

# GLOBAL REPORT

# 12

DENYS GLOBAL



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## GEARING UP FOR THE BIG GAME

### Gearing up for the big matchup

Unbelievable things are happening in the construction world right now. We're dealing with dramatic shortages in raw materials and supply, transport and energy costs are going through the roof, and skilled workers and engineers are harder to find than ever. Yet there's an immense demand for new infrastructure in the face of the energy transition, climate neutrality, and all the other global challenges such as water scarcity and biodiversity.

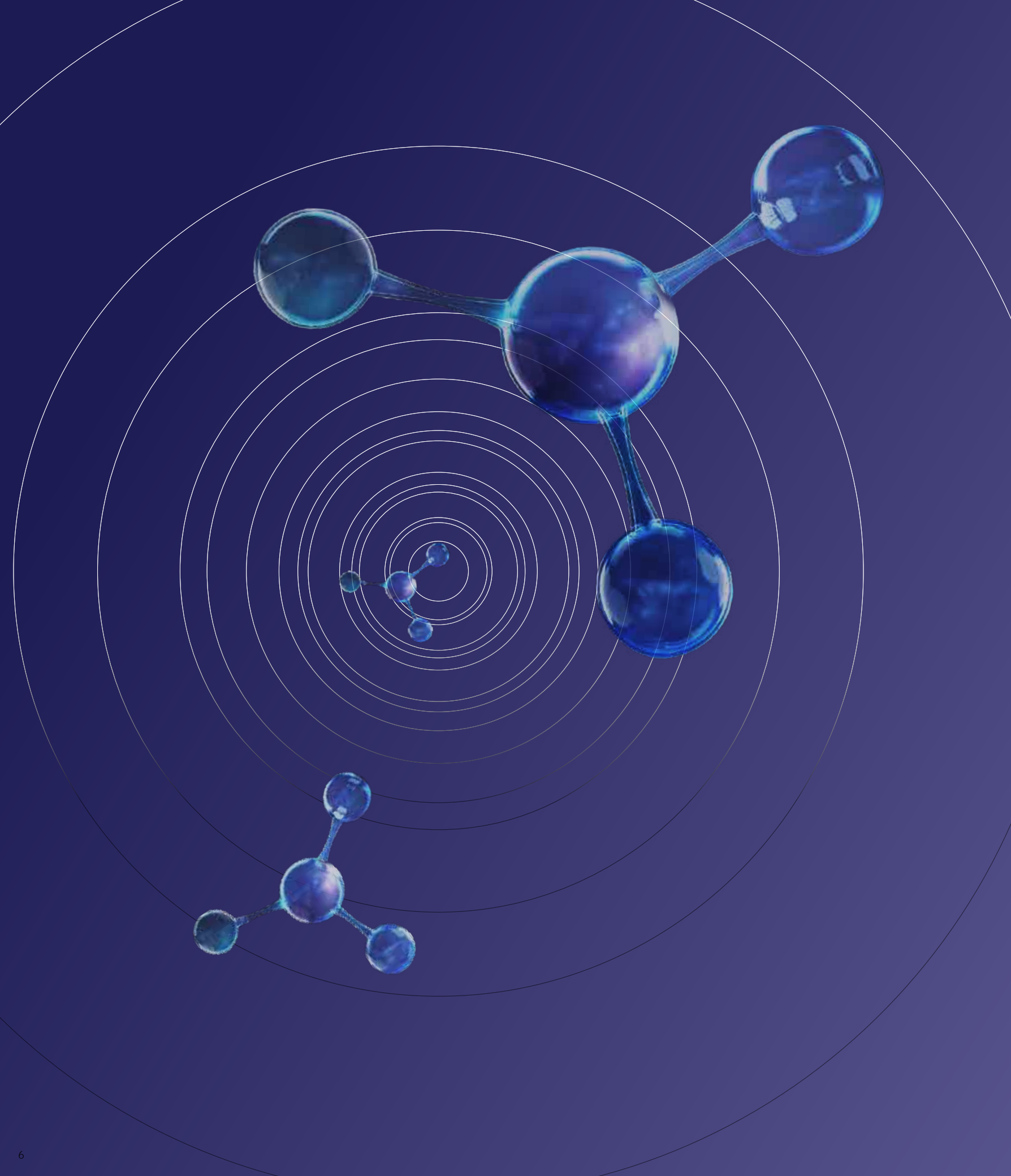
Networks of hydrogen pipelines need to be developed. Markets for district heating and underground HV lines are booming. Carbon capture and storage is becoming a reality. Nuclear facilities are under construction in the wake of an expected revival of the nuclear power industry. And our built heritage needs to be brought up to the prevailing economic and ecological standards.

Yes, construction firms need to gear up for the big matchup. But it won't happen if they persist with old ways of doing things. We need to push the boundaries, develop innovative working methods, embrace creativity, and have the courage to launch ambitious projects for the future of society. Because doing more of the same will not move the needle. The construction industry doesn't need dinosaurs, it needs innovators and entrepreneurs.

I know a multidisciplinary marvel that fits this description precisely, and it's called Denys. Just look inside this global report. Discover how we're revolutionizing underground construction with our Dreamcutter device. See how we're breaking records with the latest low-impact pipeline construction systems. Learn about our involvement in developing a European hyperloop. Hear about the huge recognition we've been getting at the UK's Hinkley Point C construction site. See how we're helping mining companies in Africa work more efficiently. And take a look at our gloriously daring projects for the Brussels Stock Exchange building, the new Brussels DoubleTree by Hilton, the Middelburg Police District Centre (Netherlands), and many more.

At Denys, we're facing up to the world in transition and saying a big hello.

Johan Van Wassenhove  
CEO Denys Global



# DESTINATION: OUR COMMON FUTURE





## **MOVING THE NEEDLE TO NET ZERO**

What a Catch-22 it is! Huge investment in infrastructure is needed to combat climate change, but resources are scarce. Energy transition programmes mean that pipelines have to be built or converted, and district heating networks and HV transmission grids developed, but supply chains are in turmoil in the aftermath of the pandemic and due to the war in Ukraine. We all knew the journey to a net zero economy wouldn't be a bed of roses, but who could have imagined the current plot? And what is its next twist going to be?

### **ENGAGING IN A WIDE VARIETY OF PROJECTS**

Whatever the circumstances, Denys is still on a mission to move the needle. Which means that we're fully engaged in a wide variety of net zero programmes in Europe. The type of project varies a lot, depending on the transition strategies countries have set out for themselves.

Germany's decision to phase out nuclear power, for example, gives rise to major investment in wind energy, HV cabling, and district heating networks. District heating is also prominent in the Netherlands as a way to cut loose from natural gas, a path that Denmark has been on since the 1970s.

France and the UK, on the other hand, are forging ahead and renewing their commitment to nuclear energy. Belgium has been less clear about its strategy, as is often the case. All countries agree, however, that hydrogen will become a critical energy carrier in the future, which is leading to hydrogen pipelines being developed all over Europe.

### **INNOVATIVE TECHNIQUES TO PRESERVE THE ENVIRONMENT**

Importantly, care for the environment is an inherent part of the net zero transition. The need for additional underground infrastructure must therefore be reconciled with preserving the natural environment. The authorities have increasing expectations, and so we're fully on board, for example, with innovative trenchless and near-trenchless techniques such as Pipe Express and E-Power Pipe, and ploughing.

