

# Engineering: people's work

Annual Report 2017



Bio-based bicycle bridge Ritsumasy| The Netherlands

# Engineering: people's work

Annual Report 2017



## REPORT BY THE BOARD OF DIRECTORS

**In 2017, the world's first 3D-printed concrete bicycle bridge was completed in the Dutch town of Gemert. There was a massive increase in the use of Virtual Reality in our design and participation processes, and we enthusiastically worked on challenging circular design and digital construction projects. In the year under review we promoted entrepreneurship by devoting extra attention to innovation, which resulted in a stronger position on the Dutch market. Thanks in part to this focus on innovation, the Port of Rotterdam Authority selected us to draw up a flexible design for a future-proof quay. We also helped the Central Government Real Estate Agency to tackle the complex challenge of realising energy-neutral buildings in The Hague. Internally, we switched to a new project accounting and financial administration system, and completed the renovation of our Leeuwenbrug office in Deventer. The year under review was a busy and dynamic one and was closed on balance with 2.4 % organic workforce growth, a total revenue of EUR 130.8 million, and a net result of EUR 12.5 million.**

Witteveen+Bos wants to provide added value to society. We use the seventeen Sustainable Development Goals (SDGs) defined by the United Nations in 2015 to guide our contributions to a socially, ecologically and economically sustainable world. Based on a materiality analysis conducted in 2016 in consultation with internal and external stakeholders, we have formulated four corporate objectives, on which we continued to achieve good progress in 2017.

Our first corporate objective is to create added value for society through our projects. Our seven sustainable design principles enable us to put sustainability into practice. In 2017, 80 % of all colleagues worldwide were already familiar with the seven sustainable design principles, with these principles being considered in 54 % of all audited projects. Ongoing attention is required to increase both percentages to 100 %. By performing a materiality analysis for each separate business line, we were able to gain further insight into the potential impact of our activities. In 2017 Witteveen+Bos implemented the Plus+ Innovation Programme, which is aimed at developing new solutions for today's challenges in river deltas, infrastructure, 'closing the loops', and sustainable cities. Various innovations are already providing added value for our clients. By devoting extra attention to our home market of the Netherlands, we were able to gain a great deal of new knowledge and increase our revenue in the Netherlands in 2017.

We have defined 'Developing top talent' as our second corporate objective: Witteveen+Bos wants to provide a platform for people to discover and

develop their talents and apply them to create added value for society. The economy and the labour market improved in 2017, which resulted in an increased inflow of personnel (15 %) as well as a higher outflow (12 %). On balance, the size of our workforce grew from 1,029 to 1,054 employees. We devoted extra attention to leadership and engagement and we are very pleased that Witteveen+Bos employees worldwide continue to be proud of their work, feel connected to the company, and appreciate the development opportunities offered.

The manner in which we organise our business operations also creates value. In 2017, we introduced the integrated BST10 system worldwide to replace our existing financial management and project accounting systems. Data conversion proceeded very smoothly, although it took more time for staff to become familiar with the new system. We introduced a new car policy based on electric vehicles as the default option, and embarked on the large-scale renovation of our Leeuwenbrug office in Deventer: two important measures aimed at reducing our CO<sub>2</sub> footprint. As a result, we have achieved our target of 28 % reduction in CO<sub>2</sub> emissions per capita compared to the reference year (2007). Internally, the departments worked on updating their organisational structure and working methods. Director Henk Nieboer stepped down because he turned 55 in 2017, the age at which members of the Board of Directors are required to resign according to the company's articles of association. He was succeeded by Stephan van der Biezen. Finally, 2017 was the first full year of working with a Supervisory Board. Important points on the agenda included compliance, risk management, and the transition to the BST10 system.

Creating economic value has been defined as our fourth corporate objective. The projects that Witteveen+Bos N.V. worked on in 2017 produced a total revenue of EUR 130.8 million. Internal revenue accounted for EUR 104 million of this total. Productivity was lower than forecast in the first half of 2017, but showed an upturn after the summer. As a result of the switch-over to the BST10 system, backlogs in invoicing and liquidity developed. These issues were resolved by the end of 2017. The net result in 2017 amounted to EUR 12.5 million, yielding a net profit margin of 9.6 %. We are pleased to inform readers about our work and results in 2017 in this Annual Report. We are convinced that Witteveen+Bos is well-positioned to address the challenges of the future, and look forward with confidence to 2018.

Deventer, The Netherlands, 19 March 2018

Board of Directors of Witteveen+Bos N.V.  
Karin Sluis  
Stephan van der Biezen

## REPORT BY THE SUPERVISORY BOARD

**The Supervisory Board of Witteveen+Bos N.V. is pleased to present this report to the stakeholders of Witteveen+Bos in order to provide insight into the performance of our supervisory duties in the year under review.**

Following the creation of a Supervisory Board in 2016, in 2017 we were provided with ample opportunity and all the information we needed to explore relevant developments at Witteveen+Bos. Four regular meetings with the Board of Directors were held in 2017. We are pleased with the open, transparent communication between the Supervisory Board and the Board of Directors, and we regularly provided unsolicited advice on various topics. The composition of the Board of Directors remained unchanged in 2017, and all meetings were attended by all members, with one exception.

Frequently discussed subjects included financial matters and general developments within the company. We received detailed quarterly financial reports, and in the meantime we were kept up-to-date with summaries of relevant financial information. At every meeting we discussed work in progress, invoicing and liquidity with the CFO and the Board of Directors.

Other topics addressed included the implementation of the new project accounting and financial administration system, risk management, compliance and integrity, accommodation, optimising the organisation and internal processes of departments, and various aspects of human resources policy, such as career development and remuneration. We were also involved in initial explorations of the future development of the employee share ownership scheme. In the run-up to 2018, the Business Plan and budgets for the coming year were reviewed.

The financial statements were prepared by the Board of Directors, checked by the company's external auditor, Deloitte and were also discussed in the presence of the external auditor Deloitte. The Supervisory Board supports the Board of Director's proposal for dividend distribution. We proposed that the General Meeting of Shareholders adopt the financial statements, discharge the Board of Directors from liability for its management and policies, and discharge the Supervisory Board from liability for the performance of its supervisory duties.

The Board of Directors has defined risk management as a key focus area in 2018, and the Supervisory Board will be closely involved in this process. Other topics on the agenda in 2018 include the further development of a compliance programme, labour market developments, pension schemes, and diversity and inclusion.

We would like to thank the Board of Directors and the employees of Witteveen+Bos for their commitment and enthusiasm in the year under review, and we look forward to a successful, healthy 2018 for the company and its staff.

Deventer, The Netherlands, 19 March 2018

Supervisory Board  
Hans van der Ven (Chairman)  
Gerard van de Aast  
Inca van Uuden





## REPORT OF THE STAKEHOLDER PANEL

**On Thursday 8 March 2018, a draft version of the Annual Report 2017 was discussed with a panel consisting of five external stakeholders. Witteveen+Bos was represented by two members of the CSR team. The stakeholders critically reviewed the report, and advised on points for improvement. Their recommendations have been incorporated into the final version of this Annual Report where possible, while others will be addressed in 2018.**

### **Sustainable design principles and Sustainable Development Goals**

Witteveen+Bos has successfully aligned its four corporate objectives with the UN's seventeen Sustainable Development Goals. The company's sustainable design principles play a prominent and crucial role in that regard, and serve as important instruments. The principles are clear and well-conceived. The question is how Witteveen+Bos can demonstrate that they are applied in practice, and what the results are. Outcome measures would be very helpful. This feedback will be incorporated into the revision of the Key Performance Indicators (KPIs) to be undertaken in 2018.

### **Transparency**

The Annual Report offers little insight into the dilemmas encountered by Witteveen+Bos, relevant developments observed by the company in the external environment, defined objectives that have not (yet) been achieved, and improvements that the organisation wishes to realise. This could be addressed by contextualising the results as they are currently quantified by means of the KPIs. How do these results relate to long-term objectives? Transparency would also be enhanced by including a table that provides an overview of financial and non-financial key figures. A further explanation of and reflection on the talent development and business operations objectives would be welcome. This feedback has been partially incorporated into the report by providing a more detailed explanation of the KPIs. The panel calls upon Witteveen+Bos to become more visible and take on a more active role in sharing knowledge and participating in the public debate about sustainable development.

### **Company Code and integrity**

Greater clarity about the contents of the Company Code and how it is enforced would be welcome. The Annual Report does not explicitly state that the Company Code is also an integrity code. There is insufficient reporting about ethical aspects like human rights, the company's anti-corruption policy, and the conditions under which Witteveen+Bos participates in certain projects or decides not to do so. Increasing attention is devoted to these matters in society. This feedback has been partially incorporated into the report under the heading 'Integrity'. In the coming year, attention will be devoted to the enforcement of ethical norms and standards.

### **Business model**

The stakeholder panel advises Witteveen+Bos to provide a clear description, at the start of the Annual Report, of the nature of the company, its services and products, how it creates value, and the supply chain of which it is part, in relation to its corporate objectives. The company's unusual ownership structure and its implications also deserve a more prominent place. These recommendations will be taken into account in the Annual Report for 2018.

### **Integrated reporting, governance and external assurance**

The members of the stakeholder panel advise Witteveen+Bos to produce integrated reports in accordance with the reporting framework of the International Integrated Reporting Council (IIRC). The stakeholder panel also recommends Witteveen+Bos to consider commissioning an external auditor to provide assurance of non-financial information, as an external auditor is responsible for verifying claims made in the Annual Report.

#### **Stakeholder panel**

Eibert Jongasma, Overijssel Nature Conservation Organisation

Robert Koolen, Heijmans

Bianca Peters, Deltares

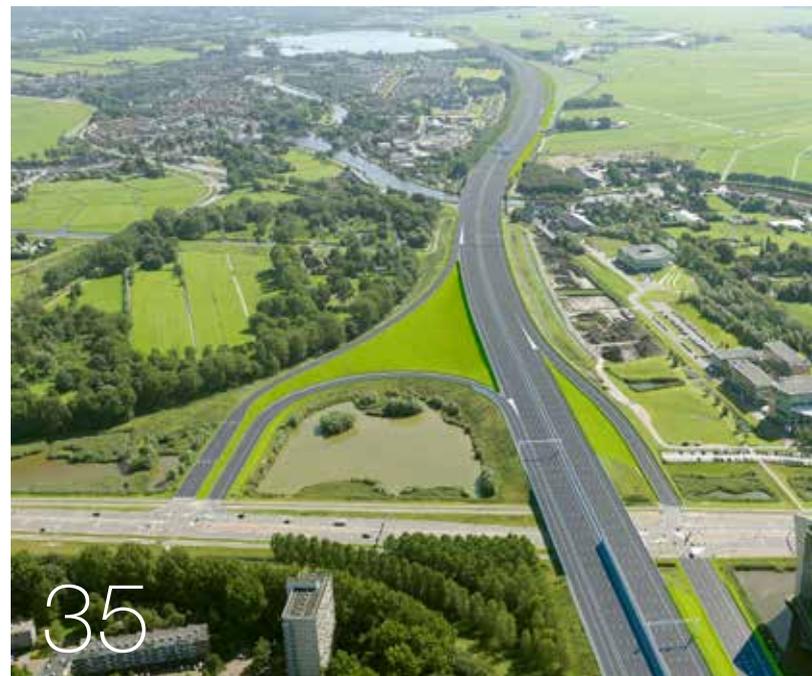
Margriet Rouhof, TenneT

Bouwe Taverne, PUM



## CONTENT

- 8 Mission and vision
- 12 Corporate objectives
- 16 Sustainable Design Principles
- 20 Interview: Circular design
- 24 Objective 1: Adding value through projects
- 36 Interview: Centre Point of Indonesia
- 42 Interview: Customised innovation programme
- 46 Objective 2: Developing talent
- 48 Personnel key figures
- 56 Interview: Sustainable renovation
- 60 Objective 3: Adding value through our business operations
- 62 Business operations key figures
- 66 Objective 4: Creating economic value
- 67 Summarised annual results 2017
- 68 Financial key figures
- 70 Interview: In business together





## MISSION AND VISION

**We have a clear mission statement: 'Witteveen+Bos offers its clients value-added consultancy and top-quality designs for water, infrastructure, environment and construction projects. We use our high-end expertise to resolve complex issues and are a committed partner for our clients. We attach great importance to our independence and to our corporate culture, which allows all our employees to excel, utilise their talents to the full, and maximise value for clients.'**

### Vision

Witteveen+Bos is an engineering consultancy that seeks to offer the very highest level of quality, because we believe that a commitment to excellence is key to developing sustainable solutions for today's challenges. We aim to be very good at what we do. Our staff are experts in their respective disciplines and pursue ongoing innovation. We work with expert partners and maintain a culture of entrepreneurship and trust. We consider it essential that our actions are guided by our key quality attributes: expertise, reliability and commitment.

### Knowledge and innovation

At the core, our work is about knowledge: bringing together the right expertise to help solve challenging issues in water, infrastructure, environment and construction projects. We set high standards. At Witteveen+Bos, state-of-the-art expertise is based on passion for the profession. Our employees want to know everything there is to know in their field, from geotechnical engineering to mechanical engineering and from water management to environmental law. By sharing and developing knowledge and deploying it worldwide, we can devise the most effective solution for each client's project.

### Sustainable collaboration

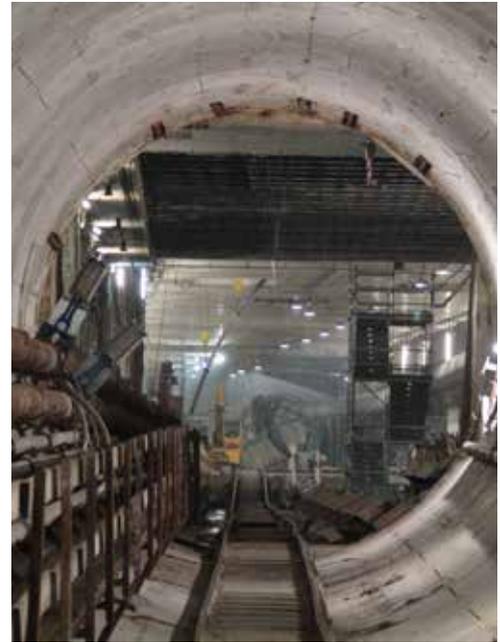
The issues we tackle are becoming increasingly complex. To develop sustainable solutions, our staff work in international and multidisciplinary project teams alongside colleagues from various backgrounds. We always try to assemble the best possible team. We therefore regularly collaborate with external partners, either on specific projects or in formal strategic alliances and joint ventures with other leading consultancies and complementary organisations.

### Entrepreneurship and trust

Our corporate culture is characterised by trust and scope for entrepreneurship. We work in an informal atmosphere and employees indicate that they feel engaged with the organisation. Together we are Witteveen+Bos - connected worldwide. It is essential that everyone is enabled to excel at what he or she does, and that we offer an environment that promotes creativity and innovation. By pursuing mainly organic growth, we can retain our identity and safeguard our corporate culture.

### Clients

Both public- and private-sector clients call on us to help resolve the challenges they face. We provide advice to contractors, engineering and architectural firms, energy and water companies, railway and port authorities, and industry. In the public sector, we work for national governments, water boards, and provincial and local authorities. Our activities cover the entire chain, from policy-making and design to contracting and supervising the performance of work. We aim to establish long-term relationships with our clients that enable us to meet their needs and expectations as effectively as possible while delivering maximum added value.





## Organisation

The Board of Directors is charged with the day-to-day management of Witteveen+Bos N.V., overseen by the Supervisory Board. With over 1,050 colleagues, we operate close to our clients, projects, partners and the employment market. Our offices are located in eleven countries worldwide, with six offices in the Netherlands. In Belgium, Indonesia, the Netherlands and Kazakhstan, staff representation bodies have been set up to look after employees' interests. In the other offices, consultations are held directly with the employees themselves.

Over 30 small organisational units - the Product-Market Combinations or PMCs - are responsible for contract management and acquisition. These PMCs are clustered into four business lines focusing on the following areas of expertise: Built Environment; Deltas, Coasts and Rivers; Energy, Water and Environment; and Infrastructure and Mobility. Worldwide, the business lines and regions form a matrix structure (see the organisation chart on page 10), supported by corporate functions such as Finance, HR, Legal Affairs, Communication, ICT and Facility Management. This organisational structure enables employees from various disciplines and different countries to collaborate on projects in a network, ensuring that we bring together the required knowledge and experience from all over the world in order to devise the best and smartest solutions.

