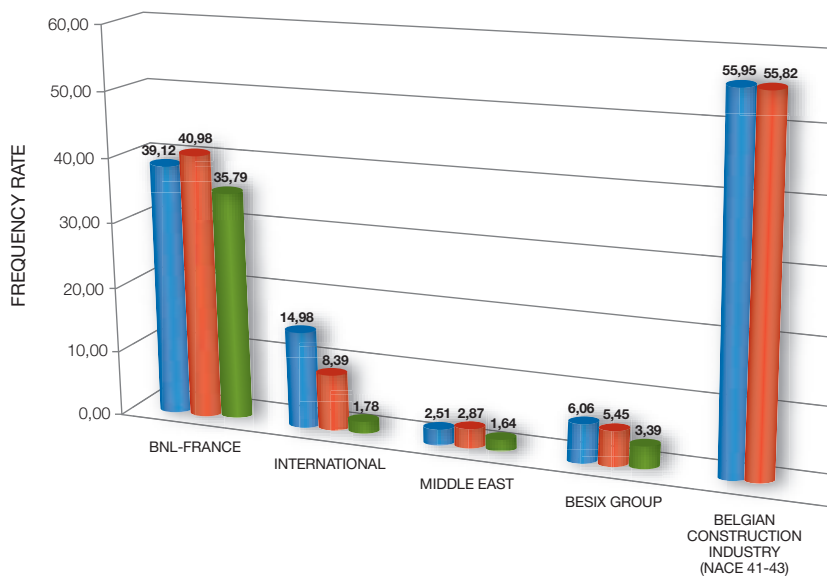
- **March 2009:** YAS Island Development, Abu Dhabi-UAE, ALDAR-BESIX - Managing Contractor of the Month.
- **June 2009:** YAS Island Development, project FE2, Abu Dhabi-UAE, Six Construct - Contractor of the Month.
- **July 2009:** QIPCO Tower, Doha-Qatar, 7.9M hours without Loss Time Accident.
- **Oct 2009:** Gate Terminal, Rotterdam - The Netherlands, BESIX-Mourik - Contractor of the Month.
- **Nov 2009:** Sluizen Limburg, Maasbracht - The Netherlands, BESIX-Mourik - Nominee for Safety Attitude & Behaviour.



The above awards and certificates of recognition are a 'pleasant' confirmation of the company's relentless drive and commitment to improved safety performance.

The efforts with regards to health and safety are starting to show in BESIX's safety statistics. Year-on-year the accident Frequency Rate for 2009 was reduced compared to 2008.

**Frequency Rate by Region**



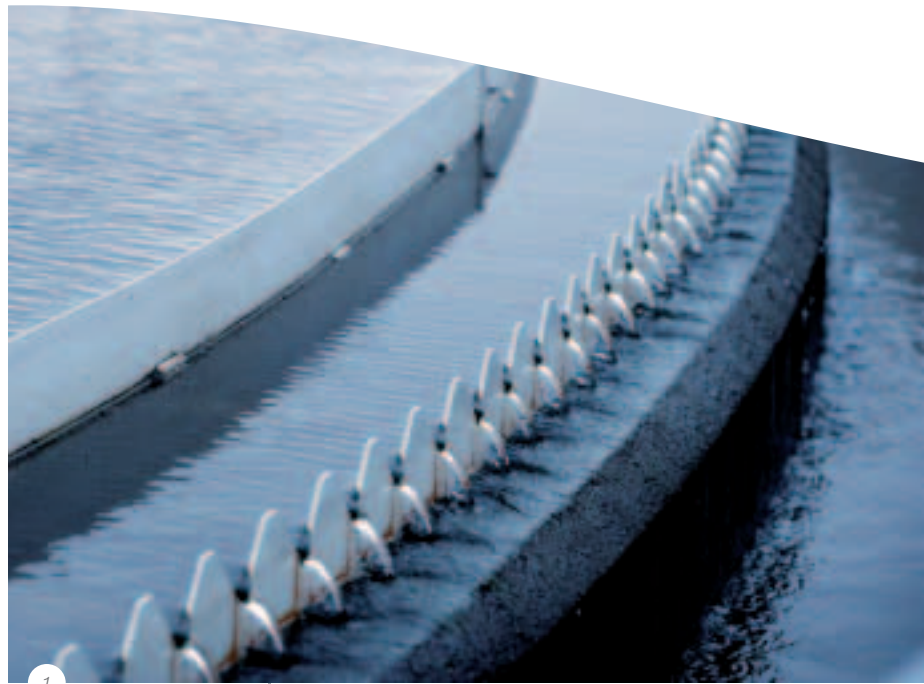
■ 2007 ■ 2008 ■ 2009

# Environment

## **Environment-Oriented**

*No Damage to the Environment*

BESIX has already implemented an Environmental Management System (EMS) in 2004 based on the ISO 14001 standard. Through procedures, inspections, internal audits, but above all by raising awareness amongst its personnel, BESIX management and employees strive to mitigate the impact of operational activities on the surrounding environment.



After a period of proven effectiveness, BESIX management decided to acknowledge the need for environmental protection as a component in the company's philosophy, by obtaining the ISO 14001 certification of its EMS in 2010.

The certificated EMS will streamline and structure operational activities, as well as future internal initiatives in environmental care, such as Corporate Social Responsibility, durable purchasing, green energy initiatives, carbon foot printing and waste management. Furthermore, the certificated EMS guarantees continuity of the environmental policy and its related objectives.

The certification stresses the role BESIX assigns itself as an appreciated partner for designing, planning and executing innovative projects, putting BESIX higher in rank on the CSR scale.

## **Environmental Management Plan**

Respecting its Environmental Management System (in line with the ISO 14001 standard), BESIX obliges, before execution of a contract, **each starting project to complete an Environmental Impact Assessment**, after which subsequent measures, controls, monitoring and possibilities for improvement must be developed in a specific project Environmental Management Plan. As a construction company, we believe in and favour the efficient use of (raw) materials and excavated soil is preferably re-used onsite (instead of transporting it to distant locations). Furthermore, BESIX strives to diminish its waste production by implementing waste prevention, segregation and the maximization of recycling and re-use.

### **Bart van Wieringen, IMS Engineer Environment - BESIX**

*"BESIX wishes to be a model company incorporating a high level of environmental awareness and at the same time recognizes its environmental footprint when creating exceptional structures and buildings. Based on its vast experience and environmental awareness, BESIX aims to decrease its impact on the environment as much as possible.*

*BESIX participated to different actions in order to put in concrete form its willingness to minimize its impact on the environment.*

1. Wastewater Treatment Plant  
Sharjah - UAE

2. Al Gurm Resort  
Abu Dhabi - UAE

### **CO<sub>2</sub>-Performance Ladder (The Netherlands)**

In order to meet the requirements set by the Dutch government (100% durable purchasing as of 2010), ProRail set up the CO<sub>2</sub>-Performance Ladder for its suppliers and (sub)contractors in construction.

The aim is to make the latter aware of the need for CO<sub>2</sub>-reduction; 'the beginning of something fairly important for future enterprise' (KIWA).

At the beginning of January 2010, BESIX started compiling the necessary data on energy and fuel consumption, in order to complete the audit checklist as part of the certification scheme. BESIX's initial goal is to reach certificate level 3, to gradually obtain an award advantage of 10% during tendering in level 5, by implementing a CO<sub>2</sub>-reduction programme with sustainable solutions. BESIX Nederland obtained the «CO<sub>2</sub> Certificate - level 3» on March 10th, 2010.

### **Certifications – Integrated Management System**

The BESIX Executive Board decided in 2009 to obtain ISO 14001 certification (expected August 2010) for its Environmental Management System which is implemented together with the ISO 9001 (2008) Quality Management System and the VCA\*\* Safety Management System through the BESIX Integrated Management System (IMS).

### **Environmental management will be consolidated.**

*BESIX management and employees strive to mitigate their impact of the operational activities on the surrounding environment.*

### **Mobility Plan (Belgium)**

By invitation of the Flemish Government and the Brussels Capital Region separately, BESIX participated in two panel discussions between Belgian enterprises of all sorts, on the issue of "Mobility Plan Flanders 2040" and "Corporate Mobility Plan Brussels Capital Region" respectively. BESIX' company experience on how to deal with growing traffic congestion, related mobility difficulties and multimodal means of transport were discussed. The outcome of the different discussions will be incorporated into the next versions of the above-mentioned strategic plans.





2009 was marked by change, uncertainty and a search for new challenges and projects. Despite these changed points of departure, BESIX Group sought to bring a spirit of innovation to its Human Resources policy, with particular concern for the **preservation of jobs** and **retention of talent** within the company. No wonder, therefore, that for the fourth time BESIX Group carried off the CRF Institute's **Top Employer** award. The renewed and enhanced HR policy clearly plays an important role in this. In 2009 we attempted to **think ahead** and prepare for the **end of the crisis**, more than ever ready for **new challenges**.



# Human Resources

## Planning the Future



Priority to the human dimension and staff motivation

### Strategic Core Competencies

To enable the company to position itself even more as a tightly cohesive group in its relations with clients, suppliers, and potential new employees, but also to promote team spirit and efficient cooperation, the five **BESIX Strategic Core Competencies** were defined in the **BESIX Competency Model** project. Through a survey of employees and final consultation within the Executive & Strategic Committee, it was unanimously decided that BESIX Group stands for **Flexibility - Result oriented - Innovation - Entrepreneurship - Teamwork**. These Core Competencies reflect the core values of the BESIX Group, values that all employees own and apply in their daily contacts, tasks and activities. These values are incorporated into all HR processes: for example, recruitment interviews are oriented towards these five values, while training is directed at supporting the same values.

2

1. Six Construct Headquarters  
Dubai - UAE

2. Six Construct Headquarters  
Dubai - UAE

## Competency Banding

Sometimes it is good to dare to question existing processes. In this way they can be improved and adapted to new needs. BESIX Competency Banding is an innovative **integrated job grading system that guarantees a transparent working method, clear information and direct communication** between the company and its employees. Group HR Director Geert Aelbrecht explains how BESIX set to work here. First, a transparent job grading model was put together covering the entire BESIX Group. All jobs were identified and the key competencies for each of these jobs were defined. Based on the identified competencies and job features, job families were then created. For each function within the job families a role description was prepared. Each employee then received a personalized Competency Banding communication package containing his or her own role description and a comprehensive information brochure.

In this way all employees now have a clear idea of their current jobs and the career paths open to them. On top of this, the **Performance Management System** is now tailored to these competencies so that performance interviews focus primarily on strengthening or improving competencies rather than simply mapping performance.



## Human resources

**Geert Aelbrecht, Group HR Director - BESIX Group**

*"BESIX employs 19 000 staff members in more than 15 countries. **Human capital** represents the first asset that BESIX can build on to respond to the challenges of these turbulent times. Adaptability has become a key to success in the future. BESIX therefore heavily invests in the continuing education and training of its workforce. This investment also aims at further improving the quality and safety of our working environment. In line with this, BESIX participates and encourages the dialogue between its staff and the community. Group rules and guiding principles are applied in daily human capital management in order to carry out business as a corporate citizen, fully aware of human rights, social responsibility and ethical business. Integrity, honesty and fair play are key values within the company.*

*For instance BESIX and Entreprise Jacques Delens signed a diversity charter in 2005 and committed themselves to offering equal professional opportunities to young people, 45-plussers, women, long term unemployed people, disabled people, immigrants, ...*

*BESIX Group launched the BESIX Young Community in September 2009. Its mission is to create **a community within the BESIX Group** where e-social networking in an informal way between young professionals is encouraged and facilitated.*

*The primary goals are:*

- Develop knowledge of the BESIX Group
- Increase self-development
- Share knowledge
- Create synergies
- Social gatherings
- Increase the sense of belonging

*Development is a key cornerstone for the success of the Company. The BESIX Group wants to ensure that employees of all levels receive the training they need to support them in their development in terms of career, knowledge and competence."*





2

3

## BESIX Young Community

### Commitment of our young talents

BYC has been launched as part of **direct and transparent communication**. Geert Aelbrecht explains that the BESIX Group contains many **young employees**, who are obviously keen on social networking. The BESIX Young Community takes full advantage of this **new communication tool**: “all young BESIXers can contact each other via BYC. For example, a young engineer setting off for a project in Qatar can use the BESIX social network to immediately make contact with colleagues who already have international experience and can share this with others.” To further strengthen contacts among its young people, BESIX has also shown a slightly more light-hearted side, with the **BYC party**, the perfect opportunity for all young BESIXers to meet in a relaxed atmosphere.”

## BESIX Training Programme

### Clarifying our talent strategy

In the past year BESIX has invested extra effort into its Training programme, in which BESIX employees can refresh and refine their **soft skills, technical skills, language skills and HSE** (health, safety & environment) knowledge. The technical skills training sessions are taught by experienced BESIX specialists, who themselves take Train the Trainer sessions to make sure they are able to put across their knowledge in a clear and professional manner. The language courses are provided by qualified teachers, with the option of acquiring basic knowledge through e-learning in a preparatory stage. “This intensive training programme aims at meeting the **training needs of our employees**. By doing so, it **passes on and sharpens our know-how**”, Geert Aelbrecht comments.

1. Wastewater Treatment Plant  
Ajman - UAE

2. Ferrari World  
Abu Dhabi - UAE  
Architect: M/s Benoy

3. Six Construct Headquarters  
Dubai - UAE

# Engineering

## Experts' Corner

### Engineering Bernd Van Den Bossche, BPS Concrete Engineer

*"The underground parking garage at the railway station of Gent St Pieters was to have a 1.2 m thick concrete slab.*

*The floor was designed as a continuous slab of 400 m x 100 m with construction joints every 30 m. In normal conditions such a huge mass of concrete would have resulted in major cracking due to concrete shrinkage. To limit this risk BESIX started, together with the consultant Eurostation, research in order to limit the heat of hydration. The outcome of the research resulted in a triple blend concrete mix using cement, fly ash and GGBS. Due to this collaboration in the design phase BESIX could offer the client considerable quality improvements in the construction phase reducing the risk of surface crackling and leakages in the construction. The environmental advantage of this mix was a CO<sup>2</sup> reduction of about 65% compared to normal portland cement concrete mixes."*

*Engineering is the fast-forward button of a construction company because of its frontline position in the construction process.*

*Engineering is the combination of Design and Methods, the combination of 'what' to do and 'how' to do it. It translates the requirements of the client to tailor made economic and sustainable structures and paves the way for a smooth construction process.*

The Engineering Department has been one of the pillars of the BESIX organization for decades. The department comprises 7 sections: two of which are related to types of structure: Buildings and Civil Works, two are related to material aspects: Concrete and Soil Mechanics, a further two are related to project assistance: Methods & Planning and Maintenance & Systems Engineering, and there is one offshore section: Engineering Six Construct. The BESIX Technical Library and Technical Knowledge Database are also managed by the Engineering Department.

Of course, progress made by the company is not only based on knowledge from the past, but also on research and technical outcome from working groups, in which members of the BESIX Engineering Department take an active part. As such, BESIX engineers are involved in the development of the National Annex of Eurocode 2 (Concrete); in the Technical Committee for Structural Work and the Commission on Ultra High Performance Concrete of the BBRI (Belgian Building Research Institute); in the SMARTCOCO project on heavily loaded composite steel-concrete elements financed by the European Research Fund for Coal and Steel; in the Joint Technical Committee 4: Geotechnical Professional Practice of the international companies ISSMGE, ISRM



and IAEG and in many other scientific committees such as, for instance the Working Commission 2: Concrete of IABSE (International Association for Bridge and Structural Engineering).

BESIX has also started an in-house research programme on cost-efficient manufacturing and pouring of concrete in high temperature environments (assisted by CREAX). The Concrete Technology knowledge of the Engineering Department combined with the Concrete Manufacturing practice of United Readymix in Qatar should lead to efficient solutions and better performance.

Engineering is not an isolated step in the construction process, but a comprehensive contribution to the lifecycle approach of a project, considering both construction and maintenance costs, and importantly the environmental impact on future generations. The Systems Engineering section provides an excellent tool for managing this integrated process.

