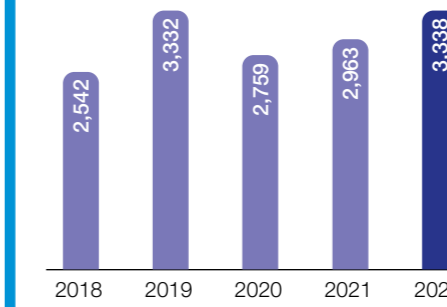
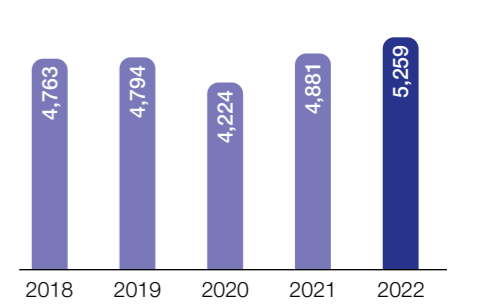


Key Figures 2022

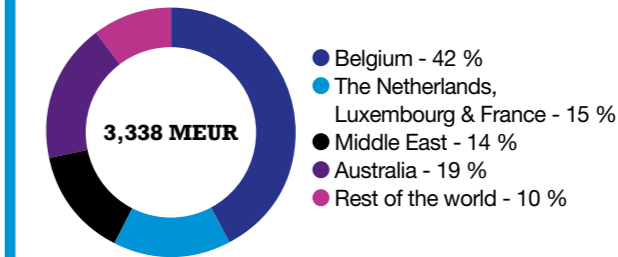
Evolution of revenues (in MEUR)



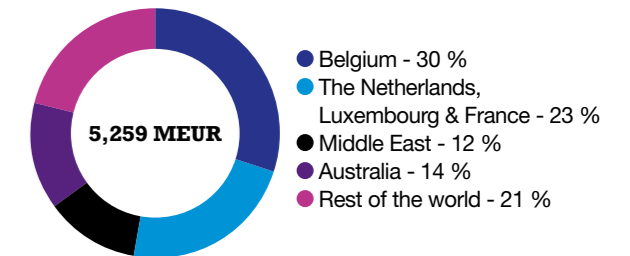
Evolution of order book (in MEUR)



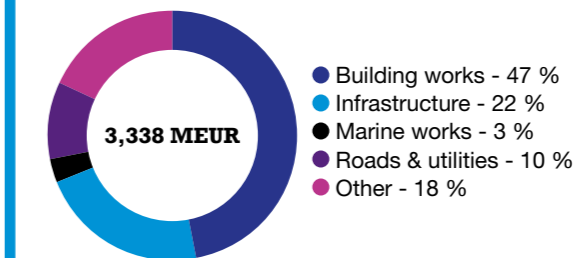
Revenues by region (2022)



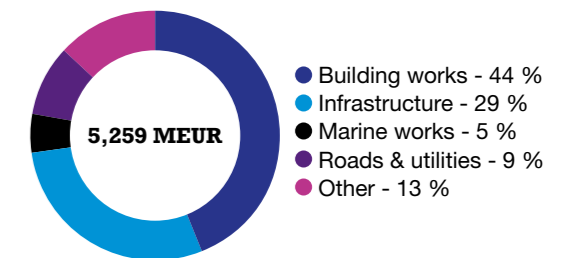
Order book by region (at 31/12/2022)



Revenues by area of activity (2022)



Order book by area of activity (at 31/12/2022)





Consolidated Key Figures 2022

Income statement (in MEUR)	2018	2019	2020	2021	2022
Revenue	2,542	3,332	2,760	2,963	3,338
Adjusted EBITDA	151	123	75	130	129
Net income	96	42	-10	27	40
(adjusted) EBITDA margin	5.9 %	3.7 %	2.7 %	4.4 %	3.9 %
Operating profit margin	4.1 %	1.4 %	0.0 %	1.4 %	1.7 %
Total assets	2,683	2,888	2,830	3,222	3,452
Total equity	696	701	625	686	786
Net cash position ¹	135.7	141	57.5	64.9	-60.9
Net cash position ²	205.2	278	163	218.4	187.6
Cash flow from operating activities	98	118	-49	10	-123
Solvency ratio	25.9 %	24.2 %	22.0 %	21.2 %	22.8 %
Order book	4,763	4,794	4,224	4,881	5,259

1. Excluding IFRS16 and PPPS non-recourse financing

2. Excluding IFRS16, non-recourse and real estate debt



Published by

Florence Bribosia

Editors

Florence Bribosia, Iza Buysse,
Christine Karels, Celine Verloigne

Design and production

Chriscom

Pictures copyright

Olivier Anbergen
archipelago architects
Pieter Asselberghs
Jean-Charles Bessela
Farel Bisotto
Stijn Bollaert
Leen Braspenning
Bas Czerwinski
Frank de Roo
Marc Detiffe
Caroline Dupont
Jean-François Fiasse
Foster + Partners
City of Greater Geelong
Kirk Hargreaves
Lantis
Jorrit Lousberg
Philippe Piraux
David Plas
Simon Schmitt
Steven Scholten
Topview
Team V Architectuur & Proloog
Ossip van Duivenbode
Patrick Van Hopplinus
Christophe Vander Eecken
Jeremy Veitch
Nigel Young

English editing for some articles
provided by Korekt
(www.korektediting.com)

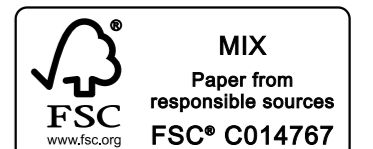


Table of Contents

01 BESIX at a glance	2	Marine Works	84
Message from the Executive Vice-Chairman and the CEO	4	A sustainable future for marine infrastructure	84
Company Profile	6	Industry & Logistics	86
Milestones 2022	8	Delivering the next generation of biopharmaceuticals	86
02 Creating the highest value for all stakeholders	12	Environment	88
BESIX Strategy	14	Modernising a wastewater treatment plant with BIM in Luxembourg	88
Value Creation Model	16	A pioneering green energy solution for Ajman	90
Value Engineering	18	Concessions & Assets	94
Innovative and Sustainable Technologies	22	A pioneering environmental PPP in the Middle East	94
BESIX Group's Commitment to Sustainability & ESG	26	BESIX contributes to new state-of-the-art school campuses as part of Abu Dhabi's PPP programme	96
03 Sustainability & ESG	28	Real Estate	98
BESIX's Frameworks	30	Sluishuis, an iconic, sustainable, and stylish landmark where reality surpasses fiction	98
ESG Governance	32	A sustainable working and living experience at the gateway to Brussels	100
Stakeholder Expectations	33	PURE, an urban regeneration project in Lille Métropole	102
BESIX's Sustainability & ESG Strategy	34	06 Business Review	104
Carbon & Energy Management	36	Contracting	106
Client Support	38	Concessions & Assets	112
04 People	40	Real Estate	116
Focus on People	42	Diversification	120
Diversity & Inclusion	46	07 Regional & Specialised Entities in Europe	122
Fair Labour Standards	48	Jacques Delens	124
Quality, Health, Safety, and Environment	52	Lux TP	126
BESIX Foundation	56	Vanhout	128
05 110 years of global expertise	60	Wust	130
Areas of Expertise	62	Besix Infra	132
Buildings	64	Franki Foundations	134
A Saint's Inspired Inner City University	64	Socogetra	136
Atlantis The Royal, Dubai skyline's newest ultra-luxurious addition	66	BESIX Unitec	138
Mediavaert, a landmark project in Amsterdam	68	08 Corporate Governance & Structure	140
Deloitte University EMEA, an ambitious project, just steps away from Paris	70	Corporate Governance	142
New Exhibition Centre in Abidjan to boost tourism and economy	72	Group Structure	146
A fascinating museum in Abu Dhabi to celebrate Sheikh Zayed's legacy and love of nature	74	09 BESIX Finance	148
Infrastructure	76	Comments on the Financial Performance	150
Towards a liveable Antwerp	76	Consolidated Balance Sheet	152
Rail infrastructure project making positive impact	78	Consolidated Income Statement	153
A16 De Groene Boog: the perfect sustainable and innovative fit in the environment	80	Consolidated Cash Flow Statement	154
Rail Baltica: the Baltic States' rail connection to Europe	82		

01

BESIX at a glance

Message from the Executive Vice-Chairman and the CEO	4
Company Profile	6
Milestones 2022	8



Message from the Executive Vice-Chairman and the CEO



Johan Beerlandt - Executive Vice-Chairman
Pierre Sironval - CEO

Dear Readers,

How things have changed in the space of 12 months! The war in Ukraine was a defining event in 2022. It has caused immense suffering and destruction in the country and has led to a humanitarian crisis in Europe. It also caused major dislocation in global commodity markets, with disruptions to energy and materials, in particular, causing transport and supply costs to spike higher.

Contractors and developers like us have struggled to navigate the challenging mix of high inflation, steep interest rate hikes, and decelerating growth. Undeniably, we have not been spared. Our contracting activities, with limited or negative profit margins, have seen their bottom line being dealt some blows in 2022 and weighed as a consequence negatively on our group's global results.

This is where our diversification strategy proved again its relevance: our private-public partnerships in waste, water and social infrastructure in the Middle East, our real estate development arm and our infrastructure and utilities entities in Western Europe have all performed very well.

In its 114-year history, BESIX Group has weathered many storms to emerge stronger, and this period will have been no exception. Our century-long journey made us the diversified group we are today, where contracting takes the lion share of our activity, and where auxiliary businesses are enhancing positively our revenues.

Going forward, the year 2023 holds promising prospects for BESIX around the globe, as major projects are set to launch, and several significant projects are nearing completion. The diversity and quality of our order book are promising for the years to come as it has reached a record level of 5.2 billion euros.

However, given the current macroeconomic conditions, it is imperative that our industry responds to this challenging environment by pushing for balanced contractual conditions, introducing clear and transparent price revision mechanisms aligned with inflation in new and current contracts.

This is essential to ensure that our industry remains financially viable and continues to deliver high-quality projects while considering the increased costs of materials and energy.

I have had the privilege of working alongside Pierre and the executive team, providing guidance, support, counsel, and encouragement. The past year has been both challenging and rewarding, and I am incredibly proud of what we have accomplished together.

On behalf of the Board of Directors, I want to express our sincere gratitude to Pierre and the executive team for their leadership during this tumultuous period, and to reaffirm our confidence in all our employees around the world.

I look forward to the year ahead together,

Johan Beerlandt
Executive Vice-Chairman

Dear Readers,

The year 2022 presented BESIX with unprecedented challenges that put our agility, relevance, and character to the test. As I write this, I am filled with appreciation, proud of our achievements, confident in our strategy, and inspired by our exceptional teams.

2022 indeed threw a variety of challenges at us: strained supply chains, inflationary pressures, rising prices of materials and energy, a lingering Covid-pandemic, all weighed on our results. I am proud to state that we mitigated these challenges and brought value to society. My heartfelt thanks go out to all our 12,000 employees around the world. They are the ones that showed incredible commitment, passion, and resilience in times of continued uncertainty. They are the ones that served communities and clients through the year by designing, developing, engineering, building and operating places where people live, learn, work, or relax. Schools, hospitals, railways, bridges, water treatment stations, museums... This report abounds with evidence of the positive impact we leave in communities. I am extremely proud to be part of this winning team.

As you will also read, our diversification strategy proved again its relevance: our private-public partnerships in water, waste and more recently social infrastructure in the Middle East, our industries, infrastructure and utilities entities in Western Europe and our real estate development arm have all performed very well and adequately balanced the more volatile performance of our contracting activities.

In 2022, we also strengthened our dedication to ESG and sustainability. Our efforts to accelerate the green transition gained industry recognition, through numerous rankings and ratings, including for our leadership role in sustainability, resilience, and climate change transparency. Our Global ESG Report, which is set to be published in May 2023, will provide a comprehensive overview of our environmental, social, and governance performance.

Turning to 2023, we will stay selective and only engage in projects with well-balanced risks and margins. We will focus on expansion in areas and sectors where we have a solid track record and added-value potential. At the same time, we will keep investing in sectors where we already have a presence, i.e. real estate, concessions, regional and specialised activities, where we keep reinventing ourselves to keep up with market evolutions. This also means diversifying in areas and sectors where we identify new growth opportunities close to our core strengths and experience, particularly in climate change-related areas. We have the size, experience, and influence to deliver value and implement solutions our planet so desperately needs.

By doing so, we are set to remain a dominant force in our industry, delivering exceptional projects while adapting to the changing landscape. We built our past by always building for the future. And we are, every day in 2023, beginning anew.

Enjoy your reading,

Pierre Sironval
CEO

Company Profile

A global multidisciplinary player, with 110+ years of experience

BESIX Group is a leading Belgian industrial group operating in the **construction, real estate development and concessions sectors**. Founded in 1909, it has grown steadily over the years. A global multi-service group, BESIX is able to take on projects of all sizes and complexity and draws its strength from its entrepreneurial roots.

BESIX, its largest subsidiary, offers services in the different stages of construction projects, with branches in Europe, Africa, and America. BESIX Group's subsidiaries also include Six Construct in the Middle East, BESIX Watpac in Australia, as well as regional and specialist contractors in the Benelux including Jacques Delens, Vanhout, Lux TP, Wust, Socogetra, Franki Foundations, BESIX Infra, and BESIX Unitec.

The group stands out by having its **in-house Engineering department**, a distinctive feature in the industry, which is home to state-of-the-art expertise in structural engineering, geotechnical engineering, methods & planning, BIM, parametric design, sustainability, concrete technology, and façade. Thanks to its value engineering capabilities, BESIX is able to improve project design and adapt implementation processes so as to limit construction costs, reduce risks, increase the lifespan of projects, and optimise their functional objectives.

To reduce its risk exposure, BESIX has been diversifying its activities on a geographical and sectoral level, through organic growth, acquisitions, or shareholdings. The group's expansion in the Middle East, where it has built an impressive portfolio over the last 60 years, and more recently in Africa and Australia, illustrates the success of this strategy. Through its many projects and initiatives, BESIX is constantly seeking to consolidate its purpose: **"To excel in creating sustainable solutions for a better world."**

The group in 5 key dates

1909

Founding of the Société Belge des Bétons (SBB), which undertakes prestigious construction projects

1966

Founding of subsidiary Six Construct to take charge of major projects in the Middle East

2004

Management buy-out, SBB nowadays known as BESIX Group

2010

Inauguration of the Burj Khalifa in Dubai (UAE), the world's tallest tower, built by Six Construct

2022

Near completion of the Grand Egyptian Museum in Cairo



Key figures 2022



86
Nationalities

12,000
Persons employed

3.3 billion euros
2022 turnover

5.2 billion euros
2022 order book

BESIX Group
is present
in **25+** countries on
5 continents

Milestones 2022

January

05-01 BESIX-Six Construct teams working on the Dubai Uptown Tower top out at 329 metres. With the steel crown complete, the final height of the tower will be 340 metres (UAE).



15-01 Project Finance International, which is at the forefront of project finance reporting for industry, names Dubai Waste-to-Energy the Deal of the Year 2021 in the Middle East and Africa.

17-01 BESIX-Six Construct delivers the Infinity Bridge to Dubai's Road & Transport Authority. Its 42-metre steel arch represents the symbol of infinity, while the 12-lane, 295-metre-long bridge connects the districts of Al Shindagha and Al Ras, over the Dubai bay (UAE).



17-01 The Top Employer Institute awards BESIX Group the certification of Belgian Top Employer for the fourth time in a row. Each year, the organisation certifies companies worldwide where working conditions are outstanding and where equity and inclusion are a reality in the company's culture.

22-01 BESIX lifts and installs the last part of the metal structure of the Abidjan Exhibition Centre's façade (Ivory Coast).



28-01 BESIX-Six Construct delivers the Dubai Deep Tunnel Storm Water System. This 10-km-long, 11-metre-diameter tunnel, buried up to forty-five metres below the ground, drains 40 % of Dubai's urban area (UAE).

February

09-02 BESIX begins building 'Triangle', a 180-metre-tall tower set to be the third tallest in central Paris, and designed to comply with the BREEAM 'Excellent' and HQE Exceptional environmental certifications (France).



14-02 BESIX Watpac's teams in Sydney deliver the underground platforms for the Barangaroo metro station three weeks ahead of schedule (Australia).

15-02 Belgian consortium Hyoffwind signs an agreement with John Cockerill and BESIX to design and build a pioneering green hydrogen production unit in Zeebrugge (Belgium).

18-02 BESIX Group unites all colleagues through BESIX Radio. It connects over 2,000 people, with many colleagues taking part either in studio or remotely.



28-02 BESIX and its partners officially complete the renovation of the Annie Cordy Tunnel (former Leopold II Tunnel) for Brussels Mobility. Measuring 2,600 metres, it is the longest tunnel in the country, and a major strategic axis through which more than 60,000 vehicles pass every day. The renovation operations are now followed by a 25-year maintenance period (Belgium).

March

10-03 BESIX RED and AG Real Estate complete the sale of the emblematic and sustainable office project ICÔNE to AG Insurance in Belval (Luxembourg).

15-03 BESIX Group affiliate Van den Berg and Agidens Infra Automation join forces and rebrand as BESIX Unitec, acting as the leading technology partner in the infrastructure market (Belgium).

16-03 UCB, the Brussels-based global biopharmaceutical company, awards BESIX the contract to build its new facilities, including cutting-edge laboratories and R&D facilities, production areas, and office spaces (Belgium).

28-03 On the initiative of PFO Africa, the designer and builder of the project, BESIX participates in the development of the Abobo Town Hall roundabout in Abidjan, significantly improving access to the city. The contract awarded to BESIX includes civil works for the construction of a 560-metre-long tunnel (Ivory Coast).



29-03 BESIX Watpac completes construction of Jubilee Place in Brisbane, which will house the company's offices. This building and its impressive architecture attest to the company's operational and engineering capacity (Australia).



April

08-04 BESIX delivers the first phase of the new sustainable Paradis Express district in Liège to its client Befimmo, comprising three office and co-living blocks. BESIX and Wust continue to build four additional residential buildings for Matexi (Belgium).

14-04 The Sludge-to-Energy plant designed and built by BESIX-Six Construct in Ajman starts generating electricity. This plant transforms sewage sludge into biogas, and then renewable energy – a first for the region (UAE).

June

07-06 BESIX delivers the third and last building of the Nice Airport Promenade complex in the new business district of Nice (France).



13-06 The BESIX-Indaver consortium is awarded the contract for the design, construction, financing, and maintenance of a sewage sludge processing installation until 2046, by water treatment company Aquafin. The installation will recover energy and raw materials from the wastewater of four million Belgian citizens in Flanders (Belgium).

15-06 The King Albert II Institute, which BESIX's affiliate Wust is building in Brussels, is inaugurated in the presence of King Albert II himself – former King of the Belgians, and father of the current King Philippe (Belgium).



25-06 A new 800-tonne steel bridge across the Brussels Ring Road at Ave. Henneau is installed (Belgium).



27-06 One million Belgian homes are connected to fibre optics, the high-speed technology for ultra-fast internet. BESIX Unitec is one of the contractors in charge of the infrastructure and connection works.



29-06 Affiliate Wust and its partner deliver a new grandstand for the Spa-Francorchamps circuit, which hosts the annual Formula 1 Grand Prix (Belgium).



July

05-07 BESIX and Plenary Group achieve the financial close of the Zayed City Schools, the first PPP in school infrastructure in the country. It covers the financing, design, procurement, construction, commissioning, and 20 years of operations and maintenance of three new state-of-the-art school campuses (UAE).

07-07 BESIX and BESIX Infra, their client Infrabel, and partner TUC Rail inaugurate the new infrastructure that replaces all seven railway crossings in Diepenbeek, including a new underpass at the train station, three bridges, the raising and lengthening of train station platforms, and various roadworks (Belgium).

12-07 The Dubai Waste-to-Energy project celebrates 5 million man-hours without lost-time incident (UAE).



14-07 BESIX Group publishes the book 'Together', where 100 colleagues share their unique perspectives and experiences of Diversity & Inclusion.



14-07 Sluishuis, the iconic landmark in Amsterdam, is delivered after four years of construction. With its famous cantilever-shaped silhouette, this striking building developed by BESIX RED and built by BESIX is already an icon in the city's skyline (The Netherlands).



14-07 The first gigantic screw of the new Royers pumping station in Antwerp is installed (Belgium).



18-07 Christchurch City Council officially endorses the design and construct contract for the Te Kaha stadium to BESIX Watpac, as lead contractor in the Kōtui consortium to deliver the stadium (New Zealand).

29-07 With the installation of the last steel beam, the Mohammed VI Tower reaches its highest point of 250 metres (Morocco).



August

01-08 The new Neuilly-sur-Seine clinic receives a favourable notice for the opening of the hospital structure, paving the way for its final delivery (France).

11-08 Cargo vessels start using the wharf built by the BESIX-Vancouver Pile Driving joint venture in Kitimat (Canada).

26-08 Affiliate Socogetra celebrates the opening of its renovated concrete plant in Fernelmont (Belgium).

September

01-09 Affiliate Vanhout delivers the Louise Marie residences, the new Antwerp landmark with stunning glass features (Belgium).



02-09 Vejdirektoratet, the Danish Road Directorate, chooses BESIX and MT Højgaard Denmark to build the Nordhavn Tunnel in Copenhagen. This technically complex contract includes the design and construction of a 1.4-kilometre cut-and-cover road tunnel from Svanevænget across the Svanemøllehavn harbour and out to Nordhavn. Part of it will run under water for 700 metres.

09-09 BESIX RED contributes to a fundraising round for Square Sense, the leading PropTech platform that improves the energy and financial performance as well as the tenant satisfaction of real estate portfolios.

17-09 The navigation channel through the Vistula Spit peninsula is officially opened, marking the end of the project for BESIX and joint venture partner Grupa NDI (Poland).



20-09 BESIX reaches a major milestone in the State Road 318 project. The four fronts of excavation of the two tunnels (two fronts per tunnel) are completed (Italy).

22-09 The 4th BESIX Group CleanUp Day takes place around the globe.



24-09 Egypt's Prime Minister, H.E. Dr. Mostafa Madbouly, visits the Grand Egyptian Museum to oversee the tremendous progress made, including the completion of the conference centre, the Solar Boat building, the entrance courtyard, the already world-famous grand staircase, and the King Tut-devoted ground floor.



October

05-10 The Dubai Chamber of Commerce and Industry awards the Dubai Chamber CSR Label to Six Construct, BESIX's subsidiary in the Middle East, for the tenth consecutive time (UAE).

19-10 With a level 5 certification on the CO₂ performance ladder, BESIX Europe and 11 subsidiaries of BESIX Group demonstrate their concrete commitment to decrease their CO₂ emissions and fight climate change.

21-10 The Sanaga River is successfully diverted on the Nachtigal hydroelectric project, before the start of the rain season (Cameroon).



24-10 The official opening of the Hornsby Hospital Stage 2 Redevelopment takes place in attendance of the State Treasurer and Health Minister (Australia).

24-10 Portonave, a subsidiary of Terminal Investment Limited and one of the world's largest container terminal operators, awards BESIX and Empresa Construtora Brasil an EPC contract for a series of marine works to improve the existing port infrastructure in the Port of Navegantes (Brazil).

30-10 The Dubai Uptown Tower team has recorded 20 million safe man-hours without lost-time injury since the project began in January 2019 (UAE).

November

15-11 World premiere for building site equipment: BESIX successfully operates an electric crawler crane for 10 working hours, unplugged, on the A16 project site (The Netherlands).



18-11 Rijkswaterstaat awards the reconstruction of the De Nieuwe Meer highway intersection in Amsterdam to the consortium consisting of BESIX, Dura Vermeer, and Heijmans (The Netherlands).

December

9-12 BESIX Watpac breaks ground on the Garden Drive Microsoft Data Centre. Located in Tullamarine, the Garden Drive Microsoft Data Centre is one of three new-generation data centres currently under construction in Melbourne, designed to meet the growing digital demands of Australian communities (Australia).

12-12 BESIX is awarded a gold medal by EcoVadis, which analyses environmental, labour and human rights, ethics, and sustainable procurement performance of businesses around the world.

14-12 BESIX RED and Immoel announce the closing of the sale of the Cours Saint-Michel site in Brussels to the United States Government. The strategically located project will allow the U.S. Embassy to the Kingdom of Belgium and the U.S. Mission to the European Union to consolidate its diplomatic representations in Brussels in a secure, sustainable, and modern workplace (Belgium).

02

Creating the highest value for all stakeholders

BESIX Strategy	14
Value Creation Model	16
Value Engineering	18
Innovative and Sustainable Technologies	22
BESIX Group's Commitment to Sustainability & ESG	26



BESIX Strategy

Meeting tomorrow's challenges

Purpose

Excel in creating sustainable solutions for a better world.

Mission

Thrive as a sustainable and highly integrated full-service provider, with construction at its heart, by offering its clients, in the various markets it operates, value-adding and pioneering solutions and by excelling in delivery, thanks to all group capabilities and trusted partnerships.

Strategic framework

BESIX is a people-first organisation that values unity, improved governance, and a lean organisational structure. As a contractor at heart, BESIX has successfully diversified in the past into exciting new ventures such as Real Estate, Concessions, Operations & Maintenance - and continues to do so. With a focus on sustainability and innovation, the group is always on the lookout for new diversifications that align with its core competencies.

Strengths

Committed staff members

At BESIX, employees are more than just a team – they are a community of passionate professionals united by a strong culture of excellence. With a deep sense of commitment, responsibility, and an insatiable appetite for challenge, BESIX employees deliver exceptional results for their customers, both as a team and as individuals. What sets BESIX teams apart is their unwavering entrepreneurial vibe, which drives everything they do. From start to finish, they put their heart and soul into every project, ensuring that clients receive the very best.

In-house engineering

The BESIX in-house design office is what sets the group apart from the competition. The in-house office leverages its technical expertise, vast experience, and innovative solutions to support clients in developing and executing their most complex infrastructure and sustainable projects. The in-house design office is committed to offering global solutions with exceptional added value from the initial tendering phase, to planning phase, to project completion. Its experts work tirelessly to deliver results that exceed expectations, deliver true value to clients, and build a sustainable future.

One-stop shop over the value chain

BESIX is a full-fledged services company that operates on the whole value chain. While construction is still its core business, the group's Concessions & Assets, Real Estate Development, and Specialised activities have grown steadily. BESIX can rely on a vast and diversified expertise to take on projects from financing to design and construction to long-term maintenance. Through leveraging this diversified expertise, business lines are able to offer bespoke one-stop shop solutions that are tailored to meet the unique needs of their clients, while also remaining their primary point of contact throughout the entire process.

A targeted and sustainable international presence

BESIX Group has opted for a deliberate and sustainable strategy with a focus on establishing a strong international presence on five continents, in addition to its already extensive coverage in Belgium. By pursuing opportunities that align with its risk management requirements, the company is able to diversify its operations while maintaining a long-term perspective in these various geographical areas.



Corporate values

Values are essential to guide the behaviours and decisions of employees within BESIX Group. Here are the corporate values that the group promotes and prioritises.

Unity

This value underscores the significance of cultivating a sense of unity and cooperation among all employees. It urges colleagues to collaborate towards a common objective, supporting each other in reaching that goal. By fostering an inclusive culture and mutual respect, employees are encouraged to embrace unity and work together for shared success.

Passion

This value ignites a drive for employees to dare and accomplish great, sometimes unprecedented, feats. It nurtures an environment of enthusiasm and commitment, motivating staff members to take pride in their work and pursue excellence in all endeavours. Additionally, it cultivates inspiration and motivation, propelling innovation and progress within the group.

Respect

With over 86 nationalities and a diverse workforce, BESIX Group values and respects the contributions of each individual. This core value emphasises the importance of acting with integrity and professionalism consistently, showcasing a strong commitment to ethical conduct and responsible business practices.

Co-creation

BESIX Group boasts colleagues with exceptional expertise in their respective fields. By sharing and combining this knowledge, remarkable solutions are devised for clients' projects, as evidenced by BESIX's global accomplishments. This value encourages a culture of collaboration, illustrating that, in terms of expertise, one plus one amounts to much more than two!

Excellence

BESIX's success stems from its teams' expertise and their unwavering pursuit of quality, performance, and client satisfaction. Cultivating and transferring this level of excellence is the essence of interpersonal connections within the group. It serves as the foundation for intergenerational unity and a prerequisite for nurturing and developing talent.

Behaviours

BESIX Group has identified six behaviours that are intrinsically linked to its corporate culture and therefore expected of each of its employees.

Be Inclusive

Inclusion is a core principle, intrinsically tied to the value of respect. It guarantees fairness, equal opportunities, and an open-minded approach towards all colleagues, regardless of their backgrounds, beliefs, or lifestyles.

Eagerness

BESIX's long-term success in its industry and beyond hinges on its eagerness to seek innovative ways of increasing efficiency and embracing new ventures and business opportunities.

Take Ownership

Employees are empowered to take action, encouraged to assume responsibility, and utilise their talents to their full potential. This is directly connected to the entrepreneurial spirit that underpins BESIX's century-long spirit.

Trust

In line with its entrepreneurial nature, the group's business units and entities maintain a high degree of autonomy and employees enjoy substantial empowerment. Trust is a fundamental aspect of BESIX's operations, acting as an extension of respect and achievable through well-defined expectations and objectives.

Engaged Teams

Every BESIX employee is part of a team, with clear shared and individual objectives, and has opportunities to grow according to their potential and personal motivations. Training, progression, and internal mobility are available to all and highly encouraged.

Resolve Together

United by a strong entrepreneurial spirit, BESIX's team members are known for their unwavering commitment to providing solutions, utilising the remarkable internal resources at their disposal. Both collectively and individually, they draw upon their successes and learn from setbacks, harnessing these experiences to achieve outstanding outcomes for their clients.

Value Creation Model

What began 114 years ago has grown into the largest construction company in Belgium and a global multidisciplinary player. Throughout the decades, BESIX has built roads that connect communities, dug ports to accommodate ships coming from all over the world, developed neighbourhoods where people live, learn, work, and relax.

To maintain its relevance for society, BESIX needs to rely on a clear and sensible purpose and a well-conceived business model that set it apart from its competitors. The aim is to

increase shareholder value while working toward a more sustainable future for employees, clients, and communities.

The world in which BESIX operates and the construction sector are undergoing profound changes. In response to these changes, BESIX draws on its business model to support its capacity to innovate, maintain a high level of project quality, face competition, meet new financial requirements and diversify, especially in recurring income businesses.

A dedicated partner, from construction to concessions

Always highly regarded as a valued construction partner, BESIX Group has become a full-fledged services company that operates on the whole value chain. While construction is still its core business, the group's Concessions & Assets, Real Estate Development,

and Specialised activities have been growing steadily. BESIX Group can rely on a vast and diversified expertise to take on projects from financing to design and construction to long-term operations and maintenance.

Macro trends

The world in which BESIX operates and the construction sector are undergoing profound changes, influencing its business model.



Technological evolution

Digitalisation, artificial intelligence, parametric design, smart building, etc.



Competitive landscape

Risk sharing, stressed supply chain, skilled labour shortage, building material price hikes, etc.



Environmental emergency

Energy efficiency, energy transition, circularity of materials, etc.



Demographic growth and urban densification

Growing demand for affordable housing, modular construction, etc.

Stakeholders



Clients, partners, subcontractors, and suppliers



Institutions and regulatory bodies



Employees, future hires, academics, and students



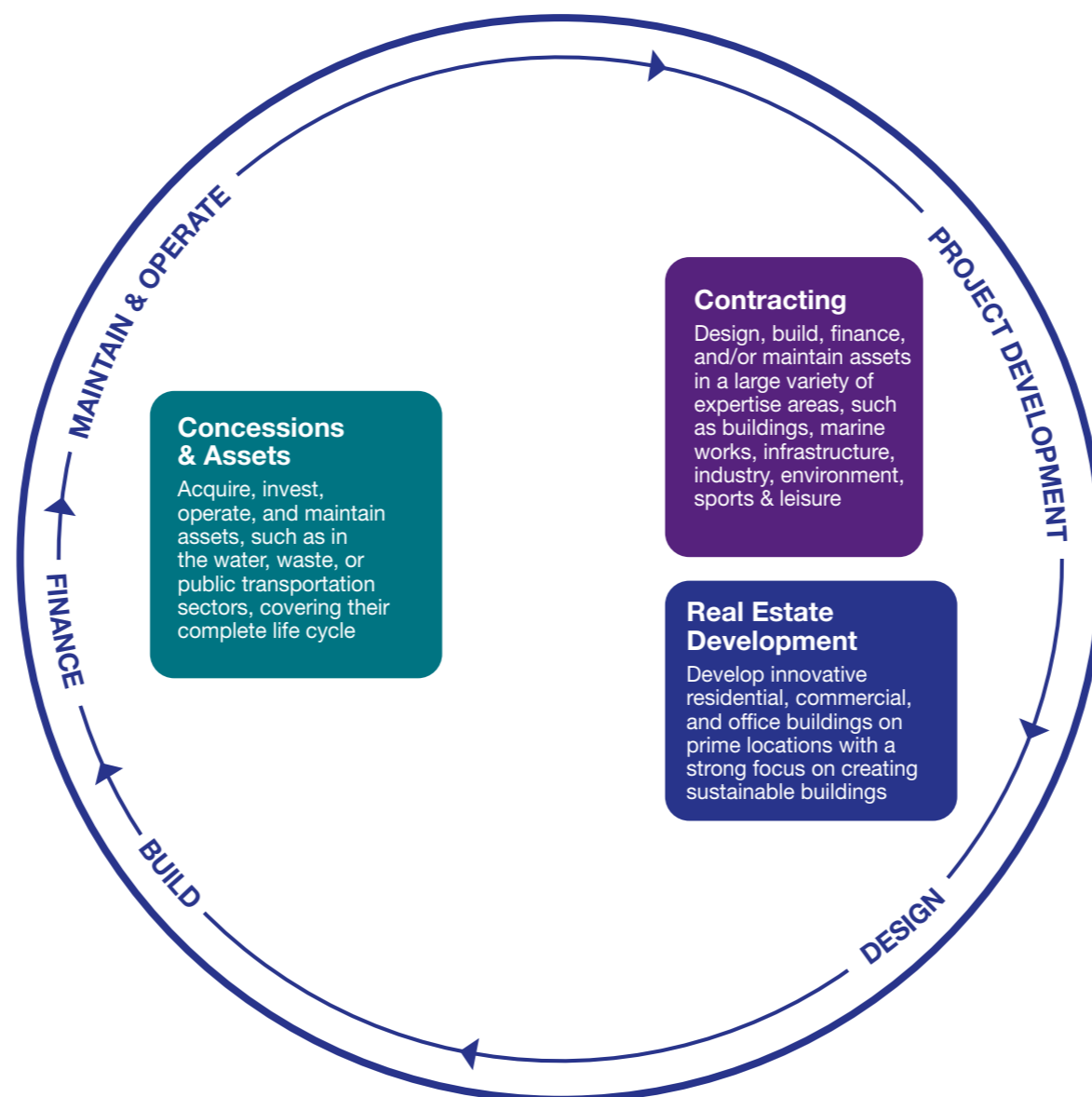
Investors, shareholders, and financial institutions



Social partners, unions, and employee representatives



Environmental and societal actors, NGOs, federations, and think tanks



Resources

Human and intellectual capital

- 12,063 employees
- BESIX Academy devoted to internal training
- 100 % of staff members have access to training

Industrial capital

- More than 1,000 project sites in 25+ countries
- Several industrial sites (steel and rebar workshops, quarries, asphalt and ready-mix concrete plants, bitumen production plants)
- 300 million euros worth of equipment and machinery to cater to complex marine and infrastructure works

Real estate capital

- Portfolio of 3.9 billion euros in market value
- Totalling 1+ million m² under development

Procurement capital

- Majority of suppliers signatories of the Code of Conduct for Responsible & Sustainable Procurement
- 2+ billion euros procured annually at Group level
- 40,000+ suppliers across the globe

Financial capital

- Stable shareholding structure based on a historical reference shareholder base

Social & environmental capital

- Leading the way in certification and labels
- Level 5 on the CO₂ ladder for BESIX Europe and 11 affiliates or subsidiaries
- EcoVadis Gold Medal
- ISO 9001:2015, ISO 14001:2015, ISO 19650-2: 2018 and ISO 45001: 2018
- IOSH Managing Safety and Working Safely Licence
- International Framework Agreement on Fair Labour Standards

Value creation

Human and intellectual value

- 1,000 recruitments in 2022
- Top Employer in Belgium for 4th year in a row

Read more on pp. 40-59

Environmentally responsible projects

- BESIX's sustainability experts accompany the design, procurement, and execution of assets to achieve certification levels such as BREEAM, LEED, Passive Buildings, etc.
- BESIX is building one of the largest hybrid-timber office buildings in the world in The Netherlands
- BESIX is progressively electrifying its fleet; in 2022 an electric crawler crane has worked unplugged for 10 hours on end without intermediate charging on an infrastructure project in The Netherlands

Read more on pp. 30-39

Financial contribution

- 3,338 million euros of revenues
- 40 million euros of net result
- 5,259 million euros in order book

Read more on pp. 148-154

Innovation

- 7 ongoing partnerships with start-ups in current PropTech portfolio
- Will secure participation in a European PropTech VC fund by summer 2023
- Several academic partnerships with leading universities

Read more on pp. 22-25

BESIX Foundation

- 360 solidarity projects funded in 13 years
- 13,000+ volunteers involved over the last decade
- Projects mainly funded in Belgium and Africa
- Projects funded around construction, education, and environment

Read more on pp. 56-59

Value Engineering

Cutting-edge expertise for a client-centred approach

BESIX Engineering is the exclusive in-house design office of BESIX Group. It enables BESIX Group to offer its clients tailor-made solutions and optimisation for their projects, whilst also maintaining a strong reactive business model. The quality of the services developed by BESIX Engineering relies on more than 150 engineers in Brussels, Dubai, and Brisbane, who are experts in their respective fields. Over the years, thanks to the active contribution of BESIX Engineering, BESIX Group has conceived and constructed first-class port terminals, cutting-edge civil engineering works, and complex high-rise buildings.