## Integrity

Worldwide, we work for and with a wide range of stakeholders: society as a whole, our clients and business relations, our company, and our colleagues. All Witteveen+Bos employees are committed to fulfilling their responsibilities to our stakeholders. Together we can realise our mission and vision. The behaviour of every individual Witteveen+Bos employee can make the difference. The Company Code describes our principles and how we do business at Witteveen+Bos, including our individual and collective responsibilities to all our stakeholders.

In addition to our own values and convictions, the Company Code is also based on the OECD Guidelines for Multinational Enterprises. In addition, Witteveen+Bos is a member of the United Nations Global Compact, and has adopted its ten principles in the area of human rights, labour rights, environment and anti-corruption.

## Ownership

Witteveen+Bos has a noteworthy ownership structure. In 1992 an employee share ownership system was introduced whereby the company is wholly owned by its staff. This arrangement provides a major incentive for staff engagement and entrepreneurship. We aim to maintain a sound financial basis and stable profit levels. Each year, the net profit is disbursed through a profit-sharing scheme for all employees and dividend distribution to all shareholders. This reflects a central tenet of the Witteveen+Bos philosophy: everyone within the company contributes to our success, and hence everyone should derive the benefits of that success.

Overview business lines and PMCs

Board of Directors	The Netherlands	Africa, Europe and the Americas	CIS countries (Commonwealth of Independent States)	Middle East	South-East Asia and Australia
Built Environment Business Line	Area Development	Resilient Infrastructures UK		Water and Urban Development Dubai	
	Buildings				
	Environmental Law and Permits				
	Planning Studies and Process Management				
	Urban Development				
Deltas, Coasts and Rivers Business Line	Ecology	Water and Infrastructure Latvia	Water and Infrastructure Russia		Hydraulic Infrastructure and Geotechnical Engineering Indonesia
	Ports and Waterways				Water Management Indonesia
	Flood Protection and Land Development				Water and Infrastructure Singapore
	Coasts, Rivers and Land Reclamation				
	Hydraulic Structures and Geotechnical Engineering				
	Water Management				
Energy, Water and Environment Business Line	Wastewater	Sustainable Environmental Solutions Belgium	Water and Environment Kazakhstan		Water and Environment Vietnam
	Assetmanagement				
	Soil Remediation and Sustainable Land Management				
	Drinking Water				
	Industry and Energy				
	Information Technology				
	International Technical Assistance				
Infrastructure and Mobility Business Line	Construction Management	Infrastructure and Spatial Design Belgium			
	Infrastructural Engineering				
	Civil Structures for Railways				
	Underground Infrastructure				
	Smart Infra Systems				
	Traffic and Roads				

Product-Market Combination (PMC)



## CORPORATE OBJECTIVES

**Witteveen+Bos has a dual mission: we devise sustainable solutions to complex challenges in the field of water, infrastructure, the environment and construction, and we want to enable all our employees to excel. To fulfil this mission, we must devote ongoing attention to four corporate objectives: adding value through projects, developing talent, adding value through our business operations, and creating economic value.**

The seventeen Sustainable Development Goals (SDG's) of the United Nations constitute a worldwide action plan to ensure a socially, ecologically and economically sustainable world by 2030. In 2016, we consulted with internal and external stakeholders to investigate how Witteveen+Bos can maximise its contribution to the SDG's. The results of this materiality analysis are summarised on page 14. The analysis revealed a significant difference between our current and our potential maximum impact, and this is where our challenge lies. We aim to increase our impact by pursuing four corporate objectives \*(G4-18, G4-19).

### **Objective 1: Adding value through projects**

Our first objective is based on the first part of our mission: we want to add value through water, infrastructure, environment and construction projects (G4-20, G4-21). Our projects are undertaken by the following business lines:

- Deltas, Coasts and Rivers: flood protection, ports, waterways, coastal and river management, land reclamation, water management and ecology;
- Energy, Water and Environment: renewable energy, oil and gas, wastewater treatment and drinking water production, asset management, soil remediation and air quality;
- Built Environment: planning studies, urban and area development, buildings, environmental law and permits;
- Infrastructure and Mobility: traffic, roads, tunnels, rail infrastructure, civil engineering structures and infrastructure systems.

Witteveen+Bos has deliberately opted for a broad portfolio of disciplines and clients. In support of a worldwide joint learning process throughout the chain, we share our knowledge and the experiences gained with various clients. We aim to provide optimal products and services that meet all applicable usage, safety, environmental and maintenance and management requirements. In order to maximise our contribution and offer sustainable solutions, we consider the application of our seven sustainable design principles in all projects. These principles are part of our quality management system, which is based on the most recent ISO 9001 and SCC standards.

In 2017, all four business lines determined to which of the seventeen UN Sustainable Development Goals (SDG's) they could most effectively contribute in their projects and with their knowledge. Details are provided in the table on pages 14 and 15 (G4-22).

In the coming years, we plan to assess all projects completed by each business line using a so-called 'SDG Impact Tool'. This enables us to increase our current impact to reach our maximum potential impact.

### **Objective 2: Developing talent**

Our second corporate objective is based on the second part of our mission: we want to provide a platform for our staff to achieve their ambitions and develop their talents (G4-20, G4-21). We aim to be a good employer by promoting diversity and enabling our employees to utilise their talents to the full. Our corporate culture of trust and entrepreneurship is aimed at ensuring good in-company relationships and solidarity. We also ensure that employees gain optimal satisfaction from their work, and that we have sufficient in-house talent for career development and promotion to other (management) positions. Finally, we contribute to high-quality technical education and encourage young people to study technical subjects.

### **Objective 3: Adding value through our business operations**

In order to work on projects and develop talent, we must have professional ICT systems, comfortable business premises and effective operational processes. Adding value through our business operations has therefore been defined as our third corporate objective (G4-20, G4-21). This means that our departments provide professional support to the business lines and offices, with a view to maximum value creation. Supporting sustainable business travel, reducing our CO<sub>2</sub> emissions and promoting Corporate Social Responsibility in the supply chain are other important objectives.

### **Objective 4: Creating economic value**

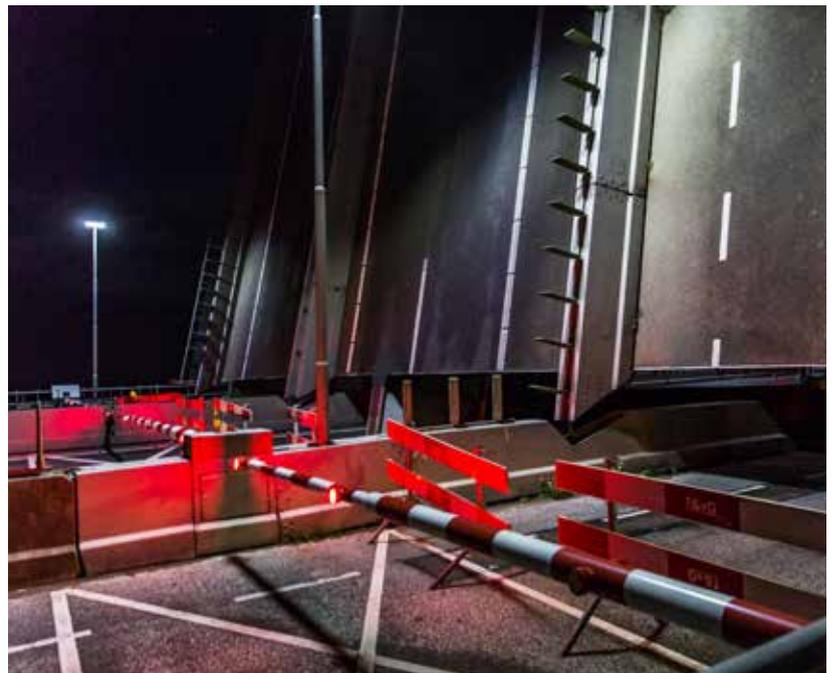
Realising healthy financial results is essential to the long-term continuity of the company. Creating economic value has therefore been defined as our fourth corporate objective (G4-20, G4-21). Good financial results are necessary to ensure sufficient scope for innovation and other new developments, and to invest in people. We therefore aim to realise a healthy annual net profit margin of at least 8 % and an annual workforce and revenue growth of 3 to 5 %.

### **Measuring and reporting on progress**

In the sections that follow, we report on the progress achieved in 2017 in realising our four corporate objectives. In order to measure the progress achieved, we have identified Key Performance Indicators (KPIs) for each objective.

\* To ensure transparency, we have prepared our Annual Report in accordance with the GRI G4 guidelines of the Global Reporting Initiative (GRI). The main GRI indicators are stated in parentheses. The information concerning the involvement of stakeholders (G4-18, G4-24, G4-25, G4-26, and G4-27) is displayed on page 3, 4 and 5. The full GRI index is available on our website at [www.witteveenbos.com/CR](http://www.witteveenbos.com/CR).





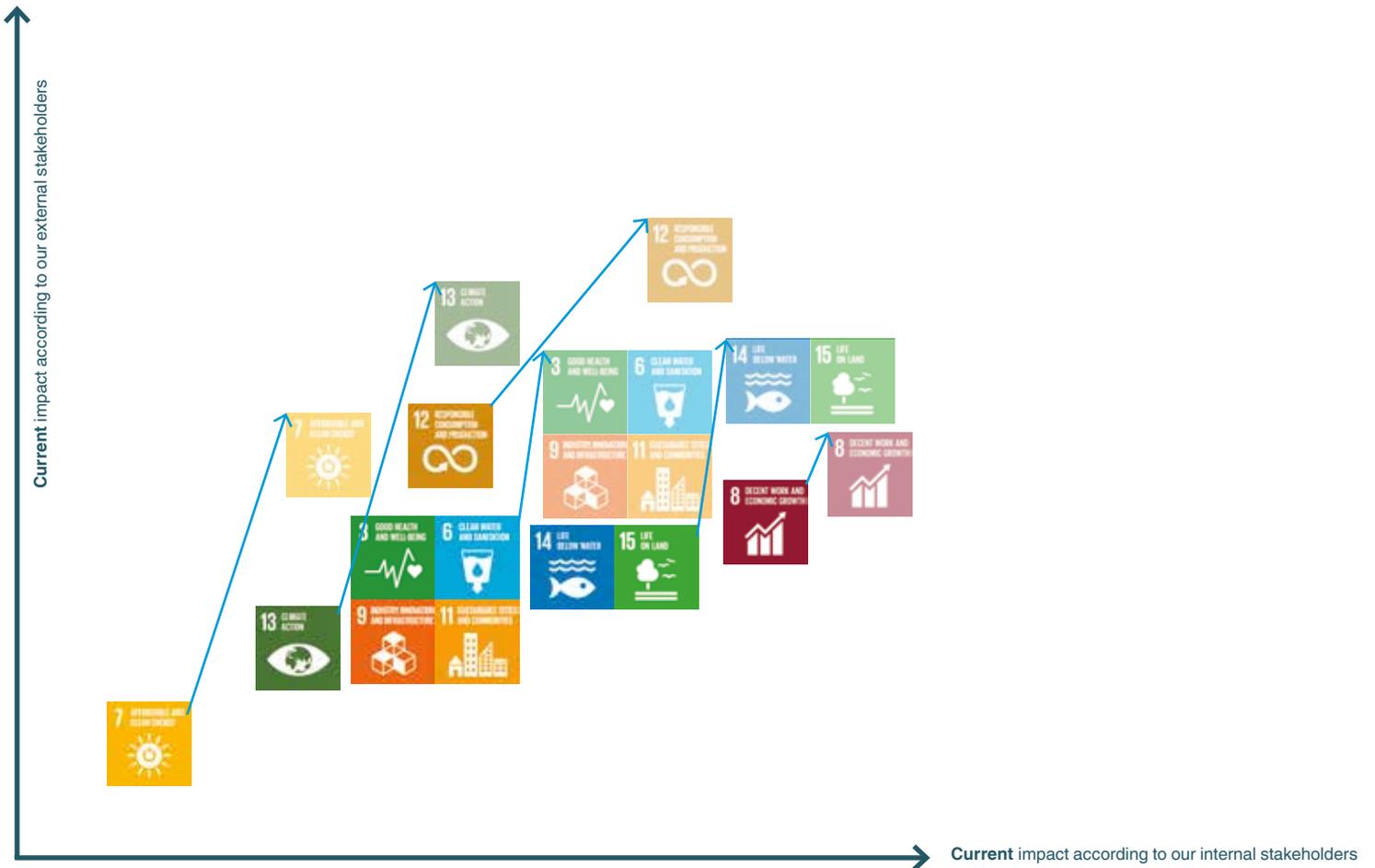
Potential impact of Witteveen+Bos on the United Nations Sustainable Development Goals



Contribution to the 17 United Nations Sustainable Development Goals in our projects and with our knowledge

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
	We focus on sustainable agriculture and a sustainable water supply, including delta salinisation, efficient water usage, integrating the value chain, and improved information provision.	We help the industry capitalise on societal benefits by focusing on circularity, renewable energy, safety, health and the environment.			Our aim is to provide over a million people with access to drinking water, and to give more than 500,000 people access to wastewater treatment facilities.	We recommend the use of energy-efficient systems and installations, minimise energy consumption, and actively generate energy.  We focus on designing low-head hydropower plants.		We design future-proof infrastructure and align the functional life cycle more with the technical life cycle.  We focus on system management in stead of asset management.

Current impact of Witteveen+Bos on the United Nations Sustainable Development Goals



All our projects contribute to a higher-quality human environment in 2025.

We focus on sustainable urban development (resilient cities).

Our projects are aimed at protecting against flooding and reducing water-related nuisance.

50 % of our projects are to be 'circular' by 2025.

We aim to create a sustainable water cycle and design treatment plants that maintain a neutral water balance.

We use data analysis for efficient and sustainable use of materials.

We control reuse: insight into present and future situation, setting and adjusting targets.

We limit CO<sub>2</sub> emissions during construction phase (reduced use of materials) and operation phase (lower energy consumption).

We perform a CO<sub>2</sub> assessment for all proposed maintenance measures.

Our focus is on proactively protecting and strengthening areas based on system analyses, and where necessary on restoring large areas at a systemic level.

Where possible, we provide insight into the benefits of system recovery.

Our focus is on proactively protecting and strengthening areas based on system analyses, and where necessary on restoring large areas at a systemic level.

Where possible, we provide insight into the benefits of system recovery.

In project assessments, our clients evaluate our customer focus, expertise (substance), professionalism (process) and sustainability performance, as well as the quality of the end product.

# SUSTAINABLE DESIGN PRINCIPLES



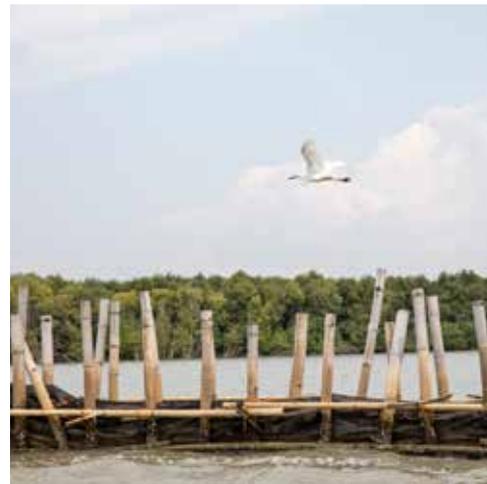
The 'Building with Nature' principle requires engineers to gain insight into the natural processes occurring in a project environment by determining their physical, chemical and/or biological characteristics. Negative effects on these processes can then be avoided in the design phase, while such processes can also be used to create additional benefits. It is applied by performing a system analysis to consider the project in a broader context. Such an analysis involves determining the dominant processes, identifying key factors that can influence these processes, and finally identifying effective measures aimed at those key factors.



By creating flexible designs, we can anticipate future developments and factor in uncertainties. We consider long-term scenarios and developments like climate change, but also relevant changes and trends in society. Robustness, adaptability and resilience are three perspectives to take into account when drawing up flexible designs. A robust 'first time right' design lasts the entire life cycle. An adaptable design meets the applicable requirements during part of the life cycle, and can be easily adjusted when circumstances change. A resilient design contributes to the resilience of the larger system of which the object or structure is part.