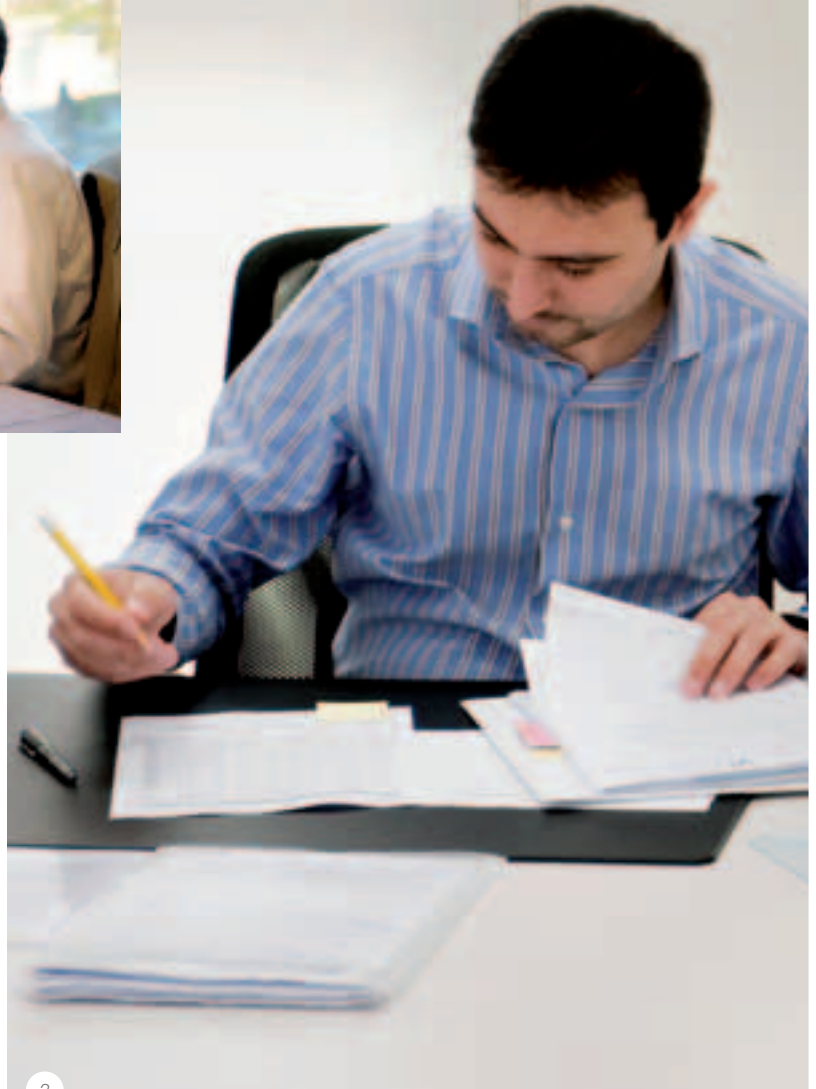
To maintain and upgrade the technical capabilities of its staff to the most recent developments, BESIX organizes a Technical Training Programme. Not less than ten engineers from the Engineering Department are in charge of organizing regular training in several technical fields of the

- 1. Allahama Wastewater Treatment Plant  
Al Ain - Abu Dhabi - UAE
- 2. BESIX Headquarters  
Brussels - Belgium
- 3. Six Construct Headquarters  
Dubai - UAE



2

construction profession for project managers, construction managers and site superintendents. The Engineering Department also maintains active contact with the academic world to keep its finger on the pulse of current research and to enable BESIX to remain a powerful support to the construction process in order to offer better solutions to its clients. The fact that five engineers from the Engineering Department teach at Belgian universities shows that BESIX has its place in the advance guard of the construction world.



3

**Procurement efforts**

*Thierry Huberland, Procurement, Logistics & Equipment Director - BESIX :*

*"Today, at procurement level, CSR is being applied through various "one-shot" initiatives and rules, mainly at equipment purchase and maintenance level; a few examples :*

- *BESIX is purchasing its equipment according to CE requirements, even when its destination is a non-EU country. The CE requirement includes various obligations related to the environment and the safety of the users.*
- *When purchasing its lubricants, attention is being given to the*

*environmental impact of the oil used.*

- *Within BESIX, the VCA-review and approval from the HSE-department is obtained for all equipment purchases, be it for countries and/or subsidiaries where VCA is being applied or not.*

*For 2010, the objective is to use the TCO (Total Cost of Ownership)-approach in the procurement department, in order to objectively measure the impact of our purchases, in direct relation to our CSR."*



# Solutions that Forecast the Climatic Impact



# Group Organization



2



3

- 1. Maastoren  
Rotterdam -  
The Netherlands  
Architect: Dam & Partners
- 2. Allahama Wastewater  
Treatment Plant Al Ain -  
Abu Dhabi - UAE
- 3. Burj Khalifa  
Dubai - UAE  
Architect: Skidmore,  
Owings & Merrill

Group Structure  
 Business Units  
 Contracting  
 Construction  
 Construction Middle East  
 Contracting New Developments  
 Regional Affiliates  
 Real Estate  
 Concessions

# Group Structure



**Corporate Services**

**Contracting**

Construction  
 Construction Middle East  
 Contracting New Developments

**Regional Affiliates**

Vanhout Geel  
 Wust Malmedy  
 Jacques Delens Brussels  
 Sud Construct Brussels  
 Cobelba Naninne  
 Lux TP Luxembourg  
 West Construct Oostkamp

**Real Estate**

BESIX Real Estate Development Brussels  
 SGT Luxembourg

**Concessions & Assets**

Ajman Sewerage 50%  
 Coentunnel Amsterdam 18%  
 Abu Dhabi WWTP'S 20%  
 Marriott Evere, Brussels 50%  
 Sheraton Poznan 29%



## Contracting

### Construction

Buildings  
Civil works  
Marine works

BESIX France  
BESIX Nederland  
BESIX Vlaanderen  
International subsidiaries  
BESIX-SOMAGEC  
Morocco  
70%  
Six International  
Cameroon  
BESIX G.E.  
Equatorial Guinea

### Construction Middle East

BESIX U.A.E. Branch  
Six Construct  
U.A.E., Qatar, Oman  
Aldar - BESIX  
Abu Dhabi  
49%  
Moalajah  
Ajman  
33,3%  
Cofely - BESIX  
Facility Management  
50%  
United Readymix  
Qatar  
49%  
BESIX Saudi Branch

### Contracting New Developments

BESIX Sanotec  
Environment  
Socogetra  
Roads  
Franki Foundations  
Foundations

# Business Units

*The BESIX Group organization is integrated into one structure in order to meet its objectives and to follow market demand. The Group is now composed of three major business units.*



2



3

1

1. Power Station  
Pont-sur-Sambre - France

2. Bridges  
Riaba - Equatorial Guinea

3. Kloorstertuin  
Opwijk - Belgium

4. Wastewater Treatment Plant  
Sharjah - UAE



## Contracting

This unit takes in construction activities (Construction, Construction Middle East and Contracting New Developments) and related resources.

Synergies have been developed between BESIX and the company's regional companies. The Group is active in 15 countries through projects in various fields of construction. The Group undertook some challenging construction projects internationally, especially in the Middle East (Abu Dhabi/United Arab Emirates and Doha/Qatar) and its local markets with regional affiliates. In 2009, BESIX executed major projects in Belgium, The Netherlands and France.



## Real Estate

In the property business the Group is mainly active in residential, office and commercial projects through its business unit, BESIX Real Estate.

Facing the economic crisis, 2009 was a year of contrast in real estate. In this difficult environment, BESIX Real Estate Development performed well, particularly in the residential market.

## Concessions

BESIX Group continues to develop expertise in public-private partnerships and concessions. Synergies were developed and projects integrating services were offered to public authorities and private partners.





1. *Burj Khalifa*  
Dubai - UAE  
Architect: Skidmore,  
Owings & Merrill

2. *Al Ittihad Road Axis*  
Dubai - UAE

# Contracting

## *The Ability to Adapt to a Changing World*

*BESIX Group's success can be explained by its capacity to continually identify and respond to new demands within various economical, geographical, cultural conditions.*

The structure of the Group's Contracting activity is an optimal response to today's challenges.

*"Building our strengths and exploring new areas of businesses unlimited by geography, we think global in development activities. Our values of respect, rigour and involvement remain unchanged. To embark on a journey of success one needs the tools of awareness, foresight and strategy. It is essential to combine these three forces in the building industry to move undeterred towards the path of growth and high operational quality", Philippe Quoilin, Chief Operating Officer, BESIX Contracting.*

This 'Contracting' business unit includes three main divisions:

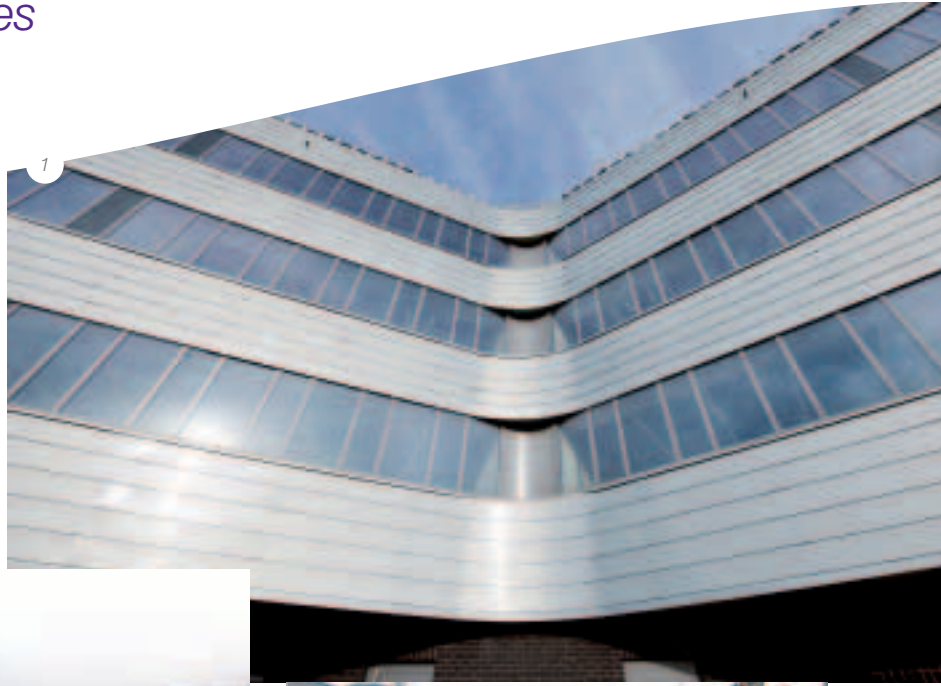
- **Construction**
- **Construction Middle East**
- **Contracting New Developments**

The organizations that survive and emerge from major crises are those that are able to innovate and mobilize all their internal energies in a progress process.

*"We make every effort to be one of the most competitive organizations in the construction industry through our efficiency and innovative approach. Our perfectly aligned method of planning and execution maximizes synergies and helps to achieve high efficiency levels", Jules Janssen, General Manager, BESIX Construction.*

# Construction

*Boost  
the Group's  
Competences  
& Ingenuity  
Potential*



*The 'Construction' division is in charge of all BESIX's construction activities on an international level as well as large buildings, civil engineering activities in Benelux-France, international civil engineering activities, industry, marine works and sports & leisure. The Middle East and the Belgian regional companies take place in a different field of the structure.*

BESIX develops its expertise in different fields (design, building, renovation of buildings and infrastructures of different sizes and levels of complexity) for public and private clients.

The Group seeks projects that can challenge its teams in engineering innovations.





## Buildings

### Beacon Project Builder

*The BESIX Group has developed a high level of competences in complex and high buildings: proficiency in management, technical advice, high quality services and flexible approaches.*

An overview of the projects executed in 2009:

#### Office buildings

The **Wyeth building** (for BESIX R.E.D.), an office development with environmentally-friendly technology (with BESIX R.E.D./Louvain-la-Neuve, Belgium).

Restructuring of the **Fortis Chancellery offices complex** (Brussels, Belgium).

The renovation of the **AXA building** (in partnership/Berchem, Belgium): A technical audit has shown that all technical installations need to be replaced in order to offer optimal climatic and acoustic comfort to staff working in the building. The façades also need thoroughgoing renovation and replacement to bring them up to the new technical requirements.

The project covers 51 962 m<sup>2</sup> of gross surface area and 14 960 m<sup>2</sup> of façades.



The **Royal Monterey** building (with Lux TP/ Luxembourg, G.D. Luxembourg).

The building and the technical installations of the **'Regionale Zuid'** ('Regional Control Centre South'). This waterway traffic centre will control various locks and bridges along the River Maas. For this centre, BESIX in consortium has developed a very striking building, together with Wiel Arets Architecten, in Design & Build. The building work will commence summer 2010. (in consortium/Maasbracht, The Netherlands).

1. 2. *Wyeth Office Building  
Louvain-La-Neuve - Belgium  
Architect: Syntaxe*
3. *Fortis Chancellery offices  
Brussels - Belgium  
Architect: Storme - Van Ranst*
4. *Axa Office Building  
Berchem - Belgium  
Architect: Altiplan*
5. *BESIX Headquarters  
Brussels - Belgium*

#### **Fortis Kanselarij, new headquarters in the City Centre**

The Chancellery offices complex, **Fortis Kanselarij** (Brussels, Belgium). The project consists of converting various buildings and roads into 5 buildings able to function as independent units, ready for 3 000 bank employees.

This complex will also contain a new Dealing Room for around 650 dealers, with fully equipped dealer desks. For this project, three of the five existing buildings are being totally demolished and rebuilt.

Located in the heart of Brussels (close to the Central Station and the Royal Park), this project will act as an eye-catcher for BESIX in this heavily visited part of town during the next two years.

## Artevelde hogeschool complex

# 18 000 m<sup>2</sup>

surface area  
(Ghent, Belgium)



### **Artevelde College, a brand new campus for Ghent**

The new Artevelde College building is a ±18 000 m<sup>2</sup> site situated in the heart of the city of Ghent. This functional, built-to-last and energy-efficient construction consists of a high-rise tower and a low block. With its clear and sober outline, the tower is a new landmark on the Ghent skyline. A desire to encourage students' creative freedom, with a building that offers maximum transparency within clearly defined volumes, underlies the design by Antwerp architects Crepain Binst Architecture. "The original slope of the site has been incorporated into the public area, including a cafeteria and a multimedia library. Instead of a staircase we opted for ramps that connect the various spaces on both sides of the patio", explains Dirk Engelen, Architect-Partner of Crepain Binst Architecture.

The design incorporates a series of different functions: 1 large 400-seat auditorium, 2 medium-sized auditoria with respectively 150 and 250 seats, 2 small 100-seat auditoria, 7 large 72-seat classrooms, 30 medium-sized, 36-seat classrooms, 18 small 18-seat classrooms, 4 computer rooms, 57 practice rooms, etc... space for the college's approximate 3500 students and 450 employees.

This turnkey project was awarded to BESIX Vlaanderen in July 2007.

"New technologies were incorporated into the structural work. These include glue-bonding of bricks in a ceiling application. It's the first time this technique has been applied in Belgium on such a large scale", says BESIX project manager Michiel Langerock.

The new Arteveldehogeschool was inaugurated on October 30th, 2009 after a construction period of 26 months.

*Client:*

**Arteveldehogeschool Gent VZW**

*Architect:*

**Crepain Binst Architecture NV**

*Stability engineering:*

**Bureau d'Etudes Greisch NV**

*Acoustic engineering:*

**Scala**

*Technologies:*

**RCR cvba**

*Surface area:*

**18 000 m<sup>2</sup> + 8 000 m<sup>2</sup> underground parking**

*General contractor:*

**BESIX Vlaanderen**

## Health Care Institutes

A **hospital** and parking lot (in partnership / Lodelinsart, Belgium).

The **Orsay Centre of Protontherapy** (near Paris, France) (see Project Highlight p.48).

## Cultural complexes

The **'Square Brussels meeting Centre'** (former 'Palais des Congrès') was inaugurated in September 2009. This centre, with its avant-garde appearance, accessible via an original glass cube, offers a total area of 30 000 m<sup>2</sup>. A prestigious reference for Europe's capital (with Jacques Delens/Brussels, Belgium).

## School and university complexes

The **Arteveldehogeschool** was inaugurated at the end of October (Ghent, Belgium).



# 150 m high

Placement of the prefabricated wall unit

## New Orleans Tower

(Rotterdam, The Netherlands)

2



3

1. *Artevelde Hogeschool Complex*  
Ghent - Belgium  
Architect: Jo Crepain

2. *Square Brussels meeting centre*  
Brussels - Belgium  
Architect: A2RC

3. *New Orleans Tower*  
Rotterdam - The Netherlands  
Architect: Alvaro Siza

## Residential

The **Rolin complex** (phase 10) (with BESIX R.E.D./Brussels).

**The Helix apartments** (Brussels, Belgium).

The company also started: **the Daskalides residence** (Ghent, Belgium), **the Transitcentrum** (Steenokkerzeel, Belgium) and **the Leskoo residence**, phase 1 (Oudenaarde, Belgium).

## High-rise buildings

The BESIX Group has solid experience in the construction of high-rise buildings, even in Europe. As a part of its core business, tower buildings represent significant new projects to challenge the Group's know-how.

The **Maastoren**, a large building completed in 2009 (Rotterdam, The Netherlands) (see Project Highlight p 44). This 165m office tower is the highest office building in the Netherlands and is now a landmark on Rotterdam's skyline.

The **New Orleans** project will become the highest residential tower to the Netherlands close to the Montevideo tower, which was also built by BESIX. This 158m tower is advancing one floor a week and will be delivered to the client at the end of summer 2010 (Rotterdam, The Netherlands).





1



2

## Hotels

The 5-star **Fairmont hotel** is operational and the Nile City Project is totally completed, 11 years after its inception. This 'core & shell' project consists of a surface area of 55 000 m<sup>2</sup> with a 'wellness' area, a fitness centre, a spa, etc. The roof is judiciously used with a swimming pool, restaurant and bar, offering an unbeatable view over the city (in partnership with Orascom / Cairo, Egypt).