# THE HYDROGEN ECONOMY IS COMING

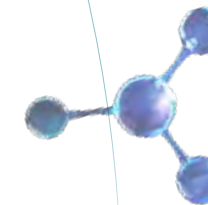
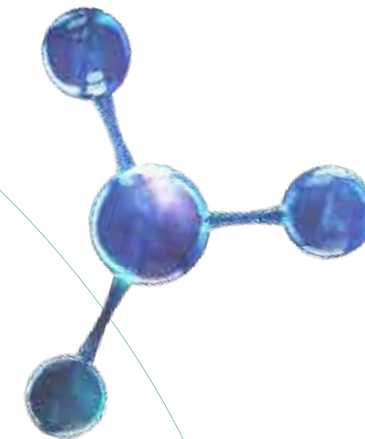
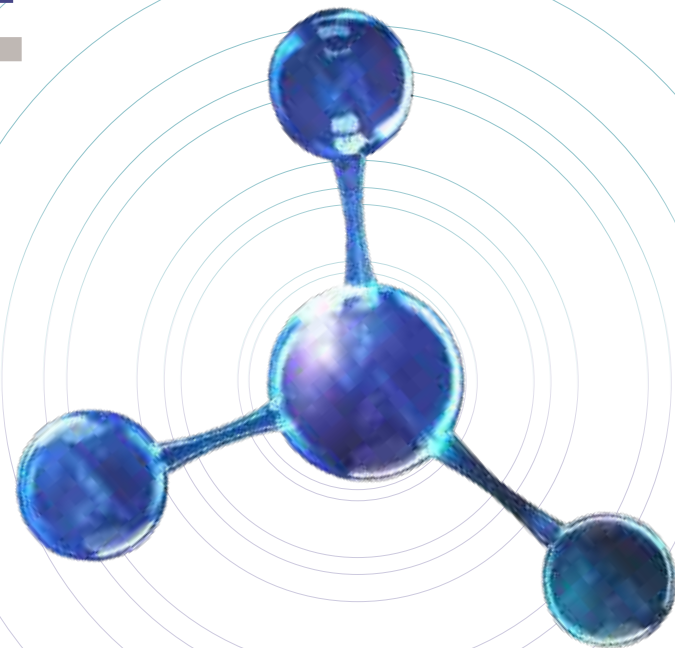
Zero.

## BE-NL

### HYDROGEN PROJECTS IN THE LOW COUNTRIES

**HYDROGEN WILL BE VITAL IN  
DECARBONIZING INDUSTRY WHERE  
ELECTRIFICATION IS ESSENTIALLY  
RULED OUT**

Denys has been gearing up its hydrogen-related activities. We actively participate in WaterstofNet, bringing to the project our comprehensive experience in **PIPELINE ENGINEERING** and **NAVIGATING PERMIT ACQUISITION**, as well as **LAYING PIPELINES IN DIFFICULT TERRAIN** such as dense urban areas and nature reserves.



The development of a green hydrogen ecosystem is a key ingredient of the European Union's path towards net zero. More than a thousand hydrogen-related research and innovation projects have been launched to scale up production and infrastructure to an international dimension.

While ideas about a hydrogen economy have been around since Jules Verne imagined it in his 1874 novel *L'Île Mystérieuse*, practical issues have tempered expectations. Hydrogen was used to launch spacecraft in the 1970s, but it has failed to enter commodity markets.

Today, most experts believe that hydrogen will not be used to fuel cars or heat homes on any massive scale (electricity appears to be the winner here) but will be vital in decarbonizing industry where electrification is essentially ruled out. Prime examples include the cement business, much of the steel manufacturing process, and heavy transport by road, air, and sea.

# THE HYDROGEN ECONOMY IS COMING

## SCALING UP GREEN HYDROGEN PRODUCTION AND IMPORTATION

But here's the first challenge: there's hardly any decarbonization if 95% of hydrogen we use is produced from steam reforming of natural gas, as is the case today. As a result, there have been multiple initiatives seeking to scale up green hydrogen production through electrolysis, with companies such as Air Liquide and John Cockerill taking the lead. Governments are also signing agreements to import green hydrogen produced in areas with surplus renewable power.

## A VAST NETWORK OF HYDROGEN PIPELINES

Developing a comprehensive network of hydrogen pipelines is a further challenge. Air Liquide has been a frontrunner in this area too, creating a dense hydrogen pipeline network in the Benelux and France over the past 25 years. Much of this pipework was engineered and built by expert teams from Denys.

In recent years, Denys has further ramped up its hydrogen-related activities. We're active participants in WaterstofNet, for example, the Dutch-Flemish partnership, uniting companies, knowledge institutions, governments, and authorities, seeking to collaborate on projects investigating hydrogen as a storage medium for renewable energy and its use in zero-emission applications.

The partners attach great value to our comprehensive experience in pipeline engineering, acquiring permits, and laying pipelines in difficult terrain, including dense urban areas and nature reserves.

## SCENARIOS FOR TRANSPORTING HYDROGEN

Multiple scenarios are being investigated to address the technical challenge of transporting hydrogen. One involves making natural gas pipelines suitable for the task. However, hydrogen is known to contribute to material cracking, raising requirements regarding the notch impact strength. In addition, because hydrogen molecules are the smallest on the planet, natural gas network valve stations, at least, will have to be modified or replaced.

Gas distribution companies are also looking at repurposing existing methane pipelines to transport hydrogen, possibly through realignment. This will also require upgraded valve stations. Other scenarios involve using ammonia (NH<sub>3</sub>) or methanol (CH<sub>4</sub>O) as hydrogen carriers.

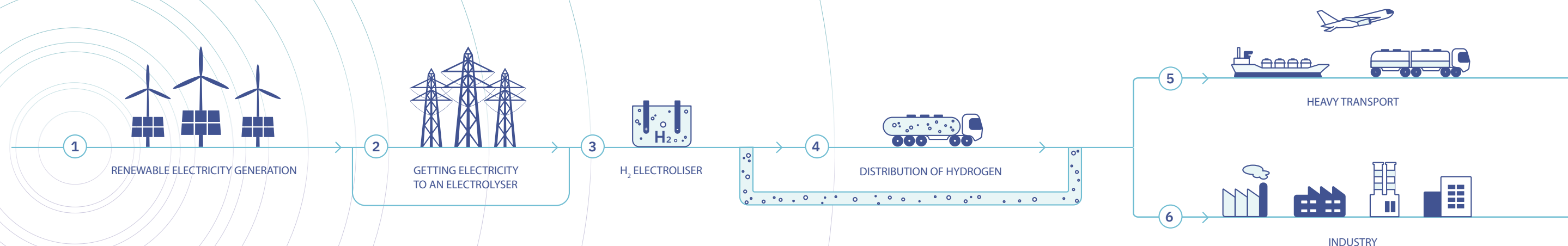
## AN OPPORTUNITY TO PROVE OUR WORTH

The Dutch energy network operator Gasunie is among the first to launch pipeline repurposing projects on a large scale. Over the next five years, they will be developing a complete hydrogen backbone to connect the seaport of Eemshaven (Groningen) and the ports of Amsterdam and Rotterdam. Multiple projects to produce green hydrogen are being launched in both Eemshaven and Rotterdam, making use of surplus power from offshore wind farms. These ports will then become major hydrogen hubs serving the Netherlands and part of Germany, allowing industrial sites across the region to gradually shift towards hydrogen.

One project being launched soon is the construction of a 32-km DN600 hydrogen pipeline in the port of Rotterdam between the Maasvlakte and Pernis areas. It will be an open access pipeline, which means that any company wishing to consume or supply hydrogen in the area can connect to it.

Meanwhile, Gasunie and the Belgian energy network operator Fluxys are joining forces to develop a cross-national hydrogen network in North Sea Port (Ghent-Terneuzen-Vlissingen).

Denys' experience in developing hydrogen pipelines can definitely prove its worth in these projects.





# PIONEER IN CARBON CAPTURE AND STORAGE

There is of course more to the energy transition than hydrogen alone. Achieving net zero means not only implementing zero-emission solutions, but also making sure that residual volumes of carbon produced by industry can be captured and sequestered (CCS) or reused (CCU) without being released into the atmosphere.

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PORTHOS CARBON CAPTURE AND STORAGE

ONE OF THE FIRST LARGE-SCALE CCS PROJECTS IN EUROPE

Denys is the engineering and construction partner in the Porthos **CARBON CAPTURE** and **STORAGE PROJECT**. We completed design work this summer and are preparing to acquire the necessary permits.

### A 20-KM OFFSHORE CO<sub>2</sub> DRAIN

And guess what. Gasunie is a pioneer in this area too with the Porthos project in Rotterdam, one of the first large-scale CCS projects in Europe. The project involves constructing a CO<sub>2</sub> pipeline running from the industries in the port of Rotterdam to a pumping station platform in the North Sea, 20 km off the coast, where the carbon will be stored in empty gas fields located in a sealed reservoir of porous sandstone beneath the seabed more than 3 km down. Air Liquide, Exxon, Shell and others have already committed to using the Porthos platform to sequester their excess carbon.

### ENGINEERING AND CONSTRUCTION PARTNER

Denys will construct the 30-km DN1050 onshore pipeline as well as the 2.7-km high-pressure DN400 pipeline connection to the offshore section. As engineering and construction partner, we completed design work this summer and have been acquiring the necessary permits. Work involves using HDD to cross waterways at four points, applying microtunnelling to cross a railway track, and bridging a cable duct.