Circular design is about making choices that take account of current and future life cycles throughout the entire process: from the initiation phase through to exploration, design, execution, management and maintenance, followed by the next life cycle. That means thinking ahead about design and materials usage, at all levels and in all phases of a structure's life cycle. In addition to the technical life cycle, designers learn to also consider the functional life cycle. Circular design is also about 'closing the loop' by using waste as a resource in the design process.





The 'Multifunctional design' principle encourages engineers to consider adding functions to a design. Questions like 'How can I make optimal use of the space available?' and 'How many functions can be added and how do they reinforce each other?' are important in that respect. It is also essential to make optimal use of existing values in an area, such as cultural/historical, recreational and social values as well as landscape and nature values. Finally, careful consideration must be given to a future-proof design, for instance by using a clear urban development or landscape framework, and by reflecting on the future value of the spaces created and the materials used.



The 'Participatory design' principle means that designs should not be created for stakeholders, but together with stakeholders. Future users and people who may be adversely affected by the design are given an active role in the design process. This approach enhances public support and enables work to be performed more efficiently. Witteveen+Bos has developed an in-house, evidence-based statistical method for measuring public support. 'We draw up a participation and communication strategy for each project, and try to ensure that stakeholders become truly involved and engaged', says stakeholder manager Ehsan Nouzari. 'Their local knowledge and ideas simply improve the quality of the design.'



The 'Trias Energetica' design principle is aimed at minimising the use of finite (i.e. non-renewable) resources. It is a three-step strategy for producing an energy-efficient and resource-efficient design, and consequently also a strategy for reducing CO<sub>2</sub> emissions. The three steps of the Trias Energetica are as follows:

- Step 1: Limit demand and prevent unnecessary use and waste;
- Step 2: Use renewable sources for energy, and use waste as a resource;
- Step 3: Make efficient use of any non-renewable sources needed to meet the remaining demand.



The 'Socially responsible design' principle encourages consideration of other measures besides just technical ones. The question 'How can I increase the prosperity effects of my project?' is central to this principle. This can be accomplished by technical measures, behavioural measures, or measures aimed at people's socio-economic circumstances, or a combination of all three. Changing the socio-economic circumstances of local residents can help them benefit from the project. An example is putting up a traffic sign to reduce the speed limit, so that it is no longer necessary to construct an additional traffic lane. The speed restriction results in behavioural changes, which in turn can help reduce traffic congestion.



Scan the QR code to watch a video about the Witteveen+Bos sustainable design principles





# Objective

# 1

## **Adding value through projects**

Executing water, infrastructure, environment and construction projects is our core process. All stakeholders agree that Witteveen+Bos can achieve the greatest impact through our projects. In this way we can contribute to Sustainable Development Goals like good health and well-being, clean drinking water and sanitation, affordable and clean energy, resilient infrastructure, sustainable cities and communities, responsible consumption and production, conserving life below water, and conserving life on land.



INTERVIEW





# Circular design

The Netherlands has formulated the ambition of realising a fully circular economy by 2050. This economic model is based on recycling raw materials and resources and preventing waste. Witteveen+Bos is working on circular solutions in a wide range of projects. Ambitions are translated into strategies, visions and principles, and we develop and implement smart, innovative solutions, either in-house or in collaboration with clients. It is clear that the design chain and our operational processes are changing. Two experts in circular design explain how we can add even more value in our projects by creating the right conditions.

‘Circular design is applied sustainable development by engineers’



## 'Circular design means preparing a deconstruction plan

The Dutch government has set up a national programme called 'Circular Economy in the Netherlands by 2050', which seeks to realise a 50 % reduction in the consumption of primary raw materials by 2030. Five so-called 'transition agendas' are designed to help change course. Such a vision document will result in a welcome acceleration of the process, says Arjen van Nieuwenhuijzen, an expert in energy, water and resource recovery. 'People are clearly thinking differently; they are adopting a more disruptive mindset based on the conviction that radical change is truly possible. The time is ripe to take bigger steps.' Arjen has been applying circular principles for over fifteen years in his work for Witteveen+Bos. 'For environmental reasons, we have long been exploring options for the recycling of water, energy and resources at treatment plants, landfill sites and waste collection and processing facilities. So we have been familiar with circular thinking for quite some time. I am convinced that we as engineers can help to speed up this transition, because we are skilled at thinking laterally

and integrally. By applying our sustainable design principles, we can encourage ourselves and our clients and stakeholders to view challenges differently.'

More and more clients are looking to phase out their linear processes, and to ensure that their energy management is in order and that materials can be recycled. Rob Dijcker has been focusing on the circular economy and on waste materials for approximately twelve years. He supported Delfland Water Authority in preparing a circular economy strategy: 'We started by performing a circularity and self-sufficiency analysis. A strategy has since been drawn up, and work sessions with employees have yielded good ideas that Delfland Water Authority can use to take concrete steps.' Vallei & Veluwe Water Board also wants all its long-term decision-making to be fully circular from 2025 onward, in order to eventually achieve fully circular operations in 2050. Rob and Arjen are helping the water board to realise these ambitions, working together with consultancy

firm Metabolic, which specialises in industrial ecology. Rob has analysed mass flows within the chain, and has identified possible measures to close loops and become climate-neutral by 2050. 'Measures to promote circularity are often aimed at existing systems. In the case of Vallei & Veluwe Water Board, however, we quickly asked ourselves if revamping the entire system was a better solution. By zooming out, you can see new possibilities emerging along the existing system boundaries. We must look at the challenges from a different perspective. As engineers, we apply a bottom-up approach based on technology. We help our clients in realising their ambitions and implementing their strategy, and can translate this into challenges - technical or otherwise - that can be addressed.' Romeo Neuteboom Spijker, project manager and leader of the Circular Economy programme at Vallei & Veluwe Water Board, is pleased with the collaboration: 'The Water Board has high ambitions when it comes to promoting a circular economy. It is a wonderful, innovative field that demands new expertise and new forms of



## for each design'

collaboration. The partnership between Witteveen+Bos and Metabolic is proving to be a good combination. 'To create a good circular design, you would really need to carefully consider the entire life cycle three times before completing the design. You can improve the results by simply drawing up a deconstruction plan', says Rob. In 2017, Witteveen+Bos teamed up with the Directorate-General of Public Works and Water Management (Rijkswaterstaat) to develop a manual for the application of circular design principles in the Multi-Year Programme for Infrastructure, Spatial Planning and Transport (MIRT). Using this manual, circular economy assessments can be performed for large infrastructure projects like InnovA58. As part of the Directorate's Impulse programme, Rob also investigated possible ways to reuse the redundant steel arch bridge across the Lek River at Vianen. The analysis produced an unexpected outcome. 'The call for tenders for the bridge demolition was already being prepared when I was asked to help conduct a quick analysis

of the potential for reuse and the sustainability benefits. It turned out that the bicycle bridge and the main bridge are in good condition for reuse, and that disassembly would be more cost-effective than demolition. In light of these demonstrable sustainability benefits, the tender procedure for the traditional demolition of the arch bridge was halted and reuse options will now be further investigated. We can increase our impact by looking beyond the existing system boundaries and thinking more in terms of cycles.

Arjen adds: 'As engineers, we are often at the controls and can influence the decision-making process. The entire life cycle should be taken into account right from the start, both functionally and technically. That means thinking ahead about materials usage, at all levels and in all phases of a structure's life cycle. Being aware of the impact of your design from the outset allows you to devise the best possible solution together with the client and stakeholders. The traditional, linear approach in the sector remains a challenge in that respect. We will have

to be even more proactive in demonstrating to clients what is possible, because we really need more scope for circularity in projects. By considering other aspects besides costs, a better solution can be devised.'

The international dimension of the drive for a circular economy is underlined by the signing of the 'ReCirc Singapore' covenant in December 2017. Arjen is proud of this milestone: 'After more than a year of consultations and preparations with our partners, we have now completed an action plan for the joint development of circular solutions in the field of water, sludge and waste treatment and raw materials recovery in Singapore and the Netherlands. Circularity connects on all fronts, and that makes it a very exciting field. But realising a circular economy is also a necessity. If we want to become fully circular by 2050, all designs must be created in accordance with circular principles from now on.' Rob adds: 'And every Witteveen+Bos design should include a deconstruction plan.'

## ADDING VALUE THROUGH PROJECTS

**According to our internal and external stakeholders, Witteveen+Bos can achieve the greatest impact and make the greatest contribution to the United Nations' Sustainable Development Goals by providing sustainable solutions in its projects. Our sustainable design principles are an important tool in that regard.**

### Project portfolio

In 2017, Witteveen+Bos worked on 3,445 projects worldwide. Our productivity was relatively low in the first half of the year, but showed an upturn after the summer. There was further growth in both our consultancy and our engineering work in relation to the circular economy, the energy transition, climate change adaptation, and digital construction. Examples of such projects include the 'materials passport', the drive to make government buildings in The Hague energy-neutral, water management in Tilburg, and the world's first 3D-printed concrete bridge in Gemert. In 2017, our staff also worked on many other small- and large-scale projects all over the world, such as the NCOC water treatment plant in Kazakhstan, the Oosterweel Link in Belgium, the 'Centre Point of Indonesia' land reclamation project, dike reinforcements in the Northern Meuse Valley, and the innovative expansion of the A58 motorway (InnovA58).

### Innovation

We live in a time characterised by major challenges in areas like energy and climate change, offset by rapid technological developments like digitalisation and robotisation. The Plus+ Innovation Programme was therefore high on our agenda in 2017. This programme consisted of five innovation campaigns, in which some 169 ideas for new products and services were submitted from all parts of the worldwide organisation. Sixteen of these ideas were further elaborated during the 'Accelerator Phase'. Our autumn staff meeting offered an excellent occasion to announce the winner: a tool called 'Fire Safety Engineering in Virtual Reality'.

### Dutch market

The strong growth in revenue and in the size of our workforce during the 2006-2016 period occurred only outside the Netherlands. Nevertheless, in this phase of the company's development we are able to operate worldwide thanks to the new knowledge and experience gained in our home market. In 2017, we therefore devoted special attention to the Dutch market as a spearhead. Among other activities, we organised symposiums and workshops for Dutch clients. In addition, innovative solutions like the Digital Process Operator and the Compliance Tool - developed as part of the Plus+ programme - were introduced in the Netherlands. Finally, we devoted extensive attention to submitting winning tenders in the Dutch market. Our efforts were successful, with the order portfolio growing to provide enough work for 34 weeks at the end of 2017 (up from 28 weeks at the start of the year). Projects in the Netherlands account for a significant portion of the portfolio.

### Safety

Witteveen+Bos is a co-signatory of the Governance Code on Safety in the Construction Sector, reflecting our commitment to improving the safety culture within the industry. In 2017, we started taking stock of ways in which Witteveen+Bos can implement this Code. We devoted particular attention to this matter in 2017, working to update our in-company safety regulations. Initially, five Dutch PMCs will attempt to obtain Safety Ladder certification at Level 3.

### Awards

In 2017, Witteveen+Bos employee Arjen van Nieuwenhuijzen won the H2O Award for the best water-related article published in a professional journal, for his work on water treatment plants as 'energy and raw materials factories'. Richard de Nijs won the Keveling Buisman Prize for the best article about geotechnical engineering with his piece on the Oosterweel Link project in Antwerp. The Railinfra Solutions project to construct railway underpasses in Zutphen received an honourable mention at the presentation of the Schreuders Award, and the 3D-printed concrete bridge in Gemert and the Lammermarkt underground car park in Leiden were nominated for the Concrete Award. Witteveen+Bos also won design competitions for the London Cycling Boulevard, a bridge in the Estonian capital Tallinn, and a sports park on the Heizel Plateau in Brussels.

### Sustainable design principles

In 2017, we continued the process of embedding our sustainable design principles in the organisation and applying them more widely. We have defined four Key Performance Indicators (KPIs) to measure our progress in achieving these aims. Our sustainable design principles are explained in detail on pages 16 and 17.





## KPI 2017

## Result

100 % of employees are familiar with the sustainable design principles.

80 % of employees are familiar with the sustainable design principles (measured in a survey among all employees worldwide).

Sustainable design principles are considered and/or applied in 100 % of all projects, to be measured by means of 35 project audits (corresponding to 1 % of all projects).

Sustainable design principles were applied in 54 % of all audited projects.

In two years' time, 100 % of design leaders attended a (refresher) course or expert session on the sustainable design principles in the past two years.

In 2017, work sessions were held at a number of Product-Market Combinations (PMCs) to support the concrete implementation of the sustainable design principles in offers and projects. No (refresher) courses were organised. These courses are scheduled for 2018. This KPI requires extra attention in 2018.

Average mark given by clients for the added value for society provided by the project results, thanks to the application of the sustainable design principles. At least one external client assessment for each PMC, in which this question is explicitly addressed and where a mark is given. Minimum score: 7 out of 10.

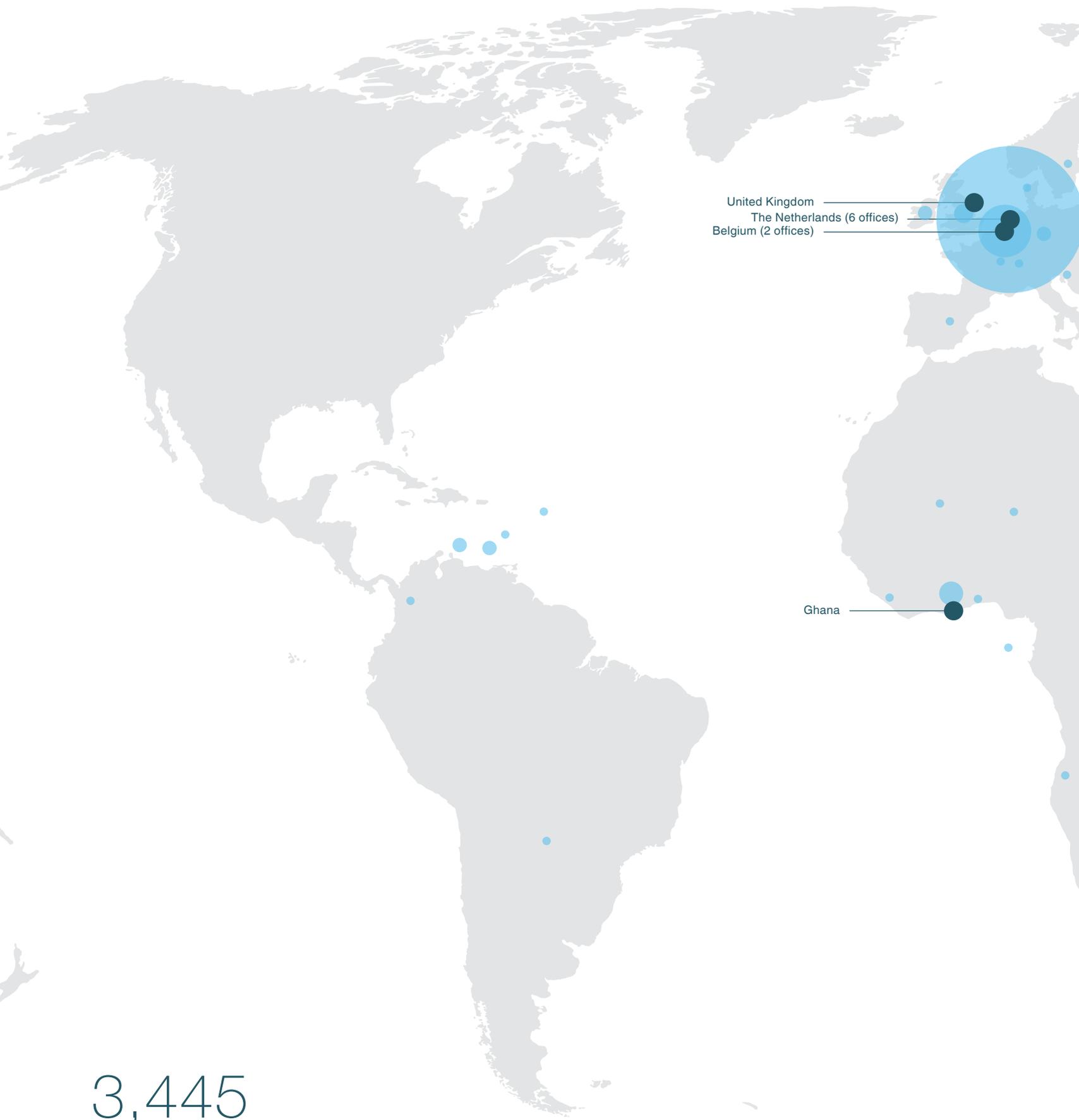
This KPI was adjusted in the interim to one client assessment per business line, instead of one per PMC. Attention was primarily devoted to changing our corporate culture; external client assessments with ratings were not held. However, generic feedback was received (G4-26).