You see how the added value of our in-house design office is significant. Our dedicated team of engineers and technical experts ensures that projects are completed to the required standards, that innovative and cost-effective solutions are developed, and that efficiency is constantly improved by leveraging on the latest technology – not only when a project runs like clockwork, but also when there is a potential thorn in our side. In a nutshell: our in-house design office is an essential part of our operations and ensures the success of our clients' projects.

Fabian Boucher, Director of BESIX Engineering

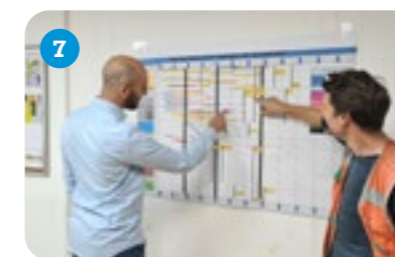
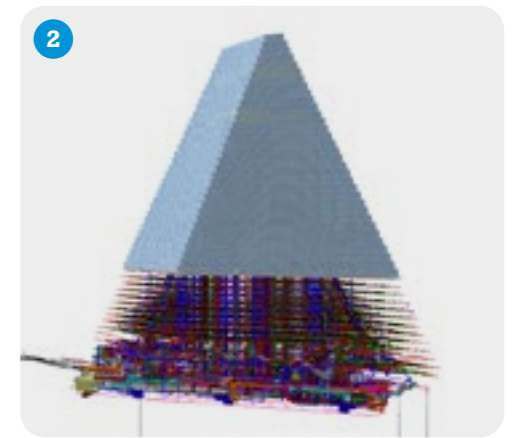
Strong competitive edge

The integration of a design office within a construction company, rare in the sector, is a considerable asset for BESIX's clients. "Our in-house Engineering department plays a crucial role in our success and that of our clients", explains Fabian Boucher, Director of BESIX Engineering. "It guarantees an optimal complementarity and cooperation between the design and construction teams of a project, and has positive impacts in terms of costs, risk management, choice of construction methods, and preparation. More recently, it has also taken the carbon footprint of our projects into consideration for further optimisation. The constant sharing of knowledge between the Design and Construction teams over the years is what allows us, today, to adapt to the varying, high-level requirements of our clients in order to create unique structures and, in some cases, to redefine the boundaries of engineering in construction."

BESIX Engineering on Tour Triangle (France)

This emblematic 180-metre high tower, with its distinctive triangular shape, is located in the south of Paris (15th arrondissement) and is intended to house offices, a conference centre, and a hotel. It will change the entire skyline of the French capital, becoming the third highest building in the city after the Eiffel Tower and the Montparnasse Tower. "This project is a collaborative effort among multiple teams within BESIX Group. It involves the contributions of our structural and geotechnical experts, who are stationed both in our design office and that of our affiliates, Franki Foundations and their French branch, Atlas Foundations. Additionally, our design office is responsible for the design and definition of methods, together with our Operations colleagues who are responsible for managing the project site in Paris. To ensure that the project started smoothly, we seconded the head of our Methods department to the site."

"Last summer, the team encountered a significant impediment, wherein the foundation works had to be stopped as we noticed an unforeseen uplift, by a few millimetres, of a nearby tunnel. This issue posed a critical challenge to the team, necessitating their concerted efforts to promptly identify viable solutions and restore the project to its original trajectory. Promptness, proactivity, and leadership combined with high-level technical analysis instilled all the different stakeholders with sufficient confidence to resume the work promptly, part and parcel of a trusted collaborative relationship. Through conducting daily meetings and orchestrating a comprehensive mobilisation of top in-house specialists, the team proficiently showcased their expertise and delivered an acceptable resolution", continues Fabian Boucher.



1. 2. Tour Triangle, Paris (France)
3. 4. Saint-Denis Pleyel Metro Station, Paris (France)
5. A16 'De Groene Boog', Rotterdam (The Netherlands)
6. F Tower, Abidjan (Ivory Coast)
7. 8. 9. Hydroelectric Project, Nachtigal (Cameroon)

BIM in the BESIX Community

The methodology of Building Information Management (BIM) has been used for many years in the company. “This way of virtually building, planning, calculating, and surveying our projects has had a significant impact upon our method of collaboration. Working around a virtual 3D model changes the way we interact with each other. Bringing every stakeholder – from architect to engineer to client – around a centralised, virtual project makes everyone more involved in the project. It makes it possible for us to analyse a situation or an issue virtually, within the context of the whole project. With the project in a central place, BIM makes us communicate and collaborate better together.”

The centralisation of the project data and the common way of working around the BIM-model leads to fewer mistakes and more efficiency, which leads to better designs, better communication, better collaboration, a higher stakeholder involvement, and, in the end, a better project.

These successes never come for free. “We can no longer rely on traditional methods of managing projects. New ways of working and collaborating pop up as we leave the traditional paper trails behind us. We are thinking with a digital mindset,

always with the end goal in mind. When we know what the project needs, we can better prepare the virtual models and feed them with accurate information so the site execution team can process this data in the format that they need, be that 2D drawings, quantity take-offs, or asset data for digital twins.”

The move to BIM has taken the company to the next level to become a virtual builder. “As virtual builder, we host communities, rather than teams, who all work together around a common set of information: the BIM-model!”

BESIX’s strength relies on its community of BIM experts. “At its core, you have the BESIX Engineering department, a team of BIM managers and BIM coordinators who are supporting the company’s projects, day in day out, together with a team of BIM modelers who are creating this digital information. This BESIX BIM community spreads over the whole company: from Europe to the Emirates and Australia, from contracting to subsidiaries. Everywhere, communities big and small are liaising with BIM partners. From the Engineering department onwards, the dots are connected and we let the BIM community grow”, concludes Fabian Boucher.

Carbon footprint reduction at the core

The Sustainability team in BESIX’s design office develops advanced solutions to improve the environmental performance of construction projects. Especially in the Benelux countries and in the Middle East, BESIX has often been a frontrunner in the environmental field, developing unprecedented circular construction projects or building energy-neutral infrastructure in the Netherlands.

CO₂ as design parameter

“Our Sustainability experts contribute to the design of projects in order to achieve high environmental certifications and labels, such as BREEAM, LEED, HQE, Passive Buildings, Eco-construction, Cradle-to-Cradle, Zero-Energy, and CO₂ neutral projects”, explains Fabian Boucher. “The level of carbon dioxide emissions is systematically considered as a critical factor in our design process. This involves evaluating the environmental impact of each project and designing it in a way that minimises its carbon footprint by reducing CO₂ emissions throughout the project’s life cycle.”

Crucially, it means using or developing new materials with low embodied carbon, improving energy efficiency, incorporating renewable energy sources, and taking the logistics into consideration in order to reduce a project’s carbon footprint. “It even means designing an asset with disassembly and recycling in mind!” insists Fabian Boucher.

Material passports

“This is one of the reasons why we have increased our efforts around material passports: by providing a detailed record of the materials used in an asset, we can help identify opportunities for material reuse or recycling at the end of the asset’s life, rather than simply sending materials to landfill. As top-notch engineers, it is our duty to promote practices and strategies that reduce the amount of waste generated during the construction process, as well as developing ways to reuse or recycle materials that are no longer needed”, adds Fabian Boucher.

Green concrete

“Let me add another point: we are also actively involved in several R&D initiatives, notably with academic bodies and suppliers, which test a variety of methods and materials to reduce the environmental impact of concrete. This ‘green concrete’ can be made of recycled materials, especially crushed concrete or recycled aggregates. It can also be made of alternative cementitious materials, such as fly ash, slag, or silica fume, in place of some or all of the Portland cement. We are also testing cement using low-CO₂ production processes, as well as cement mixtures where the amount of cement used is reduced. In short, we are responsive to the market, being active in investigating and testing low-impact concrete whilst also guaranteeing the necessary performance characteristics and durability of the material.”

Onsite and offsite support, from tender to execution

The capabilities of BESIX’s design office rely on the skills of specific experts. These experts are made available according to the particularities of each project, as is the case for method engineers. The Methods & Planning services offered by the BESIX in-house design office determine the methods for carrying out the work and draw up the precise sequence of operations in order to guarantee optimal implementation in terms of cost, timing, and quality, including sustainability.

Streamlining construction with LEAN methodology

The LEAN methodology is a management approach that emphasises the elimination of waste and the continuous improvement of processes. Services provided by Methods & Planning include the implementation and organisation of this LEAN methodology. “In a nutshell, it consists of involving all the site’s stakeholders, including subcontractors and suppliers, in the planning of logistical and operational tasks. Site teams using LEAN are seeing subcontractors, workers, and managers take on more responsibility, leading to greater trust, less waste, and more efficient cost management. This in turn leads to less fire fighting and more time for anticipation and preparation”, explains Fabian Boucher. “This approach is particularly useful in large, complex projects where there are many stakeholders, with a correspondingly higher risk of delays and cost overruns. In 2022, we seconded LEAN experts on several projects, both on and offsite.”



Fabian Boucher

“**Our method engineers play a critical role in improving production processes to increase efficiency and reduce costs. They intervene during the project’s tender and design phases of course, but also during execution. During execution, they analyse existing processes, develop solutions for improvement, and work on site with project teams to implement and monitor those solutions. Their focus on continuous improvement helps us remain competitive and efficient in our operational processes. And that’s the reason why most of our method engineers are also skilled in applying LEAN methodology.**”

Fabian Boucher, Director of BESIX Engineering

Conclusion: adding value to clients’ projects

“In conclusion, I can say that our in-house design office is a vital component to achieving success in today’s competitive market. With the ability to protect our company and our clients from design risks, provide significant engineering value to our client’s projects and function as a trusted mentor to young engineers, our in-house design office offers numerous benefits that cannot be overlooked. I see our in-house design office as the ideal platform to create a culture of innovation and continuous improvement, paving the way for long-term success.”

Innovative and Sustainable Technologies

BESIX has always had a culture of promoting and adopting innovative technologies and techniques, positioning itself at the forefront of the construction industry. This proactive approach has been instrumental in establishing BESIX as a market leader on several segments of its markets. The continuous exploration and utilisation of advanced technologies has enabled BESIX to develop and integrate new competencies within its technical and engineering teams, particularly in areas such as asset management, offsite construction, digitisation, energy efficiency, circularity, and sustainability. These state-of-the-art offerings are designed to benefit its clients and enhance the longevity of their projects. Here are a couple of examples.

Sustainable housing at the snap of a finger with CIRCL



CIRCL, a spin-off of subsidiary Vanhout, is specialised in the construction of circular and sustainable single-family houses. Its unique circular and mostly offsite construction method makes it possible to build a house literally in no more than 6 weeks' time, after designing it with an in-house developed software, which digitalises the whole 'home-buying' process for the client.

CIRCL works with elements that can be mounted, dismantled, and replaced very easily. It also uses sustainable elements in the form of bio-based and recycled materials. CIRCL is truly making terraced houses sustainable and affordable! A model one has been built on the Ghent Technology Campus of the Leuven University, while Vanhout is currently building two others in Diest (Belgium).



Smart buildings thanks to aug.e



BESIX and Proximus, the Belgian digital service and communication provider, joined forces a couple of years ago to develop a smart energy software platform, called aug.e, with the ambition to help millions of people to become more energy-efficient.

Concretely, aug.e is a digital platform that connects the physical building to a series of useful digital applications that allow building users and facility managers to optimise energy performance and reduce carbon footprint, which will help combat climate change, to improve comfort and to facilitate efficient operations and long-term maintenance. Moreover, aug.e learns how the building has behaved in the past and can predict future energy consumption. Smart buildings equipped by aug.e can anticipate their own needs based on real-time energy data enriched with weather forecasts, energy market prices, or user feedback. On this basis, aug.e also enables workplace management as well as predictive maintenance. Lastly, aug.e enables buildings to communicate with each other and integrate them into grids and networks, thus creating interconnected local energy communities in which buildings become both producers and consumers.

By combining data on the building, energy market spot prices, weather forecasts, connected electrical vehicles, etc. with artificial intelligence algorithms, aug.e is already bringing more comfort for a lower energy invoice to many Belgian and Dutch energy consumers and producers.

PropTech with Square Sense

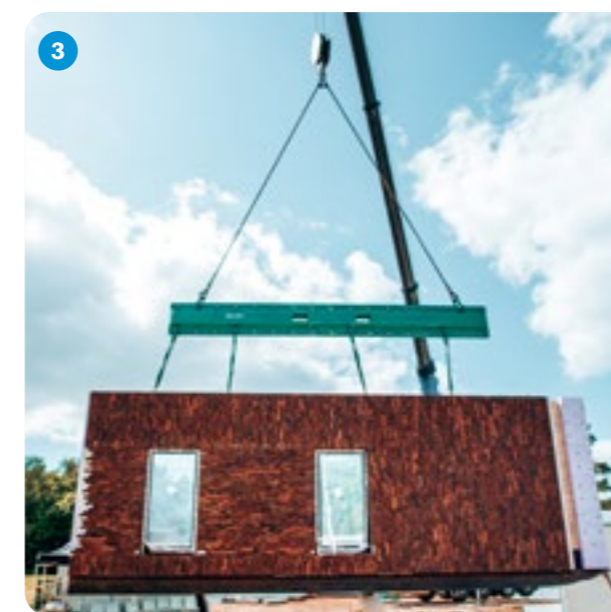
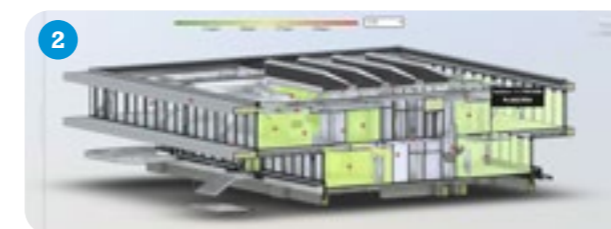


In line with its digitalisation programme and ESG commitment, BESIX RED invested in 2022 in the PropTech company Square Sense.

Square Sense improves the energetic and financial performance of offices and managed residential real estate by collecting and analysing all the data produced by using a building. This includes financial data, usage data, and technical data, such as data of energy consumption and environmental quality. On top of that, real estate developers and asset managers also get business recommendations generated by the platform's artificial intelligence.

Thanks to the analyses and recommendations, real estate developers and asset managers are able to manage their projects in a more virtuous way and optimise the environmental performance, financial efficiency, and tenant satisfaction of their real estate portfolios.

With the platform, Square Sense aims at tackling the biggest challenges of the real estate sector, including the energy crisis, ESG requirements, and impact on the financial performance. BESIX RED is proud to support the further development of this platform.



1. Circl
2. Digital twin powered by aug.e
3. BuildUp

BuildUp, the specialist in offsite construction with hybrid systems



BuildUp, a Belgian start-up in which BESIX and Vanhout hold a 40 % stake, is a pioneer in off-site construction in Belgium and France and specialises in both new buildings (totalfit) and energetic renovation of existing buildings (retrofit).

Off-site construction, also known as modular construction, is a method of building where various components of a structure are manufactured off-site in a factory and then transported to the construction site for assembly.

Concretely, BuildUp designs digital tailor-made structures, offering clients and architects extensive freedom that breaks with traditional prefabrication. The modules are then fabricated in a controlled environment using specialised equipment, and quality control measures are taken to ensure that each component meets the required standards. From the load-bearing skeleton to the finishes, with hybrid systems combining wood, steel and concrete, everything is produced off-site. The in-house integration and coordination of design, prefabrication and assembly reduces waste and transport requirements to the project site. In addition, the materials used by BuildUp are primarily locally produced, sustainable and certified, and offer a high level of traceability.

Not only does BuildUp build houses from A to Z with its hybrid off-site systems, it also renovates and refurbishes existing houses with off-site produced facades and roofs, completing home makeovers at an incredible speed. All elements, after digital design by BuildUp engineers, are produced in the off-site production factory, including structure, windows, doors, insulation, and claddings. That way, BuildUp can construct an isolating building shell off-site and swiftly assemble it afterwards against the existing structure of a house on-site.

Thanks to this off-site method, retrofits can be executed 60 % faster compared to traditional construction or renovation methods. At the same time, quality can be better supervised and processes can be automated, which in turn reduces costs. BuildUp's innovative approach is also an example of how state-of-the-art modular construction can contribute to improving the environmental footprint of the sector.

BuildUp participated in two large-scale renovations of 192 occupied social houses in Roubaix and Wattrelos (Northern France) in a record pace. After the façades and roofs were produced in BuildUp's off-site location, the houses were renovated in only 24 hours. By adding solar panels and a heat pump, all the houses were made completely energy neutral.

Begin 2023, the company was selected, with 14 other Belgian, German, Italian, and French companies, by the European Commission to benefit of the 'Life Giga Regio Factory' programme, which aims at accelerating the execution of energetic renovations and make them more accessible. With this subsidy, the group of companies will be able to renovate 750,000 social houses with off-site construction by 2030.

Timber for more sustainable buildings

The use of timber in construction has been around for centuries, but in recent years, it has become increasingly popular due to its sustainability, affordability, and versatility. The use of wood in construction presents some challenges, but also many advantages. The production of timber generates significantly less CO₂ and nitrogen. In addition, during their growth, trees absorb CO₂, which remains stored in the material. This means that timber construction limits additional emissions and, compared to traditional construction methods using concrete, has a potentially positive carbon balance.

BESIX Group can feature a number of projects using complex timber structures. In 2022, BESIX Watpac completed the Wurriki Nyal Civic Precinct in Geelong, Australia, a state-of-the-art 2,550 square metre structure, where sustainability has been a key feature, with a five-tiered cross-laminated timber frame. The project earned a 6-star rating from the Green Building Council of Australia.

Another example is the new Dutch headquarters of DPG Media which BESIX Nederland is currently building in Amsterdam and which will be one of the largest hybrid-timber office buildings in the world. The building will be highly energy efficient, also thanks to an underground thermal energy storage system combined with a heat pump and solar panels on the roof, and aims for BREEAM Excellent certification.

Neanex



Neanex, in which BESIX has been a shareholder since 2019, is a digital company with a strong focus on information management in the construction industry. Its mission is to bridge the gap between engineering, requirement management, design, construction, and operations by using a 'Digital Asset Register' portal, which is a web-based solution connecting teams, tools, and data relating to a building or infrastructure, over its total life cycle, thus providing a single source of information.

For large, complex construction projects, which imply working with different contractors, engineering firms, operators, and other parties, Neanex enables to move from document-driven to data-driven management, making sure all parties are aligned in control of quantities, planning, design, execution, and financials.

This results in a top notch Digital Twin platform, called 'Fundamend' (www.fundamend.com) that is used by large contractors and asset owners to lower cost, speed up delivery, and gain control in providing critical assets in our built environment. Mission of Fundamend is to create sustainable data as a key enabler for a sustainable built world.

In 2022, the European Commission identified Neanex as one of the three key innovators in the SPHERE project, one of the strands of the Horizon 2050 strategy, by integrating it in its 'Innovation Radar', an initiative of the Commission to identify innovations and innovators with high potential. In particular, SPHERE focuses on improving and optimising the design, construction, performance, and energy management of buildings, while reducing construction costs and their environmental impact.



Building Information Modelling (BIM)

BESIX engineers involved in the design, construction, or maintenance of buildings and infrastructure have been using Building Information Modelling (BIM) for a decade now. In 2017, BESIX became the first construction company in Europe to be awarded the BIM Level 2 certification, in accordance with the PAS 1192-2 standard for information management during design and construction phases of BIM projects. Since 2020, BESIX has been ISO 19650-2:2018 certified, the world's first international standard for BIM.

Building Information Modelling is a digital representation of the physical and functional characteristics of a building or infrastructure asset. It is a collaborative process that involves the creation and management of a digital model that centralises information on the design, construction, and operation of the building, throughout its life cycle, allowing to detect errors, optimise the project, estimate quantities and costs, and prepare planning and methods.

Projects in which BIM management has played a significant role recently include the Mohammed VI Tower in Morocco, the Grand Egyptian Museum in Cairo, the world's largest Waste-to-Energy plant in Dubai, the Tour Triangle in Paris, the Guggenheim Museum in Abu Dhabi, and the A16 highway 'De Groene Boog' in the Netherlands.

In this last example for instance, a BIM model was created for the highway tunnel which integrated all its elements and was used to automatically generate drawings. The BIM model was then turned into a virtual reality model, a so-called 'digital twin'. This type of model included the functional behaviour of the installations, which in turn enabled the virtual testing of all system behaviours. This created trust towards compliance with the stakeholder requirements in an early phase, which saved time and money for later test phases and long-term maintenance.

In September 2022, BESIX and Orascom Construction won the Autodesk Excellence Award 2022 for 'Best Construction Project' for their use of BIM software on the Grand Egyptian Museum. The software allowed them to smoothly coordinate the more than 150 subcontractors on the project.

1. Wurriki Nyal Civic Precinct timber structure, Geelong (Australia)
2. Timber structure at Mediavaert, Amsterdam (The Netherlands)
3. 4. BIMPrinter

BIMPrinter

BESIX was the first construction company in the world to use a topographic robot on a skyscraper, the Mohammed VI Tower site in Morocco. This mobile and autonomous topographic plotter, known as BIMPrinter, traces digital drawing details on the concrete slab to real scale and to the nearest millimetre, for example to prepare the construction of complex partition walls with complex geometry and angles.

In the case of the Mohammed VI Tower, BESIX was looking for a solution for a very accurate tracing of the partitions on 50 floors. The BIMPrinter allowed construction teams to gain accuracy and efficiency, producing a complete floor plan in less than a day, which is three times faster than the traditional topographic preparation method. Moreover, there are no longer limitations by points and lines only, any design pattern can be traced, whether straight or arched. The quality of the tracings is impressive for both straight and arched lines, and the 'painted' lay-out reflects very well the future installations well before the start of assembly works, which is very helpful for workers, subcontractors, but also for the architect and the client's representatives.

The BIMPrinter is also being used for the coordination of MEP works (lighting, ventilation, sprinkling,...) on another construction project of the Group, that of the French-speaking broadcaster's new headquarters in Brussels. In this project the client requested that all the MEP's were placed in the ground, in an 80-cm-high false floor, instead of the false ceiling. Given the enormous amount of techniques which have to go through this false floor, engineers are using the BIMPrinter to trace all the partitions, walls, and especially the techniques, fast, easily, and more accurately than ever before.

Parametric Design

BESIX engineers have been early adopters of parametric design. Parametric design is a design approach that involves using parameters and rules to generate and manipulate complex geometries and designs. Design engineers define a set of parameters and constraints, which can include factors such as size, shape, material, and functionality, and then use algorithms and software to manipulate these parameters and generate variations of the design.

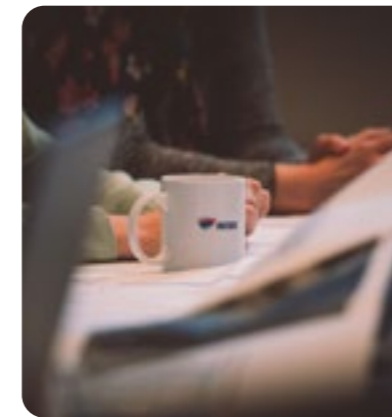
One of the key advantages of parametric design is that it allows design engineers to quickly explore and evaluate multiple design options and variations, without having to manually create each one. This can be especially useful in complex projects, where designers need to consider many different factors and constraints. Parametric design has been for instance applied on the Rottemeren tunnel on the A16 'De Groene Boog' project in Rotterdam, where the design of a single segment could be automatically reproduced along the entire length of the tunnel. Automation reduced the risk of errors and saved the engineers time to study alternative design solutions. That way, the teams came to an optimal design with reduced material quantities.

Similar automation principles are currently being used for other projects such as for reinforced concrete design calculations on the Tour Triangle (Paris) for beams and columns, and for the calculation of repetitive structures such as retaining quay walls in Dubai Port (Saudi Arabia).

BESIX Group's Commitment to Sustainability & ESG

BESIX Group recognises the importance of sustainability and its social and environmental impact on its stakeholders, including clients and employees, and the communities in which it operates. The Group is committed to demonstrating its Sustainability & ESG approach by engaging with its stakeholders, providing clear information on its sustainability efforts, and integrating sustainability into its Group processes.

True to its noble purpose to 'excel in creating sustainable solutions for a better world', BESIX Group has integrated ESG into its processes, and its sustainability strategy is based on four engagements and eight commitments. BESIX Group is dedicated to following ethical business practices, human rights, working conditions, and preserving the environment. The Board of Directors and the Executive & Strategic Committee support the Sustainability & ESG strategy and work to translate it into daily business practices. The senior management members of each entity work together with their teams to support the Group's engagements in their daily activities, translating the Sustainability & ESG strategy into reality.



International frameworks as guiding compass

As an active member of the United Nations Global Compact since 2016, the Group reaffirms its support of the Ten Principles of the United Nations Global Compact in the areas of Human Rights, Labour, Environment, and Anti-Corruption. It also supports the 17 UN Sustainable Development Goals (SDGs) which are a guiding compass while focusing on selected Goals, on which the Group can have the most impact.

The Group has identified five main challenges in its industry, including climate change, society's aging, the growing need for green buildings and energy, workers' welfare, and the need to improve talent management. In response, the Group has committed to contributing to the transition towards a low-carbon and low-waste society, encouraging green solutions, increasing employees' safety and comfort, growing as a preferred employer, promoting social and economic development, being inclusive with authorities and NGOs, endorsing a Code of Conduct, and conducting respectful and sustainable operations.

The Group has set ambitious goals to contribute to a safer and greener planet, build a better place to live in, and go beyond legal requirements in the social, environmental, and economic areas on a voluntary basis.

Human rights

BESIX Group adheres to the United Nations Universal Declaration of Human Rights, the International Labour Organisation Conventions, and the OECD rules. The Group places a high priority on respect for human rights and occupational health and safety. The implementation of the International Framework Agreement and the Declaration on Healthy and Safe Workplaces is evidence of the Group's ongoing commitment to labour welfare.

Fighting against climate change

BESIX Group integrates solutions for global climate challenges into its ambitions and considers its leading role, its take on acquiring clients with a sustainable mindset, and its goals towards lobbying, investing, and collaborating on sustainable topics. The Group's knowledge in green projects rating systems, smart buildings, integrated environment system, and sustainable engineering solutions remains crucial to fine-tune its ambitions, translating them into concrete objectives.

Achieving ESG objectives

To achieve its sustainability objectives, BESIX Group sets the framework, the ambitions, the indicators, and the areas in which each company is invited to subscribe to specific sustainability and ESG objectives. The Group also publishes a Communication on Progress every year to the UN Global Compact and in the Group's Activity Report, allowing for an introspective look at the situation.

BESIX Group takes a bottom-up approach across the entire group to determine objectives for all entities in each discipline covered by the SDGs that the group has selected for proactive actions. BESIX Group follows the highest and most relevant standards, including ISO 26000, the Code Buyse III in relation to CSR for Belgian non-listed companies, and the Global Reporting Initiative (GRI) Standards, to ensure the sustainability of its operations.

Upcoming steps

Starting from mid-2023, BESIX Group will adopt a strategic approach to align its ESG priorities with those of its key stakeholders. This consultation process will include a dual materiality analysis, which will identify how business and finance can impact climate change and society compared to what can be addressed internally. The Group's intention is to undertake this exercise in order to update its roadmap and as one of the necessary steps towards compliance with the Corporate Sustainable Reporting Directive (CSRD), which the Group will have to meet by 2026.

03

Sustainability & ESG

BESIX's Frameworks	30
ESG Governance	32
Stakeholder Expectations	33
BESIX's Sustainability & ESG Strategy	34
Carbon & Energy Management	36
Client Support	38



BESIX's Frameworks

Supporting the Sustainable Development Goals (SDGs)

BESIX Group is committed to playing a role in sustainable development and is guided by the United Nations' Sustainable Development Goals (SDGs). The group has identified 10 SDGs on which it can have a direct positive impact and it is focused on SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action), based on the group's belief that these goals align with its core activities and bring added value.

In 2023, BESIX Group will launch a comprehensive SDG Awareness Campaign aimed at engaging its employees and increasing their involvement in the sustainable agenda. The campaign will include workshops to assess and confirm the Group's current selection of SDGs. The initiative is not only a response to the increasing demand for sustainable solutions in the market, but a strategic move to prepare the company for a sustainable future.

The group is dedicated to investing in circularity and developing sustainable solutions that contribute to society and future generations. The SDG Awareness Campaign represents a proactive step towards a sustainable future and demonstrates the group's commitment to creating positive impact for generations to come.



ESG Governance

The BESIX Group Executive and Strategic Committee focuses on the vision, mission, and strategic objectives of the group. The Committee supervises the business activities and performance as well as the risk management, internal control, and organisation, as implemented by the Chief Executive Officer and the senior management. The Committee includes identity compliance in its Group Rules to secure the overall BESIX Group reputation. The Sustainability and ESG actions and achievements belong to and influence the BESIX Group uniqueness and reputation.

strategy annually, supported by the Group Sustainability & ESG Officer.

The reporting, including the objectives and results, is approved by the Executive and Strategic Committee and the Board of Directors before an annual publication. This one completes the annual United Nations Communication on Progress (CoP) available on the UN Global Compact website. This CoP is approved by the Executive and Strategic Committee every year.

A specific network was put in place for CO₂ ambitions to federate the BESIX Group Sustainability and ESG activities and adds efficiently to the networks already existing in the group around various topics, like procurement and environment.

The Executive and Strategic Committee reports directly to the Board of Directors on the Sustainability and ESG strategy. The Executive Committee reviews the Sustainability and ESG

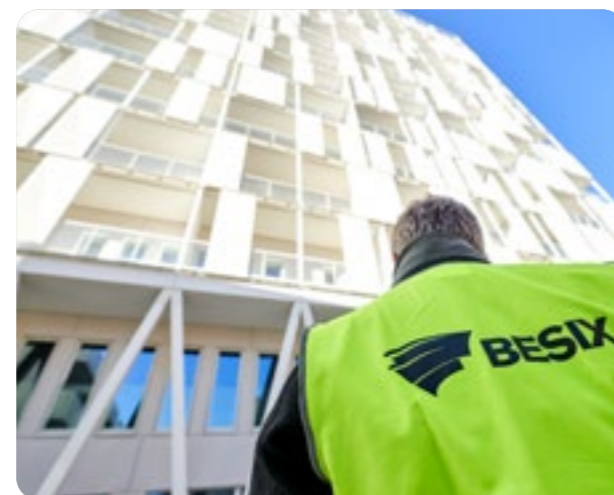
departments, from group's entities, activities, and processes across the different Business Units. This ESG Board is headed by the Group Sustainability and ESG Officer who is a member of the Executive & Strategy Committee.

Launch of an ESG Board

In order to secure the Sustainability and ESG commitments embedded in all BESIX Group entities and their working methods and processes, an ESG Board is being launched in 2023. It is composed of representatives from key support



The ESG Board, which meets three times a year, ensures compliance. It defines working groups that integrate the priorities and manages all the group's initiatives around the priorities defined. It also ensures their implementation in line with the Sustainability and ESG commitments. It coordinates and implements projects in this area, including the various Sustainability and ESG projects developed by the Group's entities. Each group entity informs the ESG Board about its initiatives.



The Sustainability and ESG Board is supplemented by Ambassadors who will be the driving forces of the actions and values of BESIX Group throughout its operations.

Stakeholder Expectations

BESIX Group recognises its responsibility to its clients, employees, and the communities in which it operates. It is committed to engaging with these stakeholders and providing transparent and relevant information on topics of shared interest. The group sees its role in society as a catalyst for economic, social, and environmental progress, and strives to improve the quality of life for all people.

Focusing on shareholder expectations

BESIX Group is committed to demonstrating its Sustainability & ESG approach to the pressing issues faced by society today. The group regularly engages with its stakeholders, including employees, vendors, NGOs, government and financial institutions, and academic institutions, through meetings, surveys, communications, and conferences. The feedback from these stakeholders helps the group to progress in its action plan and objectives.

In addition to its stakeholder engagement, BESIX Group also strives to maintain high standards in its operations through regular audits. BESIX, the biggest company of the group, is audited every year by a leading inspection, verification, testing, and certification company and has received positive feedback in its recertification audit report for ISO 9001:2015, ISO14001:2015 and ISO45001:2018. This demonstrates the group's commitment to the coordination of all departments and entities, as well as its focus on aspects related to interested parties, risks & opportunities, actions, and objectives.

BESIX Group also participated in the EU consultation on Sustainable Corporate Governance and reported to the Business & Human Rights Resource Centre on the management of its migrant workforce in 2021 and 2022. Main requests from stakeholders include CSR/Sustainability policy, sustainable procurement, labour market requirements, responsible crisis management alongside the Covid-19 pandemic, green buildings, and reducing greenhouse gas emissions.

In 2022, BESIX was evaluated by EcoVadis and received the Gold sustainability medal rating, demonstrating the company's sustainability efforts and performance. BESIX is among the top 5 % of companies evaluated by EcoVadis in its industry to receive this score, and is now working to further improve its results and sustainability initiatives.

Starting in mid-2023, BESIX Group will take a strategic approach to align its ESG priorities with those of its main stakeholders. This consultation process will involve a double materiality matrix analysis, which determines how activities and finances may impact climate change and society compared to what may be faced internally.

KEY STAKEHOLDERS



BESIX's Sustainability & ESG Strategy

BESIX Group recognises the importance of sustainability and its social and environmental impact on its stakeholders, including clients and employees, and the communities in which it operates. The group is committed to demonstrating its Sustainability & ESG approach by engaging with its stakeholders, providing clear information on its sustainability efforts, and integrating sustainability into its group processes.

True to its noble purpose 'Excel in creating sustainable solutions for a better world', ESG is integrated into the group's processes and its sustainability strategy is based on 4 engagements and 8 commitments. The Sustainability & ESG strategy is supported by the Board of Directors and the Executive Senior Management, who work to translate the strategy into the reality of their business and ensure the group is following its commitments on a daily basis.

BESIX Group aims to comply with the ISO 26000 guidelines and 'Code Buysse III' in relation to CSR for Belgian non-listed companies. The group is an active member of the United Nations Global Compact and the UN federating platform 'The Shift' Network and focuses specifically on 10 UN SDGs on which it can have a direct positive impact.

The group is dedicated to following ethical business practices, human rights, working conditions, and preserving the environment. BESIX Group's ESG strategy is translated into reality by the senior management of each entity, who work together with their teams to support the group's engagements in their daily activities.

The strategic approach remains focused on the Business Units Contracting, as the Contracting activities represent an important part of the group's turnover. BESIX Group is increasingly responding to the growing ESG requirements of co-investors and lenders in the real estate development sector as well as in concessions and asset management.

From mid-2023, BESIX Group will adopt a strategic approach to align its ESG priorities with those of its key stakeholders. This consultation process will include a dual materiality matrix analysis, which will identify how business and finance can impact climate change and society compared to what can be addressed internally. The group's intention is to undertake this exercise in order to update its roadmap and as one of the necessary steps towards compliance with the Corporate Sustainable Reporting Directive (CSRD), which the group will have to meet by 2026.



BESIX Group's Sustainability & ESG Roadmap

World challenges

Climate change | Ageing society | Green building | Scarcity of affordable energy
Water scarcity | Lack of experts | Worker welfare

BESIX's selected sustainable development goals



BESIX Group's purpose

"Excel in creating sustainable solutions for a better world."

BESIX Group's strategic framework

Central focus on people and united work approach with clear governance and lean organisation	Emphasis on general contracting at heart and expertise-focused approach	Further investments in current areas of diversification such as real estate, concessions, operations & maintenance	Pursuit of new diversification opportunities aligned with core competencies, prioritising innovation and sustainability
--	---	--	---

Sustainable engagements > Key sustainable commitments

Business Engagement	Environmental Engagement	People Engagement	Societal Engagement
Carrying out respectful & sustainable operations	Contributing to the transition towards a low-carbon and low-waste society	Increasing people's safety & comfort	Promoting local social & economic development
Endorsing Codes of Conduct	Encouraging green solutions	Growing as a preferred employer	Being inclusive with authorities and NGOs

Carbon & Energy Management

BESIX Group commits to actively contribute to a low-carbon and a low-waste society. The Group recognises it can play a significant role by focusing on solutions to reduce its carbon footprint and encouraging circular economy to preserve the earth's resources.

As a signatory of the Belgian Alliance for Climate Action on 2020, committed to aligning their activities with the objectives of the Paris Agreement, BESIX Group took several steps to achieve its sustainability goals in 2022, such as extending the Organisational Boundary of the CO₂ performance ladder certification to the BESIX Business Unit Europe.

At the same time, the following subsidiaries, as part of the Organisational Boundary, have joined this certification: BESIX Environment, BESIX Infra, BESIX Infra Support, BESIX Unitec, and its subsidiaries BESIX Unitec Automation, BESIX Unitec Nederland, BESIX Connect and Appermont, Franki Foundations and its subsidiaries Franki Grondtechnieken BV in The Netherlands and Atlas Foundations in France.

BESIX Group aims to become CO₂-neutral by 2050 at the latest for its direct and indirect emissions (scope 1 & scope 2) for its Organisational Boundary described above. The BESIX Group companies belonging to the Organisational Boundary of BESIX have committed to ambitious carbon-reduction targets, which are monitored and analysed periodically, and for which progress is reported and communicated structurally.

With the implementation of an energy & GHG reduction action plan with a specific focus on energy efficiency, the use of renewable energy and making its fleet of equipment and vehicles more sustainable through electrification and the use of sustainable fuels, BESIX Group will meet its reduction targets.

The Group is involved in innovative projects that minimise CO₂ and energy impact on construction and advises clients on building passive or green-certified projects.