The foundation works and basement of the **Nile Corniche** are still ongoing. Civil Works for the Basement construction (PK1) of a multifunction complex which will include 3 towers of 130 m height along the banks of the Nile (Cairo, Egypt).

The **Mazagan Beach Resort** (Phase 1A) a five star tourist complex, a key site in the "Azur Plan" (in partnership with SOMAGEC / El Jadida, Morocco) (see Project Highlight p.46).

1. Nile Corniche  
Cairo - Egypt  
Architect: Michael Graves Design
2. Mazagan Beach Resort  
Casablanca - Morocco  
Architect: Jamal Lamiri Alaoui
3. Fairmont Hotel  
Cairo - Egypt  
Architect: At. Art Urbain



## The Netherlands

# De Maastoren Landmark on the Rotterdam Skyline

*With the Maastoren, BESIX has once again placed a prestigious building on the map of the Netherlands. A height of 165 metres makes it the tallest office building in the country. The project was delivered on December 3rd, 2009.*

The building was designed by Dam & Partners Architects as the new national headquarters for Deloitte. The total lettable area of 69 000 m<sup>2</sup> includes 44 000 m<sup>2</sup> of offices and 637 parking spaces. With its unique location, on the Maas River at the end of the Wilhelmina Pier and forming a group with the Montevideo, New Orleans and other tower blocks, the Maastoren has firmly placed its stamp on the Rotterdam skyline.

It is a sleek building with 2 towers, the 105 m Low Rise and the 165 m High Rise. The façade of the High Rise changes colour, in 23 steps, from anthracite at the base to white at the top. A 2- floor high boardroom with a glass façade crowns the building.

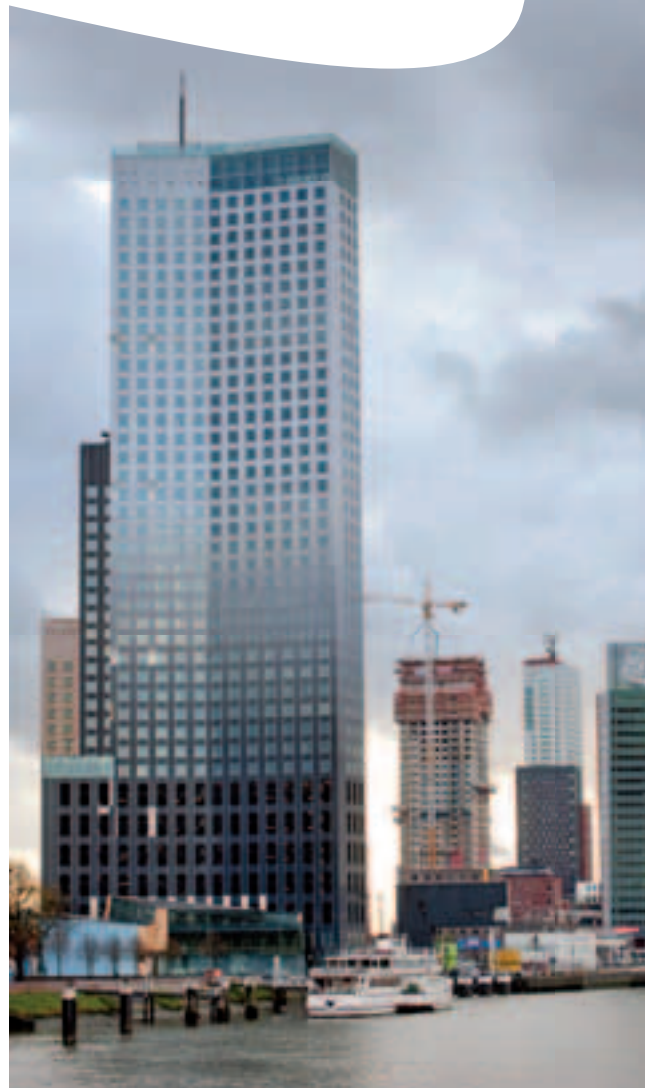
### Complex execution

At the foot of the tower there is also a glass extension containing the cafeteria, restaurant and grand café. This whimsically shaped structure proved very complex to build. The entrance façade of the building features a 10 metre cantilevered canopy to catch the downwind and provide a safe passage to cyclists on the public road below.

“BESIX was responsible for the entire implementation, from the cofferdam and foundations in the Maas to the Deloitte installation package.

The project got off to a difficult start owing, among other things, to unexpected soil conditions for the cofferdam and engineering problems with the prefab façade elements”, says Project Manager Björn Walgraeve.

Once these troubles had been sorted out, a tight pace of construction of 1 floor per week and later 3 floors every 2 weeks in the High Rise was maintained. B. Walgraeve: “A particular challenge during the structural work was logistics management on a postage stamp-sized location. It was vital that the trucks bringing in the prefabricated wall and floor elements arrived on time”. For rapid installation, 3 Liebherr top cranes were used, each with a maximum lifting capacity of 32 tons and a point load of 10 tons at 40 metres.



“The Maastoren was a very challenging project, the end result of which now graces the skyline of Rotterdam”» says Jean Polet, Deputy General Manager Construction Benelux-France.





## Maastoren proclaimed 'Building Site of the Year'

In October 2008, the Maastoren project received the '2008 Building Site of the Year' trophy from Rotterdam alderman Karakus. Runner-up was the New Orleans project also managed by BESIX. This is the sixth year that the Rotterdam municipality has organized the building site festival. Twelve building sites were opened up to the public, who could then vote for their favourite site via internet.

With these prizes BESIX once again takes a prominent position in developing the Rotterdam skyline.

## Some figures

Client :	<b>OVG Projecten</b>
Engineering :	<b>Zonneveld Ingenieurs bv</b>
Architect :	<b>Dam &amp; Partners Architecten</b>
Height :	<b>165 m</b>
Number of floors :	<b>44</b>

Office space :

# 44 000 m<sup>2</sup>

General space	<b>3 000 m<sup>2</sup></b>
Parking spaces :	<b>637</b>



*"A particular challenge during the structural work was logistics management on a postage stamp-sized location. It was vital for the trucks bringing in the prefabricated wall and floor elements to arrive on time."*

## Morocco

# Mazagan Beach Resort

## A unique Complex

*100 km south of Casablanca, in the province of El Jadida, BESIX-SOMAGEC SAS has developed and built the Mazagan Beach Resort. Covering 250 hectares and with 7 km of beach, the resort features a 5-star hotel with 500 rooms and suites.*

### A true challenge

David De Visscher, Project Manager: "The tight deadline of 24 months was met thanks to the experience, expertise and dedication of the entire Belgo-Moroccan BESIX-SOMAGEC team. The coordination of all the various elements was a real challenge, with up to 4 000 workers on site at any one time, in addition to 4 000 workers from over one hundred sub-contractors and different suppliers.

In terms of technology BESIX-SOMAGEC, backed by the BESIX engineering department, brought considerable added value to the project. This included vibro-compaction of the sand to provide the foundations (instead of the originally planned concrete piles) and improving the seismic resistance of the structure (the original structure did not meet the prevailing earthquake proofing requirements). The technical specificity of electromechanical equipment required for a top class casino (the largest in Morocco) called for a tremendous effort of coordination, engineering and precision on the part of everyone involved.

Finally, meeting the expectations of a demanding client, who was constantly and deeply involved in the site, proved a major challenge."

Inaugurated in October 2009, this Moorish-inspired project, with a surface area of 75 000 m<sup>2</sup>, includes a casino with private lounge, eight restaurants and bars, a 2 000 m<sup>2</sup> conference centre, a 2 000 m<sup>2</sup> spa and health centre and an 18-hole golf course with club house.

**In addition, the consortium built the service buildings, including a central wastewater treatment plant (by BESIX Sanotec), pools, lagoons and fountains. The contract also included the landscaping and access roads.**





*A place of luxury, calm and delight, Mazagan Beach Resort is the second resort in the Azur plan, after Saidia, to open its doors.*





## France

# Building Complexity Allied to Updating of Technical Equipment

*The new Protontherapy Centre of the Institut Curie at Orsay, built in partnership with IBA, is exceptional in more than one way.*

*Radiation protection restrictions imposed very thick walls, high-strength structures and very heavy equipment (a cyclotron weighs 220 T!), as well as very specific building services requirements.*

A first contract for the supply and installation of a proton therapy system and the associated building works was signed between the BESIX-IBA joint venture and the Institut Curie on December 13th, 2006. IBA provided expertise in advanced cancer treatment technologies placing the emphasis on cancer diagnosis and treatment with proton therapy while BESIX provided specialist knowledge of the construction of complex buildings.

## A tight programme

BESIX carried out a design and construction study with IBA covering the structural design, the incorporation of loads and the adaptation of the structural works. Taking account of radiation protection requirements and the equipment was a crucial element. They also included the buried services and pipe work, special electrical equipment, dedicated safety equipment wiring and a high-power "process" cooling system. A special structure (called the Bunker) was constructed to provide the required level of radiation protection, founded on a 50 cm thick raft foundation supported on 220 piles.

Massive walls (1 to 3 m thick) were constructed by first building two pre-walls serving both as structural elements and permanent formwork. Heavy concrete containing magnetite

(3 600 kg/m<sup>3</sup>), was also used at certain radiologically sensitive places in the building.

"Another special feature of this project was the fact that the room receiving the new cyclotron is attached to an existing building. The objective is to renew the proton source by offering a performance that meets current requirements", says Renaud de Voghel, Project Manager, IBA Technology Group. BESIX and IBA met a challenge of not interrupting the operation of the equipment and the treatment of patients during the works.

"An extension to the additional contract was programmed during the construction phase, as additional medical equipment could be installed later. It consists of the construction of an additional floor (±570 m<sup>2</sup>) on the whole area of the medical wing on the ground floor that is almost complete.

This late decision required specific organization and protection measures to preserve the works already done and handed over to the client from early 2009", explains Manuel Mesa, Chief Technician Operations, BESIX.

This extension was possible because this option was set up in the structural dimension of this part of the project. The medical wing's coating concept of the window dressings (stainless steel panel with polished mirror) reflected an architectural wish to create a constant dialogue between the building and the natural environment in which it is integrated.

The overall building work programme including additional extension was completed on October 2009.

BESIX and IBA want to profile themselves as specialists in complex buildings and up-to-date technical equipment dedicated to the medical sector. This shared experience could be applied to other projects in Europe or elsewhere in the world.



*The challenge was to avoid interrupting the operation of the equipment and the medical treatment of patients during the works.*



1. 2. 3. 4.  
 Protontherapy Centre  
 Paris - France  
 Architect: Greisch

## Civil Works

### Accuracy & Precision

*Infrastructure works are part of the core business of the Group which has developed considerable experience in numerous projects of varying size and complexity.*

*The 'Civil Works' department is responsible for relatively large-scale civil engineering works in Belgium, The Netherlands, France and the Grand Duchy of Luxembourg.*

*The 'Civil Works International' department has developed an expertise in exporting the Group's key civil engineering skills (bridges, tunnels) around the world, and in particular in new regions. This department specializes in medium scale projects which offer real added value.*



The following projects were delivered in 2009:

### Bridges

The **Noorderlaanbrug** over Albertkanaal with two steel bridges which are opened respectively for car traffic and the other one for public transport (in partnership / Antwerp, Belgium).

In the meantime, it started the construction of a **wildlife crossing** above the E19, between Antwerp and Breda, in Wuustwezel. With 110 m long and 60 m wide it will be located 7 m above the E19.

The company has also renovated the **Gardeniersbrug** in Ghent and will start the works for a **bridge** in Waggelwater (Bruges).

The **Riaba bridges** in Equatorial Guinea are on track. It consists of three more pre-stressed concrete bridges close to the town of Riaba. These are the largest Civil Engineering structures under construction in Equatorial Guinea (see Project Highlight p 54).

Bridge '**Pont de l'enfance**' (with Belgian funds) (Cameroon).

**2 bridges** over the Rio Wele (Oyala, Equatorial Guinea).

### Tunnels

The **DODO tunnel** (see Project Highlight p.52), a Design & Build contract with Engineering System. The civil engineering works on the 1.6 km long Leidsche Rijn tunnel (DODO project) were delivered several months ahead of schedule. Our partner is now putting in the technical tunnel installations to complete the project.

The **perrontunnel** (in partnership / Arnhem, The Netherlands).

The **2nd Coentunnel**, a DBFM contract (design, build, finance, operate and maintain contract) to extend the capacity of the Coentunnel route in Amsterdam. The concession will last for 30 years. The maintenance, including both the existing and the new tunnel, will be carried out by the Coentunnel Company. The worksite will reach full speed in the course of 2010 (in partnership/ Amsterdam, Nederland).





## Underground parking garage

# 2 810 places

Gent-Sint-Pieters, Belgium

4

### Motorways

Further on north from the DODO tunnel, the various bridges on the 7 km long A2 highway section between Utrecht and Amsterdam were delivered to the client (in partnership / Utrecht, The Netherlands).

A highway intersection at **Ekkersrijt** at the crossover between the A50 and A58 highways. In the course of 2009 various complex bridges and viaducts were built to a very tight time schedule. In spring 2010 the entire project will be delivered on schedule to the client (in partnership / Eindhoven, The Netherlands).

The **Kosmos** Zuid-Holland - Zeeland project infrastructure maintenance project (maintenance contract). This project included various renovation works on motorways, bridges, locks, tunnels and hydraulic engineering structures. (in consortium / The Netherlands).

### Railways

The company is also taking part in the huge RER works with the **RER section in Uccle-Nivelles** and another one in **Boitsfort-Hoeilaart**.

### Cark Parks

The shell of the **underground parking garage** at Gent-Sint-Pieters railway station (Ghent, Belgium)

With its subsidiary, West Construct, it is renovating the **Albert I promenade**, the Belgian's Coast Largest Car park on the Ostend Corniche (in partnership / Ostend, Belgium).

Two-storey semi-buried **parking garage** under a new football pitch with accommodation for 1 600 spectators (a DBFM contract, in partnership / Alassio, Italy).

A5-level, 760 **underground car parking** close to the Central Station of Rotterdam, the kruisplein carpark. Work began immediately with the digging of diaphragm walls in cooperation with Franki Foundations (Rotterdam, The Netherlands).

### Dam

Flood water evacuation on the **hydroelectric dam** (Edea, Cameroon)

1. Noorderlaanbrug  
Antwerp - Belgium
2. Ekkersrijt Interchange  
Eindhoven -  
The Netherlands
3. Kosmos project  
Zuid-Holland - Zeeland  
The Netherlands
4. Underground parking  
garage at Ghent-St-Pieters  
railway station  
Ghent - Belgium

## The Netherlands

# DODO

## A Road Overcapping Project with Many Innovations!



*Between the centre of Utrecht and the suburb of Leidsche Rijn, work has been under way since 2007 on a special new motorway section with its own energy provision. The highly innovative building process includes the use of fire-resistant concrete and a revolutionary new type of formwork.*

### The major traffic flow between Amsterdam and Utrecht (2 x 5 lanes)

The new 1 650 m long and 80 m wide over ground tunnel will widen the A2 in Utrecht from six to ten lanes. This is a Design & Build project, using Systems Engineering, which sets high demands in terms of design and execution.

Laying the new road includes the foundations and surfacing work, preparing the walls and roof of the tunnel construction, and installing the technical tunnel equipment, including two technical buildings. The DODO consortium, of which BESIX is part, was awarded the contract by the Dutch Roads and Waterways Authority (Rijkswaterstaat). For this the project had to meet the Rijkswaterstaat's strict safety, quality and environmental standards.

"Building a tunnel that is enclosed over its entire length (the original Closed-Open-Closed-Open design has been replaced by a totally enclosed over ground tunnel) has meant meeting very strict tunnel safety requirements. Fire in particular was a hot item", says Bernd Van den Bossche, BPS Concrete Engineer at BESIX.

The building process is highly innovative, including preheated concrete and revolutionary formwork. Clever technologies make the tunnel self-regulating and the fire-resistant concrete mix provides unique fire safety.

### Optimal efficiency

The consortium has demonstrated its added value with a number of innovative solutions and technologies, achieving an optimal interplay of man-hours, materials and equipment. In winter it used preheated concrete, which speeds up the building process by enabling the concrete to set just as fast as in summer.

"This complex project, built in a very short timeframe, is a serious piece of work in terms of delivery date and additional safety care. An optimal building cycle has been completed. We have skimmed on neither cost nor time, and at the same time protected the environment", explains Project Manager Emiel Braeckman.

### Strict requirements

The most recent innovations have been applied in building the over ground tunnel, in line with the newly introduced tunnel law of 2007 and the most up-to-date and stringent national and international rules governing traffic and tunnel safety. This will be one of the safest overland tunnels in Europe.

Work began on the tunnel in 2007 which will be completely operational in 2011.

*A surface area  
of 24 football pitches*



*DODO,  
the first above-ground  
road tunnel  
in The Netherlands*



## Innovations in this project

Various innovative solutions and technologies are being used in this project.