It continues to be our aim to apply the sustainable design principles in all of our projects. At the same time, we realise that systematically working with new principles requires a culture shift and that this will take time. Organising work sessions to provide concrete insight into the sustainable design principles will remain a point for attention in 2018. We will also consider defining more result-oriented KPIs. We have noted that it is not always possible to apply the sustainable design principles in day-to-day project activities, such as preparing a soil investigation plan, testing software, or inspecting civil engineering structures. In addition, some of our clients do not sufficiently appreciate the usefulness and necessity of these principles for their own business operations. Together with a growing number of clients, we investigated how the sustainable design principles can be applied in practice in their operations.

### Energy transition defined as spearhead for 2018

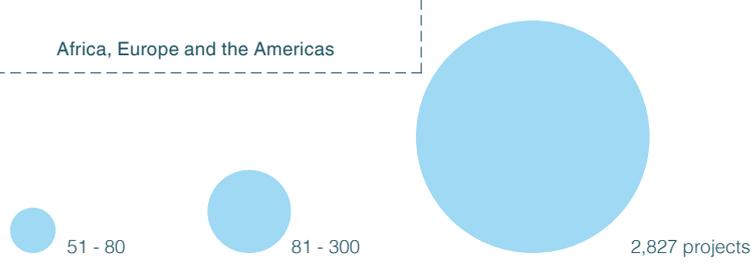
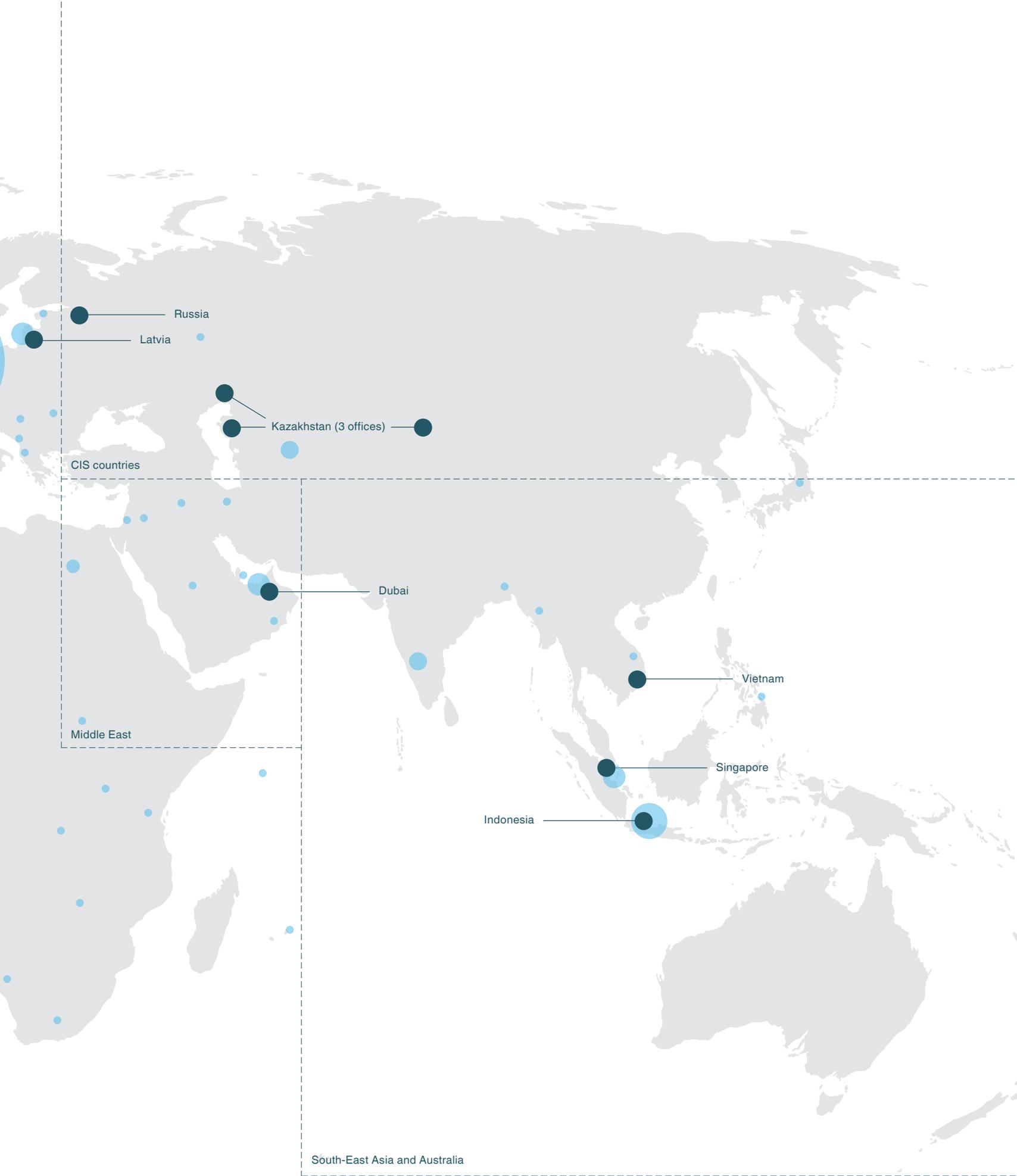
For our corporate objective of 'Adding value through projects', we have selected the energy transition as a spearhead for 2018. This is one of the greatest challenges of our time, and one to which we can make a substantial contribution as an international consultancy and engineering firm. We are already doing so by working on projects like the future disconnection of city districts from the natural gas grid in Gelderland province, and by building small-scale hydro-electric power stations in Sierra Leone. Because we wish to increase our impact, we aim to develop and successfully market innovative solutions that will contribute to the energy transition. Our objective is to realise growth in this area of our consultancy work, possibly allowing us to establish a new PMC towards the end of 2018.

# PROJECTS 2017



The Netherlands 2,827 projects  
Africa, Europe and the Americas 415 projects  
CIS countries 14 projects  
Middle East 40 projects  
South-East Asia and Australia 149 projects





- Projects Witteveen+Bos
- Offices Witteveen+Bos (19)
- Region classification



#### + Innovative movable bridge in Tallinn

An international consortium consisting of Plein06, Witteveen+Bos and Novarc Group has won the international design competition for an iconic openable pedestrian bridge in the centre of Tallinn's old harbour. The design contest was held to mark the centenary of Estonia's 1918 Declaration of Independence. The competition and the future design and construction of the bridge are co-funded by the EU. The bridge is planned for completion by the end of 2018. The 'New Balance 100' design is a work of art as well as an innovative engineering structure. New Balance 100 will be Estonia's first dynamic, movable bridge, and will therefore represent an architectural and cultural milestone for the country. The aesthetical and innovative solutions ensure that New Balance 100 will be a high-profile object in public space, in terms of both appearance and function. It will be the perfect symbol to celebrate the 100-year anniversary of Estonia's Declaration of Independence.

Tallinn Estonia



#### + 'Materials passport' for Princess Beatrix locks complex

A 'materials passport' for a civil engineering structure is a data set that provides insight into the materials used for construction, the way in which these have been processed, and the possibilities for reuse during maintenance work and after the demolition or disassembly of the structure. The Directorate-General of Public Works and Water Management has commissioned Witteveen+Bos and the contracting group 'Sas van Vreeswijk' to study which information (for decision-making purposes and otherwise) is needed to ensure high-quality materials recycling during the expansion and renovation of the Princess Beatrix locks complex, and where this information should be available in the construction chain. Registering the required object details in a 'materials passport' ensures that this information is kept on file, and facilitates high-quality recycling.

Nieuwegein The Netherlands



### + Energy transition in The Hague

In order to implement the energy transition in the city centre of The Hague, the municipal authority and the Central Government Real Estate Agency have commissioned a consortium consisting of Witteveen+Bos, Rebel Group and DWA to develop an approach for making sixteen buildings completely 'fossil fuel free' by 2040. The study examined various combinations of energy-saving measures, local generation of sustainable energy, and the costs and benefits of the different options. This resulted in the following plan: first reducing energy consumption and generating energy within individual buildings; followed by energy storage and exchange between the buildings included in the 'The Hague energy transition' programme via a Thermal Energy Storage network; connecting these buildings to a sustainable district heating network; and finally purchasing green energy. This project is a great example of the successful application of the 'Trias Energetica' sustainable design principle.

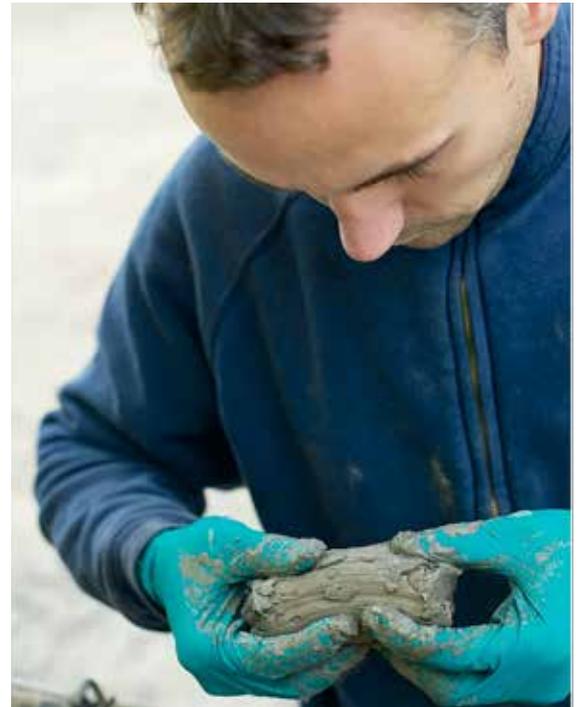
The Hague **The Netherlands**



### + Smart Integrated Construction System

Approximately 80 % of Singapore's population lives in homes built by the Singapore Housing & Development Board (HDB), the government organisation responsible for the development of all social housing in the South-East Asian nation. HDB has commissioned Witteveen+Bos and Nanyang Technological University to develop a Smart Integrated Construction System that makes use of digitalisation and automation to increase productivity in construction projects. We are responsible for the development of an integrated centralised system for intelligently and efficiently collecting, structuring and sharing all information relating to a construction project. This includes, for instance, three-dimensional Building Information Models, documentation, information for contract management, and updates on progress. It is important to make the information available in such a way that tower cranes can operate autonomously on building sites.

**Singapore**



### + A 3D-printed concrete bicycle bridge

In 2017, the world's first 3D-printed bicycle bridge was taken into operation. This unique structure is part of a new ring road around the town of Gemert. Witteveen+Bos was responsible for the structural design and engineering, Eindhoven University of Technology printed the bridge, and BAM Infra assembled and installed it. The bridge consists of approximately 800 printed layers and was assembled on-site. 3D concrete printing is a unique and promising production method that requires less construction materials and no formwork. This results in less waste and reduced consumption of scarce resources. The bridge was longitudinally prestressed along its axis, and the layers were reinforced at the same time as the concrete was being printed. This is a world first, and it has great potential for other applications in construction projects. The savings in material usage and the reduction of CO<sub>2</sub> emissions are in keeping with the sustainable design principles of 'Circular design' and 'Trias Energetica'.

Gemert **The Netherlands**

### + Screening of dry-cleaning locations

Chemical textile cleaning, also known as dry cleaning, poses an increased risk of severe soil and groundwater contamination. Dry-cleaning locations make use of chlorinated solvents, which can lead to groundwater contamination. There is also a risk of indoor air pollution. The Flanders Public Waste Agency (OVAM) has commissioned Witteveen+Bos Belgium/MAVA to screen potential dry-cleaning locations in Antwerp and Ghent. The screening comprises historical investigations of potential sources and an initial soil survey of suspected dry-cleaning locations. By means of this campaign, Witteveen+Bos/MAVA is helping the Flemish government to achieve its aim of starting clean-up operations for all high-risk historically contaminated sites by 2036.

Antwerp and Ghent **Belgium**



#### + London Boulevard in Virtual Reality

For the London Cycling Campaign, Witteveen+Bos has completed a design for the construction of cycle paths along the London Boulevard. The design was developed in 3D and presented and visualised for stakeholders using Virtual Reality (VR) simulations - a good example of participatory design. The London Boulevard is an envisaged 2-mile-long route between East and West London that encourages commuters to walk, cycle, or use public transport. This stretch of road is currently plagued by frequent accidents between motor vehicles and pedestrians and cyclists. The new design therefore provides for separate cycle tracks and safer intersections. The route has been included in plans for the future development of London's cycling infrastructure. The Virtual Reality simulation has been nominated for the Best Innovation Award in the Healthy Street Awards 2017 competition.

London **United Kingdom**

#### + Offshore Centre on Maasvlakte II

The Port of Rotterdam Authority is developing a new area of the Princess Alexia Port (part of the Maasvlakte II land reclamation project) into a large Offshore Centre that will be the first facility of its size in Europe. The site will accommodate suppliers and construction companies operating in the offshore wind energy sector, as well as firms that dismantle oil and gas platforms. Witteveen+Bos is contributing to this area development project, and has been commissioned to engineer the heavy load deep-sea quay, among other things. The sustainable design principle of 'flexible design' is central to the project, since the quay can be adapted to future changes in use. The quay is sufficiently robust to support a container crane, for instance. Application of the 'participatory design' principle ensures that future users are involved at the earliest possible stage. Such a process contributes to an optimised design.

Rotterdam **The Netherlands**



#### + Broad stakeholder participation in Limburg province

Since 2016, Witteveen+Bos and Arcadis have supported Limburg Water Authority in reinforcing fifteen dike sections in Northern and Central Limburg. Participatory design is a key design principle in this project. The project organisation has sought to consult and collaborate with as many of the 60,000 stakeholders (including local residents) as possible. First we carefully explained why dike reinforcements, and in some cases relocations, are necessary: the existing dikes are not capable of accommodating the increasing quantities of water that will flow through the Meuse river in the future, as a result of climate change. Public support is needed to subsequently collaborate in working groups for each dike section, where targeted solutions will be devised and assessed. Witteveen+Bos has developed an in-house, evidence-based method for measuring public support and adjusting participation methods if necessary.

Northern Meuse Valley **The Netherlands**



#### + Assessing the economic value of a rainforest

The 'Building with Nature' principle requires engineers to gain insight into the natural processes occurring in a project environment. Negative effects on these processes can then be avoided in the design phase, while such processes can also be used to yield additional benefits. In order to identify natural values and benefits, Witteveen+Bos is conducting an assessment of the value of the ecosystem services provided by the rainforest of Borneo for the World Wide Fund for Nature (WWF). This huge rainforest is of great value for millions of people on account of the many goods and services that it supplies. However, deforestation is putting pressure on ecosystem services such as providing a habitat for orang-utans and serving as a local drinking water supply. This study will raise awareness of the value of ecosystem services provided by the rainforest, and will establish a basis for more sustainable land use.

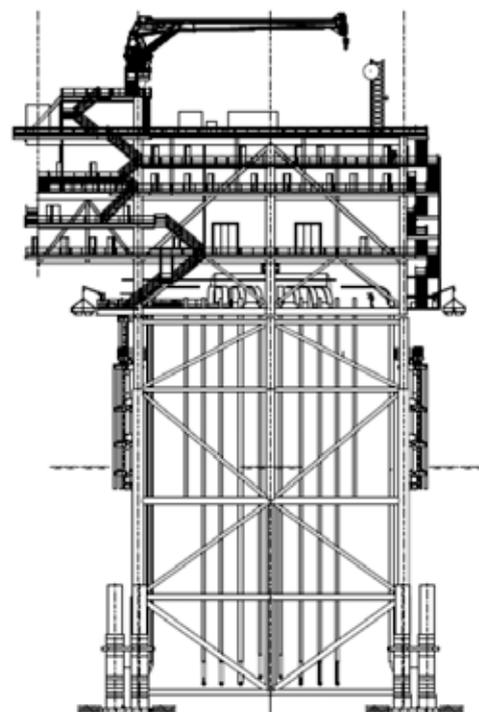
Borneo **Indonesia**



#### + Improved water treatment thanks to 1-STEP® filter

The 1-STEP® filter is an innovative solution developed by Waternet, Witteveen+Bos, Nijhuis Industries, Cabot Norit Activated Carbon, and Delft University of Technology. This activated carbon filter solution thoroughly removes phosphate, suspended solids, heavy metals, nitrogen, organic micro-contaminants and medicine residues from treated wastewater, and does so using a single, compact system. Stricter requirements in the discharge permit issued to Waternet (the water cycle company for Amsterdam and the surrounding area) prompted the development and implementation of this innovative filter a few years ago. At Waternet's Horstermeer wastewater treatment plant, the 1-STEP® filter has resulted in a cost-effective improvement in effluent quality. The filter has also turned out to provide optimal pre-treatment for the production of industrial and process water from effluent. This makes it an essential link in water recycling plants, and an important step in the development of a circular economy.