Carbon & energy ambitions

BESIX Europe and the BESIX Group companies belonging to the CO₂ Performance Ladder Organisational Boundary described above, commit to the following ambitions:

1. to become neutral for their own direct (scope 1) and indirect (scope 2) carbon emissions by no later than 2050. An intermediate intensity reduction target has been set for end 2030 targeting a 40 % reduction (related to turnover) compared to the baseline year 2019;
2. to promote and to be a leader in providing sustainable solutions to their partners and clients and, in doing so, to help them achieve their own climate goals and targets;
3. to promote and incentivise their supply chain, in particular the building material producers with the greatest potential in this area, to reduce their carbon emissions (scope 3 emissions) in order to become neutral by no later than 2050. Specific focus is given to the main categories as ready-mix concrete, rebar and (structural) steel.

The above ambitions have been defined because BESIX's impact as a construction company is twofold. It is direct through its own construction operations and project execution. It is indirect through the value chain of its partners and suppliers and through the sustainable solutions BESIX promotes and delivers to its clients.

Carbon & energy reduction programme

SCOPE 1 & 2 - Focus on 3 axes

1. Company car fleet

BESIX has the ambition to have a zero-emission company car fleet by no later than 2032. Intermediate targets on the percentage of zero-emission vehicles in the company car fleet have been set for 2025 (10 %) and 2028 (40 %). In order to obtain these targets the company car policy has been reviewed in 2021 integrating the shift to a full electric company car fleet.

2. Electricity

As from 2022 BESIX has been procuring electricity from renewable resources for its Belgian and Dutch-owned offices and fixed production facilities. As from 2023 this is also applied to the project sites in Belgium.

3. Plant & equipment

Two workgroups have been formed. The first workgroup is focused to make site installations more sustainable with the objective to define minimal requirements for BESIX's site installations. The second workgroup is focused on large construction equipment.

Examples of specific achievements are the purchase of the first electric 50 tonnes telescopic crawler crane (Sennebogen 653E) with an autonomy of up to 10 hours and the use of more than 6.7 million litres of Hydrotreated Vegetable Oil (HVO) on the A16 De Groene Boog project in Rotterdam, avoiding the emission of 20,000 tonnes of CO₂ in comparison with the use of traditional fossil fuel. In the first quarter of 2023, testing of a hydrogen power generator has been carried out.

SCOPE 3

BESIX's scope 3 strategy has been implemented over all the construction phases:

1. Design

During the design phase, the sustainability engineering department from BESIX proposes optimised solutions to limit the carbon footprint by performing life cycle analysis (LCA) and assessing the carbon footprint as a design parameter. An example is the Tour Triangle project in Paris, where a reduction of 20 % in carbon impact of the structural works was analysed with LCA by implementing a low-carbon concrete strategy. To facilitate long-term reuse and recycling, material passports are developed in combination with BIM to store the environmental data in a centralised digital platform.

2. Build

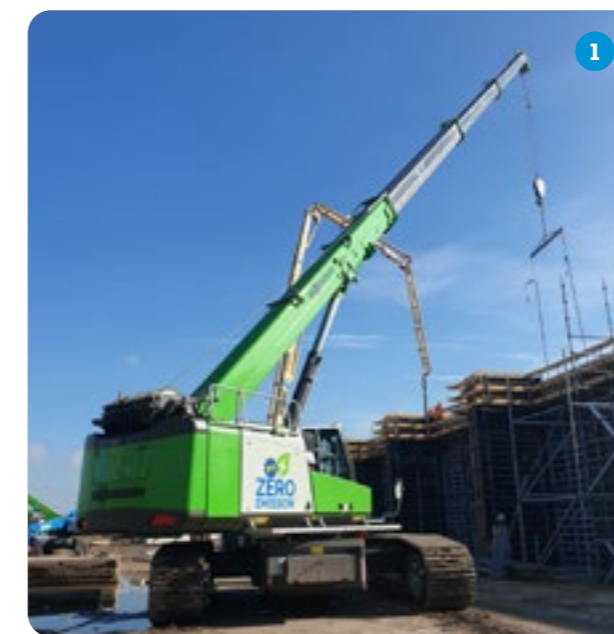
Besides low-emission equipment and alternative fuels, BESIX also proposes low-impact building materials through a sustainable supply chain with a specific focus on ready-mix concrete, rebar, and (structural) steel. BESIX has aligned itself with the 'Betonakkoord' ('concrete agreement') in the Netherlands and in December 2022, with the 'Circulair Betonakkoord Vlaanderen' (Belgium).



BESIX can offer its clients more sustainable alternatives for these materials than the standard materials by having in-house engineers in close contact with suppliers on the development of their sustainable solutions and participating in research projects such as 3D2B Green, SMARTINCS and lifeMACS.

3. Operations & Maintenance

BESIX is pioneering in solutions to create next-generation smart buildings by employing artificial intelligence, minimising energy costs and optimising the use of green energy. Aug-e, created by BESIX, Proximus and i.Leco, is bringing to the market state-of-the-art solutions in the field of smart buildings, which contribute to making buildings a significant actor in the energy transition. These solutions include the most innovative technologies to improve the energy performance and environmental impact of buildings, facilitate their long-term maintenance, and increase their users' comfort. A good example of smart building is the BESIX Nederland Head Office.



1. Electric crawler crane

Scan this QR code for more information on BESIX Europe's CO₂ reduction ambitions, action plans, and (sector) initiatives.



Client Support

Combining value for money with sustainability

The construction industry has long been known for its significant impact on the environment, but in recent years it has also been recognised for its potential to help mitigate that impact. This brings both challenges and opportunities for the sector to embrace more sustainable practices. BESIX Group recognises the importance of being a driving force in the transition towards sustainability, in accordance with UN Sustainable Development Goals, the European Green Deal, and EU taxonomy.

Through close collaboration with clients, designers, and suppliers, the Group aims to rethink how construction projects are executed to support clients in meeting new regulations on sustainability and green construction. The goal is to help clients and the industry as a whole to achieve their sustainability objectives, including net-zero emissions and circularity. Additionally, the Group is dedicated to guiding clients who need advice and assistance in making their projects more sustainable both in the short and the long term.

ESG is changing market trends








In order to address environmental concerns and promote sustainability, clients must consider the impact of sourcing materials, and manufacturing processes will need to become more eco-friendly through GHG-free technology. Supply chains will also need to be optimised to achieve sustainability and resilience objectives. By providing sustainable solutions at every stage of a project, from design to maintenance, the Group can help clients reduce their GHG footprint and minimise their impact on the environment, benefiting society as a whole. As the sense of urgency has become undeniable, companies must take physical climate risks into account when making decisions about their operations. To stay ahead of the curve, regular meetings are organised with business partners to inspire each other and better understand clients' short and long-term expectations. The central theme of these interactions is how to combine sustainability and value for money objectives.

Responsible business

Adopting more responsible behaviour in terms of resource management, environment, and social impact urgently needs to become business as usual. Clients should ensure that projects are not only efficient and functional, but also sustainable. BESIX Group has several services in its competence package to guide clients in separate phases of project realisation, from buildings to infrastructure and industries, from design to maintenance.

The Group recommends the use of Early Contractor Involvement (ECI) to bring expertise and insights on sustainability from the beginning of the project. Design decisions made early on have a significant impact on a building's long-term value and return on investment, making a whole-life cost-value approach critical throughout the design and operation phases.

The Group's commitment to sustainability is also illustrated by its team of in-house experts. From sustainability engineers to GHG & QHSE experts, to procurement specialists, BESIX Group has a comprehensive competence centre knowledgeable in sustainable construction practices. These experts collaborate with clients to identify areas where sustainability can be improved and offer innovative solutions that are both practical and effective.

 <p>Design Early Contractor Involvement</p> <p>Improving value for money in the total life cycle by integrating design and planning at an early stage</p>	 <p>Design Life Cycle Analysis</p> <p>Quantifying environmental impacts over a project's life cycle</p>	 <p>Design Data-driven process</p> <p>Shifting towards more data-driven decision-making: BIM, automation technologies such as robotics, drones, and 3D printing</p>	 <p>Build Low-impact buildings and materials</p> <p>Selecting low-impact building materials: timber, ready-mix concrete, rebar, aluminium, glass, and (structural) steel</p>	 <p>Build Low-emission equipment</p> <p>Choosing low-emission equipment and alternative fuels</p>	 <p>Build Modular and circular construction</p> <p>Shifting to a product-based approach, with significant costs, waste, and carbon footprint reduction</p>	 <p>Design / Operations & Maintenance Next generation smart buildings</p> <p>Using energy as a service Smart building solutions: optimised (green) energy and eased long-term maintenance</p>
---	---	---	--	---	--	---

Incorporating green building practices into construction projects across various sectors, including buildings, infrastructure, and industries, can yield significant benefits for both investors and society. By adopting sustainable technologies and practices, these projects can increase their asset value for investors while also meeting regulatory requirements.

In addition to providing financial benefits, sustainable practices can also deliver social and environmental benefits. Clients can achieve lower operating costs and better risk management and control, while also promoting high environmental performance and social well-being.

Jan Van Steirteghem, General Manager Business Unit Europe: "At BESIX Group, our commitment to sustainability goes beyond simply acknowledging the importance of reducing our carbon footprint. We are dedicated to being a driving force in the transition towards a more sustainable future. Our comprehensive sustainable services, from design to maintenance, can help our clients achieve their sustainability objectives,

reduce their impact on the environment, and promote social well-being. Our team of in-house experts collaborates with clients to identify areas where sustainability can be improved and offer innovative solutions that are both practical and effective. By incorporating green building practices into construction projects, our clients can benefit from increased asset value, improved risk management and control, and lower operating costs. We encourage our clients to join us in our commitment to sustainability and to collaborate with our team of experts to implement concrete solutions at the earliest stage of a project's design concept. Choosing low-impact materials, incorporating modular construction, and using smart solutions to monitor energy are just a few examples of the innovative and effective solutions our experts can propose to help clients achieve financial benefits, as well as promote high environmental performance and social well-being."



04

People

Focus on People	42
Diversity & Inclusion	46
Fair Labour Standards	48
Quality, Health, Safety, and Environment	52
BESIX Foundation	56



Focus on People

Navigating change with #WECARE: the future of People strategy

It is a fact: attracting and retaining the best people is the key to success. How can an employer like BESIX Group, spread over continents and cultures, stand out from the crowd? By creating a nurturing and caring environment where everyone has the opportunity to grow and excel. At BESIX Group, the focus is voluntarily set on valuing development, creating opportunities and providing a safe space for experimenting and sharing. The ultimate goal? Fostering a culture of creativity that enables everyone in the group to meet the challenges of a sustainable, better world.

Meet some of BESIX’s inspirational People leaders to see how they tackle this challenge.



Tell us more about the culture that is promoted at BESIX Group

By Geert Aelbrecht, Chief People Officer and Group Sustainability & ESG Officer

“At BESIX Group, our culture is not just a set of words on a piece of paper. It is the heart and soul of who we are. It is what sets us apart from the competition and what makes us the employer of choice for the world’s top talents. Our culture is built around our purpose, mission, behaviours, values and the competences of our people. It is what guides us in our daily interactions and drives us to be the best we can be.

We believe that our people are our greatest asset and that is why we developed the People strategy #WECARE. The company is fully committed to ensuring that all BESIX employees around the world, no matter where they work, receive a caring approach and have access to safety, health, and well-being at work. Our employees are our top priority and we live by the mantra of ‘People First’.

Our People strategy is not just a list of good intentions. It is a set of initiatives that make a real difference in the lives of our employees. From flexible working hours to free medical exams, from diversity and inclusion campaigns to fitness rooms and sports events, we are constantly looking for new and innovative ways to support our employees.

Our People strategy was built around four primary axes, each designed to help us achieve our goals and create a better workplace for everyone. We’re paving the way for a brighter future by becoming a recognised employer of choice through exemplary leadership, by creating a safe and collaborative work environment where each aspiration can flourish, by promoting a culture that creates development opportunities for all and by fostering creativity to stay on top and envision the future.

At BESIX Group, we are committed to evolving and growing our #WECARE strategy to meet the needs and expectations of our employees in a fast-changing world. From putting a special emphasis on health and new ways of working to providing support at every key moment in our employees’ lives, we are dedicated to making BESIX Group the best place to work.”

In early 2023, the Top Employer Institute awarded BESIX Group the certification of Belgian Top Employer for the fourth time in a row. Why is it important and what does it mean for your employees?

By Johan Melort, Regional People Director Europe

“We are indeed thrilled that for the 4th consecutive year, BESIX Group, BESIX, BESIX RED, BESIX STAY and Flamant have been certified as a Top Employer in Belgium, with an outstanding score of 89.48 %, exceeding the benchmark and our previous best score! This accolade validates our unwavering commitment to providing our employees with a supportive and rewarding work environment that promotes their development and well-being.

This certification shows that our continuous improvement efforts and consistency in our People strategy are paying off. It reinforces our position as a leading employer, who is recognised for its excellence in employee conditions, and confirms that we prioritise our employees’ happiness and success. Being recognised as a Top Employer is an honour that we take seriously and is proof that we strive to be the best for our employees, stakeholders, and clients.

Moreover, being certified as a Top Employer is a significant advantage in attracting and retaining top talents. It strengthens our reputation in the market and demonstrates our commitment to creating a positive workplace culture and environment, which leads to higher employee engagement, satisfaction and productivity. We believe that happy employees lead to successful businesses and this recognition is a testament to our company’s culture and values.

Going forward, we are committed to maintaining this certification and further enhancing our employee value proposition. We intend to sharpen our focus on inclusion, diversity and equity to excel even more in this domain. With this recognition, we aim to continue providing our employees with the best experience possible, supporting their growth and development, and ensuring their well-being.”

1,045
new hires in 2022

12,000
employees at 31.12.2022

43.5
years average age

86
nationalities in the Group

9.7
years average seniority

What does BESIX offer its employees for their career and personal development?

By Axelle Vankleput, Global Expert BESIX Academy

"The BESIX Development Academy (BDA) is our flagship training programme designed for engineers and technical functions staff. It is a comprehensive training curriculum that covers a wide range of topics, including technical skills, soft skills, Health & Safety and functional skills. Divided in three levels, the BDA is tailored to correspond to specific career stages, with the aim of providing employees with the skills they need to perform their job and upskill them throughout their careers.

Since its launch in September 2021, the BDA has already made a significant impact and we receive positive feedback from participants who find the programme invaluable. The courses have been held in Brussels and have been initially offered to a Belgian audience. However, we are thrilled to announce that the programme is now available to colleagues from BESIX France, BESIX Nederland and the Business Unit International. In 2023, it will become available in the Middle East as well, with a pilot session scheduled before the end of the year. Year in, year out, we train at least 500 participants.

At BESIX, we believe in investing in our people and the BDA is a testament to that belief. The programme is designed to empower our employees with the necessary skills to achieve their goals and thrive in their careers. By offering courses presented by internal experts, we ensure that our employees benefit from the knowledge and experience of their colleagues, allowing them to develop their internal network.

As a result, the BDA has become an invaluable asset for our employees, providing them with a wealth of knowledge and expertise that they can apply in their daily work. Furthermore, it highlights our commitment to continuous improvement, innovation and our people. With the BDA, we are not only investing in our employees' development but also in the success of our company."

How would you say Diversity & Inclusion are influencing your People strategy?

By Caroline Vyncke, Global Expert Talent & Leadership Management

"At BESIX Group, we truly value diversity and believe that our teams should reflect the rich cultures and backgrounds of the countries where we operate. By having a diverse group of individuals, we can better understand and cater to the unique needs of our clients all over the world. Plus, diversity brings innovation and fresh perspectives to everything we do!

But it is not just about diversity. Inclusion is just as important. We want to make sure that everyone feels respected and valued, no matter their background, beliefs or lifestyle. Inclusivity means that everyone has a fair and equal opportunity to contribute to our collective success.

We are proud to say that our teams are incredibly diverse and we showcase this in our book, Together. We are committed to creating an open and welcoming environment where everyone can thrive and feel like they belong. Join us on this exciting journey!"

>> See next page for an in-depth focus on Diversity & Inclusion at BESIX Group.



Our Development Academy has become an invaluable asset for our employees, providing them with a wealth of knowledge and expertise that they can apply in their daily work.



In 2022, BESIX introduced flexible rewards schemes for some of its staff. What benefits does it bring and what trends did you detect?

By Laurence Debart, Global Reward Recognition Manager

"Flexible rewards put the power of choice into the hands of employees when it comes to their compensation and benefits. No two employees are alike and the flexible rewards system recognises that one-size-fits-all benefits packages simply will not cut it. Instead, employees are given a budget, i.e. part of their salary, to allocate towards the benefits options that work best for them - whether that is health insurance, retirement savings plans, mobility programmes or any of the other options offered.

This personalised approach ensures that employees are getting the benefits they need and want, which can lead to increased job satisfaction and loyalty. And as our employees' needs and priorities evolve over time, so can their benefits package - ensuring that they are always getting the support they need.

For BESIX as an employer, the flexible rewards plan is a win-win. We introduced such schemes in 2022 for a staff population of about 1,600 people from no less than 11 subsidiaries or affiliates: by offering a more personalised benefits package, many entities in our Group can attract and retain top talent, for a cost that is at least neutral for the employer. It is a smart, modern approach to compensation and benefits that puts employees first."



By integrating green e-mobility into our HR policies, we promote sustainability, reduce our carbon footprint and improve employee well-being.

How do you integrate sustainability into your mobility practices?

By Dris Salek, Fleet & Administration Manager

"Green e-mobility at BESIX Group is much more than just a trend. It is a way for us to demonstrate our commitment to sustainability and attract top talent. By integrating electric vehicles and other sustainable transportation options into our HR policies, we participate actively in the decarbonisation of our activities.

Being present in more than 25 countries, with different compliance and awareness levels, our mobility policies may differ from one region to another, but our common goal is and stays the same: vigorously participate in the fight against climate change.

To name but a few of our mobility policies, we encourage employees to use electric vehicles, bicycles or public transportation to commute to work by offering them incentives, such as preferred parking spots, subsidised public transport passes or financial rewards. If we take the example of Belgium, we have installed 30 EV charging stations recently. 11 % of our company fleet is already electrified.

Mobility is not only about electric vehicles. We also offer flexible work arrangements, such as teleworking or flexible work hours to reduce the need for daily commuting, reduce time spent in traffic and promote work-life balance.

In a nutshell, by integrating green e-mobility into our HR policies, we promote sustainability, reduce our carbon footprint, and improve employee well-being. This demonstrates our commitment to environmental stewardship and attracts top talents who are increasingly concerned with employers' environmental practices. Together, we can create a more sustainable and resilient future for all!"



Diversity & Inclusion

A long-term commitment

As the world becomes more connected, the demographics of many countries are changing rapidly. As a result, organisations like BESIX need to be able to work with people from diverse backgrounds, cultures and perspectives to succeed in a global marketplace. BESIX has embraced this reality a long time ago, operating seamlessly on 5 continents, in 25 different countries and employing more than 80 distinct nationalities. “I truly believe that our success around the globe is achieved through, among other things, our openness towards other countries’ cultures and values”, introduces Geert Aelbrecht, Chief People Officer and Group Sustainability & ESG Officer at BESIX Group.



More than a necessity, an asset

“As a corporate citizen, BESIX has the responsibility to promote diversity and inclusion. By creating a diverse and inclusive workplace, companies like ours can help break down barriers and promote social equality, which is an important societal goal for us”, adds Geert Aelbrecht.

At BESIX, unity in diversity is a lever for performance, but inclusion is crucial for every employee to feel respected and valued. “To achieve this, we support a culture in our organisation where everyone can reach their full potential within their role. We offer equal opportunities to our staff, we employ the most qualified people based exclusively on their skills related to the position. We encourage different perspectives to foster innovation and broaden professional opportunities. We help our employees and partners to reach their full potential by being united and supportive.”



When people from different backgrounds come together to work on a common goal, they bring diverse perspectives, experiences and ideas. This can lead to more innovative solutions and better decision-making, which can ultimately result in improved performance and competitiveness. Prioritising diversity and inclusion is not only the right thing to do but also makes good business sense. It can lead to improved performance, attract and retain top talent, improve relations with partners and clients and demonstrate social responsibility.

Geert Aelbrecht, Chief People Officer at BESIX Group



Together for a positive impact

Experience has shown that respect for diversity and inclusion improves the working environment by increasing positivity and productivity. “Inclusion helps us integrate newcomers faster in the company and our teams, and as such we reduce risks of failure or errors”, acquiesces Geert Aelbrecht. “Inclusion is also about being open to other ways of looking at things and being willing to co-create solutions with others, with the ability to question our own views or opinions. New ideas and visions are indispensable if our company wants to remain a leader that is open for innovation and talent”, he adds. “Together, diversity and inclusion are essential for creating a workplace culture that is innovative, productive and respectful of all employees.”

Unique but united

“We believe we must live diversity to understand it. Working with diverse teams offers us the opportunity to learn beyond the purely technical aspect of one’s job. It broadens our view, helps us look at situations from different perspectives and inspires us to mutually understand each other”, repeats Geert Aelbrecht.

What better way than letting employees express themselves to check how this translates into their daily life at work? In 2022, BESIX chose to publish a collection of 100 portraits and testimonials of colleagues, diverse and unique, but united in their passion and pride, all from their very own perspective and identity. “This book emphasises equal opportunities, particularly in terms of career development and internal mobility. It shows how our differences make us unique and stronger. Above all, it is a joyful symbol that at BESIX, we do not always build walls – we also build bridges. Between us. To go beyond origin, gender, or professional status”, concludes Geert Aelbrecht.



All these testimonials from BESIX Group employees are available here

Fair Labour Standards

Migrant colleagues in the Middle East

In the Middle East, BESIX Group has been a major construction company since 1965. Over the years, the Group has carried out some of the most ambitious and decisive projects for the development of certain countries, in particular the United Arab Emirates and Qatar. These projects reflect the expertise of BESIX Group's engineers, but also the work of thousands of blue collars. They are almost all migrant colleagues, from India, Bangladesh and Nepal. There are 5,000 of them currently on the BESIX Group payroll, working on the company's construction sites. It is also with them, with the local authorities and with international organisations that BESIX Group has set a precedent in respecting and promoting fair labour practices in the broader region, a commitment that is now widely acknowledged, including by foreign states, international institutions and non-governmental organisations.



BESIX Group's internal policies

BESIX Group has implemented strict internal policies regarding the respect and promotion of migrant colleagues' rights, often going beyond its legal obligations. These measures are of course mandatory for each branch or subsidiary of the Group. Among the measures are for instance the fact that these colleagues are employed and paid directly by the Group, without intermediaries and that the company covers their full health insurance. Migrant colleagues are hired through official agencies that do not require them to pay any fees or back payments. Migrant blue and white collars retain their identity documents at all times and are provided with qualitative, comfortable accommodation, including places of worship for each religion and culturally appropriate menus. They freely appoint representatives to relay grievance or requests to the company and have access to all information in a language they know.

Independent monitoring

In recent years, the living and working conditions of migrant colleagues have been independently audited on a number of occasions, including in the United Arab Emirates and Qatar. In addition to those carried out by local authorities, these audits were mainly conducted by the Building and Woodworkers' International (BWI), an international federation of 351 trade unions from 127 countries, representing around 12 million workers. This follows the signing of an international framework agreement with BWI in December 2017, providing the promotion of fair labour practices and the establishment of a monitoring mechanism. In this context, BWI has free access to construction sites and migrant blue and white collar' housing, when they live in accommodations provided by the BESIX Group.



BESIX Group has implemented strict internal policies regarding the respect and the promotion of migrant colleagues' rights, often going beyond its legal obligations.

A lasting societal role

BESIX Group does not only focus on its own practices, the Group also requires its subcontractors to provide documentation demonstrating that they meet high standards in various areas, including living conditions and recruitment processes.

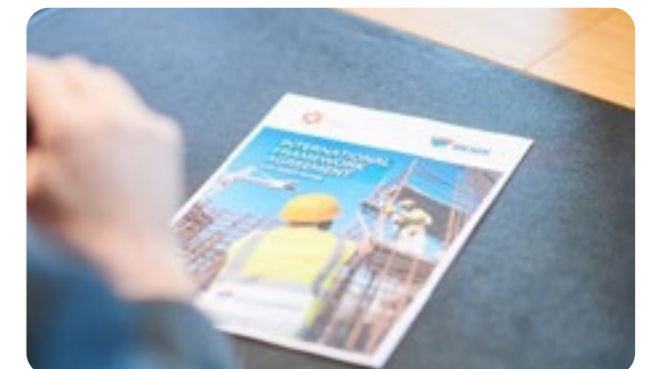
BESIX Group requires them to sign a code of conduct which obliges them to respect the Group's standards and allows audits to be carried out in their facilities. When breaches are found, the priority is to help them improve and find solutions.

For example, BESIX Group has hosted subcontractors' blue collars in its own accommodation when subcontractors' facilities were audited as not up to par with BESIX standards. It has also happened that the Group paid the unpaid wages of subcontractors' employees and deducted them from the payments due to the subcontractor in events where subcontractors were failing to compensate their employees adequately.

In the event of unwillingness or blatant breach of standards on behalf of subcontractors, a range of provisions, which local laws allow, provide for financial penalties or even outright termination of the contract.

What experts say about BESIX

In recent years, eminent figures from international organisations have publicly cited BESIX Group as a reference in promoting worker welfare in the Middle East. This is the case for the former Chairman of the Governing Body of the ILO, Luc Cortebeek, who declared in the press and Flemish Parliament that BESIX's practices were among the best in this field. The director of Amnesty International Belgium did the same in the Belgian press, presenting BESIX as an example to follow. The Secretary General of BWI (Building and Wood Worker's International), Ambet Yuson, has also expressed himself publicly on several occasions, explaining that BESIX Group applies standards in the Middle East that are equal to those in Western Europe.



FIFA World Cup in Qatar

The FIFA World Cup was held in Qatar from 21 November to 18 December 2022. BESIX Group has been operating in the country for several decades, renovated the Khalifa Stadium and designed and built the Al Janoub Stadium from 2014 to 2019. BESIX was openly not in favour of a boycott of the World Cup. It was the Group's opinion that the World Cup could set a precedent for the respect of workers' rights. Since construction work for the World Cup started, huge steps have been taken to improve the rights of migrant workers. This has led to an unprecedented reform of the country's labour legislation. BESIX Group shares this position with the ILO of the United Nations, the BWI, the Royal Belgian Football Association and several Belgian trade unions. BESIX Group encourages the continuation of the efforts already made and is committed to further cooperation with the Qatari authorities, international organisations and trade unions. The Group is committed to continue to play its role as a large company to this end. This is how BESIX wants to keep acting: by applying high standards, similar to the Belgian ones and by pushing its partners and subcontractors to apply them in turn.

Excelling in safety

Safety at work is BESIX Group's number one priority on all its sites. This is also the case in the Middle East where BESIX Group has one of the best safety records in the region. This is generally similar to that of the Group's other sites around the world, including Europe. Most sites often achieve several million working hours without an accident resulting in work incapacity. This was the case in July 2022 for the Dubai Waste-to-Energy team with 5 million safe man-hours and for the Dubai Uptown Tower team in October with 20 million safe man-hours since the project began in January 2019.



Number one in the construction sector

In October 2022, BESIX Group's subsidiary in the Middle East, Six Construct, was awarded the Dubai Chamber of Commerce and Industry CSR Label for the 10th consecutive time. It is also the only construction company in the country to achieve this.

Adapting the work to the warmer seasons

Working hours are adapted according to the season. For example, in the United Arab Emirates, work is interrupted from 15 June to 15 September between 12.30 and 3 pm. BESIX Group sometimes extends this rule, especially when the humidity and temperature reach levels that are considered too high. In addition, on site, employees are provided with quality equipment, cool and ventilated areas for breaks, drinking water and refreshing towels.



Quality, Health, Safety, and Environment

#SafeTogether

BESIX Group is determined to shape its business and projects towards a world-class culture of Quality, Health, Safety and Environment. This is achieved by creating and enhancing a continuous improvement momentum in collaboration with internal and external stakeholders.

In 2022, BESIX has continued implementing its QHSE strategy. Reinforcing its core QHSE programme and developing further supportive and effective programmes, bringing the company continually closer to excellence in the fields of Quality, Health, Safety and Environment.



1. Safety Timeout at the Grand Egyptian Museum (Egypt)

2. 5 million man-hours free of long-term incident at Dubai Waste-to-Energy (UAE)

Health and safety performance

The Covid-19 pandemic resulted in companies losing the strength of bonds among staff members and to some extent within operations, due to increased distance between people, reduced movement and travel, and increased telework. This did not have a positive impact on the Health and Safety performance either. In 2022, BESIX became fully operational again across its business, but the return to normality has sometimes been experienced as difficult. All of this, alongside an increased volume of work was certainly a challenging aspect of 2022.

This alone, however, might not fully explain the slight deterioration in the total recordable injury and illness frequency rate, and the fatal accidents sustained in 2022.

Two road accidents, on the way from and to work, in Montenegro and Cameroon respectively, sadly impacted seven people's and their relatives' lives. In Paris, a devastating fatal accident took place on one of BESIX's project sites, where an employee of one of the co-contractors lost his life. Finally in Qatar, one work-related on-site fatal accident was recorded in the year. BESIX teams carried out in-depth research into the root causes of these accidents with all interested parties in order to understand, learn about the context and draw corrective actions and improvements. BESIX Group also registered 46 high potential incidents (HiPo). This gave additional opportunities to investigate, analyse and share lessons learned that were relevant to BESIX operations and risks. An injury or even more so a fatal accident is always a human tragedy. The absolute priority is that everyone goes home safe, every day. BESIX Group's focus is therefore to eradicate serious and fatal accidents. This commitment is a strong challenge that can only be tackled as a group.

One of the ways to prevent incidents and accidents is to continue working on safety engagement. Amongst 2022 key achievements, BESIX Group enhanced its Safety Pledge and its core principles. This promoted and upgraded BESIX employees' skills and knowledge in Occupational Safety and Health (IOSH) and in managing occupational health and safety risks by rolling out tailored BESIX IOSH training courses on managing and working safely.

Finally, BESIX has introduced a new digital solution named OASIS, designed to facilitate the management of QHSE-related processes and risks for its staff. The year 2023 heralds a transformative phase in BESIX's QHSE digitalisation journey, as the gradual global implementation of this innovative digital solution promises to revolutionise QHSE operations for all stakeholders.

BESIX Safety Pledge, four fundamental safety principles

The BESIX Safety Pledge was first launched in 2018 and subsequently rolled out across the Group. 2022 was the opportunity for Pierre Sironval, CEO of BESIX Group, to reinforce the four fundamental safety principles that the Group leaders had committed to follow by endorsing the Safety Pledge.

This Safety Pledge dictates the way forward to excellence and a world-class culture of safety through four principles: BE SAFE, Life Saving Rules, safety walkabout and subcontractor engagement. These principles are being supported by IOSH (Institution of Occupational Safety & Health) and will be powered by OASIS in the future.

The 2022 Safety Timeout was the opportunity to have the entire Group focused on one of these four principles: Subcontractor engagement. It was the opportunity for the project teams to work on improvement plans for the subcontractor management process, the subcontractor workers' engagement in risk control effectiveness and the motivational strategy in managing risks.



Since 2018, we have all committed to effectively deploying and implementing the BESIX Group Safety Pledge, under the motto 'Let's go the extra mile for safety'. This pledge reflects BESIX's four fundamental safety principles. I ask everyone to keep investing in these principles to reach superior levels of safety, culture, and performance.

Pierre Sironval, CEO BESIX Group

OASIS, the new QHSE digital solution

Operational excellence cannot be reached or developed to higher levels without an efficient digitalisation strategy. 2022 has been an intense year at BESIX QHSE with the digitalisation of processes. The entire Group, including the Australian, Middle Eastern, European and International business units, united to align on QHSE risk management. This includes uniting QHSE processes, workflows and functionalities with the aim to configure this digital solution for the entire group, which should ultimately be capable of fulfilling the needs and expectations of the sites, departments, business units and internal affiliates.

The development of OASIS is a tremendous team effort that will pay off in the year to come. As a matter of fact, the solution has already been deployed in Australia and there have been a few other pilot sites in Belgium and within the other business units with very promising end-user feedback.

The benefits of OASIS are numerous: it considerably reduces paperwork for end-users, supervisors, managers and QHSE staff. In addition, the solution is not only fulfilling all sites and projects' needs and expectations, the platform can also be easily deployed in a joint venture with fellow contractors. Furthermore, it engages subcontractors' commitment, is suitable for BESIX's multicultural context as it is a multi-language solution and complies with legal aspects and with corporate QHSE reporting expectations.

The OASIS solution is a real breakthrough in gaining time and efficiency, but also in engaging people in managing risks on a wider spectrum. Although still awaiting full feedback on its impact and effectiveness later in 2023, the QHSE department has already started its deployment within the BESIX Group.



OASIS is a very promising solution that has answered many of our needs and expectations already in the very first few weeks of using it on-site. What is also nice in the development of this tool, is the level of interactivity with the QHSE department in tailoring and fine-tuning functionalities such as dashboards and reports.

François Springuel, Project Manager at the breakwater renewal project in the port of Poti (Georgia), an OASIS pilot site



Climate change

Climate change is one of the main challenges for the construction industry and BESIX Group recognises its utmost urgency. This has been demonstrated by BESIX since 2011, with the Level 5 Certification, the highest level on the CO₂ Performance Ladder, for its activities in the Netherlands. In line with its climate and sustainability ambitions and BESIX Europe's Energy & Carbon Policy, BESIX extended the scope of its Level 5 Certification to all activities of its Business Unit Europe covering Belgium, Luxembourg, France, Italy and the Netherlands in mid-2022.

At the same time, the following subsidiaries, as part of the Organizational Boundary, joined this certification: BESIX Environment, BESIX Infra, BESIX Infra Support, BESIX Unitec (and its subsidiaries BESIX Unitec Automation, BESIX Unitec Nederland, BESIX Connect and Appermont) and Franki Foundations (and its subsidiaries Franki Grondtechnieken BV in the Netherlands and Atlas Fondations in France).

Jan Van Steirteghem, General Manager, Business Unit Europe explains: "Our main ambitions are threefold. First of all, BESIX aims to become carbon neutral for its own direct (scope 1) and indirect (scope 2) emissions by no later than 2050. An intermediate milestone has been set for the end of 2030. By then, BESIX Europe and the concerned regional entities want to reduce their own consolidated carbon emissions (per million-euro turnover) by 40 % compared to the baseline year of 2019. At the same time, BESIX wants to promote and be a leader in providing sustainable solutions to its partners and clients and, in doing so, help them achieve their own climate goals and targets. Finally, we want to incentivise our supply chain, in particular the building material producers with the greatest potential in this area, to reduce their greenhouse gas emissions (scope 3) in order to become neutral by no later than 2050."

More information on BESIX's engineering capabilities and achievements related to sustainability can be found in chapter 03. In chapter 05, you will find more information about the projects in each area of activity.



Scan the QR code for more information on BESIX Business Unit Europe's ambitions for CO₂ reduction, action plans and sector initiatives.



BESIX Foundation

Building a better world together

Thanks to the enthusiasm of BESIX employees, 2022 can be marked as a great year of charity and community involvement. Whether by participating in sponsored events for projects financed by BESIX Foundation, taking part in a solidarity day or getting involved with the foundation's own 'homemade projects', they were out there in number getting things done!

Solidarity days

For the past 12 years, BESIX Foundation volunteers have been helping 'Opération Thermos Operatie', an association preparing and serving hot meals to the homeless in Brussels every evening during colder months. For the past 11 years, a sister association has been doing the same in Liège. In 2022, 200 volunteers organised 17 evenings in either Brussels or Liège, serving 2,500 meals from the beginning of November until the end of April.



It is a true human experience. It makes me aware of what is happening around me, and grateful for what I have acquired throughout my life. It helps me put things into perspective and take a step back from the stress of our daily responsibilities. Sharing this human experience as a team brings everyone together. And do not forget: by working together, our impact is much greater and rewarding.

Dris Salek, Fleet & Administration Manager BESIX Group



BESIX Foundation's 'homemade' projects

BESIX Clean-Up Day

The 4th BESIX Clean-Up Day was a real success, with 3,256 employees participating (almost double than last year's turnout) in 48 locations on 4 continents. Together, they collected more than seven tonnes of waste in their community!



The BESIX Watpac GPO Marriott Hotel project team were thrilled to take part in the 2022 BESIX Clean-Up Day. The team came together to clean up the local city centre square adjacent to our construction site. Volunteering as a team was a source of great joy and gave us a true sense of community. It was great to see how fulfilling this was for the team.

Michael Rapaic, Site Engineer BESIX Watpac

KiddyBuild

KiddyBuild, one of the Foundation's flagship homemade projects, invites children of primary schools exercising positive discrimination on a field trip to a construction site, where they learn about the various trades required to get a building off the ground. To everyone's great joy, the on-site KiddyBuild sessions were able to resume after being halted during the Covid-19 pandemic. Six sites in Belgium opened their doors to 11 classes totalling 224 youngsters in their final year.

The KiddyBuild at School programme, a spin-off of the KiddyBuild programme, was further developed in 2022. This involves BESIX volunteers visiting classrooms for a morning to introduce schoolchildren to the ins and outs of the construction world. The sessions are centred around a BESIX patented board game, Construction Heroes. This game made its debut in the game world in 2022 and provides a fun and innovative introduction to the construction sector to help attract youngsters to the business. Ten sessions were organised with 199 children.

"I find these activities very rewarding. Talking about your job with these young people lets you take a step back and reminds you of what motivates you every day. I have always enjoyed talking about my job, the positive and negative aspects of our work, because I feel privileged to be able to do what I love every day. Not everyone is so lucky and some young people have little idea of the various careers open to them. Construction trades, for instance, are relatively unknown. In my mind, we can have a significant impact on the future of many young people by doing something that is actually rather easy and requires little investment in time. Doing these things together with a colleague is also very enjoyable, especially as we complement each other", explains Abdellah Touzani, Engineer at BESIX Group.





In 2022, BESIX Foundation held its first Discovery Build in-class sessions, another spin-off project, targeting secondary school youngsters.