# DISTRICT HEATING, A MAJOR CONTRIBUTION TO NET ZERO



District heating based on renewable energy is becoming more common

## 160°C IN BREMEN

In Bremen (Germany), Denys is laying a 1.6-km grid of pipes designed to interconnect with three existing DHC networks as a step towards an integrated network in 2030. Water in the network circulates at 160°C, which is an unusually high temperature. One consequence is that the supply pipes must be insulated using polyisocyanurate (PIR), because polyurethane (PUR) would disintegrate at this temperature. This means that prefabricated PIR flanges must be used at the welds, since PIR cannot be sprayed in situ.

## GETTING RID OF GAS

In the Netherlands, Denys is contributing to the national 'get rid of gas' programme which aims to see homes and businesses disconnected from the natural gas supply and provided with alternative sources of heating.


As part of the programme, we built the Tilburg Kruidenbuurt extension to the Central- and West-Brabant DHC network. Operated by Ennatuurlijk, this network is among the largest DHCs in the country. It was initially built in the 1980s to bring residual heat from the RWE power station at Geertruidenberg to homes and businesses in nearby towns and municipalities. At present, 75% of the heat is generated by biomass and the network is planned to be carbon neutral by 2040. The Kruidenbuurt extension involved constructing distribution pipework and

connecting an additional 200 homes while they were still occupied, receiving warm compliments from residents because we managed to minimize disturbance. At the engineering phase, we worked closely with Ennatuurlijk to optimize the design and the use of innovative materials and construction methods.

Denys is also fully engaged in Gasunie's ambitious WarmtelinQ project, a 2 x 24-km DHC pipe designed to bring residual heat at around 120°C from industries in the Port of Rotterdam to homes and greenhouse horticulture businesses in Delft, The Hague, and other parts of South Holland. At present, we're constructing a 6.3-km section, largely through urban areas and involving two HDD crossings.

Because heating and cooling represent about half of all energy demand in Europe, district heating and cooling (DHC) networks are believed to be major contributors to the net-zero agenda, especially where heat is sourced from renewable energy. This is an important proviso because most current networks get their heat from fossil fuel-powered cogeneration plants. Solutions based on biomass and geothermal energy, however, are becoming more common, and some experts are even pointing to untapped heat resources such as data centres.

Today, district heating already supplies 10% of heat demand in the EU and experts say this could rise to as much as 50% in Europe's urban areas by 2050. While Iceland, Norway, Sweden, Finland, and Denmark have already achieved this level, other countries, including Germany and the Netherlands, are catching up rapidly.



### NL-DE

#### DISTRICT HEATING AND COOLING

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##### ENGAGING IN LOCAL PROJECTS

Experts say **DISTRICT HEATING** could supply 50% of demand in the EU by 2050. Denys is engaging in several such projects in Germany and the Netherlands.





# REDUCING IMPACT ON LOCAL FLORA, FAUNA, AND ON HUMAN LIFE



## NL-DE

ENVIRONMENTAL  
MANAGEMENT

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SERVING AND PROTECTING  
PEOPLE AND PLANET

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We're getting better and better  
at **REDUCING OUR IMPACT** on the natural  
and built environment around construction  
sites. And we're breaking world records.



# REDUCING IMPACT ON LOCAL FLORA AND FAUNA, AND ON HUMAN LIFE



We live in fascinating times. Infrastructure projects are being launched all over the world on a massive scale to make the energy transition happen. Renewable energy is popping up everywhere, hydrogen production facilities and pipelines are under construction, carbon capture and storage solutions are beginning to become reality, and district heating and cooling networks are coming onstream in every region. But what if these projects did harm to the people and the planet they’re supposed to serve and protect?

They shouldn’t. The construction industry is becoming increasingly skilled at reducing its impact on the natural and built environment near construction sites, on local flora and fauna, and on human life. And Denys is a pioneer in these matters. Here are a few remarkable examples.

## ADAPTING THE PLAN AS WE GO ALONG

Environmental management is an important part of our work on the DHC network in Bremen. We plan for continuous construction activity, but we also want to avoid negatively impacting local residents, businesses, and the general public in the area. We’re given no more than a 6- to 10-metre-wide workspace, and we’re permitted to dig sections of no more than 50 metres, which means it’s kind of a stop-go operation with many milestones to achieve and tough logistical challenges.

The subsoil in this part of Bremen also contains an incredible network of existing pipes and ducts, both documented and undocumented. Digging operations are therefore performed very carefully, making onsite adaptations if required. On top of that, we need to regularly supply the local post office and even put the trash bins out once a week. At your service!

## NEGOTIATING WITH SITE OWNERS

In East Flanders, Denys is extending the capacity of the Farys freshwater pipeline between Gijzegem and Opwijk, to the north-west of Brussels. While the new pipeline is laid parallel to the existing one, the project involves a lot of negotiation with around 180 site owners and users, most of whom are farmers.

We also need to build a few crossings, one of which is a DN1000 HDD, 18 metres below Herdersem village centre.

## ALWAYS KEEP THE DISTURBANCE DOWN

Denys also offers installation and maintenance services to Waterlink, the water company providing freshwater and wastewater services to half a million people in the province of Antwerp. The service means that half a dozen Denys teams are on the road every day connecting homes to the freshwater

or wastewater network or carrying out corrective maintenance wherever there is damage. On average, we connect over 3500 homes each year.

Odd things sometimes occur, like that day when subsidence turned out to be due to thieves using the wastewater pipe to rob a bank, when we inadvertently disinterred human skulls, or when we found ourselves in the middle of a police operation catching jewellery thieves red-handed.

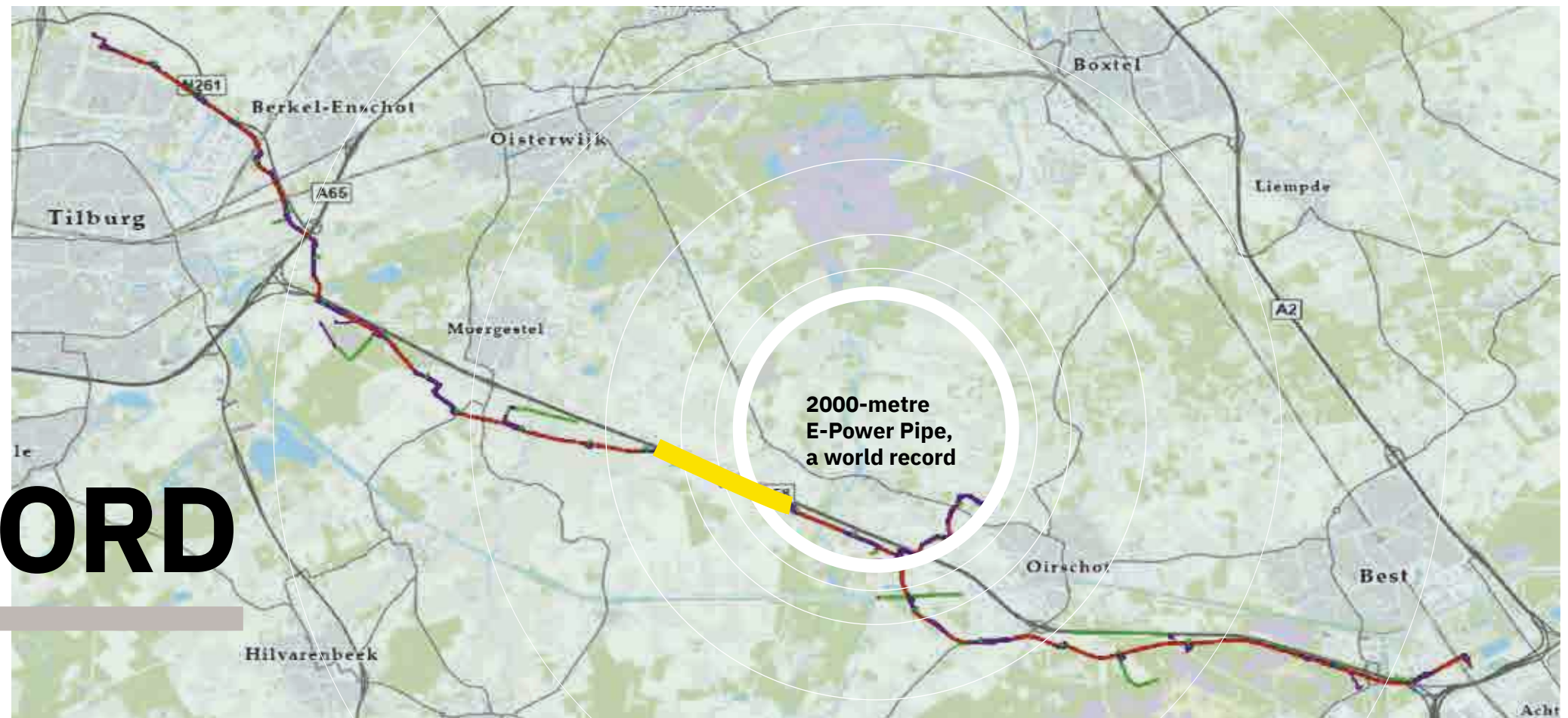
We also carry out planned maintenance such as renewing pipes made from asbestos or cast iron. This means we lay over 50 km of new pipes each year. Importantly, we do that in coordination with telecoms, electricity, and gas operators, as well as data networks, to avoid the sidewalks being constantly broken up. Always keep disturbance down as much as possible!