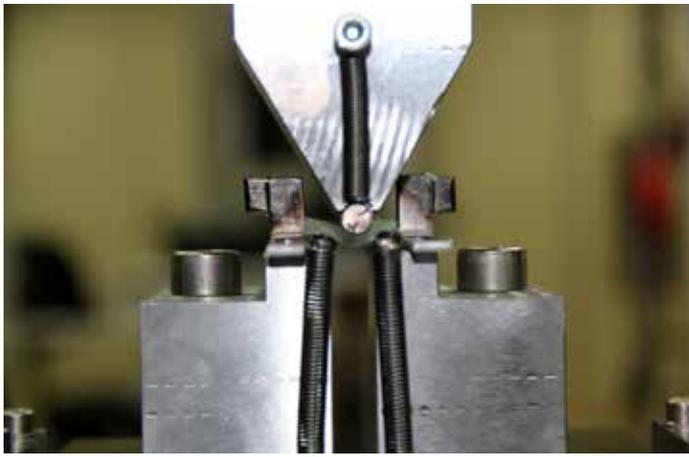
Various locations **Worldwide**



#### + Offshore Grid - Holland Coast (South)

The Dutch government's roadmap for offshore wind energy specifies that the objective of 3,500 MW of new capacity by 2023 is to be realised in three offshore wind farm zones off the Dutch coast: Borssele, Holland Coast (South) and Holland Coast (North). Grid operator TenneT is responsible for the construction of the required 'offshore grid'. The Offshore Grid - Holland Coast (South) project is aimed at ensuring that the electricity generated in the Holland Coast (South) wind farm zone is transported to the onshore high-voltage grid. The project comprises the realisation of offshore platforms, offshore and onshore cables, and a new onshore transformer substation. Witteveen+Bos contributed to the preparations for the project by performing a routing study, analysing and evaluating alternatives, conducting impact assessments, drawing up an Environment Impact Report, and preparing permit applications.

South Holland province **The Netherlands**



#### + Bio-based bicycle bridge

The Fryslân provincial authority is building a bicycle bridge made of bio-based composite materials to complete the new ring road around the city of Leeuwarden. The bridge design was elaborated by the DRIVE construction team, consisting of Sweco/Witteveen+Bos, the provincial authority, the Reef Infra/Spie contracting group, and composites manufacturer Infra Composites. Bio-based composites are relatively new in the infrastructure sector. The material used in this project consists of balsa wood, flax, resin and hardener. A study was performed in collaboration with a number of educational institutions to determine the optimal composition of the material. This resulted in a mixture that consists of 80 % natural materials, with a service life of 50 years. The entire 66-metre-long roadway will be constructed out of bio-based composite, a world first at this scale. All partners involved gained new insights into bio-composites thanks to the materials study.

Ritsumasy! **The Netherlands**

#### + IMPAKT programme completed

In 2014, the Directorate-General of Public Works and Water Management (Rijkswaterstaat) set up a 'Secure Working' programme to reduce the vulnerability of infrastructure-related ICT systems and to increase responsiveness in case of incidents. Following a preparation phase, structures like tunnels, bridges and locks were inspected on-site by a multidisciplinary team of engineers and specialists from Rijkswaterstaat, VKA, Witteveen+Bos, Royal HaskoningDHV and Pilz. They surveyed the structures, interviewed managers, and performed on-site tests of functional safety, cyber security and access security. Completed in late 2017, the programme helped to improve the safety and security of no less than 460 infrastructure objects. Witteveen+Bos, Royal HaskoningDHV and Pilz established a separate engineering firm under the name IMPAKT to continue their successful collaboration.

Various locations in **The Netherlands**



**+ A9 motorway, Badhoevedorp - Holendrecht section**

The expansion of the A9 motorway near Amstelveen is part of the Schiphol-Amsterdam-Almere (SAA) programme. Since 2014, Witteveen+Bos and the Directorate-General of Public Works and Water Management (Rijkswaterstaat) have been working on the integrated design and plan development for the route decision, which was signed by the Minister of Infrastructure and the Environment in March 2017. It is now time for the preparation of contract documents, the tender procedure, and the performance of work. Witteveen+Bos contributes to the next phase and will staff the Rijkswaterstaat technical team that is to provide all technical support during the 2017-2025 period. The commission includes drawing up documents for the DBFM contract, supervising the call for tenders, the dialogue phase, the performance of work and the provision of back-office support, and eventually overseeing the completion and delivery phase.

Amstelveen **The Netherlands**

**+ Exposure to Substances of Very High Concern**

There are regular reports in the media about the release of toxic substances as a result of incidents and technical malfunctions at companies. It is essential that both workers and local residents are informed as quickly and accurately as possible if there is any risk of hazardous exposure to high concentrations. Witteveen+Bos models these types of short-term exposures for companies, and evaluates the risks associated with substances like benzene. The team also provides advice on the prevention of emissions by performing safety studies, such as HAZOP reviews for chemical companies. So-called 'Substances of Very High Concern' constitute a special category. They can cause cancer, interfere with human reproduction, and accumulate in the food chain. Witteveen+Bos helps companies to comply with reporting requirements in view of their obligation to minimise the use of such substances and adhere to the Maximum Permissible Risk Level (MPR).

Various locations in **The Netherlands**

INTERVIEW





# Centre Point of Indonesia

**Centre Point of Indonesia is an iconic project in the shape of Indonesia's national symbol, the Garuda. It is located off the coast of Makassar, often called the capital of the east of the Indonesian archipelago. Geographically, the densely populated city is literally in the middle of Indonesia and is a major trading hub. New land is needed to absorb the population growth. The land is being developed offshore. Witteveen+Bos has been involved in this project since the start in 2015 by developing the conceptual design, preparing contractual documents and maintaining supervision. Adecar Nugroho, design coordinator, and Budiwan Adi Tirta, geotechnical engineer, are both working on this high-profile project.**

'We factor in all stakeholders already present in the area, including the ecosystems'



## 'The soft subsoil resulted in special conditions for this

The project calls for enlargement of a small pre-existing land reclamation along Losari Beach to create an area of 157 hectares. After delivery, developer KSO Ciputra Yasmin will build real estate for commercial and residential purposes. The land was reclaimed based on a design-and-build contract under which the contractor is responsible for designing and constructing and Witteveen+Bos is in charge of contract management and supervision. 'The real challenge for us lies in the contracts', says Tirta.

'It is a complicated project from an engineering point of view, but thanks to the considerable experience of Witteveen+Bos with soft soil

projects we have not had any engineering problems', adds Tirta. 'The project location is close to a small island occupied by fishermen and to the tourist attraction of Losari Beach. It is prohibited to dig up the soft subsoil in Makassar. Due to these two factors, the method of construction is extremely important to the success of the project. The contractor developed an innovative spraying pontoon. Spraying in thin layers means the load on the soft subsoil is increased gradually to ensure the soil remains stably in place and is not pushed to one side. When the new land came to the surface of the water, conventional ship-to-shore pumping was again used. Work is now in progress on improving the ground, excavating

canals and installing bank revetments. Delivery is scheduled for the fourth quarter of 2018.

'Working with a European contractor requires a different approach to working with, say, a Chinese contractor as in the Kapuk Naga Indah project in Jakarta', says Tirta. 'The focus in Kapuk Naga Indah is on engineering problems, whereas with Centre Point of Indonesia the challenge lies in the contracts.'

Adecar and Tirta both studied civil engineering in Yogyakarta. Witteveen+Bos figures prominently in their careers. They had an opportunity to complete their bachelor's degrees in the Netherlands. Tirta subsequently



# project'

continued working in the Netherlands and got a specialised water management internship at Witteveen+Bos. 'It was then that I realised that Dutch water management was not for me, because all the dams in the Netherlands had already been built', he says with a grin. Adecar now works as a geotechnical engineer at Witteveen+Bos in Jakarta, and after roaming around for a while, Tirta also applied for a job at Witteveen+Bos. 'My CV was forwarded to Indonesia and that's why I am now working alongside Adecar again.'

Since work on the project began in April 2017, a team of Indonesian and Dutch supervisors have been on the ground in Makassar. Tirta:

'Eight people are present on site, including a secretary and a driver. The group rotates. We get technical and contractual support from Jakarta and the Netherlands. Cooperation within the team is good. The role of supervisor is new for some colleagues, but we support each other and there is room for consulting and learning from mistakes.'

Adecar: 'Our experience of working with the Dutch comes in very useful. I've learned to be direct, sometimes too direct according to some of my Indonesian friends. But in this particular project it is essential to be direct. It is a trait that is not appreciated in Indonesian culture. In Indonesia it's all about how you get the

message across, while in the Netherlands the most important thing is the message itself.'

How was attention devoted in this project to sustainable development? Adecar: 'A relationship exists between the consultant and the client. In simple terms, the client wants an island and we are designing it. We also factor in other stakeholders already present in the area such as fishermen, island residents and ecosystems. From our point of view, project development is inextricably linked to social and environmental aspects and we make suggestions for how to carry out the project in a sustainable manner. That ultimately benefits everybody.'



# Objective

## 2

### Developing talent

Witteveen+Bos aims to be a good employer by promoting diversity and enabling our employees to utilise their talents to the full. The materiality analysis also showed that Witteveen+Bos can contribute to SDGs like quality education, decent work and economic growth, and reducing inequalities.



INTERVIEW





# Customised innovation programme

Inspired by the methods of technology start-ups and the software industry, innovation was a key focus area at Witteveen+Bos in 2017. The Plus+ Innovation Programme has unleashed a massive innovation drive that is radically transforming the company. It truly serves as a platform for people to turn their dreams into reality. Otto Schepers initiated Plus+, and developed and implemented the programme together with an enthusiastic and dedicated team.

‘Innovation is also about developing talent’



## FIRE SAFETY ENGINEERING

If you assume that Virtual Reality (VR) is mainly used in games and other forms of entertainment - think again. An innovative tool called 'Fire Safety Engineering in Virtual Reality' (FSE in VR) is now being applied to simulate the effects of fire in a new metro station in Brussels. The tool sets new standards in fire safety research. 'We are currently working on the calculations for the Grondwet metro station in Brussels. The trick is using VR techniques to visualise our expertise in evacuation planning and complex fire and smoke propagation', says engineer Tamara Dolle, who took the lead in developing this innovative solution together with fellow engineer Marina Fragkopoulou.

'You can be surrounded by virtual smoke in the VR simulation, so you can check if the emergency exit sign is actually visible'

The idea for FSE in VR was developed as part of the Plus+ Innovation Programme. The demo version was based on the designs for another Brussels metro station. Because the clients were very pleased with the results, they decided to commission an FSE analysis for the new Grondwet station currently under development. The Netherlands Fire Service and large infrastructure managers have also requested demonstrations.

## SMART FACTORIES

Creating a truly 'smart' factory by optimising the industrial brewing process for a well-known Belgian beer brand, using Big Data and Artificial Intelligence (AI) - this is how a team of Witteveen+Bos engineers is using the Digital Process Operator (DPO). 'The idea of applying AI and Big Data has been floating around for some time at Witteveen+Bos. The combination of these technologies has great potential for the sectors in which we operate. We initially developed the concept outside regular working hours. By participating in the Plus+ Innovation Programme, we were able to invest more time in development, and that really speeded things up. We have now applied our innovative solutions for multiple clients, and we've noticed that there is enormous demand', says engineer Bram Bloks. 'We have visited breweries, water treatment plants and waste-processing facilities. In fact, we are now 'training' our AI system at a waste-processing facility, to help it recognise and predict odours so nuisance can be prevented. This process is very different from the way we as humans perceive smell, but that is precisely the strength of AI. The results benefit our clients, the environment, and local residents.' In almost all projects, significant savings are realised in terms of costs, energy consumption or use of raw materials. Too good to be true?

'We can probably achieve even better results, since our AI is getting smarter all the time.'



## FACTS AND FIGURES

- A total of 169 ideas were submitted in 5 campaigns
- 412 participants worldwide, 16 teams of finalists
- Over 400 reactions in 19,000 visits to the HYPE platform
- 5 'innovation hubs' coordinated by 5 hub managers
- Over EUR 350,000 invested in talent development hours

From AI data analyses that optimise the brewing process of a Belgian beer brand, to fire prevention in the Brussels metro system using Virtual Reality, and from CO<sub>2</sub> capture and storage using mud to automatically designed quay walls - the innovations developed by Witteveen+Bos have immediately resulted in new business. But the transformation that has been set in motion is even more important than the boost to revenue, says programme manager Otto Schepers. 'The innovation process has truly gained steam. Almost half of all Witteveen+Bos employees worldwide are or have been involved in the Plus+ programme, particularly the operational staff. We have found that many people have great ideas, and that there are opportunities for the professional development of all our colleagues. The success of the programme makes sense in hindsight, but we had not expected it beforehand.'

The Plus+ Innovation Programme is based on experiences gained in the software industry. For instance, social engineering techniques were applied using a so-called 'hub structure'. In addition, a special online collaboration platform was set up based on the HYPE format, which is also used by major companies like Airbus, Siemens, Fujitsu and NASA. 'We made one important adjustment. Where other programmes take individual effort and concept development as their starting point, we deliberately created multidisciplinary teams, because at Witteveen+Bos we believe that collaboration is essential. It is part of our 'corporate DNA'. And that turned out to be a key factor for success.'

Four 'innovation hubs' were defined in line with the four business lines of Witteveen+Bos and the Sustainable Development Goals of the United Nations: Smart Cities, Smart Cycles, Smart Deltas, and

Smart Infrastructure and Mobility. A fifth hub called 'Smart Company' was deliberately added.

No fewer than 169 ideas were submitted by the teams in a very short period of time. In the five hub campaigns, sixteen teams of finalists were selected with input from clients. These teams proceeded to a three-month 'accelerator phase' with additional support and supervision. Otto Schepers: 'The competition element is mainly intended to encourage a sense of pride and a desire to win. Plus, engineers simply love to develop solutions for problems. In this programme, we harness that energy for innovation by providing room for their talent. The initial ideas were elaborated in the accelerator phase, which focused on all the non-technological aspects. After all, engineering is our strength. Developing a technical solution into a sound business case and putting it into practice - that is much harder for engineers.'

'Feedback from the market and our partners confirms that we have an excellent reputation for innovation. We believe that this is due to our company culture and the attention we devote to employees. Staff at Witteveen+Bos feel sufficiently free to devote time to participating in a programme like this. They are also quick to coordinate with other disciplines, and our relatively flat organisation structure makes it easier to ask for help. We are quite strong-willed, so we customised the programme and implemented it with a dedicated team to ensure that it is perfectly geared to our wishes and requirements.' The innovation programme will be further developed and continued in 2018. It will also provide support for colleagues who are working on promising innovations parallel to the programme.

## DEVELOPING TALENT

**Developing top talent is a key corporate objective of Witteveen+Bos, arising directly from our mission. We are committed to training and developing top talent, promoting diversity, and ensuring an adequate inflow of technical professionals.**

### Workforce

On 31 December 2017, Witteveen+Bos had 1,054 employees worldwide. This corresponds to a net workforce increase of 25 employees or 2.4 %, falling just short of the targeted workforce increase of 3 to 5 %. This growth is the net result of a large inflow of 160 new colleagues, as well as a substantial outflow of 135 employees. We can clearly see that the economy is picking up, and that mobility on the labour market is increasing. In our experience, an outflow of up to 10 % creates a positive dynamic within the organisation. An increased outflow means that more attention is devoted to 'onboarding', transfer of duties, and saying goodbye to colleagues leaving the company. We have therefore investigated how we can reduce the outflow. Personnel key figures that provide insight into the composition of our workforce may be found on pages 48 and 49.