In 2023, BESIX Foundation aims to further develop the KiddyBuild and Discovery Build initiatives in Belgium for both primary and secondary school youngsters and to extend the concept to other countries of the group such as France and the Netherlands.



The activities offered by BESIX are learning tools that can help children solve problems in a much more flexible, creative and collaborative way. The children learn a whole new language and experience something totally new. And the presence of skilled people from the business world in the classroom enriches the courses. The kids love it and so do we.

Nadia Moro, 5th and 6th grade teacher, Bruyères-Horta primary school in Brussels

Support to social and charity associations

Through financial support

28 projects benefited from the Foundation's financial support in 2022. These included associations working with the most disadvantaged, such as those supporting the integration of people with disabilities or those providing protection to victims of trafficking. All these projects help more than 5,000 people, both in Belgium and abroad.

Through the Staff Award

Every two years, BESIX employees are given the opportunity to vote for their favourite project from a shortlist of ten. In 2022, the award was won by Cavoequiva, an association in Abidjan, Ivory Coast, that takes in and supports 90 young vulnerable girls who have been victims of child prostitution. This allows them to go back to school or take up professional training and, where possible, to return to their families.



Through skill-based sponsorship

IRSA

IRSA, an educational centre in Brussels for young people with visual, hearing and speech impairments, recently installed a vibrating floor designed and built with the help and expertise of BESIX engineers and with financial support from BESIX Foundation.

The vibrating floor enables youngsters with a hearing impairment to decrypt the link between sound and vibration in a playful way. As sign language is not used everywhere or by everyone, it is crucial for them to understand the world of sounds and of people who can hear.

In the past, the centre used a small 80 cm² resonance module. The new 10 m² floor, consisting of twelve 80 cm² modules, enables the therapists to work with groups, thus treating many more patients at the same time. The floor is a sort of amplifier connected to a microphone or a music player. The sound vibrations are transmitted to the floor and hence to the people standing on it.



The new vibrating floor is a dream come true for the therapists who are indebted to BESIX Foundation and the four engineers who validated the prototype, worked together with the manufacturer, and monitored the floor's delivery and installation.

"When BESIX Foundation contacted me in March 2022 to work on a small project building vibrating boxes for the IRSA school, I didn't hesitate for a second, despite the subject seeming quite abstract at first. The goal was to get the students to feel the vibrations emitted by the music through the wooden boxes. This great project is the very concrete result of four BESIX colleagues working together as a team for the Foundation (David Smets, project instigator; Servé Dolmans; Adriatik Qerimani in charge of all the audio techniques; and myself). I was in charge of the technical drawing and the realisation of the vibrating box. This human adventure is once again proof of the great work done by BESIX Foundation for associations. I hope that many more colleagues will want to put their skills at the service of one of the foundation's projects", explains Frédéric Gaillard, Project Engineer at BESIX Business Unit Europe.

PAG-ASA

Another achievement in 2022 relates to PAG-ASA, a Belgian association that supports victims of human trafficking, offering them a stepping stone towards autonomy and reintegration. In addition to housing and supporting victims, this association organises numerous awareness campaigns for professionals active in the sector so that victims can be quickly identified and helped.

Over time, PAG-ASA has also succeeded in creating a working partnership with the police and the courts, allowing crime networks to be fought much more effectively and resulting in a reduction of violence against victims. But their action remains necessary since the number of victims in Belgium is still estimated to be around 20,000. BESIX Foundation has financed the accommodation of new shelters (five rooms) for victims.



Across all projects of BESIX Foundation, BESIX volunteers spent no less than 5,810 hours – equivalent to 726 days – helping people.

"So much creativity and availability from partners and colleagues, as well as their families, to the service of building a better world all together is a small miracle BESIX Foundation manages to realise every year! Our impact is even stronger in 2022 and makes our tribute to education, environment and construction a recognised and sustainable reality year after year. Let us all continue to be the active BESIX Foundation ambassadors by participating in its initiatives and feel proud of acting for the benefit of a better world and planet. BESIX Foundation thanks all contributors in 2022 and continues recruiting more volunteers for to get on board in 2023", declares Frédéric de Schrevel, BESIX Foundation President.

Mahaweb and Manzil

In the Emirates, BESIX Middle East colleagues work together with Mahaweb and Manzil, two associations helping disabled people through volunteering, skills sponsoring and reusing office furniture.



05

110 years of global expertise

Areas of Expertise	62
Buildings	64
Infrastructure	76
Marine Works	84
Industry & Logistics	86
Environment	88
Concessions & Assets	94
Real Estate	98



Areas of Expertise

Thanks to its expertise and in-house engineering know-how, BESIX is always ready to come up with high-quality and cost-efficient solutions across its many activities.

Concessions & Assets

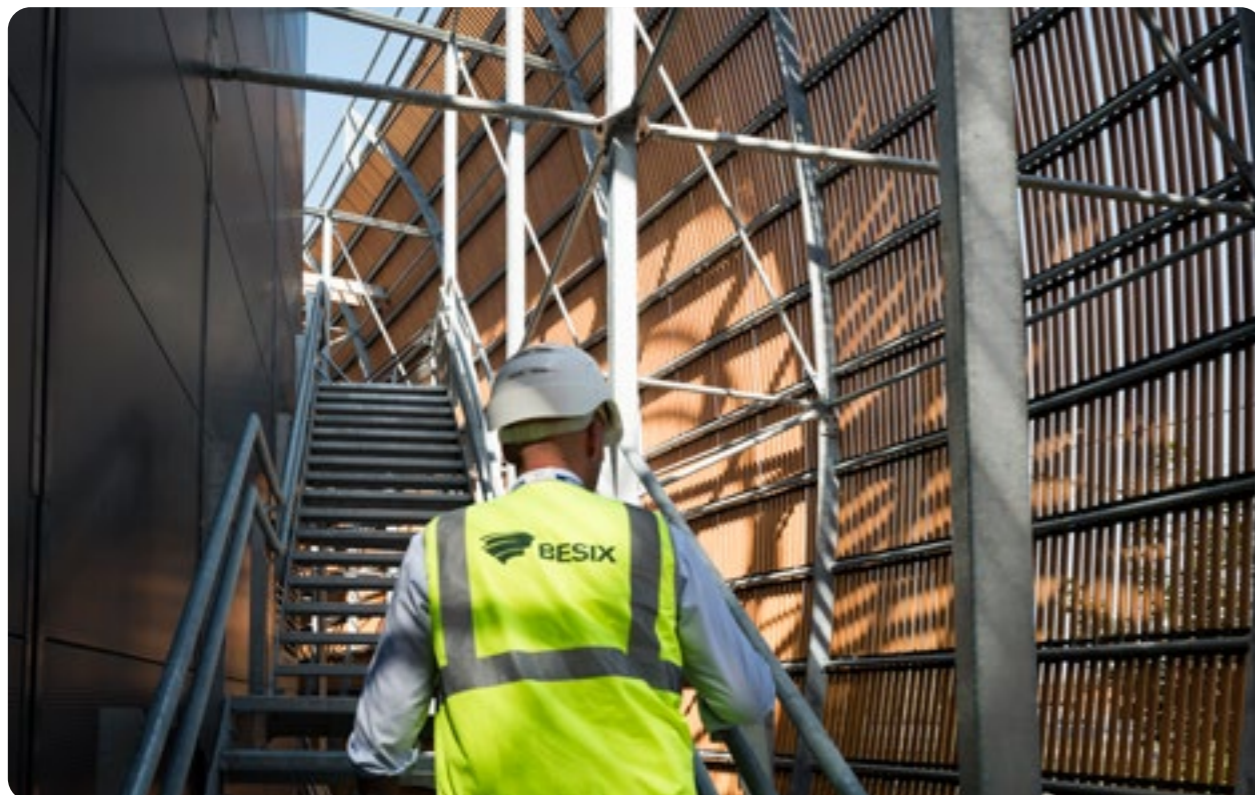
BESIX Concessions & Assets devises tailor-made solutions covering the complete infrastructure life cycle. With its broad experience in European and Middle Eastern Public Private Partnerships, BESIX recognises that each project, client, and community has a unique set of challenges and

takes pride in being able to form collaborative partnerships to deliver on their aspirations. Together with its Client-Partners and applying its range of financing options, BESIX devises a pragmatic approach to achieve a shared interest over the complete infrastructure life cycle.

Real Estate Development

BESIX RED has proven itself a responsible player in revitalising cities and acquiring prime locations across the Benelux, France, and Portugal. It covers three lines of activities: Offices, Residential, and Retail & Services. In addition to its 30 years of experience, BESIX RED relies

on a team of great talents, whether it be architects, engineers, or entrepreneurs. They serve the specific interests of clients with high-performance developments: maximising convenience of occupancy and optimisation of the environmental, economic, and technical factors.



Contracting

Buildings

From world-famous skyscrapers to low-impact housing developments, BESIX's impressive track record speaks for its professionalism and mastery. Today, BESIX continues to design, develop, and deliver fully integrated buildings and real-estate properties with a unique architecture, cutting-edge technology and performance, complex logistical and environmental requirements, and extreme construction deadlines. BESIX is especially known for its sound experience in carrying out sophisticated large-scale projects, such as high-rise buildings, shopping malls, hotels, hospitals, schools...

Infrastructure

BESIX takes on the most challenging and large-scale civil construction plans for both public and private clients. Building on its engineering skills and its powerful implementation resources, BESIX constructs complex public works such as tunnels, bridges, railways, dams...

Marine Works

The market for modern port infrastructure is one of the most dynamic in which BESIX operates. Benefiting from its in-house engineers' know-how, BESIX carries out projects mostly on a Design & Build basis, and owns and operates its specialised marine construction equipment. This comprehensive design and equipment approach yields considerable cost savings. BESIX executes coastal marine works all around the world: breakwaters, jetties, quay walls, locks, marinas, water intakes, shore protection and refurbishment.

Environment

BESIX has established itself as a key player in environmental contracting. BESIX provides innovative and tailor-made integrated solutions for today's growing water and waste challenges, and energy needs. It includes the design, engineering, execution, start-up, and commissioning of wastewater and drinking water treatment plants, pumping stations and hydroelectric installations, treatment capacity upgrades, sludge drying and valorisation (digestion, biogas re-use...), and the polishing of treated effluent to near potable water standards (ultrafiltration, reverse osmosis...). BESIX also focuses on the creation of by-products from waste, such as biogas, biofuel, biosolids or heat recovery. Recoverable resources and energy optimisation are a must in times of rapid demographic changes and a global transition to green energy.

Industry

In the niche market of industrial structures, BESIX designs and builds logistic and handling centres, warehouses and processing plants, as well as infrastructure for power providers.

Sports & Leisure

BESIX builds places that turn people into participants. World-class football stadiums, multipurpose arenas, theme parks, and swimming pools are some of the iconic examples of outstanding infrastructure for entertainment and sporting events BESIX has built over the years, over the continents.

Roads

BESIX provides construction, renovation, and maintenance services for roads and road infrastructure. Works range from motorways to the construction of interchanges. Maintenance services are also provided through long-term public-private partnerships. In addition, several specialised entities owned by BESIX Group are active in this field, particularly in the Benelux. This is the case of BESIX Infra in Belgium and in the Netherlands, and Socoetra in Belgium, both figuring among their region's leading roadwork companies.

Utilities

The group is active in the utilities sector, both through BESIX and through some of its specialised entities such as BESIX Unitec in Belgium. This field comprises a variety of competences, such as the laying of underground infrastructure, including sewage, cable, fibre optic and duct networks. In the field of technical installations, the group offers services for the construction of high and low voltage infrastructures. Several companies in the group also offer specific expertise in the railway sector, including signalling systems.

Foundations

From deep foundations to retaining walls, BESIX provides foundations for infrastructures and buildings of all types, including the most demanding ones such as skyscrapers. BESIX Group's subsidiary Franki Foundations is itself specialised in deep foundation techniques and is a European leader in this field.

Construction Materials

Several companies in the group represent a vertical integration that is extremely valuable for the quality and reliability of their work. This is the case of gravel quarries, asphalt plants, and asphalt binder production for companies active in the road construction sector in Europe. The group also has ready-mix concrete plants and recycled products, notably in Belgium and the Middle East.

Buildings

A Saint's Inspired Inner City University

The Australian Catholic University's (ACU) state-of-the-art Fitzroy campus breathes new life into tertiary education. Be it through its innovative technological features or the unmissable façade inscriptions, this 12-storey tower will offer a divine environment to its students and staff alike.



Project details

ACU Saint Teresa of Kolkata Building

Location
Fitzroy, Melbourne (Australia)

Contract type
Design & Construct

Contract value
225 million Australian dollars (approx. 136 million euros)

Construction period
December 2018 - April 2023

1. 2. Australian Catholic University, topping out ceremony in April 2022, Melbourne (Australia)

The building is part of ACU's plan to accommodate mounting student and staff growth within the inner-city suburb of Fitzroy, Melbourne. Through meticulous design, the 18,000m² tower encourages lateral learning opportunities through centralised teaching facilities and informal study spaces. Despite being surrounded by tall buildings, bustling cafes, and busy shops, the campus provides a pocket of peacefulness and connection within its varied facilities. These include a full library, congregational hub, elevated garden spaces with city views, a rooftop multi-sports court, and underground car and bicycle parking.

Uniquely, this university campus has a remarkable seven level basement structure. The complexity of geotechnical conditions challenged the design teams to develop a system of a grout curtain construction methodology to allow construction to proceed within the highly permeable and clay-filled geology. Modelling has predicted that without the grout curtain installed, the water inflow to site could have been as high as 120 litre/second during excavation. This is the first time a grout curtain on a project of this size and complexity has been installed in Victoria. Other noteworthy coordinations included the bespoke delivery of an advanced timber auditorium and the heritage listed, three level overbuild above the iconic Mary Glowrey Building. This once Note and Stamp Printing Department will now serve as a private research and office hub for campus staff.

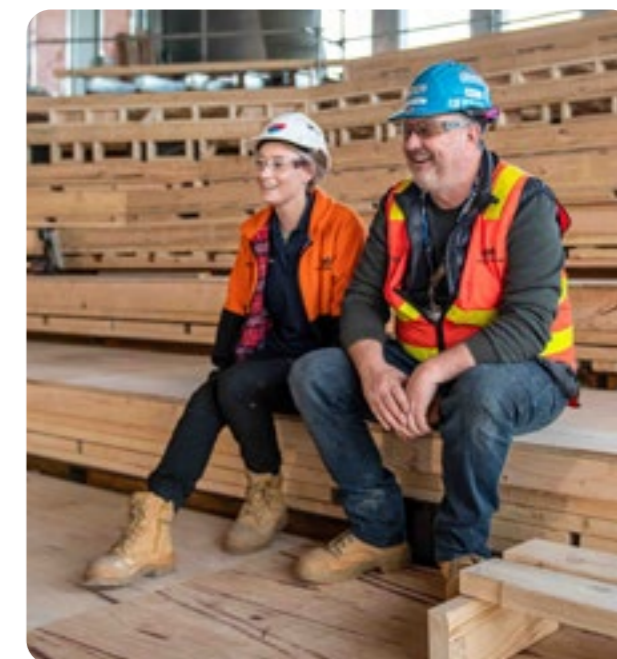
BESIX Watpac has significant experience delivering work within and around heritage listed buildings. This expertise is maintained through a high level of consultation with a variety of stakeholders during delivery to protect building integrity through restoration and enrichment.

Much like the historic-meets-contemporary landscape that surrounds the university, ACU's campus epitomises the marriage of old and new. Paying homage to its namesake, philanthropist Saint Teresa of Kolkata, the building is fully clad with a GRC serrated edge that is inscribed in her memory. Having topped out in April last year, the project is nearing formal completion and will soon be full of inspired students ready to make their own mark on the world.



A whole new integrated public interface is achieved for the Campus by creating a more porous and transparent street presence, whilst highly contemporary teaching and learning facilities focused on well-being through emphasis on comfort, natural light, and gardens will energise the ACU student and staff community.

Adrian Stanic, Director of Lyons (Project Architect)



If you wish to know more about this project, please scan this QR code.



Buildings

Atlantis The Royal, Dubai skyline's newest ultra-luxurious addition

In early 2023, the much-anticipated Atlantis The Royal resort was delivered to the client, Atlantis the Palm 2 LLC. This extraordinary project of almost 400,000 m² is one of Dubai's most unique buildings, both in terms of its architecture and the quality and sophistication of its interior design. From the first day to the last, it has been a particularly demanding project, which BESIX Group's subsidiary Six Construct and its South Korean partner Ssangyong brilliantly carried out. This is reflected in the stunning quality of the building, as well as the attention that has clearly been paid to every detail at each stage of the construction, both inside and out.

Project details

Atlantis The Royal

Location
Dubai (UAE)

Client
Atlantis the Palm 2 LLC

Partner
Ssangyong

Architect
Kohn Pedersen Fox Associates

Contract type
Build

Construction period
2016-2023



A new icon for Dubai

Located on the outer crescent of the Palm Jumeirah, Atlantis The Royal offers spectacular views wherever the eye falls. The waters of the Arabian Gulf on one side, the Dubai coastline and skyline on the other. No building has ever better borne the name of Atlantis, the mythical island of grandeur mentioned by Plato and dedicated to Poseidon.

The architecture was designed by the prestigious New York firm Kohn Pedersen Fox Associates. The building, marked by a curvilinear design and cantilevered structures, is 500 metres long from end to end. At the western end, the hotel tower reaches a height of 185 metres and has 43 floors that house 795 rooms and suites. At the east end, the 37-storey residential tower rises to 165 metres and includes 231 luxury residences, ranging from two to five bedrooms. These east and west wings both comprise three sub-towers and are connected by a 45-metre-long suspension bridge. At a height of 95 metres, it includes an infinity pool and relaxation areas. In addition, many of the residences and hotel suites have their own outdoor areas with private pool. Together with Atlantis The Palm, the original Atlantis hotel, the resort boasts the largest private beach in Dubai of 2 kilometres.

Among the many services, Atlantis The Royal offers its visitors 12 swimming pools, a beach and night club, a 3,000 m² wellness haven, and 17 restaurants and bars, including 8 celebrity chef restaurants. Topping it off is the magnificent rooftop featuring a 90-metre infinity sky pool with breathtaking views of the Arabian Gulf and Dubai's skyline.

A challenging construction

The project was extremely demanding from start to finish, but BESIX and its partners executed the project with brilliance, which is reflected in the stunning quality of the building. The end product is exactly in line with the client's objective to bring to market a truly high-end hotel and residences, a new generation of luxury in Dubai. "Many of BESIX's departments have demonstrated the full extent of their expertise on this challenging site. This is true for the operational teams, but also for the technical office, procurement and certainly the quality control teams", explains Jean-Pol Bouharmont, Managing Director BU Middle East and Australia. "Achievements in 2022 included completion of MEP works, the addition of furniture, supplies and equipment and final touches to the stunning landscaping. Final delivery took place early 2023."

Lifting the sky bridge

A major milestone in the project was the lifting of the 1,260 tonnes, 45-metre sky bridge by strand jacking. This was an extremely precise operation. It was first built on the roof of the main lobby, between the 4th and 8th floors, and then gradually lifted to its final position at a height of 93.5 metres. It then took another month of work to finally fix it to the existing structure and make all the connections!

0/100

**0 lost-time incidents,
100 million safe working hours**

500

metres long

185/175

**the height of the East and
West end towers in metres**

45,000

tonnes of steel rebar

5,500

tonnes of structural steel

150,000 m²

of marble

130,000 m²

of glass reinforced concrete



One of the great successes of the project is safety. The construction site has not experienced any lost time incidents, which represents over 100 million safe working hours!

Valery Paquier, Project Director at BESIX Middle East

Buildings

Mediavaert, a landmark project in Amsterdam

The media heart of the Netherlands is soon to beat in one of the largest hybrid-timber office buildings in the world. An incredible feat in terms of sustainability and innovation.



Project details

Mediavaert

Location

Amsterdam-Duivendrecht
(The Netherlands)

Client

DPG Media Nederland

Partners

Being, Team V Architectuur,
Drees & Sommer Netherlands,
Arup, DGMR, DELVA Land-
scape Architecture / Urbanism

Architect

Do Janne Vermeulen,
Team V Architecture

Developer

Being

Contract type

Engineering & Build

Construction period

From the end of 2021 to the
start of 2024 (25 months)



1. Installation of glass panels at Mediavaert, Amsterdam (The Netherlands)

The idea

In an innovative media landscape, people, activities, and functions at DPG Media are constantly changing. Flexibility, healthy working environment, and creativity are leading factors for the new accommodation. The answer is a sustainable and iconic building in a green setting where creativity and collaboration thrive.

Ways of creating impact

The 44,500 m² main office of DPG Media in the Netherlands will become one of the largest hybrid-timber buildings in the world. By using hybrid-timber building methods, the new building strongly focuses on the relationship between nature and technology.

Working and spending time in and around the new accommodation of DPG Media will mean becoming inspired by a healthy and welcoming setting. It's a tailored work environment promoting synergy between users, functions, and activities. Besides office spaces, newsrooms and recording studios, the building also features test labs, meeting rooms, sports facilities, restaurants, and an event location at the waterfront. Open spaces, voids, and outdoor areas will enhance spatial perception and encourage user interaction. Greenery in, on and around the building will offer an inspiring work environment and will add to a sense of connection with nature.

Situated next to the existing printing business of DPG Media, the new building connects the past and present. Employees of Het Parool, Volkskrant, Trouw, Qmusic, NU.nl, Tweakers, vtwonon, Libelle, HR and Marketing, among others, will be able to take full advantage of these state-of-the-art facilities in Mediavaert.

6,500 m³
of wood

1,800 tonnes
of structural steel

44,500 m²
total area

**Aquifer thermal
energy storage**

**BREEAM Excellent
certification**

Sustainability

Flexibility, healthy working environment, innovation, and creativity are at the forefront of Mediavaert. The creative wooden structure and the office's green landscape add to the design's characteristics. A wood-hybrid office of this size has never been built in Europe. BESIX Nederland started building the upper timber structure in mid-August 2022. The construction required 6,500 m³ of timber.

While this was challenging, it will add many benefits. Compared to traditional construction methods such as concrete construction, wood production produces significantly less CO₂ and nitrogen. Trees also absorb CO₂ during their growth, which remains stored in the material. This means Mediavaert's wood construction limits additional emissions and potentially has a positive carbon balance.

The building will also be very energy efficient and use aquifer thermal energy storage, including underground heat and cold storage with a heat pump, as well as solar panels on the roof. The building has been designed to reach the BREEAM Excellent certification.

Next to its unparalleled ambitions in sustainability and greenery, Mediavaert also features an impressive mosaic of glass panels. The first of the 1,530 panels were installed at the beginning of December 2022.



Our client DPG connects people in the fictional, virtual, and real world. The office we are building will connect all those images, sounds and newsprint in one central place. The successful combination of steel, concrete, and wood in the construction has been the work of various teams who worked together very well from start to finish. This would never have been possible without the effort and teamwork by the client, consultants, subcontractors, and suppliers, and I would like to thank everyone on behalf of BESIX.

Nic De Roeck, General Manager at BESIX Nederland

Buildings

Deloitte University EMEA, an ambitious project, just steps away from Paris

On behalf of Nexity, France's leading real estate group, BESIX France and its partner Dalkia Smart Building are completing the construction of the new Deloitte University EMEA building, the audit and consulting firm's new training centre in Bailly-Romainvilliers, near Marne-la-Vallée. Located about thirty kilometres to the East of Paris and at a stone's throw from the famous Disneyland Paris theme park, this project is extremely ambitious in terms of energy performance and biodiversity and has been designed to obtain five top-class environmental certifications, among others the 'Biodiversity Excellent' and 'BREEAM Excellent' validation.



Project details

Deloitte University EMEA

Location

Bailly-Romainvilliers (Paris), France

Client

Nexity

Construction period

2020-2023

Contract type

Build

Contract value

73.8 million euros

Partner

Dalkia Smart Building

Architect

Dubuisson Architecture

This stunning complex is meant to become a training centre where Deloitte's staff, active in Europe, in Africa and in the Middle East, will come together to learn and network. Designed by Dubuisson Architecture, the buildings will cover an area of 22,000 m², surrounded by green spaces and by a man-made lake, the whole complex reaching a total surface of 13.5 hectares. The campus will include a big multifunctional auditorium, 43 flexible classrooms, 12 meeting rooms and multifunction boxes, a restaurant, a fitness, and 265 bedrooms. BESIX was selected to undertake this project owing to its operational and planning commitment and to a prior positive experience by a senior member of the Client's team with the Dexia tower project in Paris.

Full-service execution at a spectacular speed

BESIX was in charge of all construction works, which include earthworks, foundation works, the structural, and the finishing works, allowing BESIX to show its capability of providing clients with a full-service solution. The construction works started in 2020 and will be finished in 2023, after a challenging period of 37 months only, during which works progressed at a spectacular speed, in spite of the Covid-19 pandemic, the war in Ukraine and its impact on costs, and the scarce availability and long lead time of wooden material. The structural works began in the summer of 2020 and were completed at the end of 2021. BESIX made several technical proposals to meet the stringent architectural requirements, searched for alternatives and applied value engineering to meet the client's requirements, both from a technical as an environmental point of view. Substantial completion of roofing and façade works (windows and curtain walls), making the building air- and watertight, was achieved by the summer of 2022 and remaining wall cladding (wood, tile, zinc, sunshades) was completed by the end of 2022.



This project allows us to show our execution capacities, from the foundations to the finishing touches. BESIX has looked for solutions and alternatives to meet the high expectations from the client and to respect the stringent architectural requirements, both on the technical and the sustainability sides.

Guillaume Cornille, Project Manager

Low-carbon footprint and green spaces

The Deloitte University EMEA will be a reference building in terms of energy performance and biodiversity by meeting the most demanding certifications and norms thanks to cutting-edge solutions to fulfil Deloitte's expectations. The building was built using mostly low-emission green concrete and designed to obtain five first-class certifications: 'BREEAM Excellent', 'Energie+ Carbone-', 'Biodiversity Excellent', 'Well Building Institute Gold' and 'Cradle to Cradle' referencing. The building will be powered to more than 40 % by local green energy, provided by 1,100 m² of solar panels.

Additionally, BESIX has taken care of the landscaping of the site, the gardens and the development of a wooded park and an artificial lake. These will host a wide variety of local water and land plants. Once operational, this area should not require external water supply, nor drilling operations as it will be fed by rainwater.

The Deloitte University EMEA has won a MIPIM award in the category 'Best alternative project' out of 43 finalists. These awards celebrate the most useful, sustainable, and innovative projects in the real estate sector worldwide.

135,000 m²
of total plot area

800 m³
of laminated timber frame

500 tonnes
of steel structure

6,000 m²
of façade wood cladding

4,500 m²
of windows and curtain walls

18,000 m³
of concrete, of which a large part is green

4,000 trees
and shrubs for the park

Buildings

New Exhibition Centre in Abidjan to boost tourism and economy

Strategically located next to the Ivory Coast's Félix Houphouët Boigny International Airport, the new Exhibition Centre in Abidjan is set to host its first visitors in the second quarter of 2023. BESIX was commissioned by PFO Africa, the leading construction company in Ivory Coast, and started works in 2021. BESIX's participation includes the design, manufacture, transport, and installation of a three-dimensional 37-metre-high metal structure. BESIX has also carried out the concrete shell and the installation of the roof.



Project details

Abidjan Exhibition Centre

Location
Abidjan (Ivory Coast)

Client
PFO Africa Côte d'Ivoire SA

Architect
Pierre Fakhoury

Contract type
Design & Build

Contract value
37 million euros

Construction period
2021 - 2023



800 tonnes
of spaceframe (20,000 bars
and 6,000 nodes)

325 tonnes
of sheet metal

500 tonnes
of sound and thermal
insulation

217 tonnes
of waterproofing

7,000 m³
of concrete

48
water drains with a capacity
of 48 litres per second

A major project for the country

An ambitious structure designed by the architect Pierre Fakhoury, the convention centre will have a surface area of 12,000 m² and a seating capacity of 5,200 people, and up to 10,000 thanks to modular spaces. Close to the airport, the complex is intended to host first-class economic activities, trade fairs, cultural and sporting events and international conferences, easily accessible to foreign visitors, without disrupting Abidjan's traffic.

The construction is part of the Eco-Aérocité project developed by the Ivorian Ministry of Trade and Industry. In addition to the exhibition centre, the Eco-Aérocité will house offices, hotels, shops and housing, all located in the heart of a wooded environment that respects the local flora.

Amazing structure

This building features an impressive three-dimensional metal structure, which is the first spaceframe in West Africa. Building it was particularly delicate as it required to lift a 38-tonne dome element at an altitude of 37 metres, install it in its exact location and connect it to the rest of the structure already installed. This impressive operation took no less than ten hours. The impressive spaceframe was finished in June 2022 and is made of 6,000 nodes and 20,000 bars, each of them being different. It will be painted in gold and visible from the inside.



BESIX is immensely proud to participate in the construction of the Abidjan Exhibition Centre, a project which will further strengthen the central position of Ivory Coast in the heart of West Africa. This convention centre is an exceptional project, not only by its architectural design, but also by its engineering and construction challenge, which we are looking forward to completing and which will make a significant contribution to the influence of Ivory Coast.

Guillaume Bracq, Project Manager

A roof like a puzzle

The convention centre is covered by a spectacular roof, made of 8,000 unique-size panels. These aluminium composite tiles are approx. 2.5 m² each and are fixed with stainless steel brackets on an aluminium sub-structure. Every tile has a different size to accommodate the shape drawn by the architect, so building this roof was like making a huge puzzle. The first cladding panels were installed on the roof in September 2022.

Safety first

Covering the roof was an incredible exercise in working at height. Workers, professionally trained and certified for this type of work, were equipped with a safety harness and a life-line for abseiling. They also had to watch their step and walk on the joints between the tiles, so as to not damage the tiles, as the supporting understructure lies beneath these joints. Thanks to stringent safety measures no severe incidents were registered for the project.

Perfect acoustics

As the building will be hosting major conferences, the client required for it to have perfect acoustic insulation. In April 2022 BESIX started installing the acoustic complex on the roof, as well as the thermal equipment, to offer outstanding comfort to visitors.

Water drainage

In this part of the world, a roof like that must not fear snow loads, but the massive strain that can come from heavy tropical rainfall. Engineers designed the water drains so that they could each take 48 litres per second, enough to fill a bathtub in four seconds. The roof is equipped with forty-eight of them.

Strong partnership

This is BESIX's fourth project in the country at the initiative of PFO Africa, the leading construction company in Ivory Coast. BESIX is also building the F Tower in Abidjan, also designed by Pierre Fakhoury, which will be Africa's tallest tower, and the Abobo tunnel, as part of the Abobo Town Hall roundabout project to improve the accessibility of the Abidjan metropolitan area. And in 2021, BESIX delivered the largest drinking water treatment plant in La Mé, to serve the greater Abidjan area. The Exhibition Centre is set to be completed by April 2023.

Buildings

A fascinating museum in Abu Dhabi to celebrate Sheikh Zayed's legacy and love of nature

Saadiyat Island is poised to become the United Arab Emirates' cultural hub, and more widely of the Middle East. The ambition of Abu Dhabi leaves little doubt about this. The Louvre Abu Dhabi, inaugurated in 2017 with French President Emmanuel Macron, will soon be joined by two brand-new museums of exceptional architecture. The Guggenheim Abu Dhabi, the largest of the four Guggenheim museums, and the Zayed National Museum. These two stunning buildings have in common that they are both constructed by Six Construct, BESIX Group's subsidiary in the Middle East. Let us take a closer look at the Zayed National Museum.

The project is composed of 3 parts

- The Museum with 5 wings and 4 pods harbouring the galleries
- The Mound with the main atrium and no less than 2 km of walkways
- The Timeline Garden with 40,250 m² of landscaping with fountains and kiosks



Project details

Zayed National Museum

Location

Saadiyat Island, Abu Dhabi (UAE)

Client

Abu Dhabi Department of Culture and Tourism

Partner

Trojan General Contracting LLC

Contract type

Build

Construction period

2021 - 2023



The Zayed National Museum is being developed by the Abu Dhabi Tourism and Culture Authority and is a tribute to the country's founding father, Sheikh Zayed bin Sultan Al Nahyan. It will showcase the life and legacy of Sheikh Zayed and the history of the United Arab Emirates. The museum will feature interactive and immersive exhibits, multimedia presentations, and historical artifacts that illustrate the cultural, social, and political transformation of the country over the past several decades. The building will also serve as a cultural and educational hub, hosting events, workshops, and programmes that promote Emirati culture and heritage.

Unique design

Its breathtaking design is a reflection of the heritage and cultural identity of the United Arab Emirates, and incorporates elements of traditional Emirati architecture. Designed by Pritzker Prize-winning architect Lord Norman Foster, of Foster + Partners, the museum combines a highly efficient, contemporary form with elements of traditional Arabic design and hospitality to create a museum that is sustainable, welcoming and culturally of its place.

The narrow glass atriums evoke the wing tips of the falcon, a national symbol and emblem of Emirati heritage. The galleries are inspired by Sheikh Zayed bin Sultan Al Nahyan's values and beliefs in education, conservation, the environment, sustainability, heritage and culture, as well as his humanitarianism and strong faith. The galleries are nested within a mound, whose form is an abstraction of the topography of the Emirates. Above this rise the five lightweight steel structures, sculpted aerodynamically to act as solar thermal towers. Balancing the lightweight steel structures with a more monumental interior experience, the four pod-shaped galleries are suspended over a central lobby, which give the impression of being dug into the earth to exploit its thermal properties and brings together shops, cafes and informal venues for performances.

Norman Foster and BESIX

Norman Foster is amongst the 'starchitects' who have shaped architecture in recent decades. The National Zayed Museum is not the only work by Foster + Partners, built by BESIX Group. The Group has recently delivered the Icône office building in Luxembourg and is currently winding up the Lusail Plaza towers in Qatar. It is unlikely that any construction company has ever worked on three Norman Foster projects simultaneously. Except for BESIX, of course!

Highly complex works

The teams from Six Construct and their local partner Trojan General Contracting took over works from the previous contractor in March 2021.

"We at Six Construct and BESIX have been very honoured by the trust placed in us by the Abu Dhabi Department of Culture and Tourism. The Sheikh Zayed Museum will be a world-class museum and we are proud to take over the construction process from the previous situation. The Emirate of Abu Dhabi can count on our extensive engineering and construction expertise, combined with Trojan's knowledge, to successfully complete this extraordinary museum, which will further enhance the Emirates' global standing", explains David De Visscher, Project Director.

"Taking over this project was a challenge, adding to the already intrinsic complexity of such a unique building. But our design office experts and operational teams have excelled in conducting exceptional preparatory work, in methods and engineering, which have enabled us to best address the construction challenges", says Santanu Chattopadhyay, Technical Director.

The achievements of the operations team since then are indeed remarkable. Works have progressed immensely in 2022. At museum level, all five wings steel structure are rising up and the full steel arch of wing five (culminating at 123 metres) is in place. At the end of the year, close to 30 % of the cladding of the pods (which contain the galleries) had been realised, and the final concrete of the conical wall over the main lobby was finished. Last but not least, the first trees have been planted in the Timeline Garden!

More about Saadiyat Island

Saadiyat Island is a man-made island located off the coast of Abu Dhabi, UAE. It is one of the largest cultural, residential, and tourism projects in the world and is being developed as a premier destination for arts, culture, and tourism. The island is home to a number of major cultural institutions, including the Louvre Abu Dhabi, Zayed National Museum, and the Guggenheim Abu Dhabi Museum. The island is a symbol of the country's commitment to cultural development and exchange and is destined to play a major role in shaping the cultural landscape of the region for generations to come.

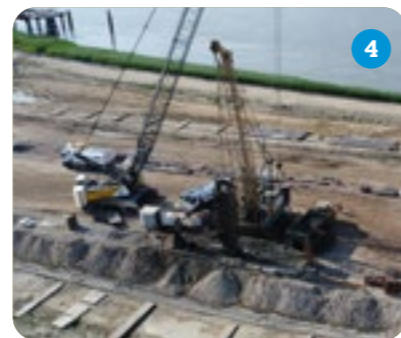
Towards a liveable Antwerp

BESIX Group leaves its mark on the Oosterweel junction works

Anyone going to Antwerp will notice: the works on the Oosterweel junction are in full swing. What started out as an idea to reorganise the Antwerp Ring Road with a viaduct, has transformed over the years from an infrastructure project to a mobility project, to a quality-of-life project. A referendum, countless debates, a project consultant, and unparalleled levels of citizen participation later have resulted in a widely supported Oosterweel project that will make Antwerp an accessible, healthy and above all liveable city. BESIX Group is enormously proud to help build this site of the future.

Three contracts, one goal

Of the five sub-projects that make up the Oosterweel junction, three are co-managed by BESIX Group. BESIX, united in the JV COTU with Stadsbader Contractors, DEME, and Jan De Nul, is building the Scheldt Tunnel, which will link the Left Bank to the Right Bank. Via the Oosterweel link, the Scheldt tunnel flows over into the Channel Tunnels and the sunken ring road, a sub-project being carried out by JV ROCO, consisting of BESIX, BESIX Infra, Cordeel, DEME Infra, Dredging International, Denys, Franki Construct, Jan De Nul, Van Laere, and Willemen Infra. Finally, BESIX Unitec also plays a significant role through a third contract for traffic and tunnel technical installations. To realise this, client Lantis relies on JV Ocotech, consisting of BESIX Unitec, Equans, Jacobs, and Deckx Elektromechanica. Most of their work is still taking place behind the scenes during this design phase.