1. Revolutionary formwork: specially adapted wall and roof formwork was developed for this project. Both the wall and roof formwork are mobile, being moved along and placed by hydraulic systems. The roof formwork has hydraulically extendable side panels which fit the formwork onto the walls.
2. Use of roll mats reduced the reinforcing steel weaving cycles from 5 to 2. These prefabricated roll mats are rolled out with the reinforcing rods already in the correct layout and spacing.
3. The tunnel's fire-resistant qualities are obtained by means of a special BESIX-developed concrete mix which meets the Rijkswaterstaat's strict fire resistance requirements. The walls and the escape passages have a fire resistance of two hours and the tunnel itself of one hour.

"Meeting the requirements and preconditions in this project has called for repeated breaks with tradition. This combination of innovation and creativity has made us successful as a consortium. But it is our shared passion and our rock-hard confidence in our own know-how that have given real impetus to the project", says Project Manager Emiel Braeckman.



## Equatorial Guinea

# Three New Bridges in the Jungle

*Late in 2006 BESIX Equatorial Guinea contracted to design and build three pre-stressed reinforced concrete bridges on Bioko Island, midway between the capital Malabo and the city of Riaba.*

This project will be completed in March 2010, apart from the connection between the bridge and the existing road, which is still under negotiation. The three bridges, on the national highway between Ela Nguema and Cope, consist of two lanes (one in each direction), and are all located within a single 5 km road section. Respectively 192, 139 and 181 m in length, each consists of two central piers and two abutments, giving three bays.

### A particular relief

After a complex phase of providing access up to the site of the foundations, piers and abutments in very steep valleys, the geotechnical exploratory work was undertaken and micropile foundations set down, the main difficulty encountered being the heterogeneity of the volcanic sub-soil of Bioko Island.

The piles were produced using climbing formwork. The decks were built out symmetrically from each pile, using mobile formwork crews, with post-tensioned cables to achieve the necessary resistances.

### Support from the engineering office

The BESIX engineering office in Brussels has been in permanent

communication with the site and with the subcontractor consulting firm Greish from the laying of the foundations (choice of foundations and monitoring of the geotechnical exploration) to the very precise monitoring of the geometry of bridges, as the mobile crews progressed.

“To help it over the logistical difficulties and the general lack of materials, spare parts, consumables and the like, BESIX GE is receiving significant and essential support from the other BESIX departments, among them methods, procurement, HSE, equipment, human resources and IT, with which it coordinates on a daily basis the various aspects of successfully completing a project ‘in the middle of nowhere’”, Project Manager Adrien Theunissen tells us.



## *The largest civil engineering project under way in Equatorial Guinea*

The special and difficult local conditions related to the environment of the country have added a further challenge to the success of this project.

*Each bridge has two pillars - the tallest of which is nearly 50 m high - with two abutments, and is cantilevered out from the piles.*

**Seventy 25 m long inclined piles installed**

**(22 per pillar and 13 per abutment).**

To compensate the horizontal constraints and the torsion generated by wind, temperature and creep.

190 vertical piles each **30 m long**

(71 per pillar and 24 per abutment) with a carrying strength of around 100 tonnes.



Three types of pre-stressing are applied: the first for construction segments (cantilever tendons), the second for the final configuration (continuity tendons), and the third to allow future adjustments in the event of long-term movements (external pre-stressing).

## Cameroon

# Spillway on the River Sanaga

*The BESIX-Six International joint venture has signed a Design and Build contract with AES Sonel, a mixed private/public (Cameroon state) company which produces and distributes electricity in Cameroon, to build a new spillway on the River Sanaga at Edea (65 km from Douala). The overall deadline for completion is 43 months.*

The flashboard dam, built in 1956, channels the flow of the River Sanaga to the three hydroelectric plants. One of the largest hydroelectric sites in Cameroon, it suffers from structural weaknesses. A break in the dam would result in a loss of electricity generating capacity, interrupting electricity supply to the Alucam aluminium plant and to the entire southern Cameroon electricity grid.

### The constraints of the rainy season

A special feature of this project lies in the fact that the worksite is flooded during 50% of the year. The climate in Cameroon has the special feature of being divided into a dry season extending from January to June and a rainy season lasting from July to December. Throughout the rainy season, the Sanaga frequently floods and overflows the existing flashboard dams and weirs. During these six months, mechanical or civil engineering work is impossible. This explains the long timeframe of the project: 3 years and 7 months.

### A highly complex project

The project involves the construction of a 123 m long spillway consisting of a minimum 1 m thick by 19 m wide raft foundation, two abutments and five 11 m high by 3 m thick piers. The 6 lift gates to be installed are each 7 m high by 18 m wide. The spillway is designed for a maximum retained water depth of 7 m and a flow rate of 2 500 m<sup>3</sup>/s. The old dam will be dismantled as soon as the new spillway is operational.

“Four dry seasons are needed to produce the anchors (61 in number). The upstream grout curtain, the civil engineering work including a raft foundation, piles and abutments (7 of them), 9 metres high and 3 metres wide cast in a single phase. The installation of 6 mobile flood-gates operated by hydraulic cylinders, testing, commissioning and finally training the Cameroon personnel who will operate this structure are our missions”, explains Project Manager François Guiot.



**123 m long**  
spillway

Min. **1 m thick x 19 m wide**  
raft foundation

**7 m** maximum retained  
water depth

**2 500 m<sup>3</sup>/s**  
flow rate



BESIX and Six International have created a joint venture for this project. BESIX is responsible for the offshore part of the works (engineering design studies, and procurement) while Six international will look after the onshore part (execution of the works).

The spillway, downstream from old flashboard systems built about forty years ago, will effectively regulate the water level on the man-made lake on the River Sanaga that feeds water to the Edea power plant, which currently supplies electricity to the whole coastal sub-region and Douala. Once the new spillway is operational, the old dam will be dismantled.

# Industry

## Activities Mix

*The Group is active in the industrial sector, realizing projects in the field of oil & gas, energy and nuclear projects.*

The projects realized in 2009 are the following :

### Energy Sector

- the civil works of the new **power station**, including the steel structure (Pont-sur-Sambre, France) (see Project Highlight p60),
- Two **new combinedcycle gas units** of 430 MW will each bring the all coal-fired Emile Huchet power plant into the era of gas-fired power plants. The new plant will be more ecological (Saint-Avold, France). The gas-fired power plant project is the largest of its kind in France (see Project Highlight p60).

### Nuclear sector

- a highly technical building such as the new **Proton Therapy Centre of the Curie Institute** (in partnership Orsay near Paris, France) (see Project Highlight p.48),
- the Georges Besse II **uranium enrichment plant** (Pierrelatte, France) (see Project Highlight p. 61).

### Oil and gas

- the civil works for **an oil tank terminal** (Antwerp, Belgium),
- the civil works of the **LNG terminal 'Gate'** in the port of Rotterdam. It is executing the concrete works for various foundations, pits, ducts, piperacks and overall construction (in joint-venture / Rotterdam, The Netherlands).

**Constructing power plants and upgrading the energy infrastructure are increasingly being carried out in Northern France. After initially lagging behind, France has now speeded up its investment in this type of technology. BESIX is emerging as a key actor in this new niche market of combined-cycle gas turbine power plants.**







1. 2. 3.  
Power Station  
Pont-sur-Sambre -  
France

4. 5.  
LNG Gate Terminal  
Rotterdam -  
The Netherlands

6. Protontherapy Centre  
Paris - France  
Architect: Greisch



## France

## BESIX

## Goes for Industrial Construction

*The 410 MW electricity generating station at Pont-sur-Sambre, in the Nord-Pas-de-Calais, opens the gateway to France's energy market for BESIX. This is an up-and-coming sector since its liberalization seven years ago.*

"After signing the initial contract with Siemens for the foundations on January 31st of 2007, we successfully negotiated for the entire civil engineering work.

Six months later we signed up, again with Siemens, for the civil engineering work on a second power plant at Saint-Avoid in Lorraine", says Patrick Delperdange, Senior Operations Manager Civil Engineering Benelux-France.

### Pont-sur-Sambre, integrating the environment

The combined cycle power plant at Pont-sur-Sambre departs from industry standards in terms of the architectural criteria, which call for an extraordinarily high level of environmental integration (façades in sawtooth zinc elements, untreated wood and Pilkington-type glazing bands).

Another challenge of this first project as principal contractor was adjusting to a demanding client requiring a high degree of flexibility. After transforming its relationship of sub-contractor into that of quasi-partner in charge of the civil engineering, BESIX brought the project to completion, brilliantly finishing the final phase of the project with the famous 'French Wave': mounting a vertical three-dimensional Mero type structure (identical to that used for the dome in the Ferrari project in Abu Dhabi), dressed from top to bottom in zinc, Pilkington glazing and aluminium slats. Work was completed towards mid-2009.



### St. Avold, meeting aspirations

At St. Avold, BESIX benefited from earlier experience and, in less than two years, erected a power plant twice as large as its predecessor (2 x 410 MW units).

The new plant will be greener, emitting less CO<sub>2</sub> and consuming 3 times less water, while delivering higher efficiency levels than coal-fired thermal units (57% against 37 to 40%). It will also be much more flexible, with a start-up time of around half an hour, while its older sister needs more than an hour.

All this makes it a magnificent commercial and technical success for BESIX. The civil engineering works were completed in late 2009.



2

## New technology at Pierrelatte

Still in the field of energy, BESIX is proud of the contract it completed early 2010 (more than 1 year ahead of schedule), for the civil engineering work at the Georges Besse II South uranium enrichment factory at Pierrelatte on the Tricastin nuclear site. The contract, signed with SET, a subsidiary of Areva, was to build 8 'cascade' halls (for centrifuge cascades) and all the industrial 'nuclear' assembly (CAB & CUB) and operating buildings.

Georges Besse II opens the way for nuclear enrichment using new centrifuging technology, making the plant both more efficient and environmentally safer.

These contracts complement the experience gained from building the three LNG tanks of the LNG terminal at Fos-sur-Mer, completed in 2008. BESIX is confirming its presence on the French market with major projects and continues to work with France's energy players to build up its experience in the energy world.



3

"We are aiming, among others, at the Toul, Hornaing, Sarguemines and other sites for power plants, at Dunkirk, Antifer (Le Havre) for LNG terminals and at Cadarache for the ITER project", says Jean Polet, Deputy General Manager Civil Engineering Benelux-France.

Projects for power plants and for strengthening the energy infrastructure are now taking concrete shape in northern France. After lagging behind in this technology, France today has its foot hard on the accelerator. BESIX is emerging as a key player in this new niche market for combined gas cycle electricity generation.

1. 2.  
Power Station  
Pont-sur-Sambre - France

3. Power station  
St-Avoid - France

## Marine Works & Harbour Works

### A Significant Player

*The BESIX Group is specialized in the design and construction of harbour, marine works (jetties, quay walling and the like) in Belgium and abroad. The Marine Works (& Harbour Works) department is responsible for offshore works worldwide and for protected port works (except for Benelux-France and the Middle East).*

#### Locks

The renovation of 3 **locks** in Born, Maasbracht and Heel (Limburg, The Netherlands). At each lock, one lock chamber will be extended by 80 m, the outports will be adapted and the whole complex will be renovated. With a 12 m lockage, these locks are among the Netherlands' tallest! This Design & Build project will be developed through Systems Engineering, executed and maintained for one year by BESIX. Each of them will be extended to a length of 225 m (The Netherlands).

#### Quay wall

An extension to the existing **quay wall** was completed (in partnership / Trinidad, Jamaica),

The reconstruction of a **quay wall** started (Douala, Cameroon).

#### Harbour

The contract for the design & build of the new infrastructures of the "Tangier MED2" **harbour** has been awarded to a consortium including BESIX (Morocco).







3

1. Locks  
Maasbracht - The Netherlands

2. Quay wall  
Trinidad - Jamaica

3. Locks  
Maasbracht - The Netherlands

## Abu Dhabi Yas Island

# The Race Track and the South Marinas

*The Yas Island Race Track Marina is at the centre of the prestigious complex of the Yas Marina Formula 1 Circuit, which hosted the first Abu Dhabi Grand Prix on November 1st, 2009.*

The marina is designed by Halcrow, and was executed using the dry method, with a cofferdam preventing of water penetration from the nearby channel. First a diaphragm wall was executed to act as earth retaining structure on the perimeter of the future marina, and then the whole inner area was excavated to a depth of 8 metres to allow a 6 metres usable draft, the Marina being expected to dock yachts up to 100 metres long.

The entrance to the Marina and the external portion along the channel were constructed with precast concrete blocks.

Environmentally friendly flooding, without any energy consumption, was carried out from 11th to May 27th, 2009 by siphoning 650 000 m<sup>3</sup> of water through three pipes with a diameter of 300 mm.

### Challenges

Upon completion of the Marina, in June 2008, we were asked by the client Aldar to delay the flooding - by almost one year - to allow the construction of the Yas Hotel, whose foundations were to be partly in the Marina.

The problem was that the cofferdam was built on the natural gypsum soil, which the sea water had already started to dissolve. Water-tightness of the cofferdam could not be guaranteed for another year, and we had to build a second cofferdam to prevent accidental flooding by failure of the first one while our own works were being completed.





## Some figures

### Race Track Marina

Excavations	1 260 000 m <sup>3</sup>
Diaphragm wall	1 898 ml
Precast blocks	2 500 Nos
Block quay wall	900 ml
Usable draft	6 m
Rock revetment	450 ml

### South Marina

Earthworks	1 100 000 m <sup>3</sup>
Concrete	65 000 m <sup>3</sup>
Precast blocks	5 657 Nos
Quay wall length	2 200 ml (in curves)



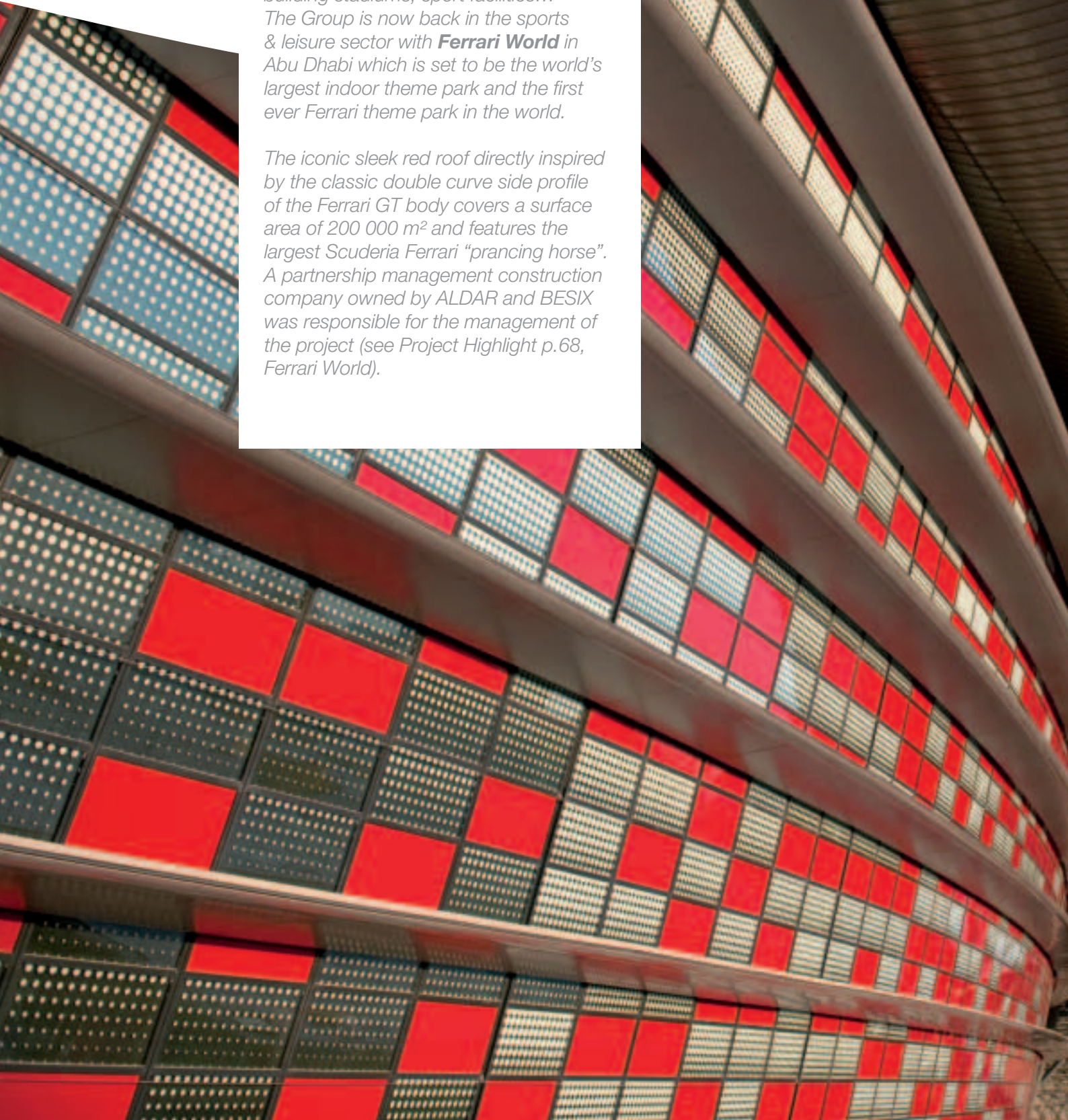


## Sports & Leisure

### Start up for Performances

*The BESIX Group had experience in building stadiums, sport facilities... The Group is now back in the sports & leisure sector with **Ferrari World** in Abu Dhabi which is set to be the world's largest indoor theme park and the first ever Ferrari theme park in the world.*

*The iconic sleek red roof directly inspired by the classic double curve side profile of the Ferrari GT body covers a surface area of 200 000 m<sup>2</sup> and features the largest Scuderia Ferrari "prancing horse". A partnership management construction company owned by ALDAR and BESIX was responsible for the management of the project (see Project Highlight p.68, Ferrari World).*







## Abu Dhabi Yas Island

# Ferrari World

*The Ferrari World is the world's first Ferrari Theme Park and the largest attraction of its kind. It is located on the artificial island of Yas, right by the Yas Marina Formula 1 circuit, a few kilometers away from Abu Dhabi Airport.*

The curvy red roof - the patented "Ferrari Red" colour - with an area of 200 000 m<sup>2</sup>, is inspired by the profile of the Ferrari GT body, and carries the largest Ferrari logo ever created.