### Leadership

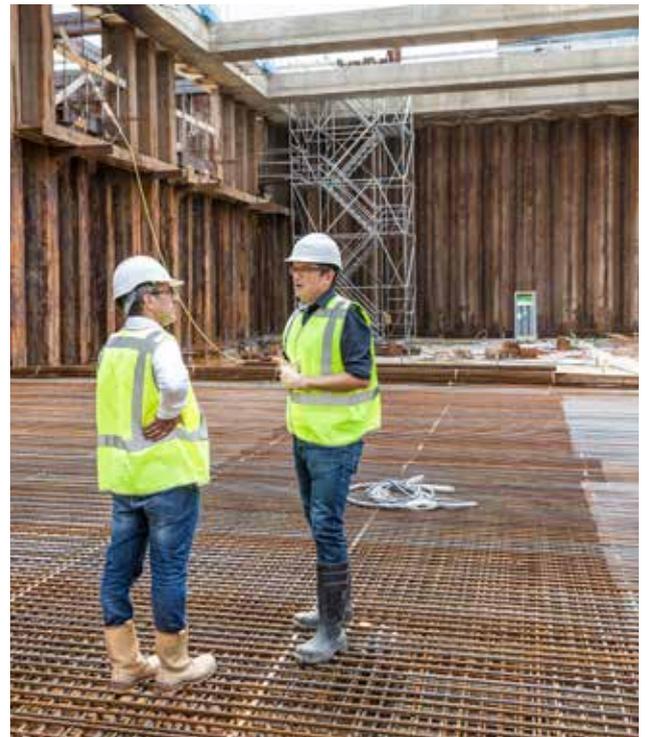
In the past few years, we have seen a significant increase in part-time work and work performed at project sites. As a result, the number of personal interactions between employees and their managers has decreased. In 2017 we therefore devoted extra attention to leadership in line management. We set up training programmes for group leaders and for new and experienced PMC leaders. In 2017, Witteveen+Bos spent a total of EUR 587,313 on leadership and employee development.

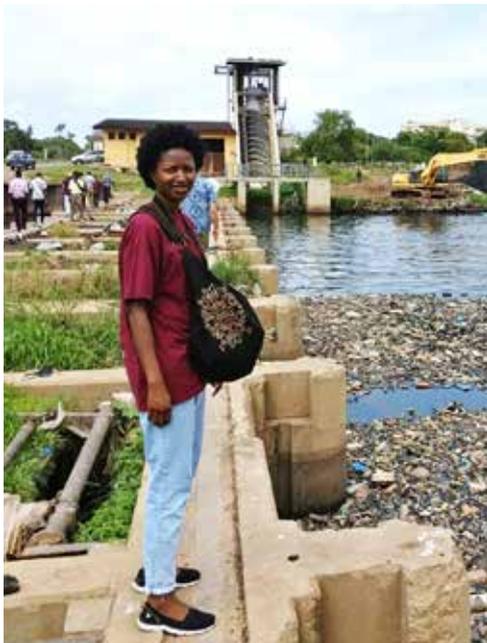
### Connection

For Witteveen+Bos, the past decade has been characterised by rapid international growth. Our strength lies in operating as an integrated worldwide organisation, assembling the best possible project teams consisting of colleagues from all offices. In 2017, we therefore devoted particular attention to intercultural collaboration and connection, both within and outside the office. We organise various activities where employees can get to know each other outside work. Special extracurricular activities are offered for employees at our Dutch and Belgian offices who have been with Witteveen+Bos for less than three years (known as 'neWBies'), such as a weekend trip to Belgium devoted to natural coastal defences. We are also a sports-minded organisation, with Witteveen+Bos teams competing in various sports events.

### Measuring talent development

Employee development occurs mainly through 'learning on the job'. In addition to internal and external training courses, job performance interviews serve as a key instrument for effectively supervising and promoting the development of employees' knowledge, skills and capabilities. By offering places for interns and final-year students, we also ensure an adequate inflow of technical professionals. The table provides an overview of the Key Performance Indicators (KPIs) that we use to monitor progress in realising corporate objective no. 2.





KPI 2017	Result
The number of interns and final-year students must equal or exceed 20 % of the total workforce of Witteveen+Bos (at 31 December 2017)	In 2017, Witteveen+Bos hosted 215 interns and final-year students. This corresponds to 20.4 % of our total worldwide workforce of 1,054 employees.
At least 80 % of all employees have had a job performance interview in the past two years.	49 % of all employees have had a job performance interview in the past two years. In 2017, job performance interviews were conducted with 30 % of all employees.
We aim for female employees to account for 25 % of future partner nominations, a male-female ratio that corresponds to the ratio among new colleagues joining the company.	14 new partners were appointed in 2017: two women and twelve men. Although the absolute number of female partners has increased, the ratio of 14.2 % falls short of the target percentage.
Employees can use a 'Talent Development Score' to indicate whether they have been given every opportunity to utilise and develop their talents. We aim for an average score of 8 or more on all three components.	<p>The Talent Development Score is determined on the basis of three questions:</p> <ul style="list-style-type: none"> <li>- to what degree do you feel able to utilise your talents at Witteveen+Bos? Average score: 7.5</li> <li>- to what degree do you feel able to develop your talents at Witteveen+Bos? Average score: 7.3</li> <li>- how do you rate the working atmosphere at Witteveen+Bos? Average score: 7.60</li> </ul> <p>The overall Talent Development Score for these three elements is 7.5.</p>

The average Talent Development Score of 7.5 indicates that Witteveen+Bos makes a more than sufficient contribution to the development of our employees' talents. However, we have not achieved our target of an average score of 8 or more on all three components. Another point for attention is the fact that the percentage of employees who participated in job performance interviews falls far short of the target (49 % in the past two years compared to the target of 80 %). In addition, we must continue to devote attention to diversity. In short, we must focus more on employee development in 2018.

**'PLUS school' for professionals defined as spearhead for 2018**

By making every effort to promote professional development in 2018, we aim to reduce personnel outflow and increase the inflow of talented young people. Setting up a 'PLUS school' for professionals has been designated as a spearhead for 2018. Among other measures, we will accelerate our tried and tested 'starters programme' and modernise the project management training courses on offer, enabling employees to develop more quickly and effectively in project work. In addition to the PLUS school, we will investigate potential locations for a new office in the Netherlands, and begin experimenting with 'pop-up offices' near relevant universities and institutes of higher education, where Witteveen+Bos employees, students, clients and partners can meet in an informal setting.

# PERSONNEL KEY FIGURES



Number of employees in Full-Time Equivalents (FTEs)

977 ↑

(2016: 952)

Number of employees

1,054 ↑

(2016: 1,029)

Male/female ratio

70/30

(2016: 70/30)

Average age

38

(2016: 38)



Different nationalities

25 ↑

(2016: 23)



Employees hired

160 ↑

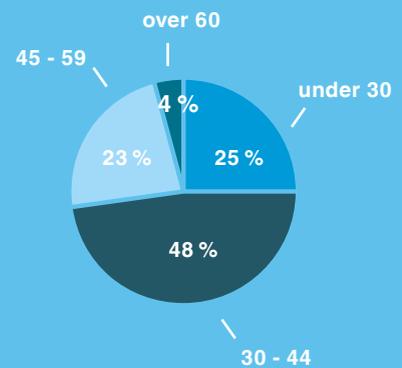
(2016: 98)

Employees leaving

135 ↑

(2016: 125)

Staff age distribution



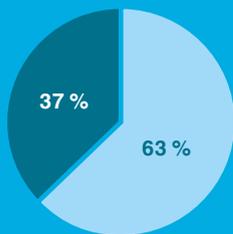
Employment contracts

part-time



385 ↑

(2016: 365)



full-time



669 ↑

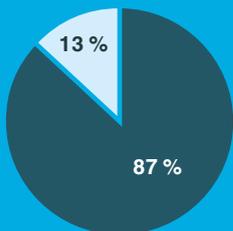
(2016: 664)

fixed-term contract



134 ↑

(2016: 111)



indefinite-term contract



920 ↑

(2016: 918)

Workforce by country

**The Netherlands**  
2017: 842 / 2016: 842

**Belgium**  
2017: 74 / 2016: 61

**United Kingdom**  
2017: 1 / 2016: 3

**Ghana**  
2017: 6 / 2016: 5



**Latvia**  
2017: 6 / 2016: 6

**Kazakhstan**  
2017: 65 / 2016: 67

**Russia**  
2017: 1 / 2016: 1

**Dubai**  
2017: 8 / 2016: 5

**Vietnam**  
2017: 2 / 2016: 2

**Indonesia**  
2017: 41 / 2016: 31

**Singapore**  
2017: 8 / 2016: 6



**Sick leave rate  
(The Netherlands)**

2.5 % ↓

(2016: 2.9 %)

**Level of Education The Netherlands**



**intermediate voc-ed**



135 ↓

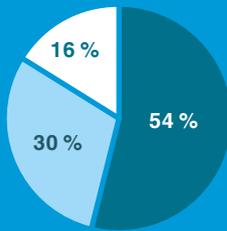
(2016: 152)

**higher voc-ed**



253 ↓

(2016: 269)



**university**



454 ↑

(2016: 421)

**In-company training and education**

1,182 ↑

(2016: 652)



**Investment training and education (euro)**

587,313 ↑

(2016: 511,375)



Stephanie Lamerichs

## Indicate what you want

The profession of structural engineer really attracted me. When I applied to join the company in 2011, I therefore indicated that I wanted to specialise in this field. I quickly became an active member of the neWBie Committee. We organised a lot of cool activities for newcomers, and my company network grew quickly. Now I represent junior Witteveen+Bos employees in the youth organisation of the Dutch Association of Consulting Engineers. These 'extracurricular activities' give me a lot of energy. They also made me realise that I want to focus on becoming a generalist rather than a specialist in the coming years. I voiced my ambitions during a job performance interview last year, which served as the stepping stone for a new role. I really enjoy working in my new position as work package leader for the A58 motorway project.



Viktoriya Rusakova

## Learning new skills

Engineering for me is the application of scientific knowledge to solving problems in the real world. My dad is an engineer and I followed in his footsteps. I am now working as a civil design engineer in Atyrau. Our clients require 3D models instead of 2D drawings more often. I like learning new things so when Witteveen+Bos provided me with the opportunity to learn Revit software by external and internal trainings in the Netherlands I of course said yes. It's a good chance to improve not only my professional knowledge, but to grow personally, get acquainted with a new culture and a new way of working. And I will be happy to share this new knowledge with my colleagues in Kazakhstan.



Koen Haans

## Passion for sustainable energy

'Engineering is all about people' is a guiding principle at Witteveen+Bos. I couldn't agree more, and that's why I believe that developing talent is our most important core value. Or as company founder Goosen Bos once put it eloquently: 'Smart people with passion and talent will feel right at home at Witteveen+Bos. Here we constantly stimulate their creativity.' I can live out my passion for energy and sustainability at Witteveen+Bos, and realise my personal dreams because the company provides 'room for all good ideas'. As a team, we have been able to contribute to the energy transition and the reduction of CO<sub>2</sub> emissions. That makes me truly proud of our work!

## Achieving impact

Witteveen+Bos and I have a great passion for water. The company's rich history and commitment to addressing social issues continue to inspire me. As manager of the Resilient Spatial Design group, I can live my passion every day and I am given the opportunity to inspire people and work on projects that embody my values and those of Witteveen+Bos. In 2017 we laid the foundations for making the city of Antwerp and the Belgian coast more resilient and adaptive, among other things. This success will be continued in 2018, with the first projects being realised on-site. I am proud that I can help to build the future and contribute to the rich history of Witteveen+Bos.



Sofie Depauw

## Room for new ideas

Wood is a highly sustainable construction material, and it's one of my ambitions to put wood structures in the spotlight. In 2017 I completed my graduation project at Witteveen+Bos, researching sustainable applications of wood structures. As Witteveen+Bos devotes a lot of attention to sustainable solutions, I was keen to join the company after obtaining my degree. Right away I was asked to give a lunch lecture on wood structures. I have a lot of new ideas, and I am happy that the company provides me with opportunities to devise new ways of using wood as a construction material.



Bart Hazewinkel

## Sharing knowledge is essential

In my field of geotechnical engineering, Witteveen+Bos is widely recognised for its involvement in high-profile underground infrastructure projects like the North/South metro line in Amsterdam and the Oosterweel Link in Antwerp. Given the massive interests at play, our creative solutions must be subjected to full-scale testing. Thanks to these and other projects, Witteveen+Bos is a leader in knowledge development, and the project teams enable us to build a valuable network of experts. And what's better than sharing all that knowledge - through articles, graduation projects and my lectureship at Delft University of Technology? In recognition of these efforts, I was awarded the Keverling Buisman Prize 2017 for best article in the professional journal GeoTechniek - the 'icing on the cake', so to speak!



Richard de Nijs



Wouter Bijman

## Creating opportunities

The combination of professional roles in projects and challenging management positions offers me the opportunity to see the world. Developing entrepreneurial skills is a gradual process, in which you create your own opportunities. In 2017, for instance, we succeeded in launching a pilot project that included the 3D-printing of concrete objects in the extreme climate conditions of Abu Dhabi. I spent months trying to raise interest in 3D concrete printing among Dubai-based contractors, without much success. They had no need for a consultant but wanted turnkey printing solutions and were apprehensive about investing. That is why we adapted and tested a second-hand printer, and developed a business case showcasing how this contracting firm could apply 3D-printing in their operations. Actually, we did everything except our traditional design work!



Marinus Aalberts

## Innovation in dike construction

Building dikes is the best job there is. You can't get more Dutch than this: a dike builder is part of a centuries-old tradition that has shaped our country. At Witteveen+Bos, I am working on the first project that will apply the revised national standard for dike safety. That gives me a lot of energy - energy to apply all available knowledge, skills and talents, and to make sure that we maintain our leading position in terms of expertise. This also means that we must anticipate and respond to new developments. VR-Dijken is a good example: this dike design tool allows stakeholders to participate in the design process via Virtual Reality. Because we possess such extensive in-house expertise, we were able to quickly develop a tool that delivers excellent results.



Wim Vansina

## Adding value for clients

My ambition is to become a technical expert in my field, so I can truly provide added value for our clients in managing their soil-related issues. In the execution of projects, I am given a lot of personal responsibility and scope for development. For instance, last year I served as project leader for a challenging, large-scale soil survey of an old industrial site near the city centre of Mechelen. As someone who's most comfortable working 'behind the scenes', I was very surprised and honoured to be recognised as Witteveen+Bos Employee of the Year 2017. But I was even more pleased when the results of the Mechelen soil survey were approved by the Belgian government just two days later, to the great satisfaction of the client.

## Developing new knowledge

For me, 2017 was a special year because I completed my doctoral research. I successfully defended my PhD thesis and had a wonderful day with colleagues, friends and family. As part of my research, I developed an innovative method for assessing the effectiveness of governance in urban wastewater systems. I am particularly proud of the fact that my work - conducted for years in close collaboration with De Dommel Water Authority - has demonstrably achieved the desired effect: an improvement in the water quality of the Dommel River. At Witteveen+Bos, I was given all the freedom I needed to do my research. Talent and knowledge development are truly part of the company's 'DNA'.



Petra van Daal

## Plenty of career opportunities

Utilising my talents and adding value to the company are important to me. By being proactive, showing 100 % commitment and being open to new challenges, wonderful opportunities have come my way. In my role as head of the secretariat, I have learned a great deal and have tried to assign the right people to the right jobs. Thanks to careful planning and organisation and close collaboration within the secretariat, we have created a very solid foundation. So now it is time for me to pursue further development. I would like to apply my expertise in projects, and I am provided with the scope for a broader interpretation of my role as project assistant.



Annemiek Nijland

## Improving design processes

In the past few years, I have worked hard to introduce 3D structural design techniques in the field of hydraulic engineering. It definitely helped that I was given the opportunity to set up a group focusing on my own field of specialisation (port design). Since I enjoy improving existing processes, the Plus+ Innovation Programme came at the perfect time. Together with colleagues and students, we worked on the development of a wonderful new tool for the automated design of quay walls (called 'Automated Quaywall Design'). I was quite proud when the Dutch technology magazine De Ingenieur recognised my efforts by including me in its 2017 list of engineering talents!



Elmo Slump



# Objective

# 3

## **Adding value through our business operations**

As a company, we can contribute to the Sustainable Development Goals of responsible consumption and production, climate action, and partnerships for the SDGs by improving our own operational processes. Supporting sustainable business travel, reducing our CO<sub>2</sub> emissions and promoting Corporate Social Responsibility throughout the supply chain are important ways to achieve these aims.