2022 brought first challenges

2022 marked the real beginning of both the Scheldt Tunnel and the Channel Tunnels. The 1.8 km long Scheldt Tunnel is being built using the «immersed tunnel» method. This involves building 8 tunnel elements in Zeebrugge and then towing them afloat to Antwerp. There, they are immersed in a previously dredged trench in the Scheldt. This technique is one of the most ingenious construction methods in concrete and marine engineering. The Zeebrugge construction dock immediately presented the teams with their first challenge, when in early 2022 it turned out that the soil layer of the construction dock contained unexpected leaks which meant that the groundwater levels outside of the construction pit were lowering too quickly. To solve this as efficiently as possible, JV COTU called on Franki Foundations, which quickly installed a cement-bentonite wall no less than 28 meters deep down to the watertight soil layer, so that in the fall of 2022 the final drainage of the construction dock could begin. Thanks to the efficient teamwork between the client Lantis and the COTU teams, construction of the first two tunnel elements in the construction dock could begin in 2023. Back in Antwerp, the teams started to work on the entryway of the tunnel. However, the area on the Left Bank where the tunnel ramp is to be constructed was heavily contaminated with PFAS. To purify the groundwater that will be pumped up during the drainage works, a water purification plant with activated carbon was built next to the site. Thanks to this treatment, purified water can now be discharged into the Scheldt and the adjacent Blokkersdijk nature reserve. Interventions such as these make Oosterweel a real liveability project.

Channel tunnels and a transformed R1

Improved liveability and mobility are also at stake in the next sub-project BESIX is involved in: the Channel Tunnels and the sunken Ring Road. This double-deck tunnel goes partly under land but mostly under the Albert Canal to flow into the existing Ring Road, both to the north and east. That Ring will look completely different, however, which is precisely why this section is known as the biggest metamorphosis of the Oosterweel project. Groenendaallaan, where the Ring lies at ground level, will be fully deepened and covered. Eastward, the Merksem viaduct will disappear, and the Ring will once again go under the Albert Canal and then disappear to underground level at Schijnpoort until the junction with the E313. The covered parts of the Ring provide breathing room for parks and pedestrian or bicycle crossings.

An innovative contract type

It should come as no surprise that JV ROCO is working amid challenging circumstances. The subproject is complex, and the scope is also volatile, as ongoing changes are made to maximise the project's viability. To work as sustainably as possible in such a reality, an innovative collaboration model was needed. It was therefore decided to work with a NEC-4 contract, a form of contract brought over from the UK, based on cooperation, mutual trust, and risk sharing. Moreover, it offers the necessary flexibility. In 2022 the JV could start the preparatory works: the rerouting of the many utility lines and sewers, as well as the installation of silt walls in the sandy area. The next step is the construction of the bypass to divert traffic from the Merksem viaduct, so that its demolition can begin in 2024.

Together as one

BESIX Group's strength as a one-stop shop contractor comes into its own on huge projects such as the Oosterweel link, where different areas of expertise must apply innovative methods in ever-changing conditions. Both for the Scheldt tunnel as well as for the Channel tunnels and the sunken ring road, different entities join forces: BESIX as civil contractor and main partner in JV ROCO and JV COTU, Franki Foundations for the foundation works, the iron braiding plant supplies the reinforcing steel, Belasco delivers the asphalt and BESIX Infra handles the road works both in Antwerp and Zeebrugge, as well as supplies the concrete. Besides the tunnel technical installations as part of JV Ocotech, BESIX Unitec is also responsible for the automation of the Royers lock. All BESIX Group entities involved are working as one to deliver this site of the future and to improve Antwerp's liveability.

“
All BESIX Group entities involved are working as one to deliver this site of the future and to improve Antwerp's liveability.

1. Construction dock Zeebrugge (JV COTU) (Belgium)
2. Water treatment plant, Left Bank, Antwerp (JV COTU) (Belgium)
3. Construction of temporary jetty, Right Bank, Antwerp (JV COTU) (Belgium)
4. Excavation works for diaphragm walls, Right Bank, Antwerp (JV COTU) (Belgium)
5. Lifting of rebar for diaphragm walls, Right Bank, Antwerp (JV COTU) (Belgium)

Rail infrastructure project making positive impact

Located in the heart of Sydney, Sydney Metro Barangaroo Station will be one of the flagship destinations of the city's new metro line and is part of Australia's biggest public transport project. BESIX Watpac is responsible for the construction, fit-out and testing and commissioning of the new underground station including the platforms, lifts and escalators, the northern entrance and public domain works.

Project details

Sydney Metro Barangaroo Station

Location

Sydney, New South Wales (Australia)

Client

Sydney Metro

Contract type

Build Only

Contract value

260 million Australian dollars (approx. 157 million euros)



1. Delivery and installation of escalators at ground level of Sydney Metro Barangaroo Station (Australia)
2. Sydney Metro Barangaroo Station northern entrance looking southeast (Australia)
3. Sydney Metro Barangaroo Station northern entrance looking west (Australia)



BESIX Watpac commenced construction in October 2021 and have been fully mobilised on site since November 2021. This is a major infrastructure project with a large footprint at 350 metres long and 25 metres underground over six levels.

Collaboration with the client and key project stakeholders is central to the project's successful delivery. BESIX Watpac is leading the complex interface with the two main corridor contracting parties (Systems Connect Line-wide Works and MTR TSOM) to complete the fit-out and commissioning of the new station. Regular executive meetings, working group meetings, collaboration workshops, interface meetings and technical workshops are being implemented to ensure alignment between all parties.

Close working and stakeholder relationships was also one of the key factors, along with a high level of planning and delivery, that enabled the track area being handed over four weeks early in April 2022.



Our collaborative model guides our approach to working with a large number of contractors to ensure the best possible outcome for this landmark project in the heart of Sydney.

Bram Gruwez, BESIX Watpac General Manager, Operational Support

Social impact

Creating lasting legacies throughout project delivery and beyond is central to BESIX Watpac's shared mission with BESIX: to create sustainable solutions for a better world.

BESIX Watpac has implemented various initiatives on the Barangaroo Station project to increase diversity, create pathways for Indigenous businesses and workers, and to encourage women to consider a career in the construction industry.

Creating employment, training and business opportunities for Australia's First Nations People is a BESIX Watpac priority. Currently 98 Indigenous workers and 13 recognised Indigenous businesses are engaged on the Barangaroo Station project.

Engagement with Indigenous businesses kicked off with an Indigenous Business Forum early in the project. This was instrumental in connecting not only BESIX Watpac with these businesses, but it also opened pathways to opportunities with BESIX Watpac's subcontractors. Held in close cooperation with the New South Wales Indigenous Business and Employment Hub, YARPA, the forum was attended by senior BESIX Watpac and Sydney Metro staff.

Barangaroo Station has also been part of BESIX Watpac's greater commitment to building career pathways for women in construction. The team hosted a group of young female engineering students from the University of Sydney in August 2022. Attendees participated in a site tour as well as a panel discussion about women in construction. The panel was led by five BESIX Watpac women.

The project has also run a successful pre-employment programme to attract new people to the industry.

76 women

in technical roles (traditionally more male-dominated roles)

112

apprentices and trainees

372

people aged under 24

98

Indigenous workers

13

recognised Indigenous businesses

A16 De Groene Boog: the perfect sustainable and innovative fit in the environment

In northern Rotterdam, BESIX is participating in the A16 project as part of the 'De Groene Boog' consortium. It includes connecting the existing A16 and A13 by constructing a new motorway. This new 11-kilometre-long A16 will be the world's first energy-neutral motorway with a tunnel and will significantly improve the accessibility of Rotterdam. Sustainable, innovative and a perfect fit in the environment, that's what A16 is about.

Consortium De Groene Boog

To improve quality of life and access to the Rotterdam region, Rijkswaterstaat (RWS) decided to construct a new motorway, the A16, along the northeast periphery of Rotterdam. A joint venture composed of BESIX, Dura Vermeer, Van Oord, Croonwouter&dros and Mobilis named 'De Groene Boog' is responsible for designing, building and financing the project as well as managing a twenty-year maintenance period.

The project includes several infrastructural elements, such as a semi-sunken energy-neutral tunnel and a 400-metre-long viaduct across several important traffic axes. In November 2021, the construction of the viaduct was officially launched and by the end of 2022, the first part had all but reached the other side of the Terbregseplein. The tunnel also progressed well, with the last underwater concrete having been poured in September 2022. The entire A16 will be ready in 2025.

Sustainable fit

The project sets the bar high to be as sustainable as possible to deliver an energy-neutral A16. To achieve this, solar panels (20,000 m²) are installed to naturally generate all the energy needed for the roads and the tunnel. In addition, the latter includes energy-efficient LED lighting and smart solutions for the electricity, heating and lighting. Natural light is maximised by the use of grilles and fibre-glass panels. At the entrances, the lanes and walls are painted in a light colour to maximise reflection and residual heat will be stored in the ground and released when required.

Elsewhere on the project as well and already during construction, measures are being taken to keep the CO₂ emissions as low as possible. For example, Hydrotreated Vegetable Oil (HVO) fuel, which has 90 % fewer emissions than diesel, is used on a large scale on the project.

In November 2022, the teams successfully tested an electrical crawler crane which can operate unplugged for 10 hours. It is the first time in the world that heavy equipment like this operates on a jobsite with such a high level of autonomy. The successful test led BESIX to the decision to invest in this top-notch equipment, the Sennebogen 653E.



Project details

A16 De Groene Boog

Location

Rotterdam (The Netherlands)

Client

Rijkswaterstaat

Partners

Mobilis, Croonwouter&dros, Dura Vermeer, Van Oord

Contract type

Design, Build, Finance & Maintenance

Construction period

2019 - 2025

Maintenance period

20 years

The essential role of BESIX Engineering in the A16 project

Playing an essential role in the project is BESIX Group's in-house engineering department, BESIX Engineering. Their indispensable contribution to the project is thus worth a more detailed look in this activity report.

The Incremental Launching Method across the Terbregseplein



One of the engineering masterpieces is the viaduct across the Terbregseplein that passes over a railway line and motorway interchange. As closing these busy traffic lines was out of question, the consortium opted for the Incremental Launching Method, which includes gradually pulling the structure across the Terbregseplein, enabling traffic at all times.



A temporary production line was set up behind the northern abutment. There, each segment – about 30 metres long – is cast in relation to the previous one and gradually pulled over the Terbregseplein, until the whole structure reaches the southern abutment. This happens at a low pace, i.e. 4 m/h, and cannot be observed by the vehicles driving under the viaduct.



This imposing blue steel structure is the launching nose of the flyover. It was installed at the front of the first segment to balance out the weight equally and covers the distance between the different piers. In addition, it limits the internal stresses as the structure cantilevers over the existing infrastructure, ensuring a safe operation.

The energy-neutral Rottemeren tunnel



The project uses underwater concrete to minimise disturbance for the environment and to reduce the use of materials. Reinforcement and concreting of the floor are carried out underwater. Then, the water is pumped out to create a dry construction pit in which the rest is built. Less concrete is required, thus reducing CO₂ emissions.



A BIM model was created which integrates all elements and is used to automatically generate drawings. It was then turned into a VR model, TWIN-16, which includes the functional behaviour of the installations, enabling virtual testing of all system behaviours. This creates trust towards compliance of requirements in an early phase, which saves time and money for long-term maintenance.



Parametric design involves automating digital design processes through algorithms and computer programming. Thanks to this, the design of a single segment could be automatically reproduced along the entire length of the tunnel, which reduced the risk of errors and saved the engineers time to study alternative design solutions.

Rail Baltica: the Baltic States' rail connection to Europe

Rail Baltica is a significant infrastructure project that aims to develop a high-speed rail network linking the Baltic States of Estonia, Latvia and Lithuania with the European Union for both passenger and freight transportation purposes. This initiative is being implemented as a joint venture between the three countries and is receiving support from the European Union. Specifically, the Rail Baltica project entails the construction of an 870-kilometre-long railway line that will run from Tallinn in Estonia through Riga in Latvia to Kaunas in Lithuania. It will then connect with the existing European rail network. The new railway line will comprise both high-speed and conventional rail, allowing trains to travel at speeds of up to 240 km/h. The advantages of the Rail Baltica initiative include improved connectivity between the Baltic States and the rest of Europe, heightened trade and economic development, and reduced reliance on road transport. This project will generate thousands of employment opportunities during the construction stage and contribute to economic progress in the region.

Project details

Rail Baltica

Location

Riga (Latvia)

Client

Eiropas Dzelzceļa līnijas
(Executive agency of the
Latvian Ministry of Transport)

Partners

SIA RERE BŪVE,
Rizzani de Eccher

Contract type

Design & Build

Construction period

2019 - 2027



BESIX's scope

The BERERIX consortium, comprising of BESIX from Belgium, Rizzani de Eccher from Italy and SIA RERE BŪVE from Latvia, was granted the contract to design and construct the Rail Baltica Central Station project located in Riga, Latvia. The scope of the project includes the creation of the new Central Station building, a significant railway bridge spanning the Daugava River, railway embankments and track works.

The Central Station building features a 12,600 m² area, designed as a long-span steel structure with a 2,100 m² glazed roof. The project also involves the construction of passenger platforms, the refurbishment of the existing station building, pedestrian tunnels, the junction between the Timoteja and Elizabetes streets, and the associated demolition works.

Additionally, the consortium is tasked with installing a new railway bridge that spans 1,056 metres alongside the existing one over the Daugava River, connecting Maskavas to Jelgavas Street. The bridge has a slender design that complements the city's architectural style.

The consortium is also responsible for installing new rails and a new catenary system over a 2.5-kilometre stretch within the city of Riga. The installation of the new rails involves the reconstruction of the 1,520 millimetre gauge track and the construction of 1,435 millimetre gauge infrastructure to comply with the European rail network standard.

Community engagement

Along the way, the consortium has regularly involved the local community, international stakeholders and future users of the project. "All suggestions from the public and NGOs in the context of functionality and accessibility solutions have been discussed and considered and more than 80 % have been incorporated into our design. We can therefore proceed with the construction of the station with confidence and certainty. The new station will be modern, compliant with international requirements, safe, sustainable and, last but not least, successfully integrated into Riga's skyline", says Guntis Āboliņš- Āboliņš, Managing Director of BERERIX. "We insist on this important aspect of cooperation with society at large, because only by respecting the interests of future users and international professionals of high calibre can a good result be achieved", he adds.

Did you know? Relocation of a 57 years old oak tree

In the winter of 2022, a 50-tonnes, 15 metre-high oak tree planted in 1964 next to the bus station in central Riga was moved and replanted away from the construction site. An unusual operation, deemed necessary as the oak tree is the national symbol of Latvia.

Piling and concreting works in full swing

The consortium has made stable progress all along the year.

In July 2022, BERERIX began demolishing the Titāniks shopping centre and parking complex to create a new square on Prāgas Street. The site was cleared of debris in September 2022 and preparation works for the construction of the railway embankment retaining wall and landscaping began.

BERERIX started active surface works in the Central Station area in October 2022 and the new station building's location is becoming more visible. The team has completed several works since then, including the piles on the southern side of the track and the excavation of 45,000 m³ of railway embankment. In addition, 43 kilometres of new telecommunications and power cable networks and more than 100 kilometres of railway signalling cable network have been installed.

By the end of 2022, most piling works and all temporary retaining walls had been completed and deck construction of three different viaducts and bridges had started. The bridge over Lāčplēša street will be the first completed overpass in the entire Rail Baltica project.



This modern railway link connecting the Baltic States to Western Europe is of particular significance in current times. Events in the region are invigorating our determination to see it through.

Xavier Debruche, BESIX Project Director

Leaving a legacy for future generations

In the summer of 2022, all parties involved in the Rail Baltica project - the European Commission, representatives of all 3 Baltic States, railway operators and contractors - buried a time capsule in the foundation of the new station building grounds, to leave a message for future generations. "We inserted a copy of the day's newspaper and two pieces of artwork from the children's drawing competition we organised, visualising today's children's predictions of what the future Rail Baltica train in Riga would look like", tells Xavier Debruche.

Marine Works

A sustainable future for marine infrastructure

BESIX Middle East via MIC Construct is conducting important marine works in the world's largest LNG operations centre located in Ras Laffan Petrochemical Industrial City, about 80 kilometres from Doha, Qatar. As a company with extensive expertise in constructing near-shore facilities and port installations, MIC Construct has been selected to carry out the construction of four LNG loading berths and repairs on five dolphins at the Port of Ras Laffan.

Project details

Ras Laffan Construction Package

Location
Ras Laffan Petrochemical Industrial City (Qatar)

Client
Samsung C&T Engineering and Construction

Contract type
Engineering, Procurement & Construction (EPC)

Contract value
240 million US dollars

Construction period
2021 - 2024

Ras Laffan Rehabilitation Package

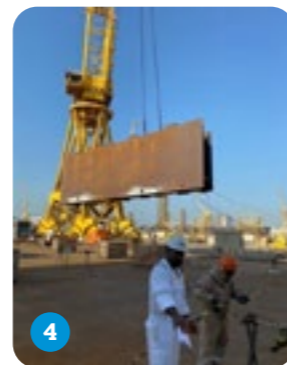
Location
Ras Laffan Petrochemical Industrial City (Qatar)

Client
Qatargas

Contract type
Engineering, Procurement & Construction (EPC)

Contract value
29.5 million US dollars

Construction period
2022 - 2024



1. 2. Ras Laffan Construction Package (Qatar)
3. 4. Ras Laffan Rehabilitation Package (Qatar)

The project will provide vital support for maritime and industrial activities in the region, strengthen the country's infrastructure and logistics capabilities and increase its liquefied gas (LNG) production capacity from 77 million tonnes per annum (Mtpa) to 110 Mtpa by 2025, with an expected total production of 1.4 million barrels of oil equivalent per day. The works will result in an expanded port capacity that can accommodate different LNG vessel types, from conventional carriers to Q-Max.

Construction and rehabilitation

Construction efforts, commissioned by Samsung C&T and which began in March 2021, have a contract value of over 240 million US dollars (approx. 217 million euros) and are slated for completion by the end of 2024. This project package includes three 187,000 m³ LNG storage tanks, four loading facilities and transport pipes. To facilitate construction, MIC Construct has established a precast factory in the Industrial City that utilises 450 m³ of concrete daily to produce the structure blocks.

In addition to the new structures, the port also necessitates heavy repairs to the existing concrete structures and marine furniture, above and below water. Rehabilitation work, commissioned by Qatargas and which began in April 2022, is scheduled to run for 23 months and valued at over 29 million US dollars (approx. 26 million euros). This project package includes expanding the port's foundation with underwater rock works and rehabilitating the concrete dolphins, which have suffered irreparable damage from delayed ettringite formation (DEF).

At MIC Construct, we're proud to contribute to the country's infrastructure and logistics capabilities. Our expertise in marine works, innovative solutions and practical project management has been vital in achieving our milestones safely and efficiently. We look forward to delivering a high-quality project that meets our client's expectations and supports Qatar's economic development.

Benoit Vallée, Project Manager
for the Construction Package

“

MIC Construct's proven track record in marine construction and previous successful project delivery for this client positions us well to undertake this challenging endeavour with confidence. Our team is dedicated to leveraging our expertise and experience to ensure that this project is completed to the highest standards of quality, safety and client satisfaction.

Joao Ferreira, Project Manager
for the Rehabilitation Package

Innovative and practical solutions

While various DEF mitigation techniques are available, steel jacket encapsulation and rubble stabilisation using stainless steel nets is the preferred method in this situation to guarantee the dolphins' structural stability until 2035. The steel jackets were constructed locally to reduce underwater labour, reduce transport time and increase efficiency. Following completion, the jackets will be launched into the water, towed approximately 7 kilometres across the port, ballasted, and shifted into their final position. MIC Construct was selected to undertake these projects owing to its vast expertise in marine construction and prior successful completion of a comparable undertaking for the same client a decade ago.

MIC Construct has also taken proactive steps to enhance the efficiency of the construction package by redesigning the block sizes. This modification has resulted in safer and more efficient transportation and installation, reducing the probability of delays and improving the project's progress.

Safety and quality assurance

MIC Construct has examined all concrete mix designs in detail to prevent delayed ettringites formation and improve manoeuvrability and strength during precast and near-shore installation. All documentation and works undergo thorough inspection by several entities to ensure safety and quality throughout the project.

The construction package has reached a significant milestone of crossing one million man-hours without any lost-time incident (LTI), a testament to the company's commitment to safety.

“

Industry & Logistics

Delivering the next generation of biopharmaceuticals

BESIX Watpac commenced construction works in 2022 following an extensive Early Contractor Involvement phase. Once complete, Project Banksia will deliver a state-of-the-art facility that uses innovative cell-based technology to produce influenza vaccines for use in both influenza pandemics and seasonal vaccination programmes. This centre represents a renewed commitment towards public health in the wake of the Covid-19 pandemic.



Project details

Banksia

Location

Tullamarine, Victoria (Australia)

Client

Seqirus Pty Ltd

Contract type

Construction Management

Contract value

365 million Australian dollars
(approx. 220 million euros)

CSL Seqirus is a wholly owned subsidiary of CSL Limited and is the world's second largest influenza vaccine provider. Project Banksia will see the delivery of a new world-class biotech manufacturing facility, built in Tullamarine, Australia.

The state-of-the-art facility will use innovative cell-based technology to produce influenza vaccines for use in both influenza pandemics and seasonal vaccination programmes – and will be the only cell-based influenza vaccine manufacturing facility in the Southern Hemisphere.

The facility will also manufacture CSL Seqirus's proprietary adjuvant MF59® - a substance added to some vaccines to improve immune response and to reduce the amount of antigen needed for each vaccine, enabling more doses to be manufactured more rapidly.

In addition, the facility will produce unique products important to Australia's public health needs – including antivenom for Australian snakes, spiders and marine creatures, and the world's only human vaccine for Q-Fever.

The centre will include PC2 and PC3 laboratories, black and clean utilities, warehousing, administration offices, an on-site cafeteria and quality control facilities.

The product manufactured at this facility will support domestic and export markets and create a supply chain worth estimated to be worth more than 300 million Australian dollars (approx. 180 million euros) annually.

Construction works underway

In 2020, BESIX Watpac was engaged by CSL Seqirus under an ECI partnership to identify and evaluate value engineering opportunities across multiple disciplines to bring the project in line with its allocated budget.

Construction is well underway on the facility, which is located within the Melbourne Airport Business Park for maximum security and freight logistics. This brings it under federal jurisdiction and requires an extra layer of design and stakeholder management with Melbourne Airport Authority.

The BESIX Watpac team is managing several project challenges. This includes the management of complex intersecting trade packages and a peak workforce of 1,500 people. As a 'Greenfields' site, surrounding infrastructure, roads and services need to be upgraded. The delivery team is also working to a zero clash construction model. This model coordinates complex client procured manufacturing process equipment with ground works and hazards to reduce risks and delays, as well ensuring overseas sourced equipment and specialty equipment arrive on time.

A collaborative contract model has led to an early decision to co-locate the more than one hundred BESIX Watpac staff and Seqirus teams in a dedicated project management office where client and builder work closely to achieve the project goals.

The project is currently tracking to achieve Green Star targets and has a 3 % Indigenous workforce target. The project has engaged with several social procurement providers and hosts an Indigenous Business Forum to connect First Nations business locally in partnership with Kinaway Indigenous Chamber of Commerce.



Working as a graduate on Project Banksia has seen a huge learning curve in my career development. I've been able to improve my planning, coordination and communication skills to overcome hurdles and really value the relationships I've built on site.

Rachel David, Site Engineer BESIX Watpac



If you wish to know more about this project, please scan this QR code.



Environment

Modernising a wastewater treatment plant with BIM in Luxembourg

In the Grand Duchy of Luxembourg, BESIX Environment and LuxTP are currently modernising the electromechanical installations of the Mamer wastewater treatment plant. By implementing modern technologies, the plant's capacity and efficiency are significantly improved. In addition, a biogas production unit is installed that will produce green electricity and heat from the plant's sewage sludge. With the plant remaining operational during the works, a precise phasing and good coordination are essential.



Project details

Mamer wastewater treatment plant

Location

Mamer (Grand Duchy of Luxembourg)

Client

SIDERO

Partner

Tralux

Consultant

Holinger

Contract type

Engineering & Build

Contract value

19.2 million euros

Construction period

2020 - 2025



Double capacity

The project consists of equipping the wastewater treatment plant of Mamer with modern technologies to increase its capacity and improve its efficiency, both in terms of energy and treatment. "Thanks to the works we are carrying out, the plant's capacity will be more than doubled. This means that it will be able to treat the wastewater of 50,000 population equivalents", explains Adrien Theunissen, Senior Manager of BESIX Environment. The contract, worth 19 million euros, was awarded in July 2020 by SIDERO, the inter-municipal water depollution company of Luxembourg that covers 26 municipalities and 80,000 inhabitants in the west of the country. Project delivery is expected for 2025.

Together, LuxTP and BESIX Environment are responsible for the project's subcontractor management, the integration of the detailed design, the engineering and procurement, as well as the coordination of the electrical subcontractors and suppliers. Mabilux, an entity of LuxTP, is also involved and is in charge of the installation works of the pipes and equipment, which they are currently executing with a remarkable level of quality and efficiency.

Precise phasing

Throughout the modernisation works, the plant remains operational and maintains its current performance, both in terms of quantity and quality of treated water. Because of this, a particularly precise phasing is required. Works, which started in August 2020, are carried out in a total of 9 phases over 5 years. In 2022, the joint venture successfully commissioned the first phase, which included the electrical substation works, to the client. In the meantime, installation works of the biological treatment equipment, the Sequencing Batch Reactor (SBR), commenced in July 2022 and are now ahead of schedule. The engineering and procurement activities as well are, despite the crisis, well ahead of schedule, which allows most of the

“
Our successes in implementing wastewater treatment technologies demonstrate that we can enter new markets effectively by combining expertise within the Group.

Adrien Theunissen, Senior Manager at BESIX Environment

longer-term contracts to be concluded. As a result, risks regarding future price escalation and the availability of materials are limited.

BIM model helps coordination

BESIX Environment and LuxTP are also responsible for coordinating the parties involved on-site, in particular the civil engineering works contractor, Tralux, and the design office, Holinger. To support the good coordination of the different parties throughout the various phases, the BESIX Environment and LuxTP teams have produced a BIM model of the plant. For this, the original 2D plans were transformed into a dynamic virtual 3D model before construction started, which allows for an optimal management of the station's modernisation, as well as its maintenance once the station is completed.

New biogas production unit

In addition to the modernisation works, the joint venture is installing a biogas production unit, which will allow the plant to produce green electricity and heat from sewage sludge, which is its own waste. This green electricity will then be used to meet part of the energy needs of the plant itself.

"BESIX is carrying out similar projects elsewhere in the world. In the Netherlands, BESIX Environment and BESIX NL have built two of the first energy-neutral wastewater treatment plants in the Benelux. Our colleagues at Six Construct have also built a biogas production unit for Ajman Sewerage, which was designed in coordination between the Brussels and Dubai teams and successfully completed in 2022", says Adrien. "This is a technology that we now master and that BESIX and its entities can offer worldwide: our success demonstrates that we can enter new markets effectively by combining expertise within the Group."

One-stop shop success story

It is not the first time that BESIX Environment and LuxTP join forces. Since 2018, they have worked together on several other wastewater treatment plants in Luxembourg. Over the years, the combination of the two companies has become a true one-stop shop success story. LuxTP and Mabilux bring their in-depth knowledge of the Luxembourg market and their strong local roots, whereas BESIX Environment provides the necessary technological expertise in the environmental field. Together, they have established themselves among the main players in the sector, with contracts of growing importance.

In addition to the Mamer project, the companies are close to complete the site execution of five other projects in the Grand Duchy of Luxembourg, namely in Consdorf, Wiltz, Nachtsmanderscheid, Bous, and Putscheid-Weiler-Stolzemburg.

Environment

A pioneering green energy solution for Ajman

BESIX Middle East is proud to announce that in the spring of 2022, its flagship Sludge-to-Energy project in the Emirate of Ajman has successfully passed performance and reliability tests. Designed and built by BESIX Middle East for Ajman Sewerage (Private) Company Limited (ASPCL), the facility transforms what was previously considered a waste stream – sewage sludge – into a valuable source of sustainable energy.



Project details

Ajman Sludge-to-Energy

Location

Emirate of Ajman (UAE)

Client

ASPCL

Contract type

Design & Build

Construction period

2019 - 2022



The facility, the first of its kind in the UAE, allows for the on-site production of green energy covering up to 72 % of the electricity consumption of the ASPCL wastewater treatment plant in Al Jurf. The facility comprises two power generators with a combined capacity of 2.4 MW, which is equivalent to the energy consumption of 2,000 households in the United Arab Emirates.

A circular, ecological and cost-saving solution

Sewage sludge is a residual organic by-product of biological wastewater treatment, which sewage treatment plants have historically disposed of in conventional landfills. Instead, the Ajman Sludge-to-Energy facility digests the sludge to produce biogas, which is then used to generate heat and electricity that is used in the wastewater treatment plant itself.

This solution has environmental advantages. In addition to reducing the wastewater treatment plant's reliance on the public power grid and providing a circular solution, the digestion process allows for a significant reduction of the sludge quantities, whilst avoiding the uncontrolled fermentation of unstabilised sludge which releases large quantities of greenhouse gases, generates odorous nuisance and poses a potential risk to public health.

In addition, the facility paves the way for further environmental upgrades such as the development of other by-products to recycle the sewage sludge into, such as organic fertilisers and alternative fuel for cement plants.



By utilising sludge to generate energy, ASPCL can reduce its energy costs and its carbon footprint, while also helping to reduce the volume of sludge that needs to be disposed of. This is an example of a sustainable and environmentally friendly approach to wastewater treatment.

Elias Sfeir, General Manager ASPCL

Design, construction, commissioning

The contract for designing and building the Sludge-to-Energy facility was awarded to BESIX Group by ASPCL in 2019 and construction continued throughout the Covid-19 period. This required a high level of creativity and flexibility from the project team and seamless cooperation between all stakeholders, including the local government electricity provider EWA (Etihad Water & Electricity).

This is the third Sludge-to-Energy project that BESIX has successfully commissioned in just five years. In the Netherlands, BESIX has successfully implemented similar biogas production and energy recovery schemes, including 100 % energy-neutral facilities.

Compliant with UAE strategy and European standards

The Ajman Sludge-to-Energy facility is fully aligned with the UAE Federal Government's strategic environmental and energy objectives, in particular the UAE Green Agenda 2015-2030 and the UAE Net Zero programme, a strategic initiative led by the Ministry of Climate Change and Environment to drastically reduce the country's dependence on fossil fuels through the development of green energies.



Through the unwavering dedication and resilience of our team, we have successfully completed a project despite the challenges posed by Covid-19. This accomplishment has enabled ASPCL to not only generate clean energy but also effectively manage their waste, contributing to sustainable development. It's an honour to have played a role in this achievement, and I'm proud of our team's outstanding performance.

Khaled Abdallah, Project Manager
BESIX Middle East (EPC)



Our O&M teams were involved in all stages of the project, from design to testing and commissioning, and received hands-on training provided by the construction team to ensure a smooth transition between construction and operations. The plant is easy to operate and maintain, and the use of predictive maintenance technologies ensures reliability and availability of the plant.

Mohammed Issa, Plant Operations & Maintenance Manager BESIX Middle East

Sludge-to-Energy in a nutshell

Sludge-to-energy refers to the process of generating energy from the organic material that is left over after wastewater treatment, known as sludge. The sludge is composed of bacteria, organic matter and other solids that have been removed from the wastewater during the treatment process.

The basic process to produce energy from sludge typically involves several steps. First, the sludge is stabilised through anaerobic digestion to break down the organic matter and reduce its volume. During the stabilisation process, methane gas is produced as a by-product. This gas, which is often referred to as biogas, is then captured and treated to remove impurities such as sulphur compounds. In the ASPCL plant, the biogas is consequently used to power two state-of-the-art Combined Heat Power Generators which in turn allow to cover up to 50 % of the plant's energy needs.

More about Ajman Sewerage

Since 2006, Ajman Sewerage (ASPCL) has played a central role in managing the wastewater of the Emirate of Ajman. The company brings together BESIX, which owns 40 %, the Government of Ajman (40 %) and Veolia (20 %). ASPCL, the first PPP in the Middle East in this field, built Ajman's entire wastewater collection network and treatment facilities, which were previously non-existent. ASPCL operates this infrastructure and continues to expand them by integrating new technologies. The plant has capacity to treat 148,000 m³ of wastewater a day and services a population of 550,000 people. As operator, BESIX also contributes to collection services, customer support and billing. This ensures continuous improvement of the plant to achieve optimal performance, thus reducing operating expenses. The plant operates 24/7 with an advanced management system, including preventive maintenance.

Concessions & Assets

A pioneering environmental PPP in the Middle East

In Dubai, BESIX and Hitachi Zosen Inova (HZI) are currently realising one of the world’s largest and technically most advanced waste-to-energy facilities. With a capacity of producing up to 200 MW of electricity from municipal waste, the project plays a key role in both Dubai’s 2050 Clean Energy Strategy and its goal of zero waste to landfill by 2030. In addition to the construction, BESIX and HZI participated in the conceptualisation, design and financing of the plant and will co-manage its operations and maintenance for 35 years when operational. With this PPP, BESIX successfully demonstrates its ability to support public authorities from A to Z in the realisation of their strategic ambitions.



A growing portfolio of PPPs
 The Waste-to-Energy project adds to BESIX’s rapidly growing portfolio of environmental PPPs in the Middle East, including Ajman Sewerage and SAFI in Ajman and the ISTP2 venture in Abu Dhabi. The company has also started tendering for social infrastructure PPP projects in the region (e.g. schools, hospitals...). In this area, it won the contract for Zayed City Schools in May 2022.

Involvement from A to Z

The plant is designed to process 1.9 million tonnes of municipal waste per year, producing approximately 200 MW of electricity through incineration. This electricity will be fed into the national grid. The project started in 2017 as a tender from Dubai Municipality for the design and construction of a waste-to-energy plant. “As BESIX and HZI accompanied Dubai Municipality in the conceptualisation of the whole project, we could tailor it to the exact needs of our client. This has been an extremely effective collaborative effort, which has ultimately led to this major concession contract”, explains Benoit Vadani, Vice President Business Development for BESIX Middle East.

BESIX and HZI have not only conceptualised and designed the installation. They are currently building it as well and are in charge of a 35-years operations and maintenance period, combining their proven track record in managing state-of-the-art industrial facilities.

A positive impact on construction

BESIX started construction in July 2020 and has continued it at a steady pace ever since. At the end of 2022, all concrete works were substantially completed and the support buildings had entered the de-snagging and handing-over stage. In addition, the water treatment plant is fully operational, producing the demineralised and soft water required for the water steam cycle of the plant’s heat recovery. On the façade as well, great progress was made with the building’s final shape and outlook slowly being revealed.

The main challenge for 2023 is the execution of the remaining MEP works, although various areas have been powered-on permanently already. Partial deliveries are progressively taking place in the coming two years and the plant is expected to be fully operational in 2024.

Sustainability and first-class technologies

The Waste-to-Energy project plays a key role in both Dubai’s 2050 Clean Energy Strategy and its goal of zero waste to landfill by 2030. Over its lifetime, the project will result in a total net reduction in emissions of 64.9 million tonnes of CO₂ equivalent compared to a scenario of continued landfill disposal and equivalent electricity generation from fossil fuel sources. In total, the project will initially divert 50 % of Dubai’s municipal waste from landfill to generate electricity.

In addition, the facility implements several advanced and innovative technologies. For example, the plant is a zero-liquid project, which means that it will not produce industrial water effluent. Its water supply will come from a nearby wastewater treatment plant, which avoids the use of fresh water, while discharged water will be recycled within the plant itself. Metals will also be recovered from the incineration process, and residues from the flue gas treatment process will be recovered and safely disposed of.

“Being involved at all stages of the project, in its design, but also in the development of how it will be operated in the long term, has a direct impact on the efficiency of construction. We are now benefiting from this full involvement and the resulting overall coherence, which has also enabled us to prepare the work in particular depth.”

Peter Lembrechts,
 General Manager BESIX Middle East

4 years
 EPC

35 years
 O&M contract duration

1.9 million tonnes
 of municipal waste processed/year

200 MW
 electricity generation

64.9 million tonnes
 net reduction in CO₂ equivalent landfill emissions

50 %
 of reduction of waste disposal in landfills

Concessions & Assets

BESIX contributes to new state-of-the-art school campuses as part of Abu Dhabi's PPP programme

In May 2022, the Abu Dhabi Investment Office (ADIO), in collaboration with the Abu Dhabi Department of Education and Knowledge (ADEK), has awarded the contract for the Zayed City Schools public-private partnership (PPP) project to a consortium led by BESIX and Plenary Group, and subsequently achieved the commercial close. In July, the parties together with the lending banks reached the financial close. This project is the UAE's first public-private partnership in the field of school infrastructure, a pioneering project confirming BESIX's trusted status as industrial equity provider in the Middle East.

The Zayed City Schools PPP project covers the design, procurement, construction, financing, commissioning and 20-year operations, and maintenance of three new school campuses with an aggregate capacity of 5,360 students in Abu Dhabi's Zayed City. As a pathfinder project developed from origination to award under Abu Dhabi's new PPP regulatory framework, it will pave the way for increased private sector participation in delivering public infrastructure.

Best of both worlds

This unique, integrated PPP solution will be the first-of-its-kind vertically integrated PPP education solution for the MENA region and will maximise operational efficiencies by bringing together high-calibre education and building service providers under a single PPP project framework.

Mohamed Al Dhaheri, Acting Executive Director Business Enterprise, ADIO, said: "ADIO is proud to have delivered this procurement on time which has taken 17 months from the commencement of the business case to the commercial close. This is a record for the MENA region and, together with the quality of the tender documentation, has been considered a standout success. We want to be considered the gold-standard and to offer a PPP programme that local and international investors can participate in, safe in the knowledge that we will offer a high-quality and efficient procurement process that is central to Abu Dhabi's long-term vision for the future."