**REDUCING IMPACT  
ON LOCAL FLORA AND FAUNA,  
AND ON HUMAN LIFE**

# BREAKING A WORLD RECORD



## E-POWER PIPE: MORE EFFICIENT AND AFFORDABLE

A lot of innovative techniques are inspired by concern for the environment. As an example, we're using the trenchless E-Power Pipe technique in a project to install part of a 32-km underground HV cable route from Tilburg to Best for the Dutch transmission net operator TenneT. The cable route crosses a natural reserve and this means we have to use trenchless techniques.

E-Power Pipe is an alternative to HDD allowing cables to be installed much closer to the surface, at a depth of 2 or 3 metres instead of 10 or more. This makes a significant difference to maintenance costs in the event of a malfunction, reducing the cable's total cost of ownership while increasing the cable transport capacity. E-Power Pipe also significantly reduces the impact on the environment and below ground. What's more, the E-Power Pipe system is getting more efficient and affordable as we get more experienced.

Talking about growing experience, here's something great: in this project, Denys broke the world record for E-Power Pipe construction by creating a 2-km crossing in a single operation, a remarkable achievement that made the headlines in the construction world!



Want to see how that worked?  
Watch this video.



© Regine Mahaux

## A REWARDING EXPERIENCE

We used the innovative semi-trenchless Pipe Express technique on four sections of the 22-km gas pipeline renewal project in Leverkusen, Germany. The reason for this choice was that we had a very narrow corridor of operation due to the pipeline being located in a nature reserve and, at one point, very close to an operational gas pipeline.

A Pipe Express machine consists of a trolley connected to a tunnel-boring machine (TBM) by a vertical trenching unit. The TBM loosens the soil, which is then removed to the surface by the trenching unit, with the pipework then put in place immediately. The excavated soil can be deposited either alongside or piled immediately back into the trench. This method significantly reduces the environmental impact because excavation work is reduced to a minimum and there is no need to lower the groundwater level.

This was just the fourth time ever in the world that Pipe Express was used, making it a challenging but rewarding experience. While the first section

proceeded rather slowly, we were up to speed from the second section onwards - a 400-m drive completed in just four weeks, with significant savings in time and costs. The excavation itself was done at a steady pace of 100 metres a day. A lot of people came by to spectate - experts and interested bystanders alike. Aside from the four Pipe Express sections, we also created ten



© Regine Mahaux

micro-tunnels, with the project crossing quite a number of rivers and roads, a highway, and a railway track.



# A SOLID IMPRESSION AT HINKLEY POINT C

UK

HINKLEY POINT C



MISSION ACCOMPLISHED  
AT THE LARGEST CONSTRUCTION SITE  
THIS SIDE OF THE ATLANTIC

Denys was voted **'BEST INTERNATIONAL CONTRACTOR'** at this huge construction site where 5000 people are giving their best every day.



## A SOLID IMPRESSION AT HINKLEY POINT C

What's good for  
the customer is  
good for us



With the invasion of Ukraine adding to the pressure to reduce dependence on Russian oil and gas, nuclear power is gaining traction again in many western countries. The UK Government had already made that strategic choice before the war, announcing that it intends to source 25% of its electricity from nuclear power plants by 2050.

Because a significant share of the existing nuclear fleet is due to be shut down in the next few years, this means that new plants will have to be built in addition to dual-reactor Hinkley Point C, currently under construction and set to generate its first power in 2026.

### SHOWING RESPECT FOR EVERYONE INVOLVED

Meanwhile, we've completed our work on the HPC project to the great satisfaction of all. In 2021, Denys was even voted 'best international contractor' at this huge site where 5000 people are giving their best every day. At the peak of our involvement constructing the secondary cooling circuits, we had 150 people working there. And we made a solid impression.

For example, we were free of any lost time injuries for more than 1000 days. We were praised by HPC management for living up to our values, notably the respect we showed for our own people, the customer, and the project itself. This came as no surprise to us, because it's in line with our motto 'what's good for the customer is good for us.'

### 1350 TONNES OF UNIQUE REBARS

After completing the secondary cooling circuits, we were awarded the additional task of building the plank arrangement required to protect the circuit. Notably, we devised an alternative construction method using expansion joints, allowing us to create 10 planks in one operation, leading to a significant gain in time. Talk about a solid impression!

What's more, we completed the planks two months ahead of schedule and were entrusted with yet another job afterwards. This was quite a challenge too, involving the construction of a 2.5-metre-thick semi-circular foundation slab for a superstructure. It contained 1350 tonnes of rebars, each of them unique and some weighing up to 120 kg. This brought about a lot of handling with stringent safety precautions. The concrete itself was poured in one 40-hour session. HPC is huge, as we said earlier!

### FEELING LIKE USAIN BOLT

At the 2021 annual awards ceremony, Denys was the only contractor to receive multiple awards. At the dinner, we were honoured to be seated next to EDF CEO Simone Rossi. And then, after completing our final task, HPC Programme and Construction Delivery Director, Nigel Cann, waved us goodbye with the words: "Now other companies can stand out!" Just for a moment, we felt like Usain Bolt after the 2016 Olympics.





A man wearing a light-colored suit, a white shirt, and a white bicycle helmet is riding a road bike through a field of tall, green grass. He is smiling and looking towards the camera. The background is a soft-focus landscape with more greenery and a clear sky.

# HAPPY

# WITH

# EVERY

# NEW

# CHALLENGE

Is the business world preparing itself to adapt and transform in the face of the climate and biodiversity crisis? As far as I can see, boardroom discussions have passed the hesitation stage in most corporations. Strategies are being updated and even radically redefined for the simple reason that it's do or die. Corporations that would stubbornly stick to their old game plan are bound to face increasing opposition from their staff, the authorities, and the markets. If the goal's clear, it's better to lead the pack than to try to catch up later.

The journey to net zero has become top priority for us. It's a journey of unprecedented scale that involves developing ambitious infrastructure projects as well as implementing a stream of technological innovations. Yes, technology will be part of the solution, so no wonder we're discussing quite a few innovations in this 12th Denys Global Report.

But the transformation is not about technology alone. It's about new market dynamics, and about behavioural change. It's about people. People embracing this gripping journey. Denys people, for example.

What a diversity of people we have here! Today, our talented workforce represents more than 45 nationalities. They're not afraid of what's coming — instead, they're happy with every new challenge they can look in the eye.

Next year, we'll be celebrating Denys' 100 years as a contractor. But we're not looking back. Let's regard our first century as just the teasing upbeat before the even greater adventures to come. 2122, here we come!

**Bruno Geltmeyer**  
CEO Denys N.V.



# DAILY COMMITMENT TO SUSTAINABILITY

Over the past few years, environmental and climate considerations have moved from the periphery to being front and centre of our strategy and daily preoccupations. Last summer, we hired a full-time energies manager who is now involved in all our major projects, providing expert guidance and advice.

## RAISING AWARENESS, SAVING MONEY

This is already raising awareness significantly among our project and construction site managers. For example, we're already running simulations of what it would mean if we had to pay for every kilo of carbon emitted in a project, even though using diesel will not be part of the EU Emissions Trading System (ETS) before 2025.