INTERVIEW





# Sustainable renovation

**Witteveen+Bos can also make an important contribution to sustainable development through our own business operations. In 2017, we therefore embarked on the renovation of the largest Witteveen+Bos office. Over the course of about a year, the Leeuwenbrug building in Deventer, the Netherlands has been extensively renovated with the aim of creating a pleasant and sustainable working environment for approximately 450 colleagues.**

‘Thanks to the innovative solutions applied, we have managed to convert a building with energy label D to one with energy label A+++’



## 'The TripleAqua system is a unique heat pump that has

Jaap de Koning was responsible on behalf of Witteveen+Bos for the renovation of the 'Leeuwenbrug' office building, originally built in 1975. There were three main reasons for this project: the office was technically and aesthetically past its prime, Witteveen+Bos wished to apply its 'PLUSworking' office concept, and we wanted to demonstrate our expertise in sustainable building renovation. 'The result is a building with an excellent sustainability performance, incorporating various innovative solutions. In addition, the 'PLUSworking' office concept enables our colleagues to collaborate as effectively as

possible on projects. The entire layout encourages encounters and interactions, creating a fertile environment for new ideas. We have created a work environment that makes staff feel very much at home and that also inspires our partners and clients when they visit us, enabling them to become better acquainted with our company.'

The TripleAqua climate system is one of the main sustainable solutions applied in the renovated building. Installation consultant Gert Segers selected TripleAqua as the most suitable system for the building: 'This unique

heat pump can both heat and cool at the same time. The residual heat captured during a cooling cycle is added directly to the hot water circuit. This has a very positive effect: less energy is needed for the heating process. The system also has several internal buffers that temporarily store surplus heat or cold for later use. Another unique and sustainable feature is the use of the cooling agent propæne, an entirely natural substance which has a low Global Warming Potential rating of 3. This means that the gas does not make a negative contribution to the greenhouse effect. The TripleAqua system has never been



never been applied before on this scale'

applied before on this scale in the Netherlands, and I am proud that we have taken the lead.'

Besides the installation of a heat pump, other measures have been implemented to make the building more sustainable. René Nelissen, who was responsible for the quality of the work, provides an overview: 'The first thing we did was to turn off the mains gas supply - for good. In addition, the building has been fully post-insulated, including the facade and the floor, and HR++ glazing has been installed in all windows. In order to reduce waste and

materials usage, we decided not to remove the entire roof and install a new one, but to apply an additional insulating layer. For lighting, we now use only energy-efficient LED lamps. The presence of people in the conference rooms is detected based on carbon dioxide emissions: the lights are switched off when no-one is around. We have also installed 326 solar panels on the roof of the building.'

Jaap de Koning: 'Besides these measures, we have taken many other steps to make the building future-proof, both to provide our

colleagues with the best possible working environment and to ensure sustainability.' René adds: 'We have succeeded in obtaining an A+++ energy label following the renovation! I am enormously proud of that, especially because this is a more than 40-year-old office building that was previously awarded energy label D. And the great thing is that we are not just saving energy - a number of Witteveen+Bos employees contributed to this project, and we learned a great deal. We can now apply this knowledge when working for our clients.'

## ADDING VALUE THROUGH OUR BUSINESS OPERATIONS

**Witteveen+Bos can also create value by means of its own operational processes. Our corporate departments fulfil secondary business functions. We can add value through our business operations, e.g. by sustainably renovating our business premises and promoting sustainable business travel. We seek to reduce our environmental impact and to promote the reduction of CO<sub>2</sub> emissions throughout the supply chain.**

### **'PLUSworking'**

A number of years ago, we concluded that our business premises needed to be modernised and rendered more sustainable. In late 2014 we therefore introduced 'PLUSworking': a new office concept for flexible, project-based working arrangements. We want our business premises to promote effective collaboration, provide a pleasant environment that 'feels like home', and result in minimal environmental impact. When considering office locations, we carefully select places that are easy to reach from a centrally located train station so as to promote the use of public transport by staff. A good example of this policy is the relocation of our office in The Hague to the building complex above the city's central train station. This office as well as our office in Steenokkerzeel (Belgium) were brought in line with the PLUSworking concept in 2017. In addition, our Leeuwenbrug office in Deventer underwent a large-scale renovation. For this purpose, over 450 colleagues worked in temporary rented office space on Stationsplein in Deventer during the year under review. Using various innovative solutions, Leeuwenbrug has been transformed into a highly sustainable building, and we are looking forward to returning to it in late March 2018.

### **Mobility**

In 2017, we adopted a new policy for project, pool and company cars based on electric vehicles as the default option. In practice, this means that almost all cars to be replaced will be replaced by electric vehicles. We aim for nearly the entire fleet to consist of electric cars by 2020. In order to reduce business travel by airplane, we are investing in videoconferencing facilities. Company policy stipulates that distances of less than 500 kilometres must be travelled by train.

### **New project accounting and financial administration system**

Several years ago, we noted that our software suite for project accounting and financial administration was in need of replacement. The old systems were not suitable for worldwide collaboration and were becoming too slow. In late 2015, we opted for BST10 as our new system and in 2016 we made preparations for the conversion and migration process. In February 2017, we went live with a 'big bang'. Following a smooth start, we devoted a lot of time and energy in 2017 to becoming familiar with the BST10 system.

### **Corporate Social Responsibility**

In 2017, Witteveen+Bos joined a sector initiative to reduce CO<sub>2</sub> emissions in civil engineering. Furthermore we are represented on the administrative committee of the UN Global Compact Netherlands Network, reflecting our commitment to its ten principles in the area of human rights, environmental protection and anti-corruption. On behalf of the UN Global Compact, we organised a webinar for Dutch SMEs about the hows and whys of performing materiality analyses. Witteveen+Bos is a member of the Sustainable Civil Engineering expertise network of the Dutch Association of Consulting Engineers, and of the Advisory Board for Sustainable Ports in Africa, an initiative of Delft University of Technology. We also signed the Memorandum of Understanding for a 'Roadmap for Human Cities' - an initiative of the Human Cities Coalition. This organisation is committed to pioneering business models for the development of inclusive urban infrastructure.

Through sponsoring, we support various institutions and initiatives in the field of arts and culture. Every year we present the Witteveen+Bos Art+Technology Award to an innovative artist, and organise an outdoor café for employees and business relations during the 'Deventer op Stelten' outdoor theatre festival.

### **CO<sub>2</sub> footprint**

Every year we calculate our CO<sub>2</sub> footprint in order to gain insight into the CO<sub>2</sub> emissions resulting from company activities. The footprint for 2017 has been calculated using the standard conversion factors provided on the website [www.co2emissiefactoren.nl](http://www.co2emissiefactoren.nl). Since 2014, we have also included the emissions of our international offices. The reported CO<sub>2</sub> footprint per FTE relates to all Witteveen+Bos employees worldwide. The footprint consists of three main elements: business premises, car use, and air travel. We aim to reduce emissions in all three areas.





KPI 2017	Result
Our CO <sub>2</sub> emissions reduction is in line with the overall target of a 30 % reduction by 2020 (compared to the reference year 2007).	In 2017, a per capita reduction of 28 % was achieved (compared to the reference year 2007). We are therefore on track to meet the target of a 30 % reduction by 2020.
Maintain our CO <sub>2</sub> Awareness Certificate at Level 5 of the SKAO CO <sub>2</sub> Performance Ladder, and obtain certification in accordance with the new Quality Manual.	Our certification at Level 5 of the CO <sub>2</sub> Performance Ladder was renewed in 2017.

### Measuring environmental impact

Progress in reducing our environmental impact is measured based on the Key Performance Indicators (KPIs) listed in the table above.

In 2017, we realised a reduction of 28 % compared to the reference year 2007. The key figures on pages 62 and 63 provide insight into usage and emissions related to business premises, car use and air travel. Many emission flows have remained relatively stable. Short-distance air travel was actively discouraged during the year under review. The infrastructure for electric vehicles was improved by installing charging points at a number of offices. Emissions related to electricity consumption increased in 2017. This is due to the fact that the actual electricity consumption of our international offices (often consisting of 'grey power') was included in the footprint in 2017. The relative increase in CO<sub>2</sub> emissions is considerable because our Dutch offices all use green electricity. In 2017 we introduced 'Meatless Monday' at all our Dutch offices. Although this measure does not significantly impact our CO<sub>2</sub> footprint, it does contribute to awareness and encourages people to make a positive contribution in all areas. We conclude that we are on track to achieve our aim of 30 % emissions reduction by 2020 compared to the reference year 2007. We will review the relevant trends in 2018, and adopt a more ambitious target for subsequent years if required.

The CO<sub>2</sub> Performance Ladder is an instrument which encourages environmental awareness on the part of private-sector companies, both in their own business operations and their projects on behalf of clients. We are proud to have retained full certification in 2017 (in the form of the CO<sub>2</sub> Awareness Certificate) at Level 5 of the Performance Ladder.

Since 2012, Witteveen+Bos has been compensating the CO<sub>2</sub> emissions resulting from air travel for business purposes. We do this by purchasing certified CO<sub>2</sub> credits (also known as 'carbon credits'). Eventually Witteveen+Bos wants to achieve climate-neutral business operations by 2020, initially by taking every possible measure to prevent CO<sub>2</sub> emissions. Subsequently we will compensate for any remaining emissions by purchasing carbon credits in the UN's Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+). As in 2016, we opted to purchase carbon credits for a REDD+ project in Indonesia to compensate for air travel in the year under review.

### Development of corporate departments designated as spearhead for 2018

Witteveen+Bos has experienced rapid growth and change in the past few years. We are developing into an internationally integrated engineering and consultancy firm with a strong focus on digital working methods, in keeping with the 'PLUSworking' office concept. These developments impact our corporate departments and demand further professionalisation. In 2017 we therefore elaborated a vision for the development of our corporate departments in the coming years (i.e. optimising their organisation and internal processes). Implementation of this vision has been designated as a spearhead for 2018.

## BUSINESS OPERATIONS KEY FIGURES



Use of public transport for business and commuting purposes (km)

8,060,806<sup>↑</sup>

(2016: 7.718.199)

Business purposes  
2017: 2,382,545<sup>↓</sup>  
(2016: 2,432,059)

Commuting purposes  
2017: 5,678,261<sup>↑</sup>  
(2016: 5,286,140)



Use of private cars for business purposes (km)

3,299,532<sup>↓</sup>

(2016: 3,745,015)

Use of company cars for business purposes (km and litres of fuel)

790,631<sup>↑</sup> / 144,990 l.

(2016: 20,722 / 216,808 l.)

Business travel in the Netherlands is mainly registered in litres of fuel consumed, not in kilometres travelled. In the past, these data were extrapolated to account for international business travel. In 2017, the actual figures concerning the use of company cars for business purposes were registered by our international offices. Because these (international) data are recorded in distance travelled rather than fuel consumed, the total number of kilometres has risen substantially while the quantity of fuel consumed has decreased compared to 2016.



District heating (hot water in gigajoule)

38<sup>↓</sup>

(2016: 88)



Gas consumption in office buildings (m<sup>3</sup>)

247,730<sup>↓</sup>

(2016: 279,350)



Use of private cars for commuting purposes (km)

3,134,609<sup>↑</sup>

(2016: 2,873,840)

Use of company cars for commuting purposes (km)

629,918<sup>↑</sup>

(2016: 363,389)



Electricity consumption (kWh)

1,455,966<sup>↓</sup>

(2016: 1,572,423)



Air travel (km)

5,714,772<sup>↓</sup>

(2016: 6,468,977)



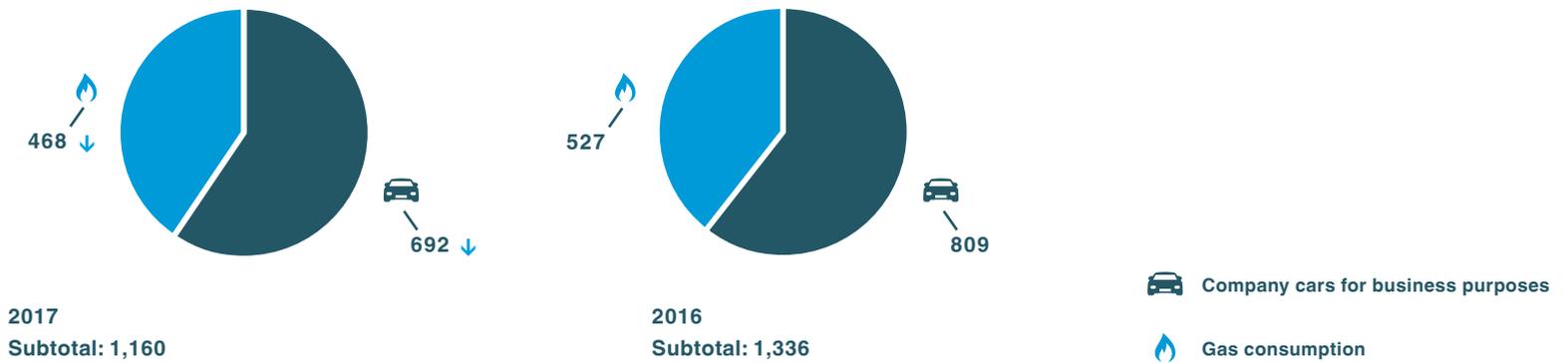
Paper use (kg)

15,381<sup>↓</sup>

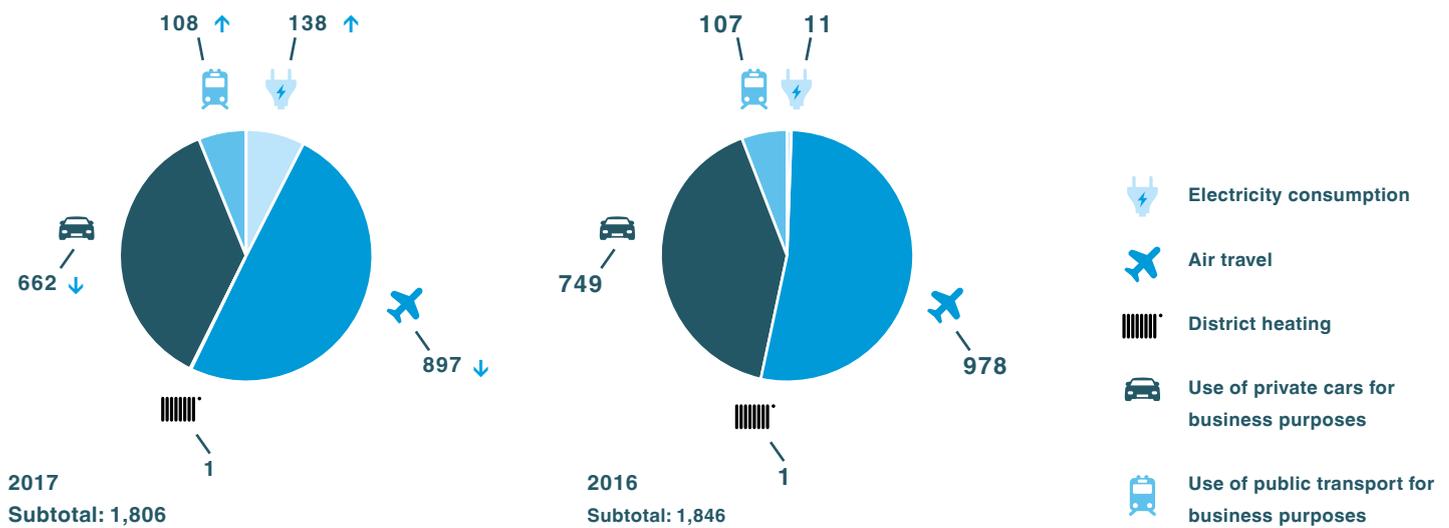
(2016: 28,778)

## EMISSIONS PER SCOPE IN TONNES OF CO<sub>2</sub>

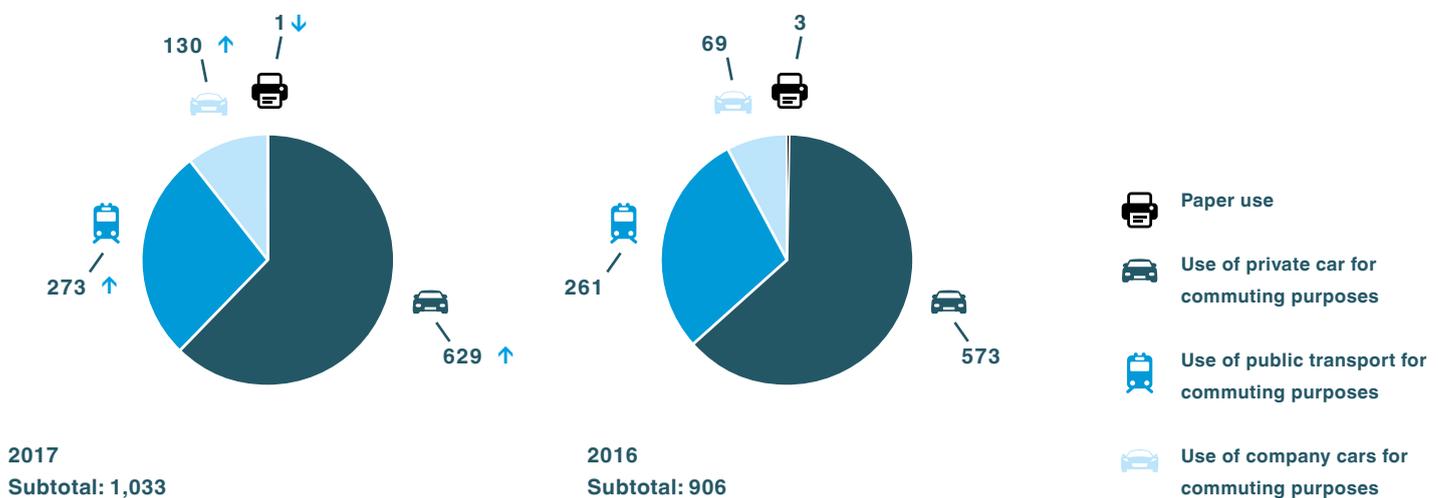
### SCOPE 1



### SCOPE 2



### SCOPE 3



### TOTAL

total: 4,089  
2016

3,999 ↓

2017



# Objective

# 4

## **Creating economic value**

As an international engineering and consultancy firm, we play a role in promoting economic growth through our projects. In addition, the company itself must realise good financial results to ensure sufficient scope for innovation and other new developments, to invest in people, and to maintain our unique ownership structure.