The campuses, catering to students from kindergarten to grade 12, will provide students access to high-quality learning environments and modern facilities, enhancing the attractiveness of Zayed City and Abu Dhabi. "We focus our efforts on enhancing education sector infrastructure to cater for students and parents throughout Abu Dhabi regions", said Dr Tareq Al Ameri, Executive Director Licensing Sector at ADEK. "With its world-class standards, the three new schools will empower more students to access quality education opportunities, to learn and thrive in a healthy and safe environment."

The education service at each campus will be provided separately by a Chartered School Operator.

Strong partners

For this project, BESIX in the Middle East has partnered with Australian Plenary Group, one of the world's leading investors, developers and asset managers of public-private partnership infrastructure projects, who has a solid track record of delivering projects across the world. Peter Lembrechts, General Manager, BESIX Middle East: "We are extremely proud to partner with the Abu Dhabi Government to develop and implement this pathfinder PPP project, providing our expertise in terms of financing, engineering, construction, and long-term maintenance. In Plenary Group we have found a world-class partner to develop and deliver this project. In this project, BESIX demonstrates how technical and operational know-how can be combined with specific development skills. As industrial equity provider, BESIX is ready to contribute to the delivery of an impressive programme of infrastructure development for social and economic growth in the GCC."

World-class school campuses

The campus buildings have a dual priority of academic excellence and high environmental performance and will feature state-of-the-art facilities and equipment, allowing for world-class, high-end education. The buildings have been designed and will be built with high sustainability objectives, complying with the Estidama Pearl 2. As low-energy buildings, they will focus on usage and consumptions efficiency. The partners will give priority to the use of locally produced building materials.

Construction on site has started during the third quarter of 2022 and will be completed in August 2024, with schools opening in September 2024.



Project details

Zayed City Schools

Location

Zayed City, Abu Dhabi (UAE)

Client

Abu Dhabi Investment Office (ADIO), in collaboration with the Abu Dhabi Department of Education and Knowledge (ADEK)

Contract type

DBFMO

Total project value (funding needs)

670 million Emirati dirhams (approx. 165 million euros)

Equity percentage

20 %

Construction period

2022 - 2024

Operations & Maintenance period

20 years



The buildings will be low-energy buildings with a focus on usage and consumptions efficiency and the partners will give priority to the use of locally produced building materials.

Real Estate

Sluishuis, an iconic, sustainable, and stylish landmark where reality surpasses fiction

In 2022, BESIX RED's iconic project Sluishuis was delivered. Sluishuis is a 39,500 m² zero-energy residential building located on the IJ-lake, known as Amsterdam's waterfront. Commissioned by the Municipality of Amsterdam as part of a tender process, Sluishuis has been co-developed by BESIX RED and Dutch partner VORM and designed by the Danish Architects Bjarke Ingels Group and Dutch BARCODE Architects. The complex construction was entrusted to BESIX Nederland and VORM Bouw. A one-of-a-kind living experience.

Project details

Sluishuis

Category

New development

Project type

Residential

Location

Amsterdam (The Netherlands)

Total area

39,500 m² residential + 1,000 m² of catering facilities + 112 m² of retail space

Client

Municipality of Amsterdam

Investors

Bouwinvest and private owners

Developers

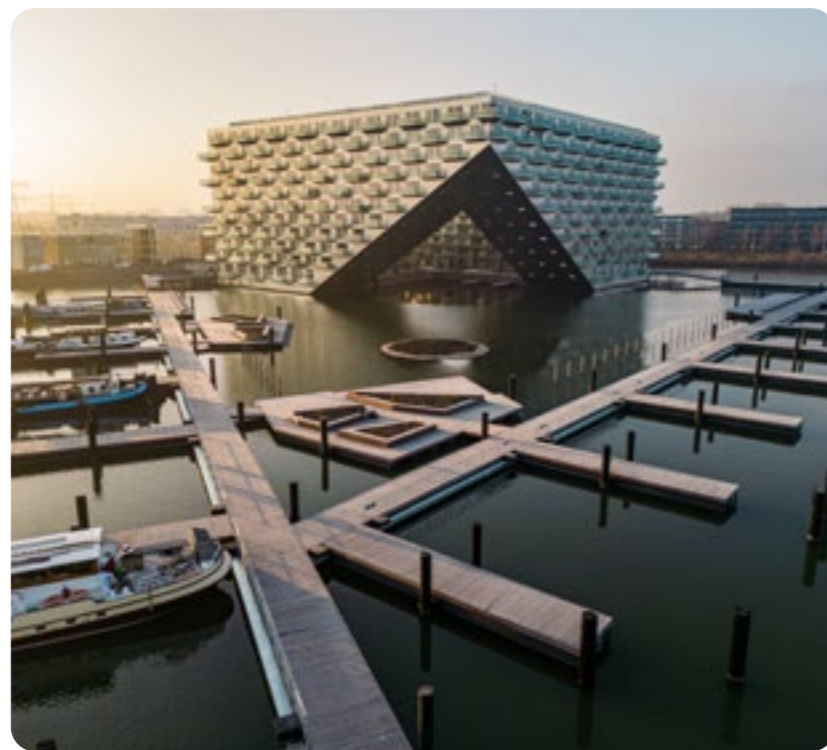
BESIX RED and VORM

Contractors

BESIX Nederland and VORM Bouw

Architects

Bjarke Ingels Group and BARCODE Architects



Sluishuis offers Amsterdam a new sustainable living experience, completely built on water. Sluishuis comprises 442 energy-neutral owner-occupied and rental apartments, 34 houseboat lots, 54 berths for pleasure crafts, and 1,112 m² of retail and catering facilities. The residential scheme is complemented by a fully integrated water landscape programme including a 400-metre long promenade and an archipelago of four islands for recreation, water sports, fauna and flora, as well as power generation. The project is publicly accessible: residents and visitors can benefit from the inner harbour, the scenic walk on the rooftop of the building and the islands.

Leading architecture

The remarkable architecture of Sluishuis is designed by Bjarke Ingels Group and Barcode Architects. From all angles, the building seems to incline towards a different side, which translates in exceptional residential units. The architectural design of the development includes one increased angle creating a large gateway – as if opening sluice gates – from the IJ-lake towards the inner harbour of the project. On the side of the embankment, a wide, publicly accessible walkway between the greenery of the apartment terraces gradually rises towards the rooftop.

Multidisciplinary expertise and Group synergy

With BESIX RED as the developer and BESIX Nederland as the contractor of the complex, Sluishuis is a prime example of BESIX Group's synergy and multidisciplinary expertise. The result of their shared vision is an iconic development in which sustainability and the well-being of both residents and visitors are rooted.

The building's iconic architecture also came with technical challenges. Sluishuis is built in the water on piles down to 60-metre depth, while its cantilever construction spans 50 metre in length on each side. Its two-storey underground car park is located below water level. "The synergy within BESIX Group and the multidisciplinary expertise of the teams involved, allowed us to turn our vision into reality. Leveraging on our extensive in-house knowhow from our different entities - for instance, the experience of our engineering and maritime departments - enabled us to propose the Municipality of Amsterdam, residents as well as visitors an architecturally and technically challenging strong concept", explains Thomas Veys, Country Director Netherlands, BESIX RED.



Sustainability at its best

Sluishuis is a prime example in terms of sustainability. A zero-energy building scoring -0,02 in terms of Energy Performance, it generates more energy than it consumes. The building's heating requirements are minimised by combining high-performance insulation techniques, triple glazing, and heat recovery on the ventilation systems and wastewater. Energy consumption is further reduced by a heat and cold storage (CHS) system in the ground for heat and cooling in combination with a connection to the district heating system for peak times. The remaining energy consumption for heating, heat pumps, ventilation, and LED lighting is fully compensated by approximately 2,200 m² of solar panels, to which an entire floating island adjacent to the project is dedicated. The development team of Sluishuis paid particular attention to green space and water collection.

On top of the building's environmental features, Sluishuis aims to stimulate and strengthen social connections and encounters.

Success among investors and residents

"In addition to the ambitious architecture conceived by BIG and Barcode Architects, BESIX RED was convinced by the ESG commitment of the project, entirely in line with our values. This formula proved to be successful and attracted the investor, Bouwinvest, as well as individual buyers looking for a unique living experience and a solid ESG investment", adds Gabriel Uzgen, CEO of BESIX Real Estate Development. Bouwinvest, specialised in managing real estate portfolios for institutional investors, bought a major part of the project, intending to rent the apartments.

Today, the project is almost completely sold out. Awarded 'Residential Building of the Year' by architectenweb and 'Best Architecture Multiple Residence' at the European Property Awards 2022, Sluishuis has also won a MIPIM Award in the category 'Best Residential Project'. These awards celebrate the most useful, sustainable, and innovative projects in the real estate sector worldwide.

442
residential units

234
carpark spaces

34
houseboat lots

54
berths for pleasure crafts

Real Estate

A sustainable working and living experience at the gateway to Brussels

“Creativity takes courage”, Henri Matisse used to say. That is also true for real estate development. Matisse is BESIX RED’s newest large-scale mixed-use development in Brussels. With well-being, sustainability, and connectivity at its heart, the project makes a bold statement and offers a comprehensive experience where working, living, and relaxing are combined.

Visibility and connectivity

The city begins at Matisse. Standing like an entry door to Brussels, Matisse is a 41,500 m² sustainable and high-performance mixed-use development including high-quality offices and housing units which will create a true urban and lively environment. The Matisse project benefits from a prime location next to a new transportation hub. Strategically located close to NATO Headquarters, it is at the crossroads of main axes to Brussels Airport. The site is set to become the epicentre of a new exemplary urban and multimodal hub: it is already directly connected in 10 minutes to both the EU District and the airport through the train station Bordet - literally at the doorstep of the building -, which will also soon welcome the terminus of a new metro line as well as a tramway line to the airport. “Mixed-use regeneration projects close to transportation hubs fit perfectly into our ESG strategy because living, working, and shopping under one roof enable short distance, promote a sense of community, while encouraging the use of soft mobility modes. That’s the philosophy behind Matisse”, says Raphaël Legendre, Country Director Belgium at BESIX RED.

A new landmark to work and live

Matisse features contemporary offices, co-housing units, apartments as well as retail space and is integrated within a fully developed landscape. Designed by the award-winning Neutelings & Riedijk Architects, the project combines high-quality architecture with stringent environmental standards, functional, modern interiors, and plenty of green outdoor spaces. Out of the two buildings, the first one of 20,000 m² spreads over 14 floors and consists of offices, two rooftop terraces, a restaurant, a large bicycle parking, a car park, and retail space. The second one features 21,500 m² of apartments, co-living spaces, and areas for public equipment. The co-living facilities, alongside the offices, will bring a dynamic and warm community life to Matisse and its neighbourhood all around the clock. The design of the offices will place the well-being and health of its users at the centre of the experience, while also ensuring that the workspace is adjustable to future needs and advancements.

The bright, spacious offices will offer an open, elegant setting filled with light, greenery and a central atrium with a glass roof at the heart of the building. Its scheme features a flexible layout, allowing for single occupancy options as well as for multiple tenants. The open-plan workspaces and flexible offices are places where creativity and collaboration are encouraged, whereas comfortable lounges and informal meeting areas as well as outdoor spaces contribute to the overall well-being of employees. With a verdant rooftop terrace on the fourth floor, space for an urban garden on the fifth floor and great diversity of trees, plants and more greenery, Matisse prioritises green spaces throughout. The building has a green roof terrace that offers views on the city as well as a restaurant with promenade terrace, a cafeteria, a fitness with showers and changing facilities.

Bringing together circularity, sustainability, and aesthetics

Designed for maximal visual effect, but minimal environmental impact, the Matisse offices include a partial renovation of an existing building dating from the 1970s. Structural columns and beams will be retained, whereas a volume will be added. This will create a visual transformation of the setting. Five heat pumps, 1,100 m² of solar panels, and a rainwater recovery and infiltration system will participate in the sustainability of the project. Matisse has been designed to obtain a BREEAM Outstanding certification, a WELL Platinum reference and follows a fossil-free approach.

With a permit expected in 2023, Matisse is set to be delivered by the end of 2025.

Project details

Matisse

Category

Partial renovation and new development

Project type

Mixed-use

Location

Evre, Brussels (Belgium)

Total area

20,000 m² of offices and 21,500 m² of residential units

Developers

BESIX RED

Architects

Neutelings Riedijk Architects & Axent

Expected certifications

BREEAM Outstanding & WELL Platinum



BESIX RED’s mission has always been to enhance the well-being and comfort of end-users by developing sustainable and innovative spaces. Matisse testifies to our commitment to create better workplaces that not only comply with the highest ESG standards, but provide in the first place a healthy and productive environment for people and businesses to thrive in.

Gabriel Uzgen, CEO BESIX RED

PURE, an urban regeneration project in Lille Métropole

With the sustainable office project PURE in Lille, BESIX RED consolidates its position on the French real estate market. After the achievement of 'Perspective' in 2012, the real estate developer further pursues its geographical diversification in strategic and dynamic European cities. Designed by the renowned architect Coldefy and the local landscape architect LAND, PURE will feature 8,000 m² of modern offices embracing a concept rooted in the well-being of users.

Project details

PURE

Category

New development

Project type

Offices

Location

La Madeleine, Lille
Metropolitan Area (France)

Total area

8,000 m² and 1,000 m² garden

Developer

BESIX RED

Architect

Coldefy

Landscape architect

LAND

Expected certifications

BREEAM Excellent and WELL
reference



An attractive localisation with excellent connectivity

Characterised by a strong demand, particularly in large cities such as Paris and Lille, the French real estate market offers many opportunities. With a growing population and consequently a high and ever-increasing demand for sustainable and qualitative buildings, the real estate market of Lille, capital of the Hauts-de-France region in Northern France, and its metropolis offer a positive economic outlook. Lille ranked first as France's most attractive city for businesses, in the 2022 ranking from the business magazine Challenges. The city also reached the highest score for its attractiveness to families and commitment to sustainability.

"Lille's strong and diversified economy offers a stable foundation for the pursuit of our geographical diversification", explains Stéphan Leturgez, Country Director France at BESIX RED. "The fact that Lille is well-connected with other major cities in Europe and offers easy accessibility, makes it attractive for both businesses and residents. For several years, the city has been undergoing significant urban renewal, to which we want to contribute with PURE", he continues.

PURE is located on Avenue de la République in La Madeleine, at the entrance of Lille. This area is known as the 'Grands Boulevards', and famous for its accessibility, its strong functional mix, and its immediate proximity to the main European cities. PURE benefits from excellent connectivity: it is a ten-minute walk from Eurallille, as well as from Lille Europe International station and has the 'Romarin' tram stop and public bicycle hire at its doorstep.

The fact that Lille is well-connected with other major cities in Europe and offers easy accessibility, makes it attractive for both businesses and residents. For several years, the city has been undergoing significant urban renewal, to which we want to contribute with PURE.

Stéphan Leturgez,
Country Director France at BESIX RED

A pure architecture and well-thought-out landscaping

Designed by Coldefy architects, PURE features a sleek and refined architecture, with a strong landscaping component. The 8,000 m² offices are filled with light and greenery and foster a spirit of collaboration and co-creation, while the building's layout addresses the need for flexible and healthy working environments.

The building is arranged as two wings enclosing the central atrium, which is wrapped in a glass façade. The light-filled atrium is the heart of the building and a place where people can relax and interact. Each level features meeting cubes with views on the atrium of the building. As an extension to the workplace, several terraces will provide tenants with a large open-air space filled with plants and outdoor seating.

PURE offices are modular and can accommodate one single or multiple companies. Alongside classic offices, PURE features flex offices providing versatility and adaptability to the changing needs of businesses. The project bathes in natural light and benefits from high-quality finishes, which ensures a comfortable and aesthetically pleasant working environment. Finally, PURE is surrounded by lush greenery, including a 1,000 m² garden in its internal courtyard. The landscaping aspect of the project is entrusted to LAND.

Sustainability and well-being at core

Designed with well-being at heart, PURE is conceived as a fossil-free and smart building. It is designed to achieve BREEAM 'Excellent' and WELL-certifications. The offices are equipped with energy-efficient technologies such as solar panels and heat pumps, resulting in lower energy consumption compared to average.

Gabriel Uzgen, CEO BESIX RED says: "BESIX RED places sustainable development and performance at the centre of its strategy and values. Since 2021, BREEAM Excellent has been the minimum score we consider for all our office developments. Mobility and transport connections are an integral part of the ESG due diligence for new acquisitions. Central and well-connected locations are core criteria of our selected development opportunities. Users' well-being is also in our roots. WELL-labelling of office operations starts in the design phase where we target at least a Gold score. PURE has it all."

With the building permit obtained in September 2022, PURE's delivery is expected for Q3 2025.

06

Business Review

Contracting	106
Concessions & Assets	112
Real Estate	116
Diversification	120



Contracting

Europe

In **Belgium**, BESIX continued working on several projects which will be delivered in 2023, such as the Kennedy rail tunnel, the Schoten quay wall, the Lanaye lock and the new offices of Domo Investment Group in Zwijnaarde. The Oosterweel project, Belgium's largest infrastructural and urban development project, has likewise made considerable progress. Additionally, the renewal of the Henneau bridge on the Brussels ring road reached an important milestone with the installation of the first of two new 800-tonne steel bridges.

For BESIX, 2022 oversaw the (near) completion of numerous impressive projects, such as the new Antwerp Police office, a major rail project in Diepenbeek, the Waterloo train station and a third railway project in Visé, linking Liège to Maastricht. The renovation of Belgium's longest road tunnel, the 2,600-metre-long Annie Cordy tunnel, was also completed. In addition, mobility projects included a new bicycle parking facility in Leuven, adding 4,000 bicycle parking spaces, as well as a bicycle highway connecting Brussels to Leuven. Finally, BESIX completed three office and co-living buildings in Liège's Paradis Express eco-district for Befimmo.

New contracts acquired in 2022 included the above-mentioned new headquarters of Domo Investment Group, which will transform a chemical polymer site into a near energy-neutral business centre. Moreover, the Brussels-based biopharmaceutical company UCB awarded BESIX the contract to build new facilities in Braine-l'Alleud. The water treatment company Aquafin awarded the BESIX-Indaver consortium the contract for the design, construction, financing, and maintenance of a sewage sludge processing installation to be built in the port of Ghent. Lastly, a contract for the construction of a water treatment station in Wareme was signed.

The Belgian market is expected to grow in 2023, with BESIX preparing for large projects such as the Ghent ring road and a sustainable land-based salmon farm in Ostend. New large-scale tenders are expected to come onto the market, such as the national railway company's new headquarters and the development of the Braine-l'Alleud and Braine Alliance railway stations. BESIX is also awaiting the results of major tenders for several office and apartment buildings, as well as for the new main fire station in Brussels and the construction of a new football stadium.

In the **Grand Duchy of Luxembourg**, BESIX and affiliate LuxTP completed the breathtaking ICÔNE office building in Belval, an 18,000 m² smart office building by Foster + Partners, in early 2023. BESIX also participated in the tender for the construction of the brand-new headquarters for the Luxembourg Red Cross.

In **France**, several projects have progressed in 2022. The Deloitte University EMEA campus, situated west of Paris, is approaching completion. The Tour Triangle project has progressed steadily with the execution of all foundation works. Lastly, the Saint-Denis Pleyel station, which is part of the

Grand Paris Express public transport project in the metropolitan area, experienced an unprecedented peak of activity in 2022 with underground and overground work in full swing.

In 2022, BESIX delivered the Nice Airport Promenade flagship project in the city's new business district, opposite Terminal 1 of the airport. This complex includes a 4-star Sheraton hotel, restaurant and rooftop bar as well as retail, office and residential units. BESIX also delivered a 28,000 m² high-end medical facility in the heart of Neuilly-sur-Seine. Situated in a densely populated urban area, this project was a challenging puzzle where safety, agility and atypical building methods were key factors for success. Furthermore, BESIX France also participated in the tender for the construction of the Montmacq lock on the Canal Seine Nord Europe.

In 2023, BESIX France will continue to implement its strategy focussing on projects where the company has a clear added value, in particular civil & industrial works, hospitals or large complex buildings. Moreover, BESIX France is investigating, together with BuildUp, the potential of off-site construction for the energy-efficient renovations of social housing in France.

In **the Netherlands**, BESIX continued major road, tunnelling and bridge works on the A16 project in northern Rotterdam. The consortium De Groene Boog in charge of carrying out the project is responsible for designing, building and pre-financing the project as well as managing a 20-year maintenance period.

BESIX started demolition, foundation and structural works on the monumental Rotterdam POST building project, which includes the construction of a 155-metre-high tower and the renovation of the historic landmark postal office into a multifunctional concept with a hotel, spectacular flats and varied retail. BESIX also started working on a new traffic control centre project located in Scheveningen, which will cover the design, construction and maintenance over the next 15 years, and will ensure the safe and reliable operation of tunnels, bridges, as well as shipping in The Hague. In Amsterdam, BESIX also made strong progress on the Mediavaert project, the new headquarters of DPG Media in the Netherlands, with the highest point reached at the very beginning of 2023. This sustainable building will be one of the world's largest buildings with a hybrid timber structure.

BESIX delivered outstanding projects in 2022 in the Netherlands. The sustainable and iconic landmark Sluishuis in Amsterdam was delivered in the summer. Developed by BESIX RED and their partner VORM, it offers a modern and sustainable way of living on and around water, with 441 different types of energy-neutral homes, a public green roof garden with a rooftop walkway, jetties for boats and even power generation. BESIX also delivered the Grotius Towers, in the centre of The Hague, two 100 and 120-metre-high towers with 655 rental apartments.



1. Bicycle parking, Leuven (Belgium)
2. Airport Promenade, Nice (France)
3. Henneau bridge, Zaventem (Belgium)
4. ICÔNE, Belval (Grand Duchy of Luxembourg)
5. Deloitte University EMEA, Paris (France)
6. Dry dock for the Oosterweel tunnel, Zeebrugge (Belgium)
7. Tour Triangle, Paris (France)

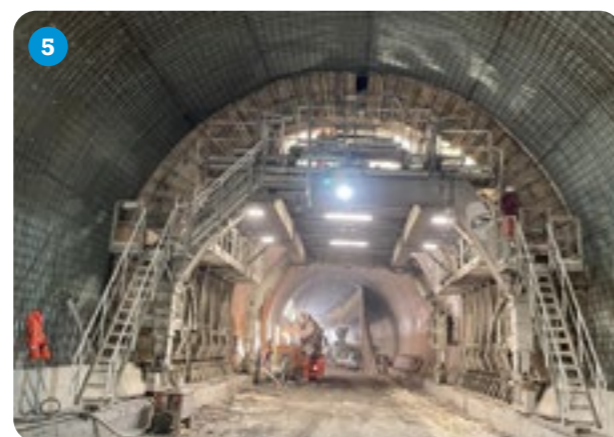
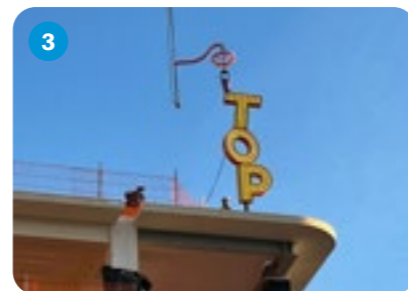
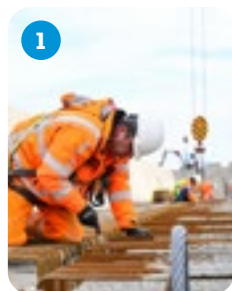
Several new contracts were awarded in the Netherlands in 2022, including the reconstruction of the De Nieuwe Meer highway intersection in Amsterdam and the execution of the pit and foundation works, including engineering and workshop drawings of the new multipurpose Pallas nuclear reactor in Petten which will produce medical radioisotopes. At year-end, BESIX was awarded a contract for the variable maintenance of road infrastructure and civil structures in the province of Limburg.

Major tenders in the civil infrastructure and marine sector, such as the ring infrastructure project in Utrecht and the Zeeland locks of Krammersluis and Zandkreeksluizen, have begun. Another infrastructure tender for the renewal and widening of the A27 highway between the cities Houten and Everdingen, south of Utrecht, started in 2022 and was awarded to BESIX in March 2023. The development study and tender for three towers of respectively 75, 110 and 140 metres in Eindhoven continued, while tenders for hydrogen plants, green steel blasting furnaces and pumping stations took off in the industry and energy-water sector.

Finally, in **Italy**, work on the Valfabbrica state road 318 infrastructure project progressed well in 2022. The four excavation fronts of the two tunnels were opened and more than 300 metres on the Casacastalda tunnel and around 100 metres on the Picchiarella tunnel were dug. The metal span of the Calvario bridge was installed and the piling activities were completed.

While remaining a general contractor of choice at its core, BESIX Europe will continue to give priority to operational excellence, putting the focus on getting some projects back on track in terms of profitability.

Although it is still recovering from the Covid-19 pandemic and the effects of the war in Ukraine, BESIX will be concentrating on reaching profitable growth with a better balance in contractual conditions and its order book, through a more balanced spread of projects within the various sectors. In parallel, BESIX will keep investing in new diversifications close to its core competencies, with a specific focus on innovation and sustainability.



1. A16 De Groene Boog, Rotterdam (The Netherlands)
2. Grotius Towers, The Hague (The Netherlands)
3. Mediavaert, Amsterdam (The Netherlands)
4. Sluishuis, Amsterdam (The Netherlands)
5. State Road 318, Valfabbrica (Italy)
6. Guggenheim Museum, Abu Dhabi (UAE)
7. Uptown Tower, Dubai (UAE)

Middle East

BESIX-Six Construct has been active in the Gulf Cooperation Council (GCC) area since 1965. A multi-disciplinary contractor with a winning combination of value engineering and a promise to deliver. A pioneer in unique projects, BESIX-Six Construct has significantly contributed to the ambitious development of the region, continually setting new precedents in the industry.

BESIX-Six Construct specialises in a variety of sectors including buildings, infrastructure and the environment. It is known for its focus on sustainability and its commitment to using innovative technologies and materials in its construction projects. The company is committed to minimising the environmental impact of its projects and is an advocate for sustainability and social responsibility in the communities in which it operates.

Following considerable disruptions to construction in 2022, there is now positivity in the construction industry in the Middle East due to the new, dynamic regional leadership that has taken hold, the rise in oil prices, economic diversification and the end of the Covid-19 pandemic. Significant market growth is expected in the coming years, driven by large-scale infrastructure projects, particularly in the areas of transportation, energy and water.

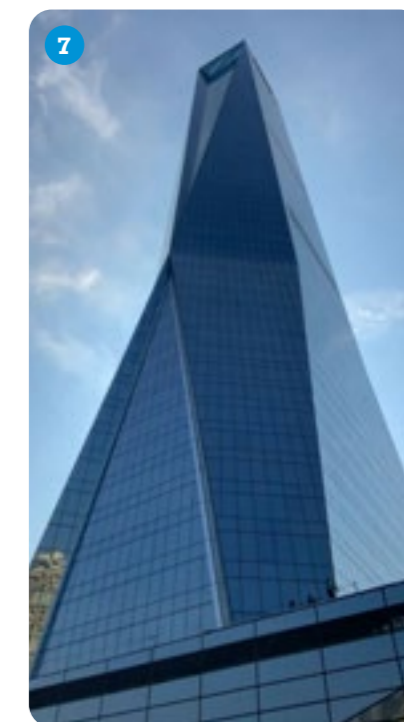
In 2022, BESIX-Six Construct signed the Guggenheim and Zayed National Museum (Abu Dhabi), part of Abu Dhabi's development strategy to be a cultural epicentre. It also completed the design-and-build project for Fujairah Port, the world's second-largest bunkering hub, and celebrated the end of the year with the delivery of the Royal Atlantis, a mega-project that stands 43 floors tall and covers 387,097 m² (Dubai).

Other major milestones include the delivery of Wasl Island Marine Works in Dubai and the fourth consecutive phase of Qatar's Airfield Pavement Remediation Works at Hamdan International Airport, the award of Zayed City Schools wave 1 (Abu Dhabi), the first PPP social infrastructure project of its kind in the region, and the façade completion and achievement of 20 million man-hours without a lost-time incident (LTI) on Dubai's Uptown Tower.

BESIX-Six Construct further cemented its position as a sustainable energy player in the region by successfully commissioning the Ajman Sludge-to-Energy and generating 2.4 MW. Meanwhile, Dubai Waste-to-Energy continued its fast and steady progress, reaching 85 % completion with the aim of achieving first fire by starting the operation of two lines by early 2023.

Looking forward, the Middle East region will once again position itself as a strategic player. Increased economic diversification, investments in local industries that offer in-country value creation and numerous promising construction management opportunities all indicate that this will be the centre of development in the coming years.

A narrowing competitive landscape and an increase in different potential revenue streams have created a healthy pipeline of projects that BESIX-Six Construct is well-positioned to seize. Looking ahead to 2023, BESIX-Six Construct's strategic focus will be marine, civil infrastructure, stand-alone and complex projects. Due to its extensive experience in public-private partnership (PPP) frameworks, BESIX-Six Construct seeks to leverage the new sources of funding in the region to maximise PPP opportunities.



International

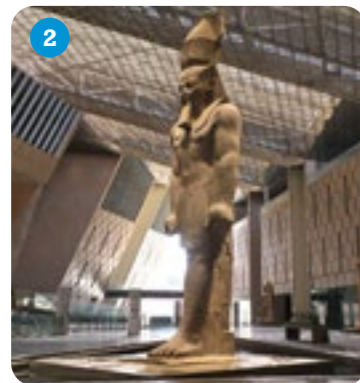
Despite a challenging international environment due to the continuous price increase of materials, the transport and logistics problems and the war in Ukraine, BESIX International has continued to position itself as a key EPC contractor for complex projects in its core sectors: marine, infrastructure and high-rise buildings.

With a continued customer-centric approach, BESIX has succeeded in winning new projects in Brazil, Tanzania, and Denmark. In those countries, BESIX will build (on an EPC basis) major marine and infrastructure projects. BESIX International is now active on four continents (Europe, America, Africa, and Asia) working on 16 projects in 13 countries.

BESIX International is currently present in four countries in Europe. The works of the new Rail Baltica Riga central station in Latvia have progressed steadily in 2022 and the first phase is planned to be completed by the end of 2023. The Nordhavn tunnel infrastructure project in Copenhagen was awarded in 2022 and works started in 2023. Finally, BESIX is still deeply involved in the Luštica resort development on the coast of Montenegro.

As planned, several projects were completed in 2022. The Vistula Spit shipping channel which connects the Baltic Sea to the Elbag port has been successfully handed over to the client at the end of the summer. This marine infrastructure became even more important for Poland due to the geopolitical development in the region. The Mamula hotel has been completed in Montenegro and will welcome its first guests in spring 2023. The refurbishment of the existing breakwater of the Poti project in Georgia is close to completion and BESIX is hoping to start with the APMT container terminal extension phase during 2023.

Despite particularly challenging ground conditions, the wharf of the LNG marine terminal in Canada has been used to offload the large modules necessary for the construction of the liquefaction plant. The LNG platform will be completed during the first half of 2023.



1. Mohammed VI Tower, Rabat (Morocco)
2. Grand Egyptian Museum, Cairo (Egypt)
3. Vistula Spit Shipping Channel (Poland)
4. Circular Quay, Sydney (Australia)
5. Te Kaha Stadium, Christchurch (New Zealand)

In Africa, BESIX International is now present in six countries. In Morocco, the prestigious Mohammed VI Tower has reached its culminating point at 250 metre above ground. The façade as the finishing works have now started, in order to plan a soft opening by the end of 2023.

BESIX has also progressed on the F Tower, a high-rise building in Ivory Coast in the Plateau district in the heart of Abidjan. Two other projects will be completed during 2023 in the same city: the iconic Palais des Expositions close to the airport, capable of hosting 10,000 people, as well as the tunnel under the roundabout of the Abobo city hall, a part of a major road infrastructure which will dramatically improve accessibility of the Abidjan metropolitan area.

The Nachtigal hydropower dam and plant have also impressively progressed throughout the year and the client NHPC (with EDF and the government of Cameroon as major shareholders) is expecting to deliver the first MW to the Cameroon energy grid before the end of the year 2023. This will be considered a major achievement for this incredibly challenging project in the middle of the country. The opening of the Grand Egyptian Museum has been postponed to 2023 in order to have the whole exhibition area completed and the thousands of artefacts transferred from the old museum and the conservatory centre. The Mozambique LNG project is still suspended waiting for the Cabo Delgado region to become safe and stable again.

Going forward, BESIX International prioritises projects where a dialogue between the client and the contractor is privileged. Thanks to a win-win approach with its clients, BESIX International is focused on developing long-term working relationships with key players such as container terminal operators, O&G majors as well as major EPC contractors. BESIX International also prioritises projects that provide sustainable solutions, such as hydropower plants, water treatment facilities and environmentally friendly transport infrastructure.



Australia

In 2022, headlines for the Australian and New Zealand construction industries were reflective of global markets. Rising material costs, global supply chain disruptions, labour shortages and extreme weather events placed extraordinary pressure on construction companies, suppliers and projects.

Given the uncertainty of the industry, BESIX Watpac continued to apply a selective 'quality over quantity' approach to bidding and converting new projects. Disciplined pricing and risk allocation parameters were implemented alongside prioritising collaborative contracting models and a more balanced risk allocation.

During the startup of Te Kaha, Canterbury's Multi-Use Arena stadium in New Zealand, BESIX Watpac successfully worked with the client throughout the entire design phase to derisk the project. This collaborative model has set the project up for success, as major construction works commenced in 2022 and enabled upfront allocation of risk to appropriate parties.

Notwithstanding floods and the impact of market challenges, BESIX Watpac took a similar approach on the Kangaroo Point Green Bridge project in Brisbane. BESIX Watpac worked closely with the client to navigate alternative solutions for the project's initial phase.

In Sydney, the Barangaroo Metro Station Project team developed innovative design solutions for the client. These include acceleration measures to ensure delivery of the project in advance of initial programme phases and will be critical to the overall completion of the project on time in 2023.

BESIX Watpac remained focused on expansion into strategic growth markets, including commencement of their first marine project, the Ferry Wharf Upgrade Programme in Sydney. BESIX Watpac is delivering this project as Managing Contractor and the company has already received an increased scope of works with additional ferry terminal packages to be delivered.

Also located on Sydney's prestigious waterfront, BESIX Watpac was formally appointed as part of the consortium for the high-profile Circular Quay Renewal project. This project will transform one of Australia's most significant historical

and cultural precincts and transport hub into a world-class destination.

Also in New South Wales, BESIX Watpac was shortlisted for a public private partnership in the defence sector for the Sydney Living-In Accommodation project. If successful, BESIX Watpac will be an equity partner, alongside delivering the accommodation precinct as Design and Construct contractor. Being shortlisted for this project is a significant milestone for the company and was made possible in part through the assistance and expertise of the company's colleagues from the BESIX Group Concessions & Assets team.

Further south, BESIX Watpac is delivering Project Banksia, a biopharmaceutical facility in Victoria. The team has positioned itself as a true delivery partner by managing all aspects of construction including buildability advice and execution of the client's highly specialised design requirements.

In Adelaide, BESIX Watpac won the prestigious 'Airport of the Year' and 'Infrastructure' Awards at the Australian Airports Association National Airport Industry Awards. The team is also making strong progress with the delivery of the GPO Hotel Redevelopment in the CBD and has a substantial pipeline of work and opportunities ahead.

A number of projects delivered by BESIX Watpac received industry awards throughout 2022. A standout was international recognition from Engineering News Record (ENR) for Wurun Senior Campus. The project was delivered under a Design and Construct contract for the Victorian School Building Authority.

Looking ahead, the company is focused on delivering strategic projects such as the Garden Drive Microsoft Data Centre in Victoria and growing its portfolio in health, defence, marine, large-scale complex infrastructure, and secure facilities. The company is also positioning itself for upcoming work ahead of the 2032 Brisbane Olympic Games, including the proposed new Olympic Stadium.

BESIX Watpac is also investing in technology to create an innovative workplace and operational efficiencies and is actively exploring opportunities for diversification aligned to the organisation's core construction activities.

Concessions & Assets

In Europe, 2022 tendering activity continued to be exclusively focused on Belgium with no additional projects being brought to market in the Netherlands under PPP schemes. Four of C&A Europe's existing projects (Coen Tunnel, Limmel Flood Barrier, Beatrix Lock and A6 Almere highway) are well into their operations period and all perform well. Construction of the A16 De Groene Boog highway project in Rotterdam saw good progress in 2022, but the ViA 15 Gelre-Groen highway project still awaits the final outcome of ongoing and long nitrogen regulation debates in the Netherlands, before hopefully being able to move on to financial close.

In **Belgium**, construction of the iconic POST X LPA police station project in Antwerp - of which BESIX acquired all shares in 2020 - which stands highly visible besides the city ever-busy ring road, was in its final stages at year end. The Antwerp Police will move into its much awaited new headquarters before summer and the project's operating period will last until 2047. After being awarded preferred bidder status together with its partners for the major R4WO ring road project in Ghent mid 2021, the past year saw good progress on further design, engineering and the introduction of all necessary permits. The project is expected to reach contract close in the second half of 2023 and construction should start early 2024. The project will involve multiple entities within the Group (i.e. BESIX Flanders, BESIX Infra, BESIX Unitec, BESIX Concessions & Assets) throughout its exceptionally long construction (five years) and operations and maintenance period (30 years).

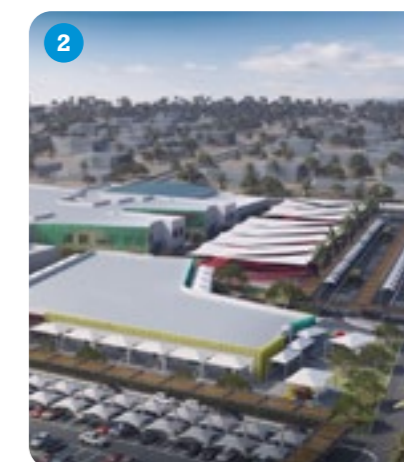
A true highlight of 2022 was the award by Flemish water treatment company Aquafin to the consortium BESIX-Indaver of the contract to design, build, finance, operate and maintain a large sewage sludge processing installation on the ArcelorMittal site in the port of Ghent, to be operational by 2026. The installation is intended to process the biomass that remains after the purification of domestic wastewater by Aquafin's many sewage treatment plants across Flanders. The project, with a duration of 20 years after construction, will be exemplary in terms of circularity and net environmental impact. It is the first environmental PPP project for BESIX in Europe.