Most of the attractions of the theme park will be found inside the building, in a huge air-conditioned hall able to contain the whole Olympic Stadium of Beijing.

### The building

The design was made by the British architectural firm Benoy, the structural design by London based Whitbybird. All shop drawings were done in-house by Six Construct.

The central area, called the shield, has a diameter of 335 m and a height of 50 m. Three double spiked branches, called trifurms, protrude to the

exterior, giving room for roller coasters and a concert area. The distance between the extremities of the branches is about 800 m.

### Challenges encountered

To be able to deliver the building closed with roof and facades completed for the Formula 1 Grand Prix on November 1st, 2009 the initial roof design, with large heavy trusses, was discarded at an early stage since requiring access to the centre of the building till very late, preventing the construction of the inner concrete structures. "An alternative solution with a light space frame structure made of small elements assembled in place - the largest of its type in the world - was proposed and accepted. This structure, designed, produced and constructed by Mero, required 42 000 nodes

with 180 000 straight elements to be fixed at a height of up to 50 m", explains Félix Warny, Project Director.

The upper slab of the building had to be redesigned in the early days to take the load of mobile cranes and the cherry pickers required to work at considerable heights to build this structure and the attraction buildings.

The central attraction, an accelerator tower 62 m high, had to be put in position by a 500-ton crane and a 250-ton crane. The supplier was behind schedule, but the building construction could not wait. It was then decided to proceed with the construction of slabs in elevation, then to place the cranes on these elevated slabs (with special ramps) and, of course, with complete ultra-dense under propping of the working zones.



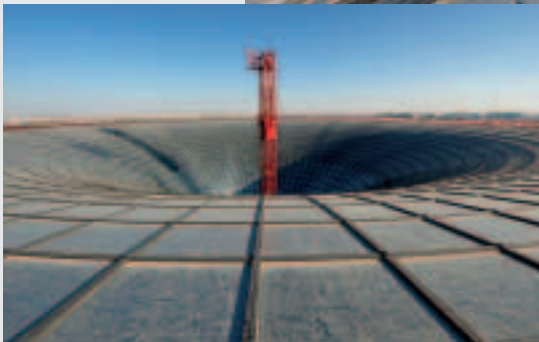
### Present situation

Six Construct is completing its scope of works (building and roof, with attraction boxes structure as a Variation Order), leaving the place for other Contractors to do the finishing works and erect and install the rides. It is expected that these works will be completed by end 2010.

*For planning reasons, all the attraction buildings on the upper slab, had to be constructed after the execution of the roof, i.e. without use of tower cranes.*

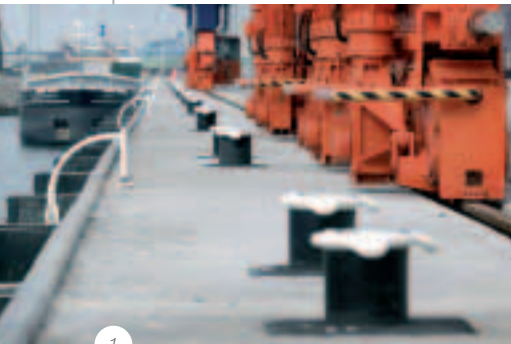


Shield **200 000 m<sup>2</sup>** area  
**335 m** diameter  
**50 m** height



## Some figures

Roof Area	<b>200 000 m<sup>2</sup></b>
	<b>(31 football fields)</b>
Ferrari Logo	<b>65 X 48 meters</b>
Space frame nodes	<b>42 000</b>
Space frames elements	<b>180 000</b>
Façades	<b>25 000 m<sup>2</sup></b>
Guttering (length)	<b>6 900 m</b>
Air conditioned volume	<b>2 800 000 m<sup>3</sup></b>
Concrete volume	<b>128 000 m<sup>3</sup></b>
Tower cranes	<b>27</b>
Mobile cranes	<b>51</b>
Cherry pickers	<b>52</b>
Workers (Six Construct only)	<b>3 500</b>



1



2



1

## BESIX

### Accuracy & Precision

*BESIX Vlaanderen,  
BESIX Nederland and  
BESIX France*

1. LNG Gate Terminal  
Rotterdam -  
The Netherlands

2. BESIX Headquarters  
Brussels - Belgium

3. Sewage Treatment  
Plant  
Heist - Belgium

### BESIX Vlaanderen

*Within the 'Contracting' business unit and more specifically the 'Construction' division, BESIX Vlaanderen can clearly look back on five consecutive years of successful and continuous growth. In so doing, BESIX Vlaanderen confirms its position as a general contractor for large and complex projects on the Belgian market.*

BESIX Vlaanderen operates on both public and private markets, in both building and civil engineering projects, with both traditional tendering and new alternative contracting forms, **from 'bouwteam' to PPP**. But more importantly still, it aims to build close collaborative relationships which can hopefully go on to provide recurrent clients.

The list of references already includes 2 successfully delivered missing links in the form of tunnels in Harelbeke and in Aalter. 3 large buildings have already been erected, the Ghent Courthouse (62 000 m<sup>2</sup>), the Eandis Headquarters at Melle (21 000 m<sup>2</sup>) and **Artevelde College** in Ghent (21 000 m<sup>2</sup>).

BESIX Vlaanderen has opted, in good time, for diversification in a highly competitive market, so

as not to be dependent on a particular sector, an approach which has secured it a sufficient volume of work in the current market situation. Right now it is working on 2 large **complex renovations**, the AXA office building in Antwerp (52 000 m<sup>2</sup>) and, in a bouwteam, the Fortis Chancellery in Brussels (55 000 m<sup>2</sup>). Work is also proceeding on 3 **residential projects**, the apartment building in the Helix project in Anderlecht (100 apartments), the Daskalides project in Ghent (100 apartments) and the Leskoo project in Oudenaarde (76 apartments). A large **underground parking garage** (2 900 places) is being built at the Gent Sint-Pieters railway station, and the seventh successive stage of a big new oil **tanking farm** is under construction in the port of Antwerp. This year work will also start on a new **quay wall** opposite the Umicore facility in the port of Antwerp.

### *Large and complex projects on the Belgian market*

#### In the future

The future also looks very promising. Besides a confirmed order book for 2010, BESIX Vlaanderen has been working hard to qualify for various upcoming major infrastructure, civil engineering and building projects. This includes prequalifications and establishing strategic partnerships, at times, but not always, in a PPP environment.

Experienced and well-trained teams are ready and waiting to take charge of these large and complex projects and provide client-tailored project management.

#### West Construct

*Van Britsom & Verheye, since rechristened West Construct at the beginning of 2010, continued to concentrate on hydraulic and civil engineering projects, primarily in north-west Belgium. It has been integrated into BESIX Vlaanderen since 2009.*



Key projects in 2009: West Construct undertook major **dredging work** on the leper-ijzer canal between leper and Knokkebrug, taking care of the downstream section as part of a temporary joint venture. More than 22 000 m<sup>3</sup> of sludge was removed by water for further processing at the Diksmuide site of our other group company GRWestkust. After lagooning, part of the sludge found its way back to the market as recycled building material.

### *Hydraulic and civil engineering projects*

West Construct worked in partnership on **extending the Heist sewage treatment plant** for Aquafin. The new building section was completed in early July 2009 and includes an aeration basin, a sedimentation tank and the necessary pressurized gravity pipelines. In a subsequent phase, work began on adapting and renovating the existing infrastructure. This extension will ultimately double the treatment capacity of this coastal municipality's sewage plant.

At Jabbeke, alongside the E40-A10 traffic junction, work was completed on a **weather radar tower**, commissioned by the Federal Buildings Directorate (Regie der Gebouwen) for the Royal Meteorological Institute. This involved building a 45-metre access tower, surmounted by a 50-ton steel structure to house the measuring apparatus. A service building with transformer room was also constructed on the site.

### **BESIX Nederland**

*In 1996, confirming its anchoring in the Netherlands, BESIX created BESIX Nederland which broke through this market with high buildings, marine and civil engineering projects. 2009 was a very busy year for BESIX Nederland with substantially higher sales than in 2008. Various new projects were begun and others were successfully delivered.*

In the field of civil engineering, both the **DODO tunnel** in Utrecht and the **perrontunnel** in Arnhem were successfully finalized. Also two projects for Rijkswaterstaat were completed in 2009: the **Ekkersrijt traffic exchange** complex and the **Kosmos**-project which is, a large renovation program of road- and waterway infrastructures. In Amsterdam the works have started on the large DBFM contract regarding the construction of the **2nd Coentunnel**. Two new projects were launched in Rotterdam: the civil works for an **LNG-terminal** (Gate-project) in the port area and a large parking lot, '**Kruispleingarage**', right in the middle of Rotterdam's city centre.

BESIX is executing its largest marine project in the Netherlands with the '**Limburg Locks**' project. After a long preparation time, these projects have successfully been started in 2009. At the end of 2009, in the field of high rise and complex buildings BESIX Nederland was proud to finalize end of 2009 the very complex **Maastoren**

project in Rotterdam. With a final height of 165 m it is now the highest office building in the Netherlands.

Only a few hundred meters further BESIX Nederland is achieving the **New Orleans tower** which will reach a height of 158 m in 2010. In Maasbracht BESIX Nederland won the Design and Build bid for a **regional maritime traffic centre** which confirms the company's focus for added value projects.

### *High buildings, marine and civil engineering projects*

#### **Prospects**

BESIX Nederland has started 2010 with an already well-filled order book. Particular opportunities exist in the civil and marine engineering fields, where the government is putting together a major investment programme. Important railway infrastructure investments, including several new station buildings, are also in the offing. With its present expertise BESIX Nederland will take advantage of these market opportunities.

In the buildings sector the trend is somewhat negative. Few major projects, if any, are expected in 2010. Given our employees' flexibility, we expect to be able to absorb this situation reasonably well in the civil and marine engineering sector.

#### **BESIX France**

*BESIX has been present in France since 2000 with prestigious projects such as the CBX tower, the 2E terminal at Charles de Gaulle Airport, civil engineering work at the Areva nuclear complex at Pierrelatte (Drôme) and an electricity power station for Siemens (Northern France). 2009 saw the completion of several major projects.*

In mid 2009 the civil engineering work for the **power station at Pont-sur-Sambre** in northern France was delivered to the client. This 430 MW combined gas cycle plant is notable for its tone-setting architecture that ensures a perfect integration into the landscape.

In Saint-Avold, BESIX undertook the civil engineering work for the **Emile Huchet power station**. Here two plants of 430 MW each, also of the combined gas cycle type, will be providing environmentally friendly electricity production. Work will be completed at the beginning of 2010.

At Pierrelatte, near Avignon, BESIX is finishing work on the **George Besse II uranium enrichment plant**.

### *High-rise buildings, civil and industrial works, and also marine works*

BESIX intends to position itself on the French market as a privileged player in high-rise building, and in civil, industrial and marine engineering.



## International Subsidiaries

*The Group has two major international subsidiaries. A permanent agency was created in Morocco (with SOMAGEC) and another one in Cameroon. The objective is to maintain a presence and provide building construction and civil engineering services in these two geographic areas.*

### BESIX - SOMAGEC

#### Major player in large-scale projects

BESIX - SOMAGEC, which has been present on the Moroccan market since 2004, has become a major player in large-scale projects in the country: development of the Bouregreg valley at Rabat, development of the port of Tangier Med, and participation in the Azur Plan (via the building of the **Mazagan Beach Resort** at El Jadida).

BESIX - SOMAGEC was also awarded, in June 2009, the contract to build the Tangier Med II port. BESIX - SOMAGEC's objective is to expand in Morocco to become a reference player in the country, mainly in infrastructure, environment, industrial building and marine engineering. We eagerly await the opportunity to take part in other major projects that Morocco is developing, such as the Casablanca tramway, the Tangier-Casablanca high speed rail link, the Safi and Jorf Lasfar electricity power stations and the Bouregreg Valley development scheme.

### Six International

#### African Card of the Group

With more than 60 years' presence in Africa, more than 30 in Cameroon and 6 in Equatorial Guinea via Six International, the Group is active in practically every field of construction in this part of the African continent.



2

The BESIX - Six International joint venture has signed a Design and Build contract with AES Sonel, a mixed private/public (Cameroon state) company, in charge of producing and distributing electricity in Cameroon, to build a **new spillway** on the River Sanaga at **Edea**, 65 km from Douala. The overall deadline for completion is 43 months.

1



1. Bridges  
Riaba - Equatorial Guinea

2. Mazagan Beach Resort  
Casablanca - Morocco

3. 4. 5.  
Spillway  
Sanaga - Cameroon

3



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# Construction Middle East



## *The Middle East, a Key Market*

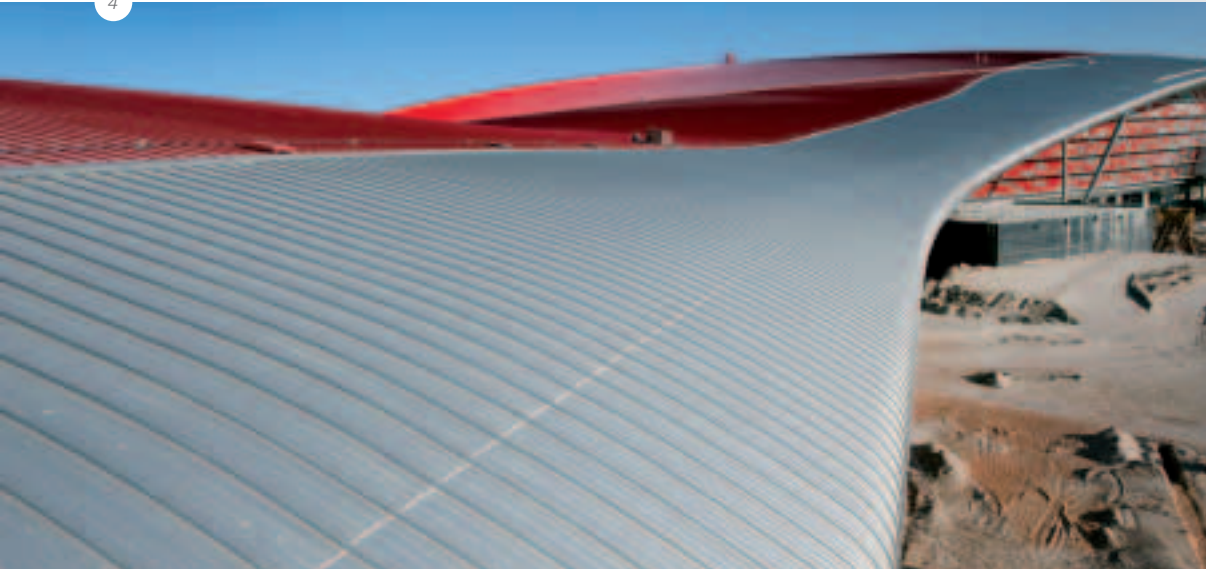
*For more than 40 years the BESIX Group has been active in the Emirates and Qatar, via BESIX and Six Construct, with a number of “reference projects” in buildings, port works, civil engineering works, marine works, industrial buildings, sports & leisure complexes.*

The Group confirms its presence in Abu Dhabi, Dubai, Doha, the Emirates of Ajman and Sharjah but is also developing new markets such as Saudi Arabia.





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1. 2. 3. Al Gurm resort  
Abu Dhabi - E.A.U.

4. 5. Ferrari World  
Abu Dhabi - E.A.U.  
Architect: M/s Benoy



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## Abu Dhabi

*As major oil producer, Abu Dhabi is a significant player in the Middle East. The Group has participated in numerous development and infrastructure projects in this region.*

On Yas Island, with the collaboration of ALDAR-BESIX, the Six Construct teams managed to complete the **Ferrari World** (structure, coaster buildings, façade works), a new icon of the F1, the race track **marina**, the **bridges** to the retail mall and **storm water pumping stations and outfalls**.