## CREATING ECONOMIC VALUE

**Witteveen+Bos aims to realise healthy financial results. A sound financial basis is an important precondition that enables the company to create value for our stakeholders in the long term and contribute to economic growth.**

### Healthy results

The consolidated balance sheet and profit-and-loss account of Witteveen+Bos N.V. shows that the balance sheet total has increased compared to 2016, in particular due to an increase in tangible fixed assets and work in progress. On balance, the solvency rate decreased from 44.4 % in 2016 to 42.7 % in 2017. Other financial key figures may be found on page 68. The table below provides an overview of the Key Performance Indicators (KPIs) that we use to measure our success in creating economic value.

KPI 2017	Result
Annual growth of own revenue of 3 to 5 %	In financial year 2017, Witteveen+Bos N.V. realised a revenue of EUR 130.8 million, a decrease of 4.6 % compared to 2016 (2016: EUR 137.1 million). Own revenue amounted to EUR 104 million and remained virtually unchanged compared to 2016.
Annual workforce growth of 3 to 5 %	The workforce grew by 2.4 % from 1,029 to 1,054 employees.
Annual net profit margin of at least 8 %	The net result in 2017 amounted to EUR 12.5 million, yielding a net profit margin of 9.6 %.

We conclude that we have achieved solid results in 2017. The net profit margin decreased slightly compared to 2016 due to three major investment programmes undertaken in 2017: the renovation of the Leeuwenbrug office in Deventer, the implementation of the BST10 system, and the Plus+ Innovation programme.

### Risk management defined as spearhead for 2018

Witteveen+Bos is involved in a wide range of small- and large-scale projects all over the world. These projects have a substantial impact on the organisation and on our financial ratios, and result in a number of specific risks and points for attention. We have therefore designated risk management as a company-wide spearhead for 2018. Witteveen+Bos uses the 'Three Lines of Defence' model as its frame of reference for risk management, distinguishing between three organisational functions that are important for risk control: 1) operational management (particularly project management), 2) the support departments and management, and 3) independent reviewers and auditors. In the past, our risk management activities had a strong operational focus within a Dutch context. At this point, the second line of defence requires strengthening, especially considering our rapid international growth. For this purpose we will conduct a risk assessment that will form the basis for setting priorities, identifying blind spots, and setting up or clarifying governance mechanisms if necessary. In addition, a compliance programme will be created comprising protocols and governance mechanisms.



## SUMMARISED ANNUAL RESULTS 2017

### CONSOLIDATED BALANCE SHEET (before profit appropriation) 31 DECEMBER 2017 31 DECEMBER 2016

#### Assets

Intangible fixed assets		2,844	2,830
Tangible fixed assets		17,557	14,250
Financial fixed assets	+	1,870	3,967
<b>Fixed assets</b>		<b>22,271</b>	<b>21,047</b>
Work in progress		11,719	4,838
Accounts receivable		26,545	30,246
Cash and cash equivalents	+	16,631	16,524
<b>Current assets</b>	<b>+</b>	<b>54,895</b>	<b>51,608</b>
		<b>77,166</b>	<b>72,655</b>

#### Liabilities

<b>Group equity</b>		<b>32,973</b>	<b>32,280</b>
<b>Provisions</b>		<b>5,223</b>	<b>4,825</b>
Long-term liabilities		11,029	5,469
Current liabilities	+	27,941	30,081
<b>Total liabilities</b>	<b>+</b>	<b>38,970</b>	<b>35,550</b>
		<b>77,166</b>	<b>72,655</b>

### CONSOLIDATED PROFIT-AND-LOSS ACCOUNT 2017 2016

#### Net turnover

Net turnover including changes in work in progress		<b>130,806</b>	<b>137,112</b>
--	--	----------------	----------------

#### Costs

Subcontracted work		26,572	32,406
Salaries and wages		48,632	48,878
Social security and pension premiums		12,174	11,510
Depreciation of (in)tangible fixed assets		2,203	1,871
Other changes in the value of (in)tangible fixed assets		1,660	510
Other operating costs	+	22,641	20,957
	-	<b>113,882</b>	<b>116,132</b>

#### Operating result

Operating result		<b>16,924</b>	<b>20,980</b>
Interest paid (on balance)	-	300	257

#### Result before taxation

Result before taxation		<b>16,624</b>	<b>20,723</b>
Results of other participations	+	-/- 283	95

#### Result before taxation (including other participations)

Result before taxation (including other participations)		<b>16,341</b>	<b>20,818</b>
Taxation	-	3,818	5,068

#### Net profit

Net profit		<b>12,523</b>	<b>15,750</b>
------------	--	---------------	---------------

(amounts in thousands of euros)

## FINANCIAL KEY FIGURES



**Turnover**  
in thousands of euros

130,806 ↓

(2016: 137,112)



**EBITDA**  
in thousands of euros

20,505 ↓

(2016: 23,456)



**Net profit**  
in thousands of euros

12,523 ↓

(2016: 15,750)

**Solvency**  
as a percentage

42.7 % ↓

(2016: 44.4 %)

**Net working capital**  
in thousands of euros

26,953 ↓

(2016: 21,527)

**Net profit margin**  
as a percentage

9.6 % ↓

(2016: 11.5 %)

### Participation in employee share ownership scheme at 1 July 2017

#### participants



547

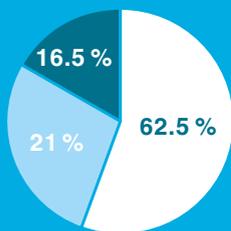
(2016: 543)

#### partners



78

(2016: 82)



#### senior and premium partners



19 en 10

(2016: 18 en 11)

### Internal price of Witteveen+Bos N.V. share at 1 July 2017 in euros

6.25 ↓

(2016: 6.33)

## NOTES TO THE ANNUAL RESULTS 2017

This Integrated Annual Report contains the balance sheet and the profit-and-loss account of Witteveen+Bos N.V., and sets out the general principles for preparing the consolidated annual results (G4-17). To obtain a complete insight into the assets and the results of Witteveen+Bos N.V., the reader is advised to inspect the consolidated annual results for 2017 filed at the Trade Register of the Enschede Chamber of Commerce.

### Preparation of the consolidated annual results

The financial statements have been prepared in accordance with Part 9 of Book 2 of the Dutch Civil Code. They are based on historical costs, with the exception of buildings and land, which are valued at current cost (i.e. current purchase price).

### Consolidation

Insofar as actual policy-making influence exists, subsidiaries have been included in the consolidated annual accounts. Joint ventures have been consolidated in proportion to the share held in the company.

### Principles for the valuation of assets and liabilities

Land and buildings are valued at current cost (i.e. current purchase price). The current purchase price is based on the amount that would be paid to acquire the building on the revaluation date if the building had the same age as it did at the time of the original acquisition, plus the estimated current additional costs of acquisition. The current purchase price is determined on the basis of periodic valuations. Depreciation of fixed assets is based on the estimated economic life. Financial fixed assets include unconsolidated interests in participations and partnership firms. Participating interests are valued according to the equity method. Projects in progress for third parties are valued based on incurred costs, plus the profit assignable to the performed projects, minus losses foreseeable at the balance sheet date. Profits for projects in progress are recognised based on the percentage of completion of the projects at the balance sheet date. Invoiced instalments for projects in progress are deducted from the projects in progress. Trade accounts receivable included in receivables are recognised less a provision for doubtful accounts. Provisions are created for deferred tax liabilities, tax risks, warranties and claims, deferred employee remuneration, and liabilities in respect of participating interests.

### Principles for determination of the consolidated financial result

Net turnover and changes in work in progress include the services invoiced excluding value-added tax, and include the changes in work in progress. Revenues of projects are presented in proportion to the work completed. Salaries include remuneration paid to the Board of Directors. The pension obligations are valued according to the 'valuation to the pension fund' approach.

## AUDITOR'S REPORT

### Auditor's opinion

The summarised annual results for 2017 presented on pages 67 and 69 (hereinafter referred to as the 'summarised annual results') are derived from the audited annual results of Witteveen+Bos N.V. for 2017.

In our opinion, the enclosed summarised annual results derived from the audited annual results of Witteveen+Bos N.V. for the year ended 31 December 2017 are consistent, in all material respects, with those audited annual results, in accordance with the principles described in the notes.

The summarised annual results comprise:

- The consolidated balance sheet as at 31 December 2017
- The consolidated profit-and-loss account for 2017
- The accompanying notes

### Summarised annual results

The summarised annual results do not contain all the disclosures required by Part 9 of Book 2 of the Dutch Civil Code. Reading the summarised annual results and this accompanying auditor's report, therefore, is not a substitute for reading the audited annual results of Witteveen+Bos N.V. and the accompanying auditor's report. The summarised annual results and the audited annual results do not reflect the effects of events that occurred subsequent to the date of our auditor's report on those audited annual results (19 March 2018).

### Audited annual results and our accompanying auditor's report for the summarised annual results

We expressed an unqualified audit opinion on the audited annual results of Witteveen+Bos N.V. for 2017 in our auditor's report dated 19 March 2018.

### Responsibilities of the Board of Directors and Supervisory Board

The Board of Directors is responsible for the preparation of the summarised annual results on the basis of the principles described in the notes. The Supervisory Board is responsible for supervising the company's financial reporting processes.

### Auditor's responsibilities

Our responsibility is to express an opinion on whether the summarised annual results are consistent in all material respects with the audited annual results, based on our procedures, which were conducted in accordance with Dutch law, including the Dutch Standard on Auditing 810 'Engagements to report on summary financial statements'.

Zwolle, The Netherlands, 29 March 2018

Deloitte Accountants B.V.  
M.H.J. Klein Haarhuis

INTERVIEW



# In business together

**Witteveen+Bos staff are co-owners of the company. Only our own employees can hold shares, which contributes to a very high level of engagement. This is also apparent from the high rate of participation. The number of shares that employees are allowed to purchase depends on their status as senior partner, premium partner, partner or participant. Every year we work hard to realise healthy financial results, which in turn ensure stable share prices and dividends. The net profit is distributed annually to all employees under a profit-sharing scheme, and also paid out as dividend to all shareholders. This reflects the Witteveen+Bos philosophy that everyone within the company contributes to its success, and should therefore derive the benefits of that success.**

'The strength of the system is that everyone is in business together, so it truly feels like our company', says Eveline Buter, Leader of the Industry & Energy PMC. 'Witteveen+Bos is basically a consortium of small 'companies' called Product-Market Combinations or PMCs, which are given the trust and freedom they need to do business in their own way. The employees feel jointly responsible for achieving good results. And that fosters commitment, creativity and a flexible attitude.' Eveline joined the company in 2006 and purchased shares as soon as possible: 'I think employee ownership is a great idea. My work is more than just a job to me, and being an entrepreneur is in my blood.' Eveline became a partner in 2011 and was appointed senior partner in 2017. 'As partners and senior partners we help to set out a course for the company. We have access to a wide range of information and together we form a strong network. This enables us to operate more effectively and eventually provide greater added value.'

Maurits Schilt also purchased shares as soon as he could. 'It immediately encouraged me to think in terms of opportunities. In the first few years, I focused mainly on acquiring projects in my own field of spatial planning.' In 2014, Maurits was appointed head of the Witteveen+Bos office in Heerenveen and widened his perspective. 'The north of the Netherlands has its own specific challenges which engineers can help to address. We have succeeded in generating new business in the region by focusing on key themes, ranging from earthquake resistance to dike reinforcements and infrastructure projects. In 2017 I was asked if I wanted to become partner. By then I had great confidence in the employee share ownership system, so I said yes.'

Since as far back as 1992, the ownership structure of Witteveen+Bos has been based on full financial participation by its personnel. Every year in April, a General Meeting of Shareholders is held where the company owners take key decisions. Among other things, the 2017 General Meeting was notable for a change in the composition of the Board of

Directors. Henk Nieboer stepped down as director in accordance with the articles of association (having reached the age of 55 in 2017), and Stephan van der Biezen was appointed as his successor. Both decisions were subject to the approval of the shareholders.

The employee share ownership system has promoted an entrepreneurial spirit within the company for over 25 years. 'Making money is not our main objective. Healthy financial results are a means to generate new business, develop talent, and realise our individual and shared ambitions', says Maurits. According to Eveline, the share ownership system also contributes to employee engagement and solidarity within the company. 'We're all in it together, so if one of the PMCs is going through a rough patch due to a slowdown in the market, for instance, we help each other. We feel connected to each other.'

Oskars Zivtins is head of the Witteveen+Bos office in Latvia and has been a participant since 2013. 'In conversations, Dutch colleagues frequently mentioned the ownership structure and various differences of opinion between the shareholders. I wanted to be part of that. I am honoured to be one of the first international colleagues who was asked to participate. Becoming a shareholder doesn't change much about my day-to-day work - I continue to be passionate about my job. At the same time, ownership comes with a greater sense of responsibility, and the ability to play a more active role within the company.'

Every Witteveen+Bos employee can participate in the scheme at his or her own pace. Maurits: 'By purchasing one or more blocks of shares every year, you can experience what it means to be a co-owner.' Eveline adds: 'Increasingly, the young people I talk to say they want to start a business of their own after working for an employer for a couple of years. The great thing about Witteveen+Bos is that you can be an entrepreneur and start realising your own ambitions from day one. Plus you have easy access to the knowledge and expertise of a worldwide network of PMCs'.

'Share ownership incentivises me to approach my work with an entrepreneurial spirit'

## COLOPHON

### **Text**

Witteveen+Bos

### **Layout and design**

Houdbaar

### **Printed by**

Ovimex

### **Photos and Illustrations**

BAM Infra Nederland

Corné Bastiaansen

Evert van de Worp

Isabelle Renate la Poutré

Maat-ontwerpers

Plein06

Port of Rotterdam/Paul Martens

Quist Wintermans Architecten commissioned by D.R.I.V.E construction team

René Vervloet

Rijkswaterstaat

Rijnboutt en Heren 5

Shutterstock.com

Viorica Cernica

Witteveen+Bos

Witteveen+Bos N.V.

Van Twickelostraat 2

P.O. Box 233

7400 AE Deventer

The Netherlands

t +31 570 69 79 11

e [info@witteveenbos.com](mailto:info@witteveenbos.com)

i [www.witteveenbos.com](http://www.witteveenbos.com)

Enschede Trade Register no. 55094503





Centre Point of **Indonesia**