In the **Middle East**, construction is perfectly on track by BESIX and Hitachi Zosen Inova for the mammoth 1.2-billion-dollar Warsan Waste-to-Energy project in Dubai, for which financial close was reached in 2021 and international awards were received. First firing is scheduled for the summer of 2023, and when fully operational in 2024, it will have the capacity to process 1.9 million tonnes of municipal waste per year and

generate 200 MW of electricity, being by far the largest project of its kind worldwide.

The year 2022 was off to an excellent start for C&A Middle East in Abu Dhabi, where its consortium together with Australian infrastructure fund Plenary Group was awarded the Zayed City Schools PPP project, which has already achieved financial close in July. This is the UAE's first public-private partnership in the field of school infrastructure, a pioneering project paving the way for private sector participation in the development of the country's social infrastructure. The project was awarded to the BESIX-Plenary consortium by the Abu Dhabi Investment Office (ADIO), in collaboration with the Abu Dhabi Department of Education and Knowledge (ADEK). It covers the financing, design, procurement, construction, commissioning and 20-year operations and maintenance of three new state-of-the-art school campuses with a total capacity of 5,360 students in Zayed City, Abu Dhabi, anticipated to open for the school year 2024-2025. BESIX also continued to tender and prepare for more PPP projects in Dubai and Abu Dhabi, but also outside the UAE, with successful prequalification efforts for environmental and infrastructure projects in Saudi Arabia and Bahrain, all set to continue in 2023.

For the hospitality assets in Belgium, Poland and Switzerland in which BESIX is a co-developer and investor, the year 2022 saw the enjoyable return to occupancy levels and financial performance to levels very close to those observed before the Covid-19 pandemic hit the sector with full force. All assets are back to delivering substantial cash flows. The local management teams, who performed remarkably well in the difficult years 2020-2021 by always looking for new sources of revenues and intelligent cost-cutting achievements with no adverse impact on the guests' overall experience, are rejuvenated by last year's fast recovery of touristic and business travel, and have set ambitious targets for the years to come.



1. Waste-to-Energy, Dubai (UAE)
2. Zayed City Schools, Abu Dhabi (UAE)
3. A16 De Groene Boog, Rotterdam (The Netherlands)

Activity profile

BESIX Concessions & Assets (C&A) creates and offers tailor-made solutions covering the complete scope and life cycle of infrastructural, environmental or building projects. For public-private partnerships, DBFM (Design Build Finance Maintain) and BOOT (Build Own Operate Transfer) projects.

BESIX C&A has the capacity to completely align with its clients' visions and expectations. BESIX C&A provides customised technical, commercial and financing schemes to meet the client's long-term needs, helping them to optimise an asset's total life cycle cost.

More than ever, BESIX domestic markets in Europe, the Middle East and Australia demand solutions that provide not only an asset but a total service: Design, Build, Finance, Operate and Maintain. Clients prefer to pay for a service instead of an asset. Through its international network of trusted advisors and tier-1 project finance lending banks, in combination with its growing portfolio of diversified assets, BESIX C&A can arrange the most competitive packages of construction, long-term maintenance and optimised financing by bringing financial parties and industrial parties together and seeking the lowest total cost over the economic lifetime of a project. BESIX C&A can provide such solicited added value, offering a broad multidisciplinary range of solutions along the entire value chain and, where appropriate, inject its own capital to finance initial investments.

Outlook 2023

In **Belgium**, C&A will continue to respond to public tenders for buildings, infrastructure and renewable energy projects. The team is already deeply involved in preparing new offers and structuring consortiums for a.o. new central headquarters for the Belgian capital's fire brigade and emergency services, the renovation of 40+ land and water bridges in Flanders, new tram lines that will further improve public transportation between Brussels and its periphery and the first floating solar parks with long-term PPA (power purchasing agreement).

In the **Middle East**, tenders are ongoing for a.o. more Waste-to-Energy projects, university student accommodation, and a wastewater treatment plant including treated effluent pipeline. The GCC market is expected to remain very active for an increasing number and types of DBFMO projects, further expanding from power, desalination, and wastewater treatment to more public infrastructure, housing, healthcare...

BESIX C&A skills embodied by its vast team of experienced staff in Brussels and Dubai, together with an emerging team in Brisbane, nicely add to the BESIX Group's strong engineering, designing and planning skills. The Group's strong balance sheet allows them to aim for sizeable equity stakes in the financing part of the projects and for a strong presence in the joint ventures that will carry out the EPC (Engineering, Procurement and Construction) and O&M (Operation & Maintenance) works. From buildings, to infrastructure, to civil works, to road surfacing, to environmental projects, BESIX can do it all. BESIX's worldwide footprint allows for participation in PPP tenders in its three home markets (Benelux-France, GCC countries and Australia), but also in other countries that consider public-private partnerships as a true value-for-money proposition for the longer term.

End 2022, BESIX C&A reinforced its team with a new director who comes with a long experience and deep insight in renewable energy markets and projects: solar, onshore wind, offshore wind, green hydrogen... The ambition is to identify in the short term a series of projects in which BESIX can participate as co-developer, and potentially also as contractor, within the huge wave of public and private energy transition projects that are emerging worldwide.

C&A will further support BESIX Watpac with its diversification efforts throughout Australia by being increasingly active in tenders – whether structured as classical PPP, but also concessions or real estate development – where it not only aims for a key role as contractor, but is also looking to participate as co-investor and developer. Several tenders are already ongoing and all aim for a first win in 2023.

As for its new venture into renewable energy projects, it is yet too early to predict in which countries and for which technologies C&A will focus its efforts. The search and selection of opportunities is ongoing and the team enjoys the full support of the BESIX board of directors and executive committee.



1. Aquafin Sludge Treatment Plant, Ghent (Belgium)
2. Ajman Sludge-to-Energy (UAE)
3. Local Police Headquarters, Antwerp (Belgium)

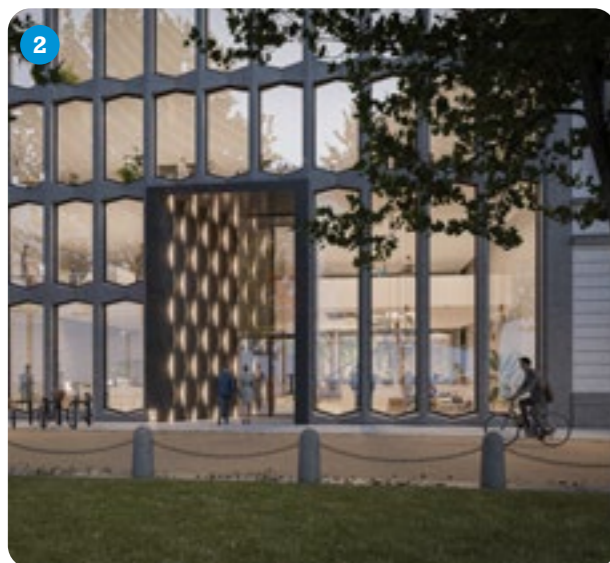
Real Estate

BESIX RED reports record results in 2022 thanks to its experienced and united team

Despite the challenging and uncertain business environment, BESIX RED closes 2022 with unprecedented financial results. The real estate developer records a turnover of 191.5 million euros, a return on equity of 47.2 % and a diversified portfolio of 33 projects in 19 cities across Europe.

“Amid global turmoil and a challenging socioeconomic context, we stayed afloat in 2022. Again, this evidences that human beings always prevail and can make a difference. BESIX RED owes its accomplishments to our solid, experienced and cohesive team”, says Gabriel Uzgen, CEO BESIX RED.

He adds: “Our positive contribution to the Group’s results shows that its diversification strategy is successful.”



Highlights 2022

2022 was marked by significant achievements for the real estate developer across Europe, including:

Belgium

Transaction of prime asset in Brussels

The sale of CSM Properties SA, holding the Cours Saint-Michel site in **Etterbeek, Brussels** to the United States Government, with partner ImmoBel, contributed significantly to the financial performance. This transaction highlights the quality of the exceptional site location, identified in 2018.

New acquisitions

BESIX RED conducted strategic and impactful new acquisitions:

- By acquiring the shares of the company Stampen, holding the office building located at the Boulevard du Souverain 360 in **Auderghem, Brussels**. This project consists in the reversion of an obsolete office building into a high-end residential project of 48 apartments. Souverain 360 is a prime example of circularity, fitting into BESIX RED’s ESG strategy.
- By securing the acquisition of a 5,300 m² office building with a strategic CBD location in **Brussels**. Named The Lighthouse, this development will consist in the complete restructuring of dated offices into a sustainable and state-of-the-art office project of 5,600 m² benefiting from breath-taking views of the Brussels skyline. In line with BESIX RED’s ESG strategy, it is conceived to reach BREEAM ‘Outstanding’ and WELL Platinum certifications,
- By securing a commitment with Securex for the development of a site located next to the ‘Watersportbaan’ in **Ghent**. The site will become a 8,700 m² residential development of 115 student units and 49 apartments.

1. Gabriel Uzgen, CEO BESIX RED
2. The Lighthouse, Brussels (Belgium)
3. ICÔNE, Belval (Luxembourg)
4. Sluishuis, Amsterdam (The Netherlands) wins ‘Best Residential Project’ at the MIPIM awards
5. Souverain 360, Brussels (Belgium)

Large-scale projects’ milestones

- The permit for Matisse, strategically located close to NATO in **Evere, Brussels**, was submitted in July. Designed by the award-winning Neutelings & Riedijk Architects, Matisse is a 41,500 m² sustainable mixed-use development including 20,000 m² of high-quality offices and 21,500 m² of apartments, co-living spaces and areas for public equipment. It is designed to obtain a BREEAM Outstanding certification, a WELL Platinum reference and follows a fossil-free approach.
- The Vice-Minister of the Walloon government, Willy Borsus, approved the PRU (Plan de Remembrement Urbain, i.e. Land Reparcelling Plan) for the 45,000 m² mixed-use project Le Côté Verre located at the Square Leopold, right by **Namur** railway station. The application for the ‘permis intégré’ (integrated building permit) was expected to be submitted in Q1 2023. In collaboration with renowned architect Jean-Paul Viguier, Le Côté Verre will offer a new 360° living, working, dining, shopping and leisure experience while being an integral part of the dynamic city centre. Based on circular business models, Le Côté Verre is being conceived to obtain a BREEAM Excellent certification and a WELL Platinum reference.

Luxembourg

- In March 2022, AG Real Estate, on behalf of its parent company AG Insurance, has finalised the signature of the contract to acquire 100 % of the shares of B-9 S.A., owner of the ICÔNE office building in Belval, **Luxembourg**. This 18,800 m² office development in Belval was delivered early 2023 to Société Générale Luxembourg that has signed a 15-year lease contract for the entire building. On this major transaction, Gabriel Uzgen explains: “The working experience conceived for ICÔNE is going to be replicated in our upcoming office projects such as The Lighthouse and Matisse in Brussels, and PURE in Lille.”
- The PAP (‘Plan d’aménagement particulier’) for the project Faïencerie - Villeroy & Boch in Rollingerggrund was validated by the City of Luxembourg at the end of the year. BESIX RED and its partners, ICN Development and Tralux Immobilier, aim to transform this site into a new sustainable living experience, comprising 46,000 m² of residential, and featuring a strong landscaping component.
- In the Grand Duchy, the developer confirmed its position as a major actor in the market by acquiring a new site in Strassen with the ambition to develop a sustainable residential project.



The Netherlands

- In **Amsterdam**, Sluishuis, a 39,500 m² zero-energy residential building located on the IJ-lake, has been completed after four years of construction. Today, this new landmark is almost completely sold out. It is getting international recognition, winning the MIPIM Award as ‘Best Residential Project’, the award for ‘Best Architecture Multiple Residence’ at the European Property Awards 2022, being named ‘Residential Building of the year’ by Architectenweb and being nominated for the ‘Zuiderkerk Prize’, the Municipality of Amsterdam’s most important award for housing. About the MIPIM recognition, Gabriel Uzgen says: “An immense thank you to all the teams who made Sluishuis a reality. I would like to highlight particularly the successful collaboration we have had with the municipality of Amsterdam. It shows that having the public and private sector work hand in hand leads to great and purposeful developments for the city and its inhabitants. This should be an inspiration for several other European cities. We are also thankful to the MIPIM jury and attendees who voted for Sluishuis.”
- BESIX RED continued to consolidate its position in the **Netherlands** with the acquisition of a stake in Argentum Vastgoed B.V., owning the Kijkduin-development located in The Hague.
- In the coastal neighbourhood of Kijkduin, BESIX RED and partner Duqer aim to develop a 48,000 m² mixed-use development featuring a 17,400 m² high-end hotel, 56 short-stay apartments and 145 regular apartments in collaboration with van Egmond architects.





France

BESIX RED obtained the building permit to develop PURE in the Lille metropolitan area. Designed by the renowned architect Coldefy and the local landscape architect LAND, PURE will feature 8,000 m² of modern offices embracing a concept rooted in the well-being of users. It is designed to achieve BREEAM 'Excellent' and WELL-certifications. PURE's delivery is expected for Q3 2025.

Portugal

- In **Lisbon**, the building permit for DUUO, its first residential development in the country, has been obtained and construction started in March 2023.
- Still in **Lisbon**, BESIX RED rethought the programme of Parque Oriente. Parque Oriente is a mixed-use project of 42,000 m² located in the Parque das Nações district. The project will feature 28,000 m² of residential, 7,500 m² of offices, 2,000 m² of equipment and 4,500 m² of retail, food and beverage and community services. BESIX RED foresees submitting the permit in May 2023.

ESG

- 2022 was also marked by BESIX RED's continued efforts to further elaborate its **ESG strategy that will include concrete and measurable KPIs**. The real estate developer appointed Laurent Sempot as Sustainability Advisor. He will be dedicated to accompany all BESIX RED Pan-European operations from a sustainability perspective.
- ESG was also placed on top of the Urban Land Institute's agenda in Belgium & Luxembourg, under the Presidency of the developer's CEO, Gabriel Uzgen.
- In line with its digitalization programme and ESG commitment, BESIX RED invested in PropTech company Square Sense.

Commercial and operational results

In 2022, BESIX RED's turnover was driven by the transactions of the Cours Saint Michel project in Brussels with the United States Government, and ICÔNE with AG Real Estate in Luxembourg.

It was also supported by the sale of 72 residential units (Les Promenades d'Uccle and SO Stockel in Brussels, Esprit Courbevoie in Louvain-la-Neuve, Meadow in Herent and Sluishuis in Amsterdam).

In 2022, BESIX RED delivered the following residential projects:

- SO Stockel (Brussels): the remaining 73 units out of 138 apartments were delivered. The first phase of So Stockel is entirely sold out, except the commercial unit of 200 m².
- Les Promenades d'Uccle (Brussels): the second phase of this residential project, corresponding to 69 apartments and totalling 7,450 m² was successfully delivered. This phase is sold out.
- Sluishuis (Amsterdam): this 39,500 m² landmark project, comprising of 442 energy-neutral owner-occupied and rental apartments as well 34 houseboat lots, 54 berths for pleasure crafts and 1,112 m² space for retail and catering facilities, was delivered over the summer.

Developments in progress include:

- Les Promenades d'Uccle (Brussels): the construction work of the houses M19-M31 (2,700 m²) continued. Besides, the construction of 32 apartments totalling 3,700 m² was launched.
- Viridis (Brussels): the construction site is progressing. Viridis totalises 17,500 m² of build-to-rent apartments and commercial premises in the up-and-coming Reyers district. BESIX RED will ensure the turnkey development until completion before delivery to investor Patrizia.
- Meadow (Herent): the third phase of this residential project comprises of 8,218 m² with 68 apartments and its preliminary delivery is planned for Q2 2023. The project is 90 % sold.
- Esprit Courbevoie (Louvain-la-Neuve) : plots 705B, 706 and 708 (25,000 m² residential) and plot 707 (8,500 m² offices) of this new district are under construction.
- ICÔNE (Belval): this landmark project includes nearly 17,300 m² of office space and an additional 1,500 m² of shops and restaurants. ICÔNE was delivered early 2023.

BESIX RED has also made progress in the development of programmes for the introduction of permits for significant Belgian projects such as: Molière, the second phase of So Stockel in Brussels, O'Vert in Ghent, Gelatines in Hasselt, Kaai District in Aalst, and Croisée des Champs in Gembloux.

Outlook 2023

BESIX RED has a solid portfolio, corresponding to more than 3.9 billion euros in market value, and totalling more than 1,003,829 m² under development (including partnerships).

"We approach 2023 cautiously, and remain attentive to the current socio-economic context and its impact on the real estate market. At the same time, we need to act on the environmental side. The latest IPCC report points out the urgency to take serious and tangible measures, which is exactly what we are currently defining for BESIX RED and all our activities." concludes Gabriel Uzgen.

1. PURE, Lille (France)

Interview with Laurent Sempot, Sustainability Advisor at BESIX RED

What's your role as Sustainability Advisor?

My mission is first to structure our sustainability strategy, implement it and then measure and report on all our ESG initiatives. As 'sustainability guardian' of BESIX RED, my role is also to make sure that our sustainability strategy is aligned with national and European legislations such as the CSRD and Taxonomy regulations, and is fully integrated within the policy of BESIX Group while taking into account the particularities of the real estate sector.

Where does BESIX RED stand in terms of ESG today?

As part of BESIX Group, we actively contribute to BESIX Group's action and commitment towards a better future for everyone.

We are committed to the most ambitious and complete frameworks in terms of sustainable development, with the adoption of codes of conducts, agreements and specific targets on environmental, social and governance level such as:

- An active member of the United Nations Global Compact since 2016
- Signatory of the Belgian Alliance for Climate Action
- An active contributor to the BESIX Foundation
- Supporter of the 17 Sustainable Development Goals (SDG) adopted in 2015 by the UN.

ESG is already part of BESIX RED's DNA and approach. Let me highlight a few projects:

- In Brussels, The Cosmopolitan consisted in the renovation of an obsolete office building into an iconic residential project.
- In Amsterdam, Sluishuis is an energy-neutral residential project with a comprehensive water-quality program and promoting a sense of community.
- In Belval, Luxembourg, ICÔNE is a new generation office building focusing on users' well-being and the new ways of working. It has a BREEAM Excellent certification.

How will BESIX RED's ESG strategy look like?

First, let me point out that our commitment is to develop a strategy that is tangible and measurable. It will come with stringent KPIs.

Our sustainability strategy will be based on:

- **Alignment with the European taxonomy.** We will ensure that all our future assets are as exemplary as possible in terms of the six taxonomy assessment principles: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and reduction, and protection and restoration of biodiversity and ecosystems.
- We will base our actions **on ambitious KPIs and quantifiable outcomes** related to environmental, social and governance priorities included in 9 of the 17 United Nations Sustainable Development Goals (SDGs).
- **Full compliance with local standards** and the ambition to achieve the highest grades of local and international certifications

Our approach will balance risks, yields, and ESG Impacts, and will focus on: **positive impact, very high-quality assets, long-term financial performance.**



Diversification

Flamant

Flamant creates inspiring interior collections that turn every house into a welcoming home. From furniture and decorative items to textiles, wallpaper, and its own range of Flamant Paint. With seven company-run stores in Belgium and France, a wide network of partner stores on every continent and an easily accessible online shop, Flamant offers its products across the world. The management focuses mainly on three business activities: Retail, Wholesale and Franchise, and e-Commerce.

2022 marked Flamant's 44th birthday. As an established name in Belgian interior design, Flamant pulled out all the stops for its anniversary year. The keyword? Renewal. Because although tradition, artistry and artisanship are strongly rooted in the brand's DNA, in 2022 Flamant also looked firmly ahead. From a new online shop and surprising contemporary collections to a second store in Paris and a restyling of the Belgian flagship store in Sint-Martens-Latem. The common thread through it all? Authentic furniture and home décor accessories at honest prices. In spite of the current economic situation and consumer uncertainty worldwide, Flamant is working

towards further increasing its operational results in 2023. A challenging task in the current climate, which Flamant intends to achieve by further focusing on close collaboration with strong franchise partners, personalised services such as Flamant at Home, a solid e-commerce environment, and brand awareness through targeted marketing campaigns. But also through smart processes in production and purchasing, such as choosing recycled materials, reducing unnecessary transport, and relying on a combination of local raw materials, local knowledge, and local crafts.

Milestones in 2022

New shop: In June of 2022, Flamant opened a third store in France, in the historic department store Le BHV Marais, in the heart of Paris.

Flagship stores 2.0: The flagship store in Sint-Martens-Latem was renovated and restyled, and festively reopened in October. Since the renovation, which included a bold façade transformation and a doubling of the total retail space, there has been a marked increase in shop visits and brand recognition in the region. In 2023, the same will be done in Sint-Genesius-Rode near Brussels.

e-commerce investment: Flamant has been recording a strong rise in e-commerce for years. To further drive that growth, a new unified website was launched in 2022, bringing the corporate website and the online shop together in one place.

Pricing campaign: In order to bridge the pandemic period, Flamant catered to customers with various discount offers. In 2022, the brand again resolutely opted for fixed prices, with the exception of clearance sale periods. With its marketing campaign titled 'Iconic pieces at honest prices', Flamant again emphasised its timeless collections that are the result of pure artisanship and local crafts.

International projects: Flamant is proud to have been involved in the renovation of Six Construct's head office in Dubai through its interior advice service, Flamant at Home. Over 2,000 m² of offices and staff restaurant space were given a professional touch of Flamant.



Flagship project

Opening of a new shop in the historic district of 'Le Marais' in Paris

In June 2022, Flamant opened its 7th company-run store – the third in France after Flamant Paris and Flamant Aix-en-Provence, on the fourth floor of the historic lifestyle department store Le BHV Marais. The store brings together new contemporary collections and timeless Flamant Classics at a spectacular location in the heart of Paris. Open 7 days a week, the store has already shown that it is able to attract a wide audience and countless new customers. This makes Flamant BHV a new top location in the shopping capital of Europe, successfully complementing the existing store at Saint-Germain-des-Prés.



07

Regional & Specialised Entities in Europe

Jacques Delens	124
Lux TP	126
Vanhout	128
Wust	130
Besix Infra	132
Franki Foundations	134
Socogetra	136
BESIX Unitec	138





Founded in Brussels in 1967, Jacques Delens is a general construction and property development company, with operations concentrated in the Brussels region, Walloon Brabant, and Flemish Brabant. For over 50 years, it has specialised in construction, the restoration of listed buildings – some of which are deeply rooted in the country's collective memory - as well as in the renovation of buildings of all types and sizes.

Jacques Delens operates within both the public and private markets, working on projects including (but not restricted to) the renovation and modernisation of care units, office development and renovation, and the construction of urban housing.

In 2022, Jacques Delens once again demonstrated its strong ability to adapt to a complicated economic environment, with great success. After the positive signs shown in 2021, impressive results demonstrated in 2022 confirmed the success of the company's defined strategy.

The company's prosperity was enjoyed by both customers and partners, the best ambassadors of the company's values. The quality of Jacques Delens' services and the efficiency of each and every staff member allow the company to look forward to the long-term future with confidence.

The projects that lie ahead will undoubtedly require ingenuity and excellence, both of which are firmly part of the company's DNA.



Projects signed in 2022

Cliniques Universitaires Saint-Luc Brussels (Belgium)

Creation of a logistics area for the operating theatre, including a centralised storage space, picking and preparation area for material and equipment, as well as a vertical transport core, consisting of a freight lift and staircase. This work had to be carried out without interfering in day-to-day operations taking place within the hospital complex.

L-Avenue Brussels (Belgium)

Transformation of the former Tagawa Hotel into a 58-room aparthotel and 6 flats.

Waterloo 543 Brussels (Belgium)

Construction of eighteen social and average-income housing units, twelve parking spaces in the basement and a communal facility.

Domaine du Neckersgat Brussels (Belgium)

Renovation, restoration, and extension of a nursing home.



Flagship project

Petite Senne

Location

Molenbeek-Saint-Jean, Brussels (Belgium)

Construction period

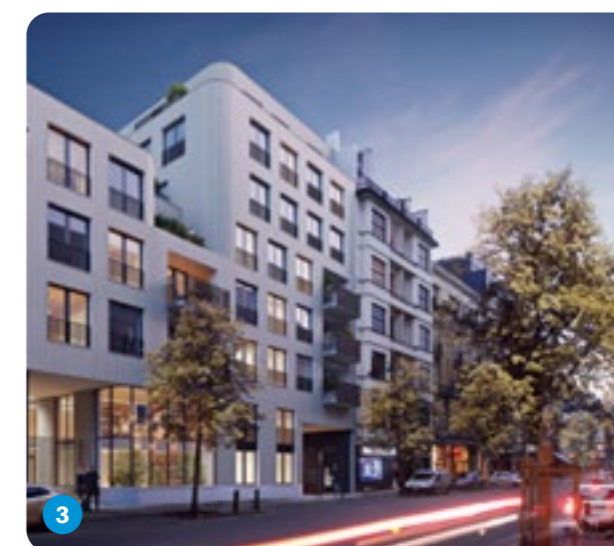
January 2020 - November 2022

Project value

6.5 million euros

Description

Construction of a public area and crèche. The project involves the development of a covered area and a public space inside the building area, reserved for pedestrians and cyclists, with a view to improving the local soft mobility offering and serving as a local meeting point. Jacques Delens carried out the demolition of existing buildings on the site, the earthworks and the soil remediation of all areas concerned. The work included the renovation of the roof of an old industrial warehouse and its gantries, as well as the construction of steps and a ramp giving access to the canal, landscaping, street furniture, a playground and fountain.



1. Petite Senne Centre, Brussels (Belgium)
2. Neckersgat nursing home, Brussels (Belgium)
3. Waterloo 543 housing project, Brussels (Belgium)



For more than 40 years, Lux TP has been carrying out construction projects of all sizes for its clients in Luxembourg, Belgium, and France.

Its success is the result of the exemplary commitment of its more than 300 loyal employees who excel in the supervision of their clients' projects.

LuxTP continued with its diversification and flexibility strategy in 2022, focusing on buildings, engineering structures, roads, railway projects including platforms and equipment, but also steel structures as well as cladding and equipment for wastewater treatment plants.

Despite the difficult situation caused by the war in Ukraine and the global energy crisis, LuxTP managed to achieve its targets in terms of both deadlines and quality, to the full satisfaction of its clients.

Projects signed in 2022

Wasserbillig Train Station

[Wasserbillig \(Grand Duchy of Luxembourg\)](#)

Development of a BMS building and construction of a technical building for the Luxembourg National Railway Company, CFL.

Reconstruction of a bridge over a river

[Manternach \(Grand Duchy of Luxembourg\)](#)

Civil engineering works for the Luxembourg National Railway Company, CFL.

SGL Engineering headquarters

[Junglinster \(Grand Duchy of Luxembourg\)](#)

Construction of the new SGL Engineering headquarters.

Flagship project

Icône Belval office building

Location

Esch - Belval (Grand Duchy of Luxembourg)

Duration

2020 - 2023

Client

BESIX RED

Project value

55 million euros

Description

With its glass façade and high-end technological facilities, the project has several special features aimed at creating a pleasant, innovative, and intelligent working environment.

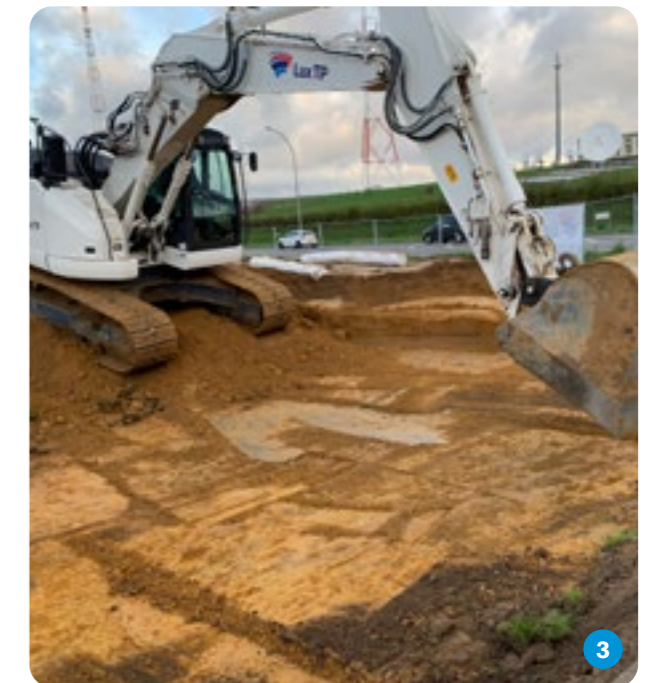
The project's location in a former industrial area is part of the overall renewal of the city, initiated by the Luxembourg government. In addition, the building has been designed to achieve BREEAM 'Excellent' certification.

3,000 square metres are reserved for coworking spaces with access to numerous areas for exchange and informal meetings. In addition to the workspaces, the building has several indoor and outdoor terraces as well as a large retail and restaurant area.

This project was realised in association with BESIX.

18,800 m²

17,303 m² of office space (of which more than 680 m² of archiving space), 1,444 m² of shops and restaurants, and 237 parking places



1. Icône Belval office building, Esch - Belval (Grand Duchy of Luxembourg)

2. Reconstruction of a bridge over a river, Manternach (Grand Duchy of Luxembourg)

3. SGL Engineering headquarters, Junglinster (Grand Duchy of Luxembourg)



Vanhout is a multidisciplinary construction group that excels in creating sustainable solutions for a better world. Its goal is to create living spaces in which people can work and then come home to relax. The various companies and construction teams undertake a broad range of construction and development projects, including offices, industrial and public buildings, residential projects, schools, healthcare infrastructure, and swimming pools.

Like many companies this past year, the Vanhout Group was faced with major and unexpected challenges in 2022. The consequences of the global health crisis, followed by the war in Ukraine, had a major impact on business, resulting in unprecedented price surges for materials and energy.

This situation called for action. Along with a further roll-out of the strategic action plan, first priority was given to the 'Operational Excellence' and 'Customer Focus' strategic projects. Fixed costs were critically analysed and ongoing projects monitored even more closely. A revised commercial strategy led to a more selective approach to projects, with gross margin and risk coverage optimised for each separate project. An adapted 'bouwteam' approach was also introduced.

Some of the project highlights include the delivery of the striking Louise Marie residential project in Antwerp and the opening of the new Buildwise (formerly BBRI) offices in Zaventem. During this time, ComTIS Services, a subsidiary, signed an important maintenance contract with Nike.

The Vanhout Group continues to focus on sustainability and innovation. CIRCL, a revolutionary digital, circular, and conceptual construction concept, is now ready, and the first residences implementing this are about to be built. The concept received extensive media attention at its launch, along with the visit from the Flemish Housing Minister Matthias Diependaele. The Flemish Minister of Environment and Energy, Zuhair Demir, expressed great interest in Vanhout's sustainability initiatives, including the adoption of the first CO₂-negative building block on one of its projects.

Projects signed in 2022

Corda E-Arena Hasselt (Belgium)

The continent's largest digital arena will accommodate a total of 3,500 seats. The e-arena will also attract numerous innovative companies and start-ups to the tech campus.

Lago Grasduinen swimming pool Bredene (Belgium)

This new swimming pool complex will be one of the largest gas-free swimming pools in Belgium. Thanks to the use of geothermal energy and a roof entirely covered with solar panels, the Bredene pool will run fully electrically with zero CO₂ emissions and 50 % less energy consumption per visitor than a traditional swimming pool.

Renovation office building Flemish Administrative Centre Mechelen (Belgium)

An ambitious energy renovation of an existing office building that will remain in use. This sustainable renovation meets the highest GRO standards.

Extension of BESIX Infra office building Schelle (Belgium)

The existing BESIX Infra office building in Schelle is being expanded with three additional levels and a part of the building renovated.



Flagship project

Louise Marie

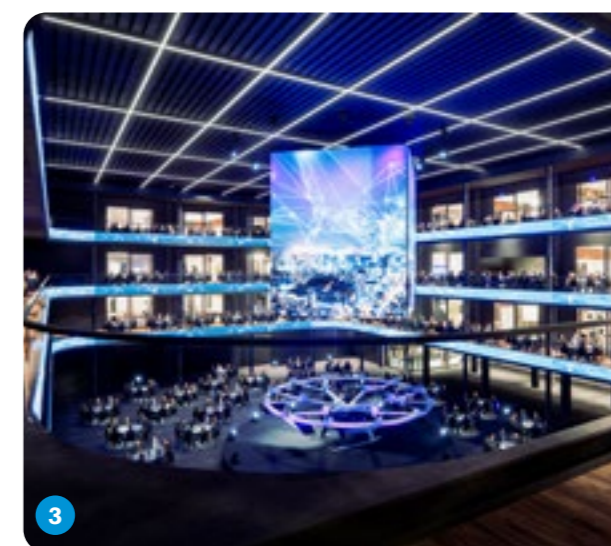
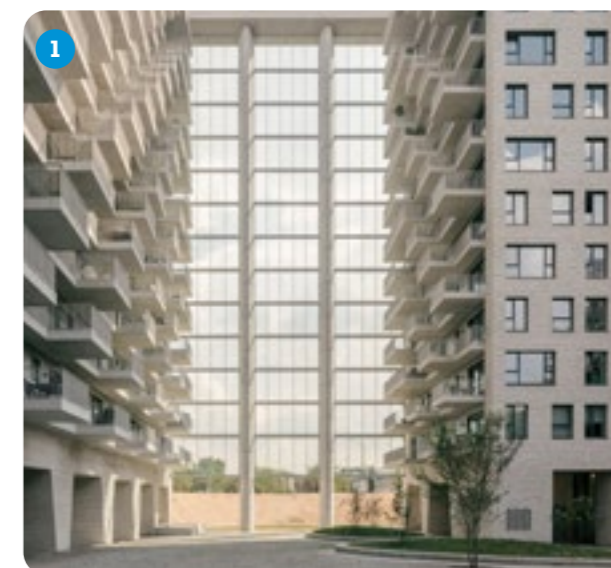
Location
Antwerp (Belgium)

Duration
January 2019 - February 2022

Client
CORES Development

Description
This striking project is strategically situated in the south of the city, close to the E19 and the Singel ring road. The two elegant residential towers house 207 apartments and penthouses across fourteen floors. An impressive glass screen connects the towers, blocking wind and urban noise from the busy roads outside to create a peaceful and comfortable living environment. Installing this screen with enough space between the panels to prevent glass breakage proved to be one of the biggest technical challenges of this project. However, with careful engineering and effective coordination, everything proceeded smoothly.

Glass screen
22 metres wide, 45 metres high,
61 tonnes, 195 glass panes



1. Louise Marie, Antwerp (Belgium)
2. Lago Grasduinen swimming pool, Bredene (Belgium)
3. Corda E-Arena, Hasselt (Belgium)



Wust is a general construction company operating in Wallonia and the Grand Duchy of Luxembourg. It builds residential complexes, office buildings, industrial units, and commercial areas, education facilities, healthcare and care facilities, as well as sports and leisure facilities. It also undertakes renovation and restoration work and provides services to the industry. Its service offering is complemented by its subsidiaries and the real estate development department.

Wust saw a year of transition in 2021, while 2022 became the year of confirmation. The ongoing development and organisational strategies put in place started to bear fruit, both in terms of sales and results, and in terms of the company's general momentum. However, one should remain cautious and vigilant regarding the evolution of the level of activity in the sector in the medium term.

Large-scale flagship projects were completed in 2022, including the new grandstand project at the Spa-Francorchamps motor racing circuit and the LégiaPark in Liège. Other projects include the municipal school in Bosson-Ferrières, the complex of shops and apartments for Solico in Fléron, the extension of the Sainte-Thérèse d'Avila school in Chênée and the construction of social housing in Chapelle-lez-Herlaimont. Construction of the Socogetra headquarters in Marche-en-Famenne has entered its final phase of execution. The AXS project in Namur and the Paradis Express project in Liège are continuing, as are the Wust Promotion projects in Malmedy, Heusy-Verviers, Hermalle-sous-Argenteau, and Bonnelles – just to name a few amongst more than 100 projects tackled in 2022.

Thanks to the volume of orders received in 2023, Wust can approach the year with confidence and devote itself to the study of longer-term projects, particularly through 'bouwteam' projects. 2023 presents itself as a year of growth that will allow the company to pursue and maintain its main development focuses, whether that be within the framework of its operations in the West of Wallonia, its boosted presence in the Grand Duchy of Luxembourg (via subsidiary Wust Luxembourg), or through its positioning on large-scale projects.



Flagship project

LégiaPark

Location

Glain - Liège (Belgium)

Construction period

November 2019 - August 2022

Client

LEGIAPARK SA

Architect

Valentiny Architects

Stability and technical design office

Greisch

Description

Wust has completed the construction of the first phase of the LégiaPark project on the Mont Légia site in Glain. The project consists of two building complexes designed to host companies active in the field of life sciences. Designed in 'bouwteam', they are being built in collaboration with Moury.

This state-of-the-art 30,000 m² business centre includes offices, mixed and communal spaces, and clean rooms. The BREAAAM-certified buildings stand out for their impressive energy performance. In this respect, the photovoltaic glass canopies were a real challenge, both in their structural design and their assembly. The project also includes 8,000 m² of green spaces.

Projects signed in 2022

New cybersecurity centre for the Rhea Group

Transinne (Belgium)

Construction of the new European cyber security centre for the Rhea Group, in collaboration with SPIE in the Galaxia parc.

Architect: ASSAR ARCHITECTS

Design office: Bureau d'Etudes Lemaire s.a.