Analysis of data logs, such as those relating to energies consumption and crane charges, is revealing opportunities to save big on our energies bill. We've been able to shut down applications when they're not used, and cut rental fees by reducing the capacity of on-site generators. In such cases, a smaller carbon footprint means lower costs and more profit. How good is that?

## TACKLING THE MORE DIFFICULT ISSUES TOO

It's wise to prioritize. Opportunities to reduce fuel consumption show that there's still some low-hanging fruit. But we're also tackling the more difficult issues. And we're developing some innovative solutions. Examples include using battery packs on construction sites to top off peak demand, and implementing condenser banks in our micro-tunnelling projects to achieve a 15% drop in power consumption. And we're investing too. For example, we installed a new 341-kWp PV installation on our depot roof, adding to the 39-kWp we already had. Today, 30% of our electricity is covered by solar power we generate ourselves. We're also increasingly installing PV at our construction sites.

BE

DENYS  
TAKING THE LEAD

SUSTAINABILITY FRONT AND CENTRE

We don't just pick the low-hanging fruit, we also tackle the difficult issues. And unsurprisingly, we're developing some **INNOVATIVE SOLUTIONS.**



# DAILY COMMITMENT TO SUSTAINABILITY

## 1 / INFRASTRUCTURE

We're making our construction sites more sustainable,

## 2 / BATTERY PACKS

We're using battery packs to peak shave demand,

## 3 / MEASURE, REPORT AND REDUCE

We're monitoring energy consumption so we can reduce it,

## 4 / ELECTRIFICATION

We're gradually electrifying our vehicles and equipment,

In fact, we're making  
significant progress  
in each of the 10 focus  
areas for sustainable  
development we set.  
Taking the lead,  
as we always like to do.

## 5 / NEW INITIATIVES

We encourage our people to develop new initiatives,

## 6 / WELLBEING

We're taking initiatives promoting staff wellbeing,

## 7 / ORDER AND CLEANLINESS

We're paying special attention to on-site cleanliness and waste management,

## 8 / PROCUREMENT

We're integrating sustainability criteria into our supplier contracts,

## 9 / SOCIETY

We involve the local communities who live near our sites, and

## 10 / RESPECT

We promote diversity, combat discrimination, and behave with honesty.



# OPPORTUNITIES FOR OUR INNOVATIVE DREAMCUTTER TECHNOLOGY



**BE-NL**  
INNOVATION  
IS IN OUR NATURE

CAPTIVATING CONCEPTS BECOMING  
REALITY

Our **DREAMCUTTER TECHNOLOGY** and  
**UCM – PORT LOOP INNOVATIONS** are  
picking up momentum. And we're taking a  
major role in the **EUROPEAN HYPERLOOP**.

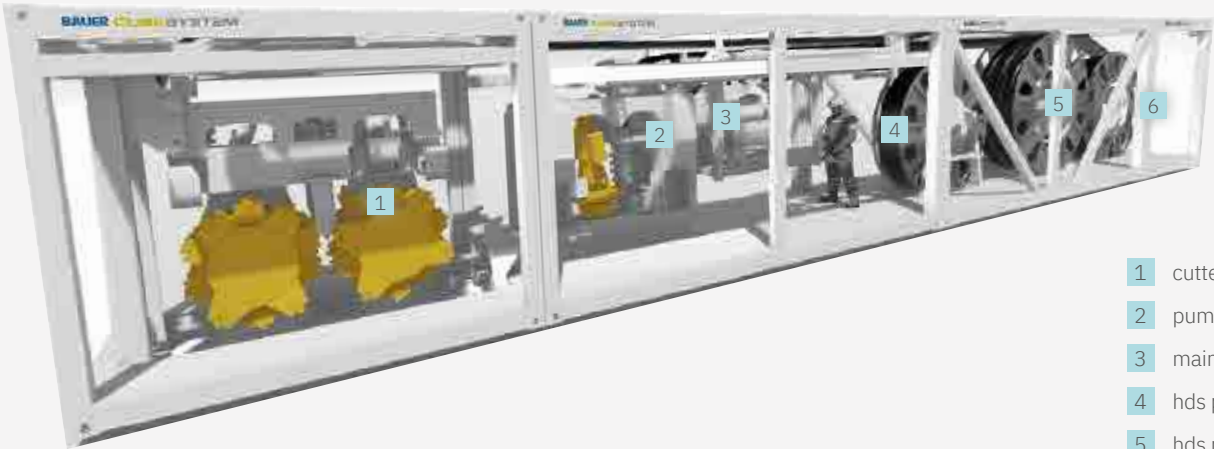


**dreamcutter**

# OPPORTUNITIES FOR OUR INNOVATIVE DREAMCUTTER TECHNOLOGY



Our Dreamcutter technology is picking up momentum to be applied to real world projects. The Cube System, which we developed along with Bauer Maschinen, is essentially a classic slurry wall machine but with the cutter, pumping unit and hose drum system arranged horizontally rather than vertically. This arrangement makes it possible to create slurry walls from within a micro-tunnel, which means there’s much less disruption above ground.



- 1 cutter unit
- 2 pumping unit
- 3 main winch
- 4 hds pumping unit
- 5 hds mud hose
- 6 hds cutting unit

## READY FOR THE REAL WORLD

We’re now investigating whether Dreamcutter technology can be used in multiple projects, not only in arrangements with a micro-tunnel but also under bridges or in other circumstances where there’s insufficient space for a classic vertical slurry machine.



© Regine Mahaux

Meanwhile, our live demonstrations of the Cube System and other Dreamcutter technologies have excited the interest of major players in the construction industry, who crave innovative solutions that could bring difficult subterranean inner-city construction projects to fruition with minimal disruption.

Live demonstrations of Dreamcutter technology are sparking excitement!



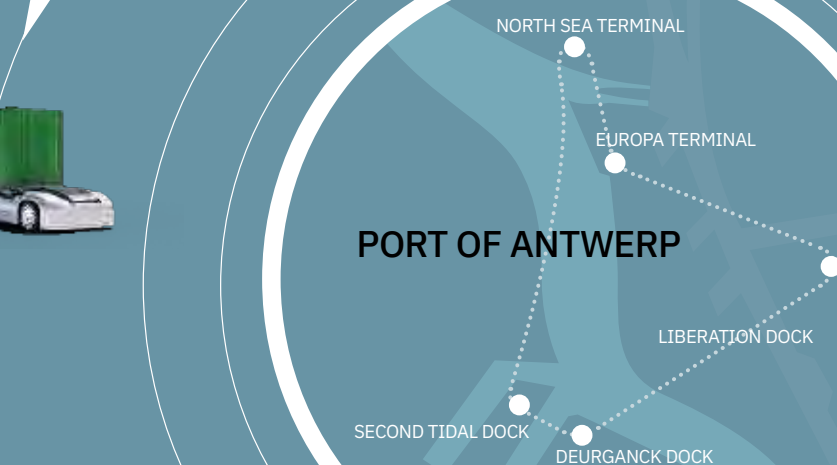
# AN ORGANIZATIONAL CAPACITY INCREASE

Major ports like the Port of Antwerp are facing huge challenges arising from the boom in container handling and transshipment. Waiting times for barges and vessels are lengthy, trucks are facing congestion issues, and shortages in storage space mean that containers need to be shuffled around. While the port authorities are putting their hopes in the extra container capacity plan (ECA), with the construction of an additional dock near Doel, more needs to be done to future-proof the port.

## TOWARDS A WORLD PREMIERE?

That's why Denys has been doing the rounds presenting our innovative UCM – Port Loop solution to stakeholders. It involves a tunnel in a loop in which containers can be moved around using autonomous electric vehicles (AEVs), and container stacking systems providing easy direct access to each individual container storage space.

It's an organizational solution that brings a dramatic increase in capacity by streamlining the intra-port logistics. Interest is definitely on the rise for what could be a great world premiere.