Six Construct is continuing the works related to the **Al Gurm Resort** (76 villas are nearly completed) and its access (elevated road) has started a display villa and shore protection on Nareel Island, enabling works for Al Mafraq Hospital and the **Saadiyat Freeway**. Together with BESIX Sanotec, Six Construct is also involved in the civil and **mechanical works at the Wathba & Alahamah wastewater treatment plants**.

## Dubai

*Even if some projects are postponed or under pressure due to the economic and financial situation of the city and the Emirate, the BESIX Group completed and pursued some contracts.*

**Burj Khalifa Tower** (formerly called Burj Dubai), the world's tallest building and man-made structure, is a landmark for the Group. Many civil works projects were also completed in Dubai: Infrastructure in **Al Jadaf development** ("The Culture Village"), **Al Ittihad road phase 1** and Emirates Road bridges. In consortium with Alstom, BESIX started work on the **Al Safouh Transit System Project**, first tramway system in the Middle East.

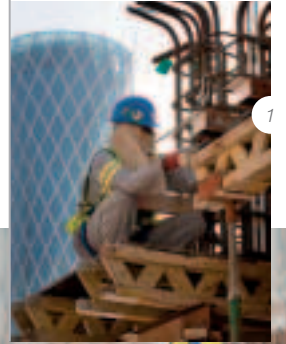
### ALDAR BESIX LLC

A Management Contract was concluded between ALDAR and BESIX (50/50 partnership). The new Company is in charge of some contracts awarded in the Yas Island Development. BESIX has taken over the management of the procurement and construction phases of the different projects. This consists mainly of logistics, planning, supply, design and management of the site and finally the general project supervision. "BESIX brings significant assets to ALDAR, such as international level procurement skills (necessary for complex elements), high level construction logistics skills (which have already resulted in more efficient and buildable design) and experience and skilful site management", Patrice Daens, General Manager, BESIX UAE.

## Qatar

Qatar remains an interesting market thanks to its petrochemical and liquid gas activities. Six Construct Qatar is participating actively in the development of this country.

Six Construct achieved in joint venture with Midmac Contracting, the **Qipco Tower** which was awarded the 2009 prestigious accolade for the Best Tall Building in the Middle East and Africa by the Council on Tall Building and Urban Habitat (CTBUH). **Additional aprons** for 14 code-E aircrafts were completed for Qatar Airways at Doha International Airport. Other significant building projects started such as the **Doha Convention Centre** for Qatari Diar in the West Bay area, the Extension to Qatar National Convention Centre for Qatar Foundation in Education City and marine works, the pre-cast blocks **quay wall** in Ras Laffan for Qatar Petroleum.



### Facility Management

**In joint-venture with Cofely (former Axima, Group Suez), BESIX Group obtained the maintenance contract for the electrical system of the Burj Khalifa (Burj Dubai) for 3 years.**



1. Convention centre (Architect: Murphy/Jahn), with on the background, Qipco Tower Doha - Qatar (Architect: M/s Benoy)
2. Convention centre (Architect: Murphy/Jahn), with on the background, Qipco Tower Doha - Qatar (Architect: M/s Benoy)
3. Doha Convention Centre Doha - Qatar Architect: Murphy/Jahn

## Sharjah and Ajman

The BESIX Group is eager to extend its presence in the Middle East. Sharjah and Ajman are two bridge-heads.

In Sharjah, the Group completed phases 3 & 4 of the **Hamriyah Inner Harbour**, and started the **Al Saja'a tanker discharge facilities** (with BESIX Sanotec).

In Ajman, the BESIX Group completed environmental work, a **sewage system** (concession). A **precast yard** was created for the fabrication of precast concrete elements for Hyundai's IGD project on Das Island.



## Dubai

## Burj Khalifa

BESIX achieved a milestone in building construction

*At the centre of Downtown Dubai, the Burj Khalifa tower (formerly called Burj Dubai) is the world's tallest building manmade structure and has also the world title in all disciplines<sup>(1)</sup>. This impressive building is the focal point of the 500-acre 'mega-project' by Emaar Properties, described as the new heart of Dubai.*

View from the Burj Khalifa

At the height of 828 meters (finally unveiled), the tower has scaled 160 levels, the maximum number of storeys in any building in the world.

## Tower of the records

The latest advanced technologies in wind engineering, structural engineering, structural systems, construction materials and methods have been applied.

"Two most important challenges to achieve this project within the required target were the logistic organization of the vertical transport (materials, workers and waste evacuation) to achieve a construction cycle up to two floors per week and the pumping of the concrete to the highest level (a world record up to 605 m). In order to cope with the problem of placing concrete in high temperature conditions (up to more than 45°C), special concrete mixtures were developed and poured mainly during the night", explains Jozef De Hauwere, planning and methods manager.



Other world records for Burj Khalifa include the highest occupied floor in the world, at over 550 m; the highest outdoor observation deck in the world, at the Top on Level 124; and the tallest service elevator, which travels to a height of 504 m. Armani Hotels is offering 160 guest rooms and suites, 5 restaurants and a Spa, covering more than 40 000 m<sup>2</sup> at the lower part of the tower.

With an average of 4 000 men per month during 5 years, at the peak of construction in 2009 (all fit out activities included) more than 12 000 workers and staff were on site every day.

"With the completion of the spire pipe jacking on the top of the building in January 2009, the cladding in September 2009 and the finishing of the 900 top level quality apartments (7 stars qualified), the tower has opened on January 4, 2010", Didier Bosredon, Area Manager Special Projects, Six Construct.

BESIX, its teams and partners are proud of this achievement after less than 5 years of intense efforts for all parties involved. With its professionals, the Group is now ready to achieve new challenges. Only the sky is the limit...



**330 000 m<sup>3</sup>** of concrete

**50 000 tons** of rebar

**6 700 tons** of structural steel

**150 000 m<sup>2</sup>** of glass

(1) Burj Khalifa is the tallest building in the world according to the three main criteria of the Council on Tall Buildings and Urban Habitat (CTBUH): 'Height to Architectural Top,' 'Height to Highest Occupied Floor' and 'Height to Tip.'



# Contracting New Developments



*Environment  
Awareness*



*BESIX Sanotec is specialized in designing, constructing and commissioning wastewater treatment plants and sludge treatment installations. It also provides solutions for drinking water. In 2009, BESIX Sanotec was active as an EPC Contractor. It succeeded in its strategy of expanding in the private sector,*

*with a particular focus on the pharmaceutical and petrochemical industries as well as in the public sector.*

In Belgium, BESIX Sanotec started the works for the new **Sewage Water Treatment Plant (STP)** of **Erbisoeuil** in Wallonia, completed **additional works** for the Belgian Refinery Company in **Antwerp** and was awarded and started up the same year the **new wastewater treatment plant** of **Genzyme** facilities, a pharmaceutical company in **Geel** that uses biotechnology to manufacture medical drugs.



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## Emphasize synergies

At the international level, synergies between BESIX's companies were developed. Indeed, BESIX Sanotec participated in the construction of the **STP and the Potable Production Plant of Mazagan Beach Resort** in Morocco, a project executed by BESIX and SOMAGEC.

The wastewater treatment plant was entirely designed by BESIX Sanotec in cooperation with the client. Both facilities were commissioned at the end of 2009.

In the Middle East, BESIX Sanotec developed its expertise in many new projects. The **two new design and build wastewater treatment plants of Al Wathba 2** in Abu Dhabi (UAE) and **Allahamah** in Al Ain (UAE) with a combined capacity of 430 000 m<sup>3</sup> per day, the **STP** of the Six Construct Labour Camp in **Qatar**, the **STP** with its Tanker Discharge Facilities in **Al Saja'a** in Sharjah (UAE) as well as the **Yas Island Pumping Station** in Abu Dhabi (UAE).

Besides its EPC label, BESIX Sanotec has positioned itself as a long-term partner in its relations with clients by operating and maintaining the plants they have constructed.

This is the case with the Municipality of Sharjah (UAE) with the O&M of the **Phase 7 of Sharjah STP** as well as of the new STP and Tanker discharge Facilities of Al Saja'a . The same scenario will be applied to the Abu Dhabi Water and Electricity Authority (ADWEA) with the O&M of both plants at Wathba and Allahamah where BESIX Sanotec, in partnership with Veolia, will operate and maintain the facilities for a period of 22.5 years.

## Tailor-made services

To face the growth of technical activities, "We decided to open a technical office in the UAE at the beginning of 2009. It is a real added-value. We can realize tendering & assure studies for local projects. This efficient link between respective tendering & engineering departments in Brussels & the UAE gives us high reactivity & flexibility," says S.Pousset, Managing Director, BESIX Sanotec.

After successfully developing its activities in UAE, BESIX Sanotec decided, following the general strategy, to look at opportunities in new countries in North Africa, the Arabian Gulf and also Asia. "It is time for us to enlarge our presence in niche markets," explains Stefan Pousset.

1. *Genzyme Wastewater Treatment Plant  
Geel - Belgium*
2. *Jumeirah Wastewater Treatment Plant  
Dubai - UAE*
3. *Water Treatment Plant  
Sharjah - UAE*
4. *Wastewater Treatment Plant  
Sharjah - UAE*
5. *Wastewater Treatment Plant for Mazagan Beach Resort  
Casablanca- Morocco  
Architect: Jamal Lamiri  
Alaoui*



## Abu Dhabi

# New Sewage Plants to Play Double Role

*Facilities will tackle growing volume of waste due to Abu Dhabi's population increase as well as reducing the need for desalinated water.*

The two new wastewater treatment plants for Abu Dhabi will be completed next year. The plants are expected not only to reduce the load on the emirate's sole existing facility but also on desalination plants by providing treated water suitable for agriculture. "Work on the two plants, in Al Wathba, 40 kilometres south-east of the capital, and Al Hamah, 40 kilometres from Al Ain, is 41 per cent complete", says Stefan Pousset, Managing Director - BESIX Sanotec.

The plants are being built at a cost of US\$400 million (Dhr 1.5 billion) and will have a combined capacity of

430 000 cubic metres of sewage per day, enough to supply 1.5 million people. The Al Wathba plant is scheduled for completion in August next year and the Al Hamah plant a few months later in December.

The emirate's rising population has placed a heavy burden on the capital's only sewage treatment plant, in Mafraq. It receives more than 450 000 cubic metres of wastewater daily, which is almost twice its design capacity. The two new sewage treatment plants, which will be able to process 430 000 cubic metres of waste daily, will also serve another important objective: the recycling of wastewater.

High-quality desalinated water, which requires large amounts of energy and is expensive to produce, has been used indiscriminately, but officials are now advocating the idea that certain needs, such as irrigation, be met with lower quality and treated wastewater that is cheaper.

At present some 40 per cent of the outflow from Mafraq Wastewater Treatment plant is released into the sea due to lack of the infrastructure needed to treat and send the water back to the city for reuse. "The outflow is a valuable product and we know that the need is greater than the quantity being produced", explains Stefan Pousset. The special-purpose company was jointly set up by the Abu Dhabi Water and Electricity Authority (ADWEA), BESIX and Veolia groups. The EPC consortium consists of BESIX, Six Construct, BESIX Sanotec and OTV (Veolia). A fully integrated Joint Venture between BESIX Sanotec and OTV (Veolia Group) has been set up in



order to execute the electromechanical scope of works of the two plants. In consequence, special dedicated task forces regrouping colleagues from both partners have been needed to treat and send the water back to the city for reuse. Coordination meetings are held on a regular basis in order to meet the target dates.

The design, engineering and procurement have been finalized and the first equipment arrived in December 2009.

While the engineering took place in Europe, a new team was based on both sites (Wathba and Al Hamah) to manage, organize and follow up the construction.

The Al Wathba facility will have a capacity of 300 000 cubic metres of sewage per day. Water will take 13 hours







to travel through the system. The journey will start at a metering room being built in a 20-metre-deep excavation. This chamber will fit the meter to measure the incoming flow.

other substances are removed. Water is then extracted from the sewage and sent to tanks, where bacteria begin the cleaning process by consuming the carbon and nitrogen dissolved in it.

The sludge left behind is further treated to extract more water before being sent to two tall round digesters. The end product is sent on to 14 large drying beds where the sun



The Al Hamah plant is based on the same design as the one in Al Wathba, but has a capacity of 130 000 m<sup>3</sup>/d. Once both plants are commissioned, they will be operated and maintained by BESIX Sanotec and Veolia joint venture for a period of 22.5 years.

After the metering room is the pumping station, where six pumps will draw the sewage from underground to the plant level.

The waste will first go through a pre-treatment stage where grease, sand and

The water is then further treated in clarifiers that are more than 10m high, where the last remaining impurities settle to the bottom.

The water at the top is piped off, filtered and treated with chlorine until it is ready for use.

evaporates more than 80 per cent of its moisture. It is estimated that the plant will produce 135 tonnes of sludge per day, which will be collected by the Abu Dhabi Sewage Services Company and could be used as compost.



## Multi-Disciplines

*Socogetra acts as a general contractor to both public and private bodies in various fields of road construction and civil engineering.*

Last year, Socogetra built an **industrial wastewater neutralization station** on the GSK site at Rixensart, with an average capacity of 310 m<sup>3</sup> per hour. The facility treats laboratory effluent, with very varying pH levels (between 2 and 12) and temperatures (between 10 and 80 ° C). These values require the use of specific construction materials. Products enter the site from the west and east, where capturing points have been built, and from here the effluent is carried to a centralized station. The very poor quality of the site (a former swamp) and the presence of peat ruled out lowering the water table. The elevation structure (6 metres under the natural ground level) was therefore cut into the ground and connected to the neutralization station by directional drilling. The station, built on Franki Foundations piles, operates in alternating batch mode. The neutralization is carried out using CO<sub>2</sub> and effluents are discharged once neutralized to a pH of 7.5 (± -0.5). The tests were entirely satisfactory. Apart from technical constraints, the planning, safety and construction methods needed to take into account the imperatives of building on a site that was already operational. Perfect collaboration between different parties involved made it possible to achieve these objectives.

As part of the **modernization of railway line 162** from Brussels to Luxembourg, Socogetra was awarded several civil engineering contracts. These involved the demolition and reconstruction of 6 overpasses, placing a corridor under the tracks (temporarily shifted for the purpose)

and laying 8 km of drains. These sites, in the municipalities of Habay-la-Neuve and Arlon, required blocking off major highways to a strict timetable worked out in consultation with the various local authorities concerned. For reasons of safety and planning, certain sensitive operations were performed during total cuts in rail traffic. In this way, 56 people worked in turn on 6 separate sites to demolish 2 existing bridges, place a corridor under the tracks, lay drains within the loading gauge, launch precast concrete beams from the abutments of a new bridge and undertake various finishing tasks. Lux TP collaborated with the Socogetra teams. By 2010, Socogetra plans to undertake works for Infrabel on line 162.

The installation of a **wastewater collector** on the bank of the Amblève in Aywaille on behalf of the AIDE over a distance of 1 000 metres, and the redevelopment of the towpath for the municipality of Aywaille as part of a 'snail plan' to improve footpaths and cycling facilities, were other projects undertaken by Socogetra. Related projects such as placing drainage antennae in perpendicular streets, linking up homes to the sewer system, and sheathing the existing sewer section are also planned.

Socogetra is also building the wastewater collectors for the municipalities of Godinne and Yvoir. This project, which makes use of various technologies, extends over nearly 10 km in the Upper Meuse valley in the Namur area, subject to a nature preservation order.





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The excellent weather in 2009 enabled rapid progress to be made, with completion scheduled for March 2010. The project combines a range of specialist areas: road works, deep pipe laying, reinforced concrete structures built on site, secant piles, sheet piling, boring, electromechanical equipment, recycling of demolition materials, pipelaying in the river...

Finally, Socogetra's **tarmac department**, acting in a subcontracting capacity, asphalted a major roundabout at the Carrefour de Menuchenet in the region of Bouillon. Completed in two phases, the contract involved laying approximately 2 000 tons of asphalt for the two underlayers (incorporating 45% recycled products) and nearly 900 tons of SMA asphalt for the surface layer.

- 1. E 411, Province of Luxembourg - Belgium
- 2. N4-N63, near Marche-en-Famenne - Belgium
- 3. Bridge on the Sambre - Floriffoux
- 4. Terminal Tram/Metro - Heysel Station Brussels - Belgium
- 5. Parking and surrounding - IKEA Sterpenich - Belgium
- 6. Wastewater treatment plant Corbion - Belgium
- 7. Bridge Birel - Infrabel line 162 Arlon - Belgium



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## Worldwide Expertise in Deep Foundations



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1. Construction of a shopping centre 'Altréa' - cut-off wall  
Tourcoing - France

2. Siemens power station  
Tessenderlo - Belgium

Franki Foundations offers a complete range of products in the specialized field of Deep Foundations, and the design capacity for developing specific and alternative solutions. In 2009, Franki Foundations worked on nearly 500 projects in its domestic market (Belgium, France and The Netherlands), whereas activities were ensured also in the UK through our subsidiary Able piling, and in Germany. Decisions were taken to establish a branch in The Emirates, together with Six Construct.