Brasseur Bel-R office building

Luxembourg City (Grand Duchy of Luxembourg)

Conversion of an office building into apartments in Luxembourg, in collaboration with Spie and Demalux, for Brasseur.

Architect: Fabeck Architects

Design office: Schroeder & Associates

'Point d'eau' special care residence

Attert (Belgium)

Construction of a residence for autistic and multi-handicapped persons for the 'asbl Point d'Eau', in collaboration with TP Rénovation.

Architect: SIA Architects

'Les Jardins du Terril' apartment buildings

Rocourt (Belgium)

Construction of two apartment buildings, together with communal and public spaces, for Matexi.

Architect: Quadra Architecture & Management

Design office: JML Lacasse Monfort (stability) - Berger Design Office (special techniques)



1. LégiaPark, Glain, Liège (Belgium)

2. Rhea Cybersecurity Centre, Transinne (Belgium)

3. 'Les Jardins du Terril' apartment buildings, Rocourt (Belgium)



BESIX Infra boasts strong expertise in roadbuilding and complex sewage systems. As a contractor for roadbuilding, sewerage works, environmental remediation, and the construction of public spaces, BESIX Infra sits right at the top of the public and private infrastructure market in Belgium.

The Bilzen and Burcht sites have their own concrete mixing and recycling facilities. BESIX Infra's subsidiaries Belasco and BESIX Infra Nederland have in-house asphalt production plants at Bilzen, Ghent, Puurs, and Roermond, enabling them to operate efficiently in Flanders, Brussels, and the southern Netherlands.

In 2022, BESIX Infra and its asphalt subsidiary Belasco acquired multiple new exciting projects that fell within the remit of some of their strongest areas: complex inner-city projects involving the multi-phase construction of new sewer systems, with major attention paid to nuisance reduction and stakeholder management. These include the projects described in this section, as well as large collector projects for Aquafin in Sint-Niklaas, Sint-Gillis-Waas, Glabbeek, Aarschot, and Duffel and impactful municipal projects in Hasselt and Grimbergen.

At its own site in Bilzen, BESIX Infra, together with its sister company Franki Foundations, prepared the surrounds and started laying the foundations for a large wind turbine, to be installed by Engie in spring 2023. No less than 234 metres tall, this colossal wind turbine will supply the Bilzen site and its installations with plentiful renewable electricity.

The Schelle site will be thoroughly renovated in the coming years. In 2022, a brand-new building for equipment service was delivered, together with a new reception building for this service and the warehouse.

Projects signed in 2022

Sewage works and village centre renewal Meigem (Belgium)

Client: Aquafin and City of Deinze

The works in the village centre will transport the wastewater from Meigem via a new separate sewerage system using pumping stations, to the sewage treatment plant in Nevele. Streets throughout the centre are simultaneously being renovated with particular attention being paid to the village centre's original charming character.

Oude Spoorweg' collector Zoutleeuw (Belgium)

Client: Aquafin and city of Zoutleeuw

This project includes building three pumping stations and a storage sedimentation basin, laying a separate sewerage system, the complete redevelopment of the road and the construction of separate cycle paths.

Redevelopment of the 'Grotesteenweg' at the intersections with 'Binnensingel' and 'Elisabethlaan'

Antwerp (Belgium)

Client: Agency for Roads and Traffic in Flanders

In addition to making the intersections more compact and clearer, the bridge over the Ring and the entrances and exits to and from the Ring are being upgraded. The tram infrastructure will be renewed across the project zone and a separate sewerage system built.



Flagship project

Road infrastructure and sewage system for major access road to Herk-de-Stad

Client

Fluvius and Herk-de-Stad City Council

Location

Schakkebroek, a sub-municipality of Herk-de-Stad (Belgium)

Duration

September 2021 - January 2023

Description

The Amandinaweg slopes sharply downwards. During periods of heavy rainfall, the water at the lowest point could not be drained off quickly enough, resulting in flooding. For this reason, a split sewerage system with separate domestic wastewater drainage and rainwater pipes was installed. BESIX Infra was also responsible for building a pumping station for this area. Along the entire two-kilometre project area, the road reconstruction features an ochre-coloured cycle lane for the many cyclists using the street. The Amandinaweg connects the centre of Schakkebroek with the centre of Herk-de-Stad and is very often used by young people going to school there. The reconstruction therefore brings significant improvements for the residents in many surrounding areas.

10,500 m²
of asphalt

2,300 metres
of concrete piping



Franki Foundations

Franki Foundations is present on more than 500 construction sites every year, in a variety of fields, including industry, energy, infrastructure, and real estate. From the preliminary study to the finishing touches, Franki Foundations offers complete, bespoke foundation solutions for every site in which the firm operates. The company also boasts more than a century of experience, including subsidiaries in France, The Netherlands, and The United Kingdom, as well as an in-house design office.



Projects signed in 2022

Project ONE for INEOS Antwerp (Belgium)

Project ONE aims to build an ethane cracking facility in the Port of Antwerp, forecasted to be one of the most efficient and sustainable chemical plants in Europe. As the deep foundations partner for this project, Franki Foundations will be placing more than 15,000 piles to support industrial buildings as well as installations such as tanks, pipe racks, and waste water treatment.

Crowne Plaza Hotel Brussels (Belgium)

The Crowne Plaza Hotel, in the heart of Brussels, is developing an extension of 4,300 m² and more than 150 rooms. For this project, a sophisticated logistics system enables us to place bored piles to a depth of over 50 metres right in the heart of the capital.

University centre by C.R.O.U.S. Villeneuve d'Ascq (France)

As part of a vast rehabilitation and construction programme to improve student living conditions, Atlas Fondations will be placing PCS piles as foundations for new student buildings near Lille.

Capacity growth project - Neste Rotterdam (The Netherlands)

Franki Grondtechnieken is supporting Neste's Capacity Growth Project to increase its renewable product production capacity in Europe. Approximately 1,600 driven piles, 2,000 screwed piles and more than 3,000 rigid inclusions will be needed for this extensive project.



1. Clarebout Plant, Dunkerque (France)
2. Neste Capacity Growth, Rotterdam (The Netherlands)
3. CROUS University, Lille (France)

Flagship project

Food production unit in Dunkirk for Clarebout

Location

Dunkirk (France)

Duration

August - September 2022

Description

In the port of Dunkirk, Clarebout has decided to set up its wholly new production site for frozen potato products. To construct the foundations for the new factory, as previously in Warneton, contractor Alheembouw has called on Franki Foundations.

For the first phase, the timing between briefing and execution was very tight, requiring less than a month to bring together 5 machines and 20 people for the project. Ultimately, the team was composed of personnel from Franki Foundations (Belgium), Atlas Fondations (France), and Franki Grondtechnieken (The Netherlands). Thanks to the rapid and efficient mobilisation of the workforce, as well as an exemplary safety culture, the project was successfully completed on time!

The Dunkirk project was a shining example of both the flexibility of Franki Foundations' regional company, Atlas Fondations, and the power that the Franki Foundations group can deploy for its clients and partners.

1,600
Omega
displacement piles

730
enlarged head
Omega rigid
inclusions



With almost 75 years of experience, the Socogetra Group occupies a key place among Belgium's construction players. Socogetra has class 8 certification – the highest category in Belgium – enabling it to tender for and carry out contracts of any size.

Socogetra's operations are divided into four main activities: road works, railway works, civil engineering, and buildings. Through its subsidiaries, Socogetra owns a range of factories and entities producing construction and coating materials (Famenne Enrobés, Enrobage Stockem, Enrobés des Trois Frontières, Emubel, GNB Béton, and Vialines), as well as quarries (Carrière des Limites and Carrières de Grès Réunies). Additionally, the Hainaut-based subsidiary Bagetra rounds off these activities in the fields of civil engineering and industrial buildings.

After two years of Covid, and despite a challenging economic situation caused by the war in Ukraine (which led to a significant increase in the prices of the raw materials), the Socogetra Group (both its building and industrial activities) achieved excellent results in terms of its business volumes and financial performance, exceeding expectations. This made 2022 its best year in terms of results since its founding! As in previous years, all Socogetra employees were fully committed to their work and objectives, taking up the various challenges presented to them.

The company once again demonstrated its ability to adapt to the changing demands and needs of its clients, as well as to the technical requirements of cutting-edge projects. Socogetra's capabilities have again been demonstrated in many fields, making the company a key player in wastewater

treatment plants, conventional roadworks, and major motorway refurbishment projects, in industrial civil engineering works requiring precise work schedules respecting the clients' constraints, in large civil engineering works for clients such as Tuc Rail, Infrabel, or Engie, as well as in extremely complex and comprehensive railway activities in terms of the skills required.

The order book reached a record level, providing the company with excellent prospects for 2023 and even for 2024, where new orders have already reached 60 % of the level necessary for maintaining operations at their current level.

2022 was also the year in which the new Socogetra Group headquarters was constructed. The new building will also house the staff of its subsidiaries and shared services, along with colleagues from BESIX Group's other branches, thus enabling them to work in the best possible conditions with the best communication flows. The move to these new headquarters in the first quarter of 2023 will mark an important turning point in the history of Socogetra, fuelling its future growth, adding to its attractiveness, and allowing the company to celebrate its 75th anniversary in a new environment!

The teams have once again showcased their know-how and perfect cohesion, demonstrating boldness, mutual support, and courage. Unity creates strength!

Projects signed in 2022

Construction of a 370-metre quay wall for the Public Service Wallonia-Hainaut Pommeroeul (Belgium)

Building of a reinforced concrete quay wall fitted with bollards and ladders for the transshipment of inland waterways cargoes, together with an access road, a drainage system and a green area. The BESIX & Socogetra consortium has undertaken to gain level-3 CO₂ performance certification for the project.

Extension of a wastewater treatment plant (from 19,000 to 40,000 PE*) for IDEA Trivières (Belgium)

Construction of a second treatment line, a new stormwater treatment line, and a sludge treatment plant.

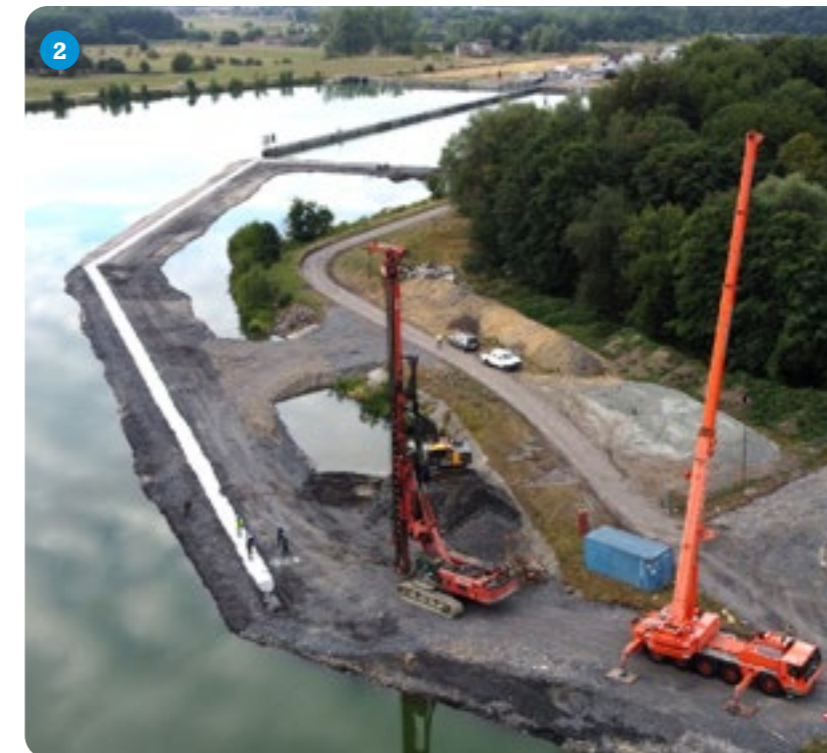
Modernisation of the 162 railway line, road link 3 Brussels-Luxembourg Haversin-Ciney (Belgium)

Levelling works, construction of a retaining wall, laying gutters for track drainage. Realisation of supports for overhead lines, re-electrification, and signalling work. Work started in November 2022 and will be completed by the end of 2024.

Creation of a path for pedestrians and cyclists on the former tramway line 618 for the Public Service Wallonia-Luxembourg Bastogne-Martelange (Belgium)

Construction of a 12-km long path: culvert repairs, construction of a bridge over the La Strange river, construction of a well, levelling works over 12,000 m³, asphaltting in two layers, laying of stones with a thickness of 20 cm and a surface of 27,000 m².

*PE = Population Equivalent



Flagship project

Insertion of a 3,000-tonne slab using 16 jacks in just 5 hours in Hondelange

Client
Infrabel

Construction period
April 2022 - October 2022

Description

The slab was constructed next to the existing railway line in Hondelange, without interfering with traffic on the single-track line. Equipped with rails, sleepers and ballast, the 520-metre long, 4-metre wide, 3,000-tonne slab was then pushed more than 6 metres into the place of the old track by sixteen jacks. More than 50 workers took part in the operation over a 24-hour weekend, working with extreme precision. It was also necessary to stabilise the muddy ground and keep the track level. The slab will stabilise the ground by providing a waterproof layer. Socogetra worked with Heijmans to insert the slab.

3,000-tonne
slab

1. Modernisation Railway Line 162, Namur (Belgium)
2. Quay Wall, Pommeroeul (Belgium)
3. Railway tracks replacement, Hondelange (Belgium)



BESIX Unitec, together with its subsidiaries BESIX Connect, Lucan, and Appermont, offers a range of high-quality infrastructure solutions to its clients. BESIX Unitec is your technology partner in the infrastructure market: a key player in the design, construction and maintenance of automated public infrastructure and networks. Clients can count on complete solutions, covering the entire life cycle of their installations, from initial concept and detailed engineering to implementation and finally long-term operation and/or maintenance.

In March 2022, Van den Berg and Agidens Infra Automation joined forces to form BESIX Unitec. Under this new name, and in the context of the acquisition of the Infra Automation division, BESIX Unitec took major steps last year to expand its organisation. With this in mind, 2022 was the year in which the company explored the Walloon market, signing first-time contracts with customers like Sofico, SWDE, VOO and Ores.

In addition, the large 'Fiber To The Home' project got underway: installing fibre optic cable connections into private homes. BESIX Unitec is now occupied in several cities with this project. A specific training room, the 'Fiber School', has been set up for the project on the Schelle site.

Other highlights this year included the delivery of the connecting bridge in Zeebrugge – the largest revolving bridge in Europe – and the delivery of the Stalen high-voltage sub-station for Elia.

For the Fluvius distance heating networks project, BESIX Unitec brought its own fully designed and built boiler rooms into service. The number of technicians was also successfully scaled up for the Fluvius 'digital meters roll-out' project work.

Flagship project

Horizontal directional drilling for the construction of a drinking water network

Location

Beauraing (Belgium)

Client

Société Wallonne des Eaux (SWDE)

Description

The southern part of the Namur Province has been struggling with water supply problems for years. Municipalities will now be supplied from the pumping stations in the Florennes and Beauraing quarries via a new 27-kilometre network.

For this drinking water network, BESIX Unitec carried out complex horizontal directional drilling over a length of 450 metres in Beauraing, crossing both a railway and a major highway. Work was further complicated by an elevation difference of 200 metres between the entry and exit pits. This drilling has now made it possible to install 35-centimetre diameter pipes.

After difficult and problematic summers, during which trucks from the regional water company SWDE took turns in supplying the network, water has once again flown from taps in the region since the start of the year and continues to this day.

Drilling over a length of
450 metres

200 metres
elevation difference
between entry and exit pits

Projects signed in 2022

Installation of fibre optic network in Wallonia (Belgium)

In 2022, BESIX Unitec and Proximus signed a cooperation agreement as part of the roll-out of the fibre network in southern Belgium. Following the Flanders area, BESIX Unitec will also contribute to the further digitisation of different parts of the country.

Strengthening the existing coax network in Wallonia (Belgium)

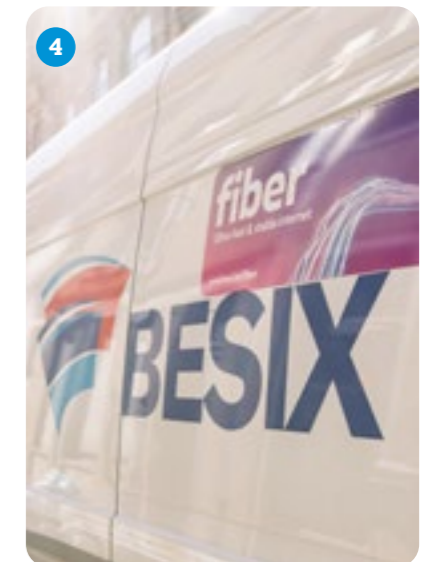
The speed of internet connection has become essential for keeping up with exploding data usage. VOO, as a Walloon internet provider, therefore continues to modernise its network on a daily basis. With a budget of 300 million euros, it is seeking to upgrade its current coax to Giga stream speeds.

Construction Bospoort bridge in Halle (Belgium)

The existing Bospoort bridge, managed and operated by De Vlaamse Waterweg, in the centre of Halle has had its day and needs to be replaced. The existing bridge will be completely demolished, to make way for a new mobile bridge for pedestrians, cyclists, and public transport only.

Construction of 220 kV connections in Wallonia (Belgium)

Two underground 220 kV connections are being laid between the Elia Rimières and Le Val substations. The connections, extending for ten kilometres over land, will connect the two future gas and steam power plants of Tractebel and Luminus respectively, to the Belgian national power grid.



1. Horizontal directional drilling, Beauraing (Belgium)
2. Strengthening coax network, Wallonia (Belgium)
3. Bospoort Bridge, Halle (Belgium)
4. Fiber to the Home, Wallonia (Belgium)

08

Corporate Governance & Structure

Corporate Governance	142
Group Structure	146



Corporate Governance

BESIX follows the Belgian recommendations on Corporate Governance for unlisted companies ('Code Buysse III'). BESIX has structures and rules in place to ensure effective corporate governance, risk management and control both in each BESIX company and within the organisation as a whole. BESIX promotes a similar corporate approach within its subsidiaries and entities.

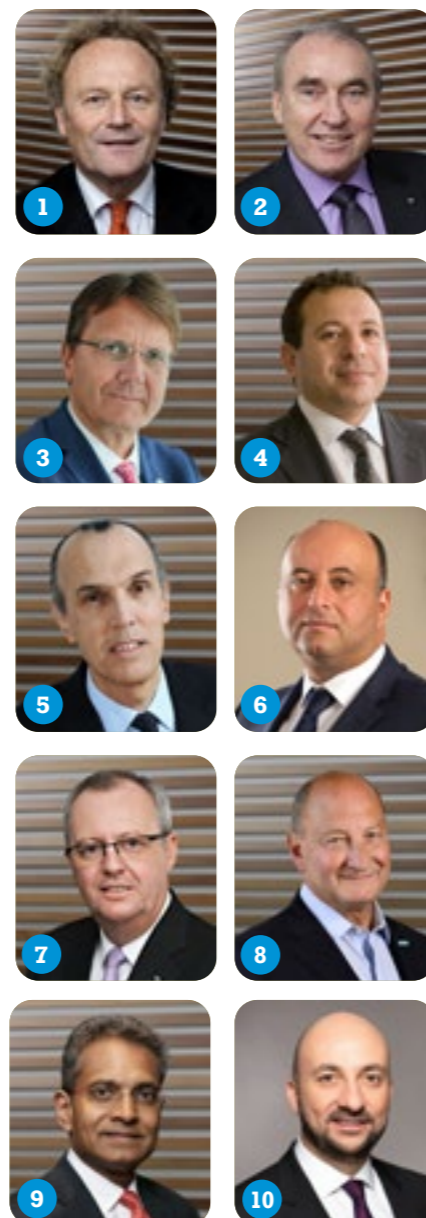
The Board of Directors, assisted by advisory committees, plays a leading role in outlining, monitoring, and controlling such structures and rules and in securing the day-to-day operational and financial management of the Group and its entities by the Chief Executive Officer and the senior management.

The Board includes four external directors, whereby a balanced configuration ensures authority, expertise, and independence, and the positions of Chairman and Chief Executive Officer are separated. Decisions are also taken after ample deliberation and consultation and the functioning of the Board is regularly reviewed, also in the light of the prevailing shareholders' arrangements.

A number of advisory committees are organised within the Board of Directors to prepare its deliberations and optimise its decision-making process. These committees prepare the topics discussed during the Board meetings, assess the effectiveness of the internal controls in place, and formulate opinions and recommendations:

- The Audit Committee supervises the setup of the statutory and consolidated financial statements, the interim financial reports, and the relations with the statutory auditor. It works closely with representatives of the senior management, monitors the internal control and risk management systems and the main risks associated with the activities of the Group and its entities, and operates in accordance with its charter;
- The Remuneration & Nominations Committee evaluates the performance of the senior management, oversees the HR policies of the Group and its entities, and pays specific attention to succession management;
- The Strategic & Executive Committee focuses on the vision, mission and strategic objectives of the Group and oversees the business activities and performance as well as the risk management and internal control and organisation, as implemented by the Chief Executive Officer and the senior management.

Board of Directors and Committees



Board of Directors

	Name	Position	End of term
1	Baron Philippe Vlerick	Chairman	2025
2	Johan Beerlandt ¹	Executive Vice-Chairman	2025
3	Rik Vandenberghe ²	Director	2023
4	Osama Bishai	Director	2025
5	Jérôme Guiraud	Director	2025
6	Ihab Mehawed	Director	2025
7	Philippe Quoilin ³	Director	2025
8	Wouter De Geest	Independent Director	2024
9	Paddy Padmanathan	Independent Director	2023
10	Etienne Schneider ⁴	Independent Director	2023
	Baron Jean Stéphane ⁵	Honorary Chairman	
	Ridder Luc Vandewalle	Honorary Director	

Remuneration & Nominations Committee

Johan Beerlandt¹ (Chairman)
Osama Bishai
Baron Philippe Vlerick

Audit Committee

Wouter De Geest (Chairman)
Johan Beerlandt¹
Ihab Mehawed
Etienne Schneider⁴

1. Permanent representative of Bevafin srl
2. Permanent representative of Audymatt srl
3. Permanent representative of Philippe Quoilin srl
4. Permanent representative of Beta Aquarii sa
5. Permanent representative of Innosté sa



Strategic & Executive Committee

- 1 Jan Van Steirteghem¹**
General Manager Business Unit Europe
- 2 Jean-Pol Bouharmont**
Executive Chairman BESIX Watpac
Managing Director Business Unit Middle-East
- 3 Geert Aelbrecht²**
Chief People Officer
Group Sustainability & ESG Officer
- 4 Hans Beerlandt³**
Chief Financial Officer
- 5 Jean Polet**
General Manager Key Projects
- 6 Johan Beerlandt⁴**
Executive Vice-Chairman
- 7 Tom Neyrinck⁵**
General Manager Concessions & Assets
- 8 Gabriel Uzgen⁶**
Chief Executive Officer BESIX Real Estate
Development
- 9 Pierre Sironval⁷**
Chief Executive Officer
- 10 Mathieu Dechamps⁸**
General Manager Business Unit International

1. Permanent representative of Kyokan bv

2. Permanent representative of Gacco bv

3. Permanent representative of Gabeli srl

4. Permanent representative of Bevafin srl

5. Permanent representative of JQTM bv

6. Permanent representative of B2B Group sa

7. Permanent representative of Althiel srl

8. Permanent representative of Athena International srl

Group Structure

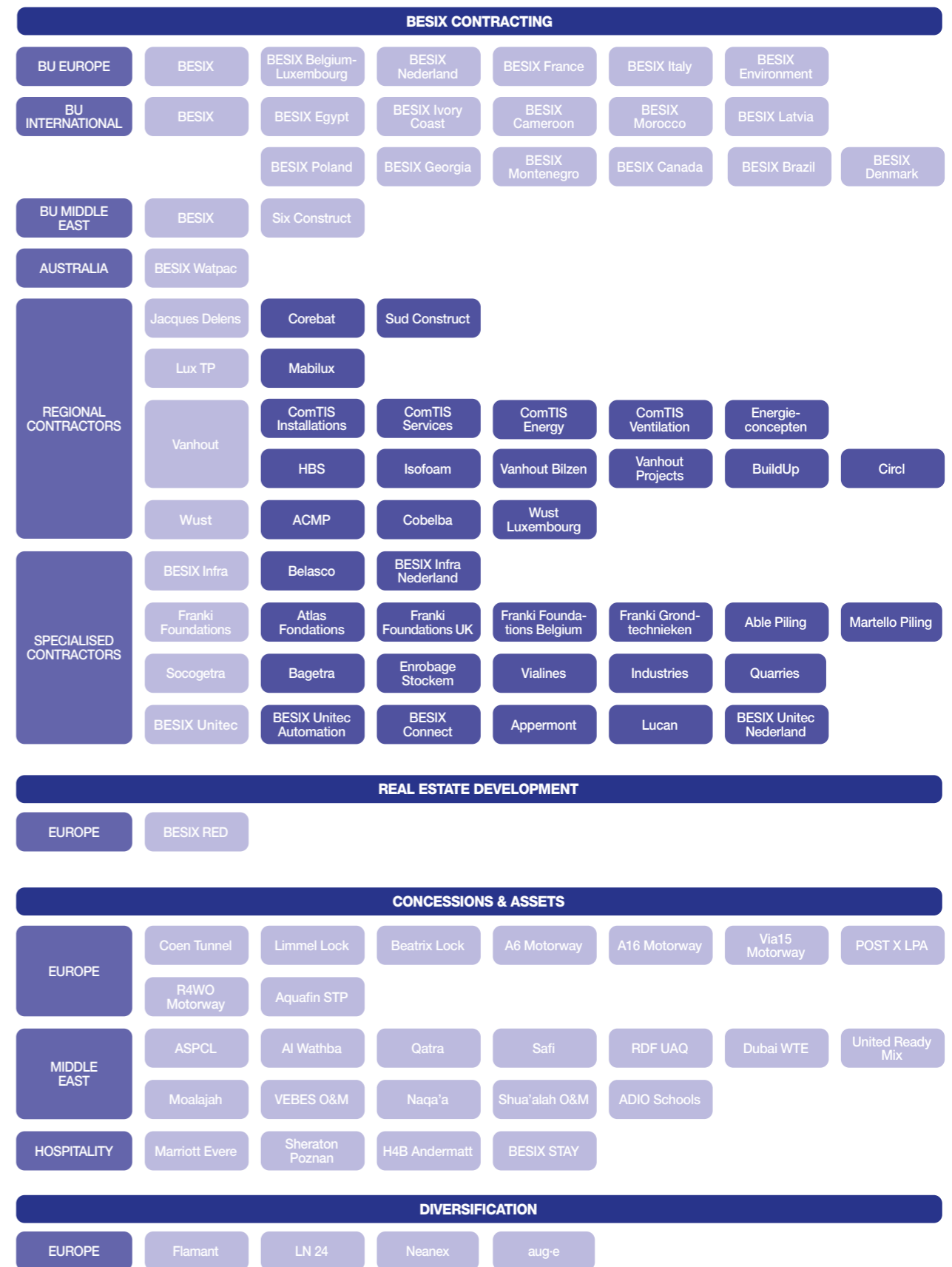
Operating across five continents, BESIX encompasses many branches and legal entities, fully owned by the group. There are also some companies in which BESIX owns a minority or majority stake.

BESIX's branches were created as the Group diversified geographically. In most cases, the BESIX name goes in front of the country in which they are established. For example, BESIX Egypt is a branch integrated into the 'Business Unit (BU) International', just as BESIX Nederland and BESIX France belong to the 'BU Europe'.

Most of the legal entities are companies acquired by BESIX over the last few decades. They are the result of vertical integration and sectoral or geographic diversification. Although they are fully owned by BESIX, many of them have kept their original name or a direct reference to it. For example BESIX Watpac (Australia), Lux TP (Luxembourg) or Martello Piling (United Kingdom). Besides commercial considerations – vital for companies whose brand embodies their specific expertise – this reflects the policy of controlled autonomy embedded within the Group.

Not all BESIX companies necessarily fall within these two categories.

- Some companies were created by the Group itself: for example Six Construct, founded in 1966 to develop the Group's activities in the Middle East, or BESIX Real Estate Development established in 1988, to further the Group's real estate development business.
- Companies in which BESIX owns a stake also retain their identity. This applies to Flamant, for example.



Disclaimer: not all companies presented in this chart are wholly-owned by BESIX Group. Besides branches and subsidiaries, this chart also presents companies in which BESIX Group owns a substantial stake.

09

BESIX Finance

Comments on the Financial Performance	150
Consolidated Balance Sheet	152
Consolidated Income Statement	153
Consolidated Cash Flow Statement	154



Comments on the Financial Performance

BESIX Group improved its profitability in 2022 in spite of a difficult economical context, reaching a record order book at the end of the year. The Group could rely on its geographical diversification and its various activities to achieve strong performance.

BESIX closed the year 2022 with a turnover of 3.34 billion euros, one of the highest in its history, and an increase of 12.7% compared to the previous year.

BESIX also generated an operating profit (adjusted EBITDA) of 129 million euros, considering the contribution of associates. The group's net result increased to 40 million euros.

The company also ended the year with a historical record backlog of 5.26 billion euros, against 4.88 billion euros in 2021.

The order book shows a good diversification in terms of geography and activity. Belgium accounts for 30 % of orders, The Netherlands, the Grand Duchy of Luxembourg, and France for 23 %, Australia for 14 %, and the Middle East for 12 %, while the rest of the world counts for 21 %.

Building construction accounts for the largest portion of the order book with 44 %, followed by Infrastructure with 29 %, and Roads & Utilities 9 %.

BESIX Group's diversification strategy has once again proven its relevance: the public-private partnerships in the field of water and waste in the Middle East, the entities specialising in infrastructure and services to communities in Western Europe and the real-estate development subsidiary have all achieved very good results, and further growth.

The company reported a consolidated net cash position of 187.6 million euros (excluding IFRS16, BESIX RED and non-recourse financing) and shows an increasing solvency ratio of 22.8 %, above the industry average.

Performance by activity and business unit

Contracting

BESIX Group's Contracting business generated a revenue of 3,116 million euros.

Contracting in Belgium, the Netherlands, France, and Grand Duchy of Luxembourg together generated 525 million euros of sales.

Regional contractors contributed to 572 million euros in the contracting turnover. Specialised contractors (roads, utilities, piling, etc.) account for another 625 million euros in the turnover and once again highly contributed to the profitability of the group.

In Australia and New Zealand, BESIX Watpac posted a revenue of 646 million euros in a highly competitive environment.

The Middle East contracting activities resulted in a turnover of 481 million euros, with new iconic projects starting in 2022.

Contracting in the rest of the world accounted for 267 million euros of turnover, with the Ivory Coast, Morocco, and Egypt being the main contributors.

Real Estate Development

BESIX Real Estate Development closed 2022 with a turnover of 192 million euros and an exceptional return on equity of 47.2 %.

2022 was marked by the sale of CSM Properties and the acquisition of new positions in the Netherlands and the Grand Duchy of Luxembourg.

BESIX RED currently has more than a million m² in development across 19 cities in 5 countries (Belgium, the Grand Duchy of Luxembourg, The Netherlands, France, and Portugal).

Concessions & Assets

Through equity stakes in 15 BOOT projects (wastewater treatment plants, waste-to-energy plants, schools...) and in a building material production company. Concessions & Assets was again a high contributor to the profitability of BESIX Group, especially in the Middle East.

The hospitality projects have shown improving performance compared to the previous year.

Balance sheet

At the end of 2022, the balance sheet totalled 3.4 billion euros, coming from 3.2 billion euros last year. The total equity stands at a high level of 786 million euros, compared to 686 million euros in the previous year. This means that the solvency ratio is at 22.8 %, above the industry average.

Evolution of net cash position

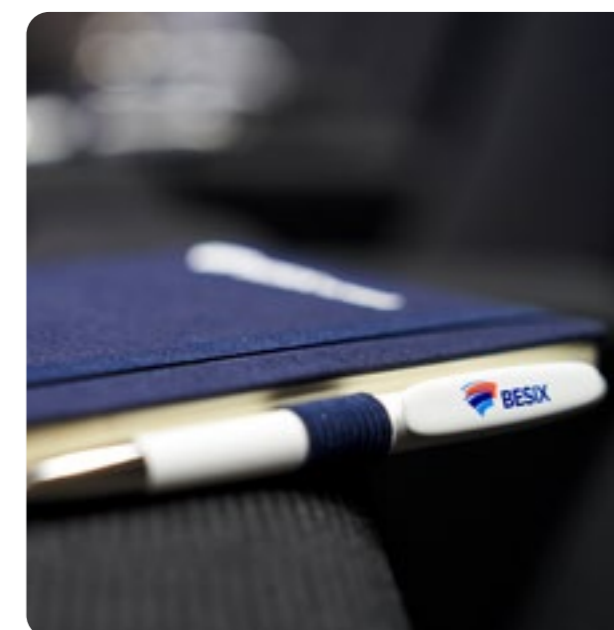
BESIX Group's consolidated net cash position amounted to 187.6 million euros at the end of 2022 (excluding IFRS16, BESIX RED and non-recourse financing).

Auditor's report

The auditor Mazars Bedrijfsrevisoren - Réviseurs d'Entreprises has issued an unqualified opinion on the statutory and consolidated financial statements as of December 31, 2022.

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.



Consolidated Balance Sheet

(in EUR '000)	31/12/2022	31/12/2021
ASSETS		
Non-current assets	800,904	733,981
Intangible assets	35,140	47,959
Goodwill	28,268	28,354
Property, plant and equipment	291,774	289,451
Investment in associates	137,339	110,686
Receivables	269,203	220,837
Other assets	16,752	13,880
Deferred tax assets	22,428	22,814
Current assets	2,651,134	2,487,945
Inventories	33,496	28,875
Construction contracts in progress	443,771	390,755
Real Estate held for sale	360,126	300,297
Trade receivables	859,497	771,441
Other receivables and other assets	444,149	431,760
Cash and cash equivalents	510,095	564,817
TOTAL ASSETS	3,452,038	3,221,926
EQUITY AND LIABILITIES		
Shareholders equity	783,055	683,670
Share capital	32,000	32,000
Retained earnings	686,111	647,673
Hedge reserves	21,949	-18,917
Translation differences	42,995	22,914
Minority interest	2,623	2,164
EQUITY	785,678	685,834
LIABILITIES		
Non-current liabilities	709,078	535,175
Borrowings	578,654	363,278
Provisions	78,377	85,124
Other liabilities	34,427	67,801
Deferred tax liabilities	17,620	18,972
Current liabilities	1,957,282	2,000,917
Borrowings and bank overdraft	175,794	272,133
Trade payables	1,044,150	964,709
Advances received on contracts	268,185	211,581
Billing in excess on construction contracts	170,693	251,278
Income taxes payable	14,019	16,574
Short-term provisions	79,381	67,152
Other liabilities	205,060	217,490
TOTAL EQUITY AND LIABILITIES	3,452,038	3,221,926

Consolidated Income Statement

(in EUR '000)	2022	2021
Sales	3,338,744	2,963,169
Cost of sales	-3,110,241	-2,749,867
of which depreciation	-60,248	-63,800
of which provisions	-11,282	-37,029
GROSS PROFIT	228,503	213,302
General & Administrative expenses	-206,481	-208,697
of which depreciation	-13,191	-24,226
of which provisions	-1,383	32
Other income / expenses	7,286	9,085
OPERATING PROFIT	29,308	13,690
Financial income	15,449	14,572
Financial charges	-20,305	-17,255
Results from associates	26,374	28,086
PROFIT / (LOSS) BEFORE TAXES	50,826	39,093
Income taxes expense	-9,966	-11,858
of which current taxes	-17,851	-13,048
of which deferred taxes	7,885	1,190
CONSOLIDATED PROFIT / (LOSS)	40,860	27,235
Minority interest	-569	-182
GROUP CONSOLIDATED PROFIT / (LOSS)	40,291	27,053

Consolidated Cash Flow Statement

(in EUR '000)	2022	2021
Operating result	29,308	13,690
Adjustment for:		
- Depreciation	73,439	88,026
- Result on disposal of (in) tangible assets	-9,546	-7,779
- Result on disposal of other long-term assets	0	-1,484
- Result on disposal of investment in associates	-3	-379
- Provisions	12,665	36,997
- Allowances	1,707	-1,153
OPERATING CASH FLOW BEFORE CHANGES IN WORKING CAPITAL	104,156	127,918
- Income taxes paid (net)	-19,533	-12,244
- Changes in working capital	-207,487	-106,002
CASH FLOW FROM OPERATING ACTIVITIES	-122,864	9,672
TRANSLATION DIFFERENCE ON CASH & CASH EQUIVALENT	-3,170	19,101
Purchase of intangible assets	-1,178	-487
Purchase of tangible assets	-69,489	-70,717
Purchase of other long-term assets	-95	-36
Acquis. & capital increase investm. in associates	-4,901	-19,781
Proceeds from sale of intangible assets	3	0
Proceeds from sale of tangible assets	18,300	14,313
Proceeds from sale of other long-term assets	32	1,497
Proceeds from sale of investments in associates	92	618
Dividends received from investments in associates	29,949	25,148
Acquisitions/(disposals) of subsidiaries, net of cash	0	-10,668
NET CASH FROM INVESTING ACTIVITIES	-27,287	-60,113
Proceeds/(repayments) of borrowings	119,486	81,831
Proceeds/(repayments) of long term receivables	-6,870	-2,586
Interest paid/received (net)	-3,918	-4,732
Capital increase minority share	41	0
Dividends paid to Group shareholders	-10,000	0
Dividends paid to minority interests	-140	-216
NET CASH FROM FINANCING ACTIVITIES	98,599	74,297
(DECREASE)/INCREASE IN CASH & CASH EQUIVALENTS	-54,722	42,957
MOVEMENTS IN CASH & CASH EQUIVALENTS		
Cash at beginning of the year	564,817	521,860
(Decrease)/Increase	-54,722	42,957
Cash at the end of the year	510,095	564,817