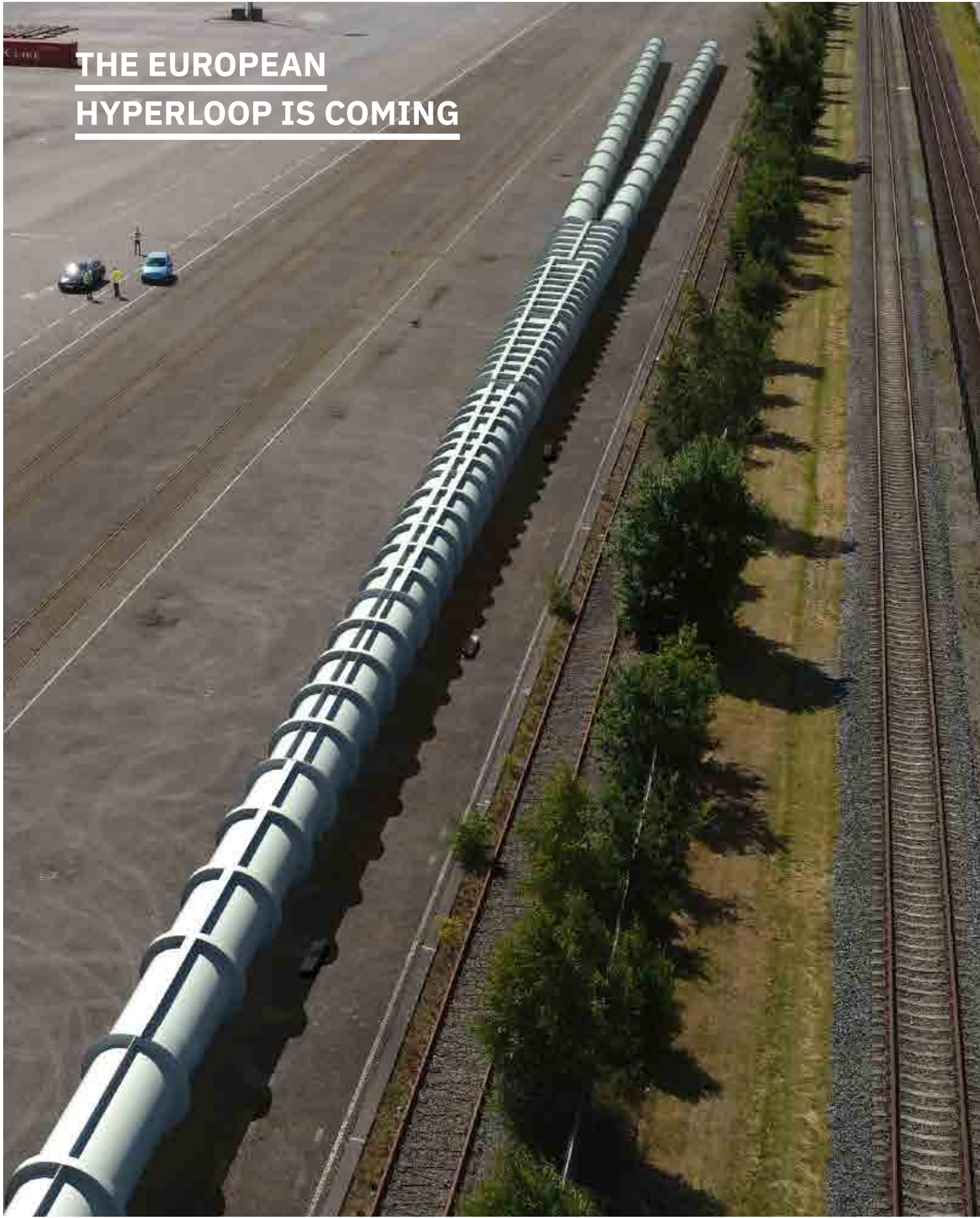




# THE EUROPEAN HYPERLOOP IS COMING







# THE EUROPEAN HYPERLOOP IS COMING



Denys is engaging in the Hyperloop Development Program, Europe’s daring project to develop a network of autonomous vehicles travelling through near-vacuum tubes. In these tubes, vehicles are suspended, propelled, and guided magnetically along upper rails. Contactless suspension in a near-vacuum means the system is 90% more energy-efficient than aviation and travels equally fast.

## STEPPING UP THE REAL THING

Hardt Hyperloop is not a pipe dream, it’s becoming real and taking shape initially in the Netherlands where the system was invented. The concept has already been successfully demonstrated at the test facility in Delft with a 30-metre tube. Now, the project has been taken a step further in Groningen, where we’re about to construct a 420-metre aboveground demonstration tube which includes a central switch arrangement to test the ability to change direction.

The tube will be made of steel much like a pipeline, but with much tighter tolerances because the vehicles are designed to travel at speeds up to 400 km/h. Meanwhile, we’re carrying out a study to evaluate whether the same system can be taken underground.

There are also plans to build 2.5-km of track in Delft as a step towards the 149-km Cargo Hyperloop Holland corridor due to connect Amsterdam and Rotterdam. Priority is being given to cargo transport to build experience and grow acceptance before a hyperloop for passengers is developed.





# BE-NL

## BUILDINGS WITH A TOUCH OF GENIUS

### DENYS LIKES TO ENGAGE IN PROJECTS WITH SPECIAL CHALLENGES

A **TECHNICALLY CHALLENGING HOTEL** project and a **FAST-BUILD SCHOOL** in Brussels. An **ELABORATE PARKING LOT** in Ghent, and a shiny **NEW POLICE STATION** in Middelburg. These are the kinds of projects our people enjoy working on - a lot.

# SOMETHING SPECIAL

Denys likes to engage in projects with special challenges. It's probably because we want to keep our engineers and workers happy — give them something they can sink their teeth into, so that, at the end of the day, everyone goes home with big smiles on their faces. Delighted that they can contribute to creating buildings with a touch of genius.

Here are four examples from Belgium and the Netherlands, each with very different kinds of challenges; a hotel on a busy square in the centre of Brussels; a rather extravagant parking lot at the entrance to Ghent; an interim solution for the fifth Brussels European School built in record time using a highly efficient modular construction technique; and the remarkable Middelburg police headquarters.





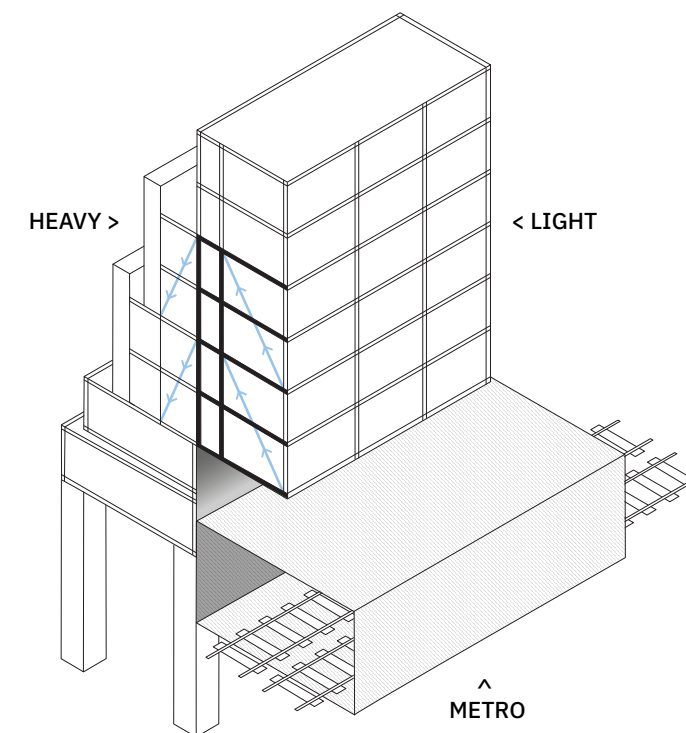
THE HOTEL THEY SAID  
COULDN'T BE BUILT



## THE HOTEL THEY SAID COULDN'T BE BUILT

We're anchoring  
the building  
horizontally!

We're building a 24,000-m<sup>2</sup> hotel complex in Brussels between Place Rogier and the Botanical Gardens, a plot of land that's been left untouched ever since the construction of the Rogier subway tunnel in the 1970s. It remained unused precisely for that reason - the tunnel severely limited the plot's load capacity.



### A HUGE, CANTILEVERED VOLUME AT GROUND LEVEL

To meet the challenge head-on, we're creating a volume 9 metres deep above the tunnel, horizontally anchored into the 7-metre main structure behind it. It's like a huge, cantilevered volume, but at ground level. This curious arrangement means that we need to construct a series of large batter piles in addition to the 24 foundation piles beneath the main volume.