2009 was a difficult year for Franki Foundations, with a reduced turnover, considerable pressure on prices and hence on margins. The large infrastructure project in Delft was delayed, and this caused a reduced activity in diaphragm walls.

### Key projects were:

The first phase of the start pits for the Tunnel under the Kaufhaus and der Kö in **Düsseldorf** (Germany). Diaphragm walls with a maximum thickness of 1.2 m and a depth of 34 m.

The continuation of the works on the **Josaphat-Schuman** project (Belgium) - 7 200 m of Jet-grouting, exploratory drillings and injections.

The start of the diaphragm walls for the parking under the Kruisplein in **Rotterdam** (Netherlands) with BESIX - 18 000 m<sup>2</sup> diaphragm walls.

The end of the various foundations works for the shopping centre Altarea, in the center of **Tourcoing** (France) - Omega piles till 36 m depth, slurry walls, and secant pile walls.

The foundations of a new storage hall and distribution center for Colruyt-Dreamland in **Lot-Beersel** (Belgium) - 8 000 rigid inclusions and 1 230 piles.

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## Regional Affiliates

**Wust, Vanhout, Jacques Delens, Lux TP & Cobelba** cover the construction markets in their respective regions. Activities in the Flemish Region (East and West Flanders) are managed by **BESIX Vlaanderen**, in cooperation with **Vanhout**.

The regional companies are responsible for small and medium-sized projects. Buildings are part of their core business. Large-scale civil engineering works are managed by **BESIX**, in synergy with the regional affiliates.



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1. The 'Trois Glans Dorés'  
Lux TP Project (in partnership)  
Luxembourg - GD Luxembourg

2. STIB Royal Atrium  
A Jacques Delens project  
Brussels - Belgium  
Architect: Assar





Around its core business of general contractor Vanhout has built up a group with a number of activities such as Facility Management, an engineering office (Botec division), sustainable building, a PPP unit and active involvement in a number of swimming pool concessions. Last but not least, the Vanhout group includes HBS, which specializes in shop fitting and is today a punctual and reliable partner of the country's major retail chains.



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municipal swimming pool in Mons. On the non-PPP market Vanhout again undertook a number of bouwteam projects in line with its strategy. We would mention here the **offices** for Securelink in Wommelgem and the final phase of the **AMCA development** (London Tower building) in Antwerp. The seventh and final building of the **Airport Garden** project in Zaventem was also completed.

As references in the utilities sphere we would point to the building of a new college in Turnhout for the **KHK** in 2009, and the renovation and conversion into offices of the satellite building in the old Zaventem airport terminal. In the care sector, building work continued on the A.Z. **Groeninge hospital** in Kortrijk, the **Onze-Lieve-Vrouw van Lourdes hospital** in Waregem, and the total renovation of the **Sint-Elizabeth hospital** in Turnhout.

In the industrial production sector, Vanhout undertook **building** work for Janssen Pharmaceutica in Geel and for the **Esso HPHT** project in Antwerp. The greatest number of sites in 2009 were in the residential sector. Here work continued on the **'Looy's Hof'** project in Vosselaar, the **'Kloostertuin'** in Opwijk and 'Park 51' in Herent. In Anderlecht, Vanhout worked on the four blocks of the **Helix project**, and in Kortrijk the old post office building on the Grote Markt was converted into **commercial space and apartments**. In Woluwe-Saint-Lambert, Vanhout continued working for its sister company BESIX R.E.D. on the **'Rops & Permeke'** project.

On its home markets in Flanders and Brussels, Vanhout's activities are divided between offices, utility and residential projects and environmental technology and industrial production units.

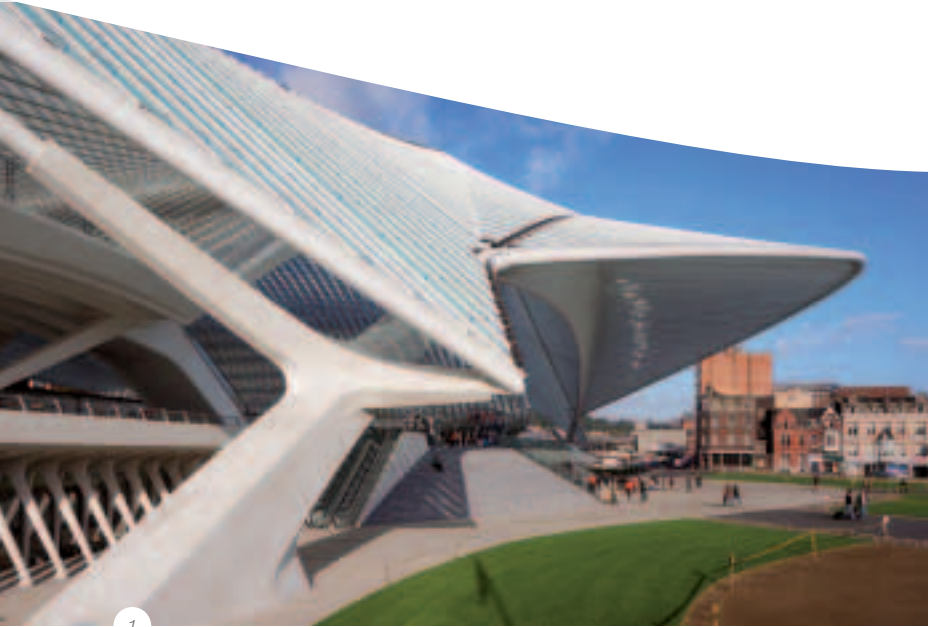
2009 was a successful year for the Vanhout Group with sales of more than EUR 110 million and good profitability, to which the sale of the **Zorgflats** in Schoten also contributed. NV Zorgflats Schoten was originally set up in a PPP of the same name to build 110 care apartments in cooperation with the Schoten social security services. The Vanhout Group remained active on the PPP market in 2009, with work beginning for example on the new **Administrative Centre** in Herent and on the new

1. **Zorgflats "Hertogloges"**  
Lommel - Belgium  
Architect: Plusoffice Architects

2. **Satellietgebouw**  
Zaventem - Belgium  
Architect: Storme-Van Ranst

3. **KHK Blairon**  
Turnhout - Belgium  
Architect: Verwilt-Cautreels,  
Jaspers - Eyers & Partners





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In 2009, Wust worked on several high profile sites, each demonstrating its wide range of activities and professionalism.



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An exceptional reference completed and brought into service during the past year is the new **Liège-Guillemins TGV station**, designed by architect Santiago Calatrava.

In addition to the preliminary work, Wust was part of the consortium for the structural work and also the railway works.

The quality of the white concrete structures is exceptional. Opened on September 18th, 2009, the new station is now a magnet of attraction for the city of Liège.

At Wavre, Wust completed three **office buildings** totaling 10 000 m<sup>2</sup> for Codic, marking a new step in its 23-year collaboration with this leading promoter.

In the area of industrial buildings, Wust delivered in 2009 the second phase of a 2 x 6 250 m<sup>2</sup> **airfreight** hall in Design and Build for SAB (Liège Airport). At Gembloux, Wust built a 6 200 m<sup>2</sup> **workshop** and 2 200 m<sup>2</sup> of offices for S.A. Belmaco.

Finally, Wust has just completed a major project consisting of an **IT building** (4 000 m<sup>2</sup>) and two 'energy' buildings for S.A. Network Research Belgium (NRB). The EUR 30 million of work that Wust has undertaken for this client over a period of 20 years demonstrates the strong relationship of trust that exists between the two companies.

1. Guillemins Railway Station  
Liège - Belgium  
Architect: Santiago Calatrava

2. Matemaco Headquarters  
Gembloux - Belgium

3. Bierset Airport  
Liège - Belgium



Five flagship projects merit special attention. These are projects, recently finished or still under execution, which represent the diversity of the Brussels company's business activities.

**Joli-Bois Lot D:** the construction of 4 blocks of 35 luxury apartments for Fortis Real Estate in Woluwe-Saint-Pierre.

**STIB Royal Atrium:** work began in March 2009 on this total renovation of the former Fortis headquarters building at the corner of Rue de la Loi and Rue Royale in Brussels. The inside of the building has been completely stripped down to the structure, which was also partially dismantled in the centre of the building to create an atrium. The entire finishing work as well as the special technology and renewal of the façades were undertaken by EJD teams.

**Brussels Social Services Agency (CPAS/OCMW):** in late 2009 Jacques Delens completed the renovation and conversion of 5 mansions into homes and ground floor offices.

**The Thalassa company,** after acquiring a set of buildings on the Avenue Louise which had remained unoccupied for 25 years, Jacques Delens totally reconstructed the complex.

The requirements of the City of Brussels in terms of heritage conservation have made this a difficult site, given the need to build a basement car park under wall sections subject to a preservation order. This complexity has produced an amalgam of foundations, combining foundation slabs, underpinning, micro-piles, buttressed formwork, secant piles, tie rods and other technologies. A real case study!

Finally the **Ernotte project** for the Regional Housing Project will construct 234 social housings and 82 new average housings. The works will end July 2011.

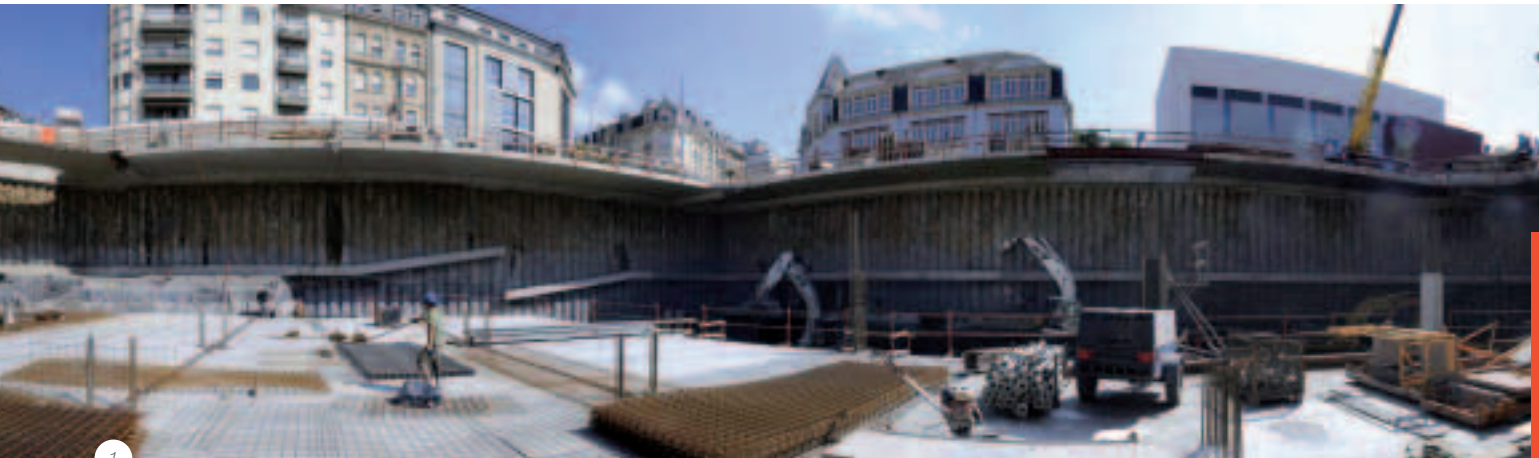
*Despite the crisis, Entreprises Jacques Delens succeeded in filling its order book in 2009. Jacques Delens builds and renovates in areas as diverse as offices, homes, industrial construction, hospitals, hotels and sports centres, etc.*

1. Thalassa  
Brussels - Belgium  
Architect: Dumont & Gillon

2. Social Services Agency  
Brussels - Belgium  
Architect: Art & Build

3. Joli Bois Apartments  
Lot D  
Brussels - Belgium  
Architect: Altiplan





Important player on the Luxembourg market, Lux TP is a general contractor specialized in civil engineering and railway works, public and private buildings, the design and construction of car parks and garages, individual housing, ...



If in 2007, Lux TP showed a deficit and in 2008, recovered light benefits, 2009 performed correctly according to the projections.

### Lux TP Key 2009 projects

- **Royal Monterey**, a 9 000 m<sup>2</sup> building in Luxembourg (BESIX, Lux TP).
- A second **car park** in Esch/Alzette (Lux TP, Franki Foundations).
- Cement plant (Lux TP).
- A prestigious project: the renovation of the **Eischen bridge**.

Thanks to its diversity and flexibility, Lux TP, well established in the Grand Duchy of Luxembourg, remains optimistic for 2010 despite the difficult economic situation.

### Two important projects are in the pipe-line for 2009/2010

- New buildings for the **European school** at Mamer (one of the most important projects of the year started end 2009).
- **Project Monopol 3** at Luxembourg City, in joint venture with Wust.

1. Car Park  
Esch-sur-Alzette -  
G.D. Luxembourg

2. Railway works,  
double track  
G.D. Luxembourg

3. Eischen bridge  
G.D. Luxembourg





Cobelba has been part of the BESIX Group for three years now. Among the major works it has undertaken we can mention:



- The **Avieta waffle** factory at Wanze (7 000 m<sup>2</sup> plus offices);
- A 31-apartment building for Immolux at Marche-en-Famenne;
- A 25-apartment building for BESIX R.E.D. at Louvain-la-Neuve;
- Manufacturing facilities for Fournipac at Andenne (Seilles);
- The **Fri-Pharma logistics centre** (10 000 m<sup>2</sup>) on the Créalys - Les Isnes industrial estate (Gembloux).

In 2010, the company expects to complete the **'Maison des Entrepreneurs'** at Jambes, which will bring together under one roof a whole series of services to the construction industry, including the Namur Chamber of Construction, Groupe 4, Assurances Fédérales, etc...

The construction of a 'passive' office building for insurance broker Bokiau, to be completed in late 2010, will be a new experience in this type of building for which demand is growing.

**Two property promotion projects will also be started**

- A 23-apartment building in the centre of Jambes;
- A property complex at Erpent consisting of:
  - Offices (1 300 m<sup>2</sup>)
  - Apartments (50)
  - Individual houses (25)
  - Retail and catering outlets (3 000 m<sup>2</sup>).

Particular attention has been paid to the environment (energy performance of buildings and green spaces). These projects have received the support of the alderman of works of the City of Namur.

- 1. 2. Property complex Erpent - Belgium
- 3. Fri-Pharma Logistics Centre Gembloux - Belgium
- 4. Maison des Entrepreneurs Jambes - Belgium

## When Visions Become a Reality





1. 'Les terrasses de l'Ecluse'  
Brussels - Belgium

2. European Parliament  
Brussels - Belgium

*In 2009 the pessimism prevailing in the second half of 2008 unfortunately proved more than justified: the crisis took a grip on the world and on our country, which officially entered into recession in the first half of 2009.*



# Real Estate

## *In the Eye of the Crisis Cyclone...*

*In this context, the general situation of real estate in Belgium has been particularly difficult.*

**In commercial property**, the market decline which began in late 2008 continued. Real estate transactions, both letting and investments, have never been so few and far between. Occupancy levels reached a new low in Brussels, even leading certain prominent players in the real estate world to advocate a moratorium on new office projects. Encouragingly, several large transactions right at the end of 2009 suggest, if not already a recovery in 2010, at least a slowing down or end to the deterioration in the property market. In this sector, the morose situation in Belgium is therefore broadly in line with the rest of the world, though until now without any real catastrophes, unlike in other countries.

**In residential housing**, the situation was very different. 2009 was an at times confusing year, full of contrasts. Largely responsible for the paradoxical nature of the year were the mixed messages put out by the media - on the one hand announcing a fall in sales prices and, on the other hand, presenting real estate as safe haven for the prudent management of private assets in a time of stock market risk.

In this way, the number of transactions remained fairly close to that of previous years and overall prices declined by only about 7 to 8 percent, all properties combined, the decrease being



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more significant in older buildings than in new ones, and less in high-class homes. Overall, the market also relatively quickly regulated itself, with promoters in the residential sector slowing or postponing, where possible, the arrival of new projects onto the market. The supply of new buildings therefore remained pretty much in line with demand, preventing a fall in prices. Qualifying this remark, however, we note the tendency for sellers, while trying not to lower their selling price, to offer all the same a little more to buyers in terms of finishing and fittings, for the same budget. The relative strength of the residential sector is also partly explained by reduction to 6 percent of VAT on the first EUR 50,000 of work, which represents a EUR 7,500 fillip for purchasers of new housing. Finally, while sales volumes have been maintained, the sales process itself has become slower, with buyers taking more time to browse the market, negotiate their purchases and obtain their mortgages (here, while rates remain attractive, credit conditions have become considerably more restrictive). In this respect we note that the marketing of new buildings, which used to be spread fairly evenly over the construction period, is tending to focus on the first few weeks ('love at first sight' purchases and exceptional properties that people are anxious not to let slip through their fingers) and the few months prior to delivery.