The cantilevered volume is made of steel to keep it as light as possible, bringing some tolerance challenges with it. But we'll manage. We're also putting the main building on hydraulic jacks so that we can compensate for any subsidence that may occur.

Work started in July 2022 and will take 28 months. The building will serve as a DoubleTree by Hilton with 146 rooms, a multipurpose hall, and a sky bar with a spectacular view.





# **THE PARKING BUILDING** **THAT LOOKS LIKE A JEWEL**

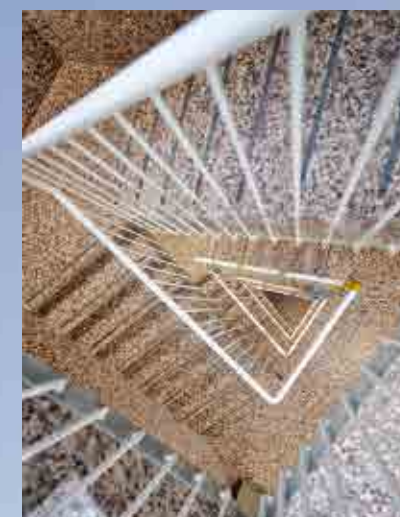


## THE PARKING BUILDING THAT LOOKS LIKE A JEWEL

In our home city of Ghent, we just completed a 500-unit parking building with integrated bicycle lot in the Ledeberg area, where it looks like a jewel at the city's southern entrance. The building is remarkable for several reasons. It's entirely made of exposed concrete, requiring us to work with utmost care and precision,



and we used plywood formwork to create the texture and pattern of the joints the architects envisaged. It's also a very slim structure requiring a high density of steel reinforcement. We used 1000 tonnes of steel for a 4500-m<sup>3</sup> volume of concrete, for which we needed to develop a special recipe. The cantilevered driveways with heavy, tailormade steel beams were also a challenge. Our work was further complicated because there was almost no storage space.



### BUT BEAUTIFUL

And there were so many architectural details to be taken care of. Lots of nooks and crannies, steel nets to be neatly integrated in the façade openings, distinctive custom-made lighting poles on the roof, a specially designed height limiter at the entrance, a concrete staircase with a granite finish resembling Uuflakke (the local variant of head cheese or brawn), large concrete clocks illuminated like one might a church clock, and very neat handrails.

And guess what's the jewel in the crown? The luxurious guardroom with parquet, wall panels, and a kitchen made of oak. Security guards are going to be falling over each other to do shifts in that building.

It all looks quite extravagant, especially for a project financed by a city where money is tight. But beautiful, no doubt about that.



# **A ROUND OF APPLAUSE FOR THE MODULAR CONSTRUCTION SYSTEM**

Buildings  
created  
using modular  
construction are  
as good as any



## A ROUND OF APPLAUSE FOR THE MODULAR CONSTRUCTION SYSTEM

Last year, we built a school facility for 1500 pupils in Brussels at record pace. Starting out in March 2021, we delivered the ground floor and first floor in September (good for 600 pupils), and the second floor in October. How were we able to do it all so fast? One word: modularity.



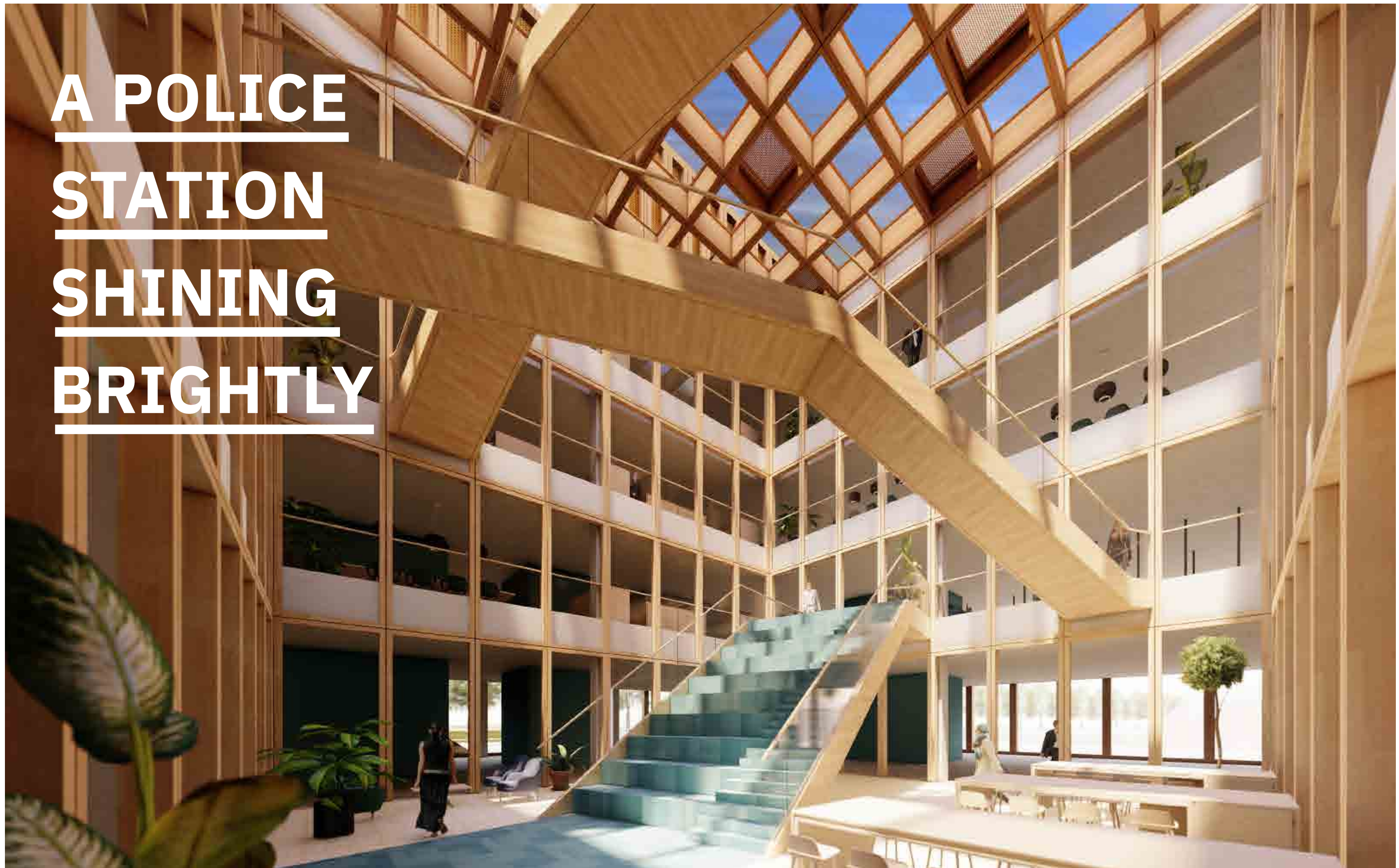
# FAST, GOOD, & MADE TO LAST

We indeed used the same modular system we deployed a few years ago for the Jan Palfijn Hospital extension in Ghent. The system uses container-sized units to create space rapidly, but it doesn't look like a pile of containers at all. In fact, due to technical advancements, it's hard to detect if a building uses our modular construction method. Exterior and interior finishing is as good as in any traditionally constructed building. The same goes for energy performance. It's just that the

building's put up so much more quickly. Which is extremely useful in times when there's a dire need for new care facilities, schools, and student housing, as well as housing shortages due to whatever reason, be it immigration or disasters caused by flooding, wildfires, or storms. That's why we expect this construction method to become much more common in the next few years. It's fast, it's good, and it's made to last.