## 2009 for BESIX R.E.D... and the Outlook

*In a market situation like this, 2009 was a more than satisfactory year for BESIX R.E.D.*



In the area of commercial real estate and in the negative context evoked above, the marketing of the **'Espace Midi'** partnership project around Brussels-South station proved a real success. The remaining offices were let to SNCB Holding and a management contract for the hotel project was concluded with the Rezidor group under the Park Inn banner.

In Namur, at the very end of the year, the Walloon Region signed a lease for the remaining available office space in the **'Roch'** project. In the wake of this lease, negotiations are on track to sell the project to an investor.

In Lille, we successfully began pre-marketing our 12 000 m<sup>2</sup> office building project on the **Euralille** site, with the SNCF agreeing in principle, at the very end of the year, to rent around 60 percent of the building. The lease negotiations for the as yet unfinished building will continue in early 2010 with a view to SNCF taking occupancy in March 2012.

In the residential area, following a traditionally very quiet December 2008, the first two months of 2009 were also very quiet, raising fears for the worst... But in March and with the adoption of 6 percent VAT, the rate of transactions picked up strongly, quickly making up for the bad weeks. And indeed, by the end of 2009, BESIX R.E.D. had posted record sales of over 220 units. Successes for the year include the following ongoing projects: the **'Résidence Permeke'**, where 50% of apartments have already been sold; the marketing launch in September of Phase 1 of **'Jette Village'** (77 apartments and houses), with almost three-quarters of the units sold during only 3 days of sale to date; the marketing launch during the same period of the **'Résidence Perlino'**, a joint project in Woluwe-Saint-Pierre, with 20% of units sold; and the further marketing of the **'Triumph Garden'** project in Auderghem.

In terms of buildings delivered in 2009, the last apartments were sold in the **'Grammairiens'** project in Louvain-la-Neuve, the **'Résidence l'Etoile'** in Charleroi, and the **'Chemin de la Dyle'** in Ottignies.



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Marketing of our **'Kloostertuin'** project in Opwijk and our **'Land van Vogelsanck'** project in Zonhoven continues, while the **'Leskoo'** project (in partnership) in Oudenaarde was launched in the last quarter of 2009.

The market situation has, however, prompted BESIX R.E.D. to postpone to 2011 the launch of its **'Orée du Parc'** project (18 apartments and 10 houses) in Uccle, in a segment more affected by the crisis.

If market conditions continue, BESIX R.E.D. should start building and marketing the **'Coparty Gardens'** project in Nivelles (78 apartments), the **'Compass Rose'** project at Jette (76 apartments, in partnership), Phase 2 of the **'Jette Village'** project (55 apartments and 14 houses) and a new project currently under study in Tournai (170 units) in 2010.



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1. *Permeke Residence*  
Brussels - Belgium

2. *Perlino Residence*  
Brussels - Belgium

3. *Eurallie*  
Lille - France

4. *Les Grammairiens*  
Louvain-La-Neuve - Belgium





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# Keeping a Head Start

1. Wathba Wastewater Treatment Plant  
Abu Dhabi - UAE

2. Wastewater Treatment Plant  
Ajman - UAE



# Concessions

## All In



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*BESIX “Concessions” unit has become the fourth pillar of the BESIX Group organization. It has developed a solid expertise in Public-Private Partnerships (PPP) and Design-Build-Finance-Operation/Maintenance projects (DBFO/M).*

Contracts are operational in the Netherlands and in the Gulf Region (in the Emirates of Ajman and Abu Dhabi).

BESIX has been the main shareholder (50%) of **Ajman Sewerage (Private) Company Limited (ASPCL)** since March 2006. The **ASPCL** has entered into a Concession Agreement with the Government of Ajman to finance, design and construct a centralized sewerage system in the City of Ajman. The company owns and operates the facility and has been for a 25 year concession term and subsequently transferred it to the Government of Ajman.

The concession period has started on June 1st, 2009 and will end by May 2034.

The purpose of the project is to collect and treat wastewater, but also deliver treated effluent.

The works (sewerage network and wastewater treatment plant) have been constructed under an EPC contract by a consortium comprising BESIX and Six Construct. This consortium was in charge of the engineering, procurement, construction,

testing and setting in order to work out a system that will fulfil ASPCL's obligations under the Concession Agreement. The wastewater treatment plant is currently treating 45 000 m<sup>3</sup> per day.

The Operator of the asset is Moalajah, a company specifically created for this purpose and in which BESIX has one third participation. **Moalajah** is acting as ASPCL's agent and is responsible for the registration of the properties, the billing or collection of the tariffs and client relations, both during the construction period and throughout the 25 year concession term and, of course, for the operation and maintenance of the facility since the completion of the works.

The revenues of ASPCL are generated through the connection fees paid by the property owners and the monthly service charges paid by the users.

End of 2009, around 53 000 properties were billed for service charges for a monthly value of approximately 2 million US\$.

On June 1st, 2008 the DBFM Agreement for the second Coentunnel (Amsterdam) between 'Rijkswaterstaat' (the Dutch Ministry of Transport, Public Works and Water Management) and **Coentunnel Company**, a project company in which BESIX Group has an 18% share, entered into force. Financial close took place a few days later.

Under the agreement, Coentunnel Company is building a new immersed tunnel next to the existing Coentunnel and reconstructing the intersections with adjacent highways. Since the contract date the company also took over the management and maintenance of the existing tunnel, which will be refurbished once the second tunnel is in operation. Thereafter, for 24 years Coentunnel Company will be responsible for the management and maintenance of the complete infrastructure system, consisting of the two tunnels with eight lanes in total.

Works on the second Coentunnel were officially launched during a groundbreaking ceremony on September 7th, 2009. BESIX is a member of the joint venture that signed the design & construction contract for the second Coentunnel and adjacent works with Coentunnel Company. The new Coentunnel system will be open for traffic by end 2013. Coentunnel Company will receive availability payments from Rijkswaterstaat until 2037 to cover financing and maintenance costs.

A 404 million US\$ so called 'soft miniperf' long-term loan has finally been signed on September 17th, 2009 between **Al Wathba Veolia BESIX Wastewater Company** and a group of seven international banks plus a local bank. In addition, three local banks are providing a dirham-denominated 100 million US\$ equivalent, two-year equity bridge loan. Vincent Gerresch, Senior Manager Project Financing stated: "The sponsors as well as the banks involved in the financing can be proud of having achieved such a significant deal considering the difficulties facing the current bank sector market."

The STA (Sewage Treatment Agreement) was already entered with Abu Dhabi Sewerage Services Company (ADSSC) by mid 2008, but no long-term financing commitments could be obtained at that time as a consequence of the financial crisis. In order to meet agreed deadlines, the start of the construction was funded from an 86 million US\$ bridging finance.

The project consists of the design, construction, financing, operation and maintenance of two wastewater treatment plants, Wathba 2 near Abu Dhabi with a capacity of 300 000 m<sup>3</sup>/day and Allahamah near Al Ain with a capacity of 130 000 m<sup>3</sup>/day. Revenues of the project company will be based on its ability to treat the wastewater flow.



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1. Coentunnel  
Amsterdam -  
The Netherlands

The Group is involved in the project company (20%) as an investor and through BESIX, Six Construct and BESIX Sanotec as contractors in the EPC consortium (engineering, procurement and construction). The STA provides for a 22.5 years operation and maintenance (O&M) period after completion of the treatment plants. BESIX Sanotec will be part of the team taking up this responsibility.

Once again it's important to mention that BESIX is a member of **Noriant**, the consortium that has been declared the preferred bidder for the 'Oosterweelverbinding'. This project aims at closing the Antwerp ring road north of the city, and includes an immersed tunnel under the river Schelde and a spectacular cable-stayed bridge ('Lange Wapper') over a part of the Antwerp port. However, the decision whether or not the project will go along its initial alignment has been postponed.

Other DBFM projects in the Benelux-France and the Gulf Region have been tendered for or are in the pipeline. They mainly concern transport infrastructures, wastewater treatment plants, schools, prisons and hospital facilities.



## Abu Dhabi

# Financial close for Abu Dhabi WWTP

*The ISTP2 project is the second independent wastewater treatment project procured by Abu Dhabi Sewerage Services Company (ADSSC) and also the largest one ever executed in the United Arab Emirates.*

The project involves the design, construction, financing, operation and maintenance of two wastewater treatment plants, Allahamah near Al Ain and Wathba 2 near Abu Dhabi, with a combined capacity of 430 000 m<sup>3</sup> per day and a 22.5 year sewage treatment agreement with ADSSC as Client. Revenues are based on the project's ability to treat the wastewater flow. The private sponsors, Veolia and BESIX, are the 40% investors in the Project Company. Their subsidiaries OTV, BESIX Sanotec and Six Construct are the engineering, procurement and construction contractors. Veolia and BESIX Sanotec will be the plants operators for 22.5 years.

The 20 years long-term financing for ISTP2 is a called "soft miniperf" - a pragmatic approach to the recovering lending environment. Like Abu Dhabi's S2 huge independent water and power project (IWPP), ISTP2 was awarded mid 2008 and could not get long-term financing commitments as a result of the financial crisis. In order to keep to the agreed timetable for ISTP2 the sponsors, Veolia, BESIX and ADWEA, began construction in December 2008, when raising a long-term debt would have been impossible. An 86 million US\$ bridging finance was provided by banks, with recourse to Veolia, BESIX and ADWEA, to fund the start of construction.

The 404 million US\$ long-term deal, which was partly used to repay the bridging finance, was signed on September 17th, 2009 by a group of seven international banks and one local bank.

The deal is structured to incentivize the sponsors to refinance as soon as possible after completion of the works as the bank margins are high and there are restrictions on cash distributions. Three local banks are also providing a dirham denominated, 100 million US\$ equivalent two-year loan to postpone the injection of equity by the sponsors.



### **Vincent Gerresch's (Senior Manager - Project Financing & Development Support - BESIX Group) statement:**

*"The sponsors as well as the banks involved in the financing can be proud of having achieved such a significant deal considering the difficulties facing the actual bank sector's market. After all, it is very rewarding to have made all this effort on a project that has lasted for almost three years since the first bid. It will ultimately allow BESIX to build another landmark project in Abu Dhabi and strengthen its position as a player of excellence in the concessions market in the Middle East".*



## Consolidated Accounts

# Consolidated Financial Statements 2009



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Comments from the CFO

Balance Sheet

Income Statement

Consolidated Cashflow Statement

Information Regarding the Consolidated Financial Statements

1. Six Construct Headquarters  
Dubai - UAE

2. Qipco tower  
Doha - Qatar

3. Square Brussels  
meeting centre  
Brussels - Belgium



# Comments from the CFO

## 2009 in key figures

Turnover

**EUR 1,926.8 mio**

EBITDA

**6.6%**

Net Cash

**EUR 180.5 mio**

Net Result

**EUR 67.3 mio**

After five years of continuous growth, 2009 was a year of consolidation and of strengthening the balance sheet.

Despite the global crisis, with the concomitant postponement of investments and the cancellation of certain orders, turnover in 2009 amounted to EUR 1,926.8 million. This is just 7.9% lower than in 2008, which was a record year for the Group.

This reduction in activity comes mainly from the Gulf region.

It was also accentuated by the weakness of the US dollar during 2009.

Group EBITDA amounted to EUR 126.4 million. At 6.6% of turnover, this is a remarkable percentage for the sector in which the Group operates.

Net cash flow of EUR 142.1 million was on a comparable level with 2008.

The Group's net treasury position strengthened considerably to EUR 180.5 million, 18% higher than in 2008.

In a difficult economic situation which could well last some time, the Group's liquidity and its financial independence are more than ever a key management objective.

The Group's consolidated net result is EUR 67.3 million, down 10.3% from the 2008 record result of EUR 75.0 million.

Group equity, on an IFRS basis and before dividend distribution, has reached EUR 311.3 million (+16.4%).

The solvency ratio is 21.6%, reaching the 20% objective which management had set itself following the management buy-out.

At EUR 2,423 million the order book at 1/1/2010 is quite a bit lower than a year before.

Order taking in the International part of the business was particularly difficult in 2009, with investors more cautious and decision-making slower than before.

The first months of 2010, on the other hand, saw the signing of several very large contracts, which presage a significant increase of the Group's order book.

No post-closing event has occurred between the closing of the accounts and the Board meeting of 12 April 2010 approving the IFRS financial statements which would require adjustments to the financial report.

Paul Mouton



*Maastoren  
Rotterdam - The Netherlands  
Architect: Dam & Partners*

# Balance Sheet (in '000 €)

	2009	2008
<b>Non-current assets</b>	<b>250,030</b>	<b>232,535</b>
Intangible assets	12,867	4,346
Tangible assets	210,147	203,160
Investments in associates	5,868	6,522
Receivables	11,468	8,768
Other assets	8,780	8,549
Deferred income tax assets	900	1,190
<b>Current assets</b>	<b>1,399,218</b>	<b>1,338,482</b>
Inventories	17,862	60,495
Construction contracts in progress	61,450	49,258
Real estate held for sale	101,889	103,123
Trade receivables	644,174	654,853
Other receivables and other assets	186,035	145,981
Cash and cash equivalents	387,808	324,772
<b>Total assets</b>	<b>1,649,248</b>	<b>1,571,017</b>
<b>Shareholders equity</b>	<b>311,347</b>	<b>267,558</b>
Share capital	32,000	32,000
Retained earnings	284,736	236,168
Translation differences	-5,389	-610
<b>Minority interest</b>	<b>630</b>	<b>93</b>
<b>TOTAL EQUITY</b>	<b>311,977</b>	<b>267,651</b>
<b>Non-current liabilities</b>	<b>201,692</b>	<b>212,221</b>
Borrowings	134,000	120,769
Provisions	46,061	42,775
Other liabilities	1,342	32,855
Deferred income tax liabilities	20,289	15,822
<b>Current liabilities</b>	<b>1,135,579</b>	<b>1,091,145</b>
Borrowings and bank overdraft	73,299	51,039
Trade payables	487,262	562,167
Advances received on contracts	216,355	226,051
Billing in excess on construction contracts	158,107	85,209
Current income taxes payable	10,646	8,524
Provisions	72,302	50,595
Other liabilities	117,608	107,560
<b>Total equity and liabilities</b>	<b>1,649,248</b>	<b>1,571,017</b>



# Income Statement (in '000 €)

	2009	2008
Sales	1,926,839	2,091,346
Cost of sales	-1,717,660	-1,895,037
of which depreciation	-44,682	-40,447
of which provisions	-25,036	-20,751
Gross profit	209,179	196,309
General & administrative expenses	-122,378	-114,518
of which depreciation	-3,516	-3,186
of which provisions	-2,129	-4,348
Other income / expenses	-8,567	6,616
Operating profit	78,234	88,407
Financial income	7,728	11,477
Financial charges	-10,376	-15,496
Results from associates	254	-515
Profit before income taxes	75,840	83,873
Income tax expense	-8,353	-8,815
of which current	-8,991	-9,524
of which deferred	638	709
Consolidated result	67,487	75,058
Minority interests	-160	-25
Group consolidated result	67,327	75,033

# Consolidated Cashflow Statement

(in '000 €)

	2009	2008
<b>Operating activities</b>		
Operating result	78,234	88,407
Depreciation	48,198	43,633
Allowances	15,510	2,552
Provisions	27,166	25,720
Result on the disposal of fixed assets	-2,284	-5,880
Operating cashflow before changes in working capital	166,824	154,432
Income taxes paid	-5,702	-8,429
Change in working capital	-14,348	16,883
<b>Cashflow from operating activities</b>	<b>146,774</b>	<b>162,886</b>
<b>Investing activities</b>		
Purchases of intangible and tangible fixed assets	-32,181	-75,907
Purchase of financial fixed assets	-369	-140
<b>Subtotal of investments</b>	<b>-32,550</b>	<b>-76,047</b>
Disposals of intangible and tangible fixed assets	10,307	12,830
Disposals of financial fixed assets	89	4,148
<b>Subtotal of disposals</b>	<b>10,396</b>	<b>16,978</b>
<b>Dividends received from associated companies</b>	<b>541</b>	<b>919</b>
<b>Impact from changes in the consolidation perimeter</b>	<b>-21,064</b>	<b>1,243</b>
<b>Net cash from investing activities</b>	<b>-42,677</b>	<b>-56,907</b>
<b>Cashflow from financing activities</b>		
Net change in financial debt	-16,047	71,803
Net change long term receivables	-2,743	301
Interests paid (net)	-2,240	-3,157
Dividend paid to shareholders	-20,000	-13,010
Dividend paid to minority interest	-30	0
<b>Net cash from financing activities</b>	<b>-41,060</b>	<b>55,937</b>
<b>Movements in cash and cash equivalents</b>	<b>63,037</b>	<b>161,916</b>
Treasury at the beginning of the period	324,772	162,856
Treasury at the end of the period	387,809	324,772

# Information regarding the Consolidated Financial Statements

## Auditors report

The auditor has issued an unqualified opinion on the statutory and consolidated financial statements as of December 31, 2009.

## Financial statements

The statutory and consolidated financial statements, together with the report of the Board of Directors and the audit report, will be filed with the Belgian National Bank as prescribed by governing law. Interested persons can obtain a copy of these documents on demand at the company's address.

**For further information,**  
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