# A POLICE STATION SHINING BRIGHTLY





## A POLICE STATION SHINING BRIGHTLY



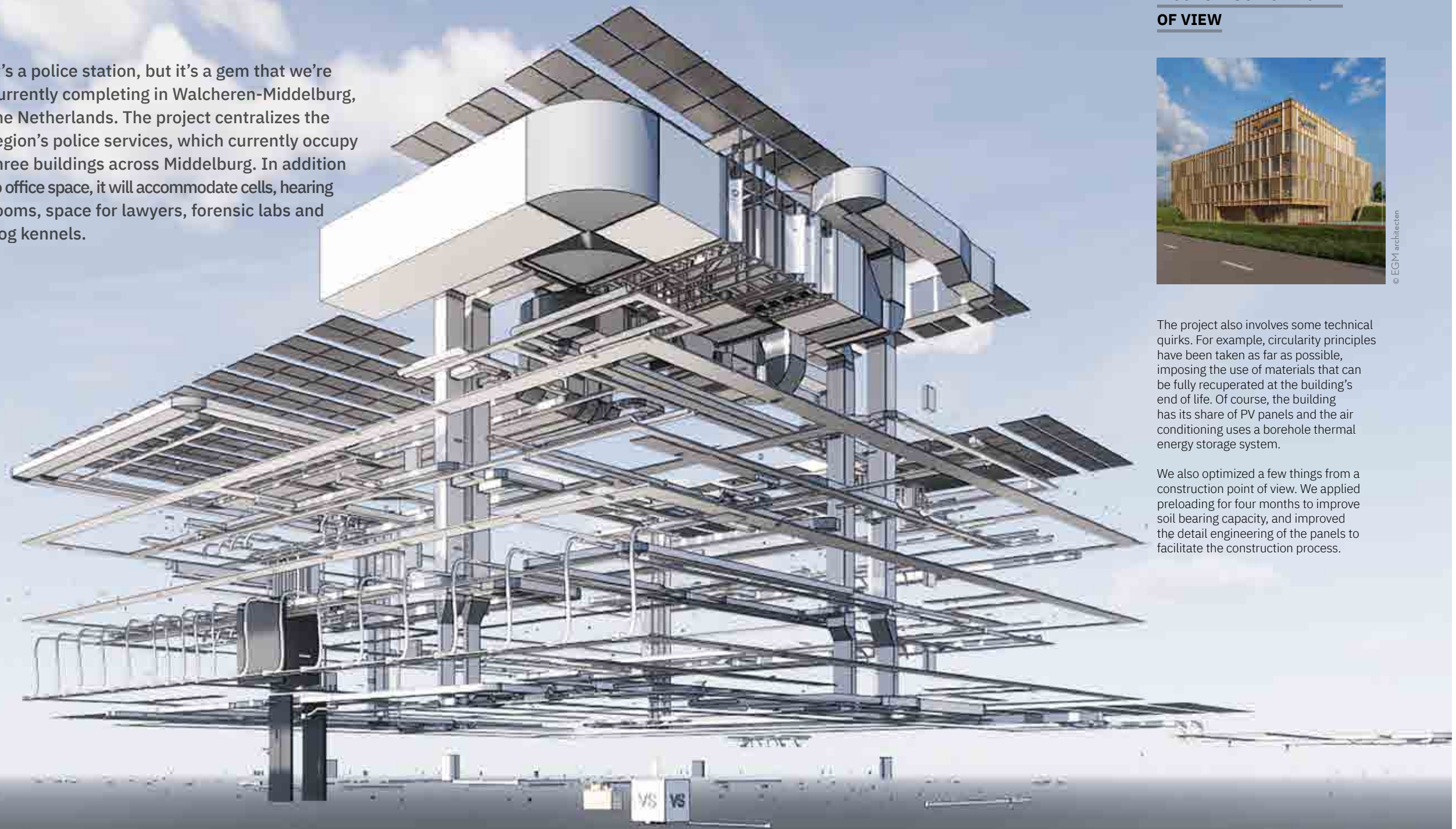
© EGM architecten

### LIKE A CHAMELEON

The first remarkable thing about the building is the design which, according to the designers of EGM architects, is inspired by the tight succession of meadows and fields in the Zeeland landscape. It's a steel structure with hollow-core slab floors and a façade made of SIPS (structural insulated panel system) with a brownish aluminium finish perforated with shapes of the Zeeuwse Knoop, a traditional jewel button.

The colour and the line patterns formed by the aluminium cassettes reflect the sharply delineated ridges formed by plough furrows in Zeeland potato fields. The façade is chameleon-like in the way it changes hue and colour as the light incidence evolves during the day. Even more mysterious things happen inside, where visitors are struck by two wood-finished steel staircases that criss-cross in the magnificent, brightly illuminated atrium.

It's a police station, but it's a gem that we're currently completing in Walcheren-Middelburg, the Netherlands. The project centralizes the region's police services, which currently occupy three buildings across Middelburg. In addition to office space, it will accommodate cells, hearing rooms, space for lawyers, forensic labs and dog kennels.



### OPTIMIZED FROM A CONSTRUCTION POINT OF VIEW



© EGM architecten

The project also involves some technical quirks. For example, circularity principles have been taken as far as possible, imposing the use of materials that can be fully recuperated at the building's end of life. Of course, the building has its share of PV panels and the air conditioning uses a borehole thermal energy storage system.

We also optimized a few things from a construction point of view. We applied preloading for four months to improve soil bearing capacity, and improved the detail engineering of the panels to facilitate the construction process.





BE

BUILT HERITAGE



RENOVATION IS AS MUCH ABOUT  
REPURPOSING AS IT IS ABOUT  
TECHNICAL ISSUES

See how Denys is **RENOVATING** and  
**RESTORING** a belle époque mansion,  
an Art Nouveau office, a neo-classical  
hallmark, an icon of Belgian modernist  
architecture, and much more.

Our built heritage deserves the best of care. Yet projects to renovate and restore historical buildings tend to need lots of time for preliminary investigations and preparatory work before they're given the green light. It's not just about technical issues, it's also about deciding how to repurpose the building and finding a suitable operator.

Meanwhile, excellent craftsmanship is a scarce resource in high demand. At Denys, we do everything we can to provide continuity of work to our specialist renovation and restoration teams. We always have multiple ongoing projects needing their expertise, and offering a wide range of challenges. Here's a selection.

# CARE AND CRAFTSMANSHIP



CARE AND  
CRAFTSMANSHIP



WHAT A JOURNEY

The renovation of the former Brussels Stock Exchange is reaching a climax in 2022 and, well, it's been quite a journey! This neo-classical building has undergone two quite drastic transformations over the years, but neither were well documented. In the absence of the original plans, we've had lengthy discussions with the architects about the elements that had to be

restored to their assumed original state. We've also been conferring a lot about the colours to be applied inside.

DE BEURS

Our problem-solving attitude was much appreciated



# CARE AND CRAFTSMANSHIP



© Regine Mahaux

## SURPRISES WITH IMPACT

We also had a few surprises which had a big impact, including the presence of hidden asbestos, foundation dimensions being different from those on the original plans, and the former stock exchange floor that proved too weak and had to be broken out and replaced entirely. All this meant we had to replan our work several times over, including the difficult logistics and storage. But our problem-solving attitude was much appreciated. At one point we discovered that a series of decorative marble columns were incorrectly placed in a previous renovation project, which prompted us to immediately shore up the structure and propose a proper repair operation.



© Regine Mahaux

## CHEERS, DUKE JOHN I

The adjacent archaeological site in the Rue de la Bourse also complicates our work. Interestingly, these are remnants from a 1238 monastery and church, the last resting place of John I, Duke of Brabant, who is remembered as a bon vivant and lover of music, song, poetry, and... beer! He'd have loved the idea of lying next to the new Belgian Beer World museum.



© Regine Mahaux

## DELIVERING

The project is now beginning to deliver. One beautiful interior addition is artist Valérie Mannaerts' marble mosaic floor finish, which subtly counterbalances the neo-classicist architecture with giant drawings of a butterfly, a caterpillar, and two leaves. This autumn we also installed the brass-coated glass and steel structure for the sky bar. There are still some challenges ahead, especially with the world wide supply chain being unstable. But we'll manage.



© Regine Mahaux



CARE AND  
CRAFTMANSHIP



NEVER CEASING TO CARE  
ABOUT BOZAR

Victor Horta's 1928 Palais des Beaux-Arts (or Bozar) fell victim to fire very recently. Remember the efficient night-time intervention of the Brussels fire brigade and Denys' speedy arrival on site with a team of 20 to evacuate water and help secure valuable assets.

We'll never cease caring about this Art Deco gem. After the incident, we carried out emergency repairs to the exterior and replaced the technical installations above the Henry Le Boeuf concert hall. We are now reinstating the exterior, a work for which we constructed a temporary shelter to work under.

Subsequently, we will carry out the repairs to the precious interiors below.



© Regine Mahaux

BOZAR



We'll never  
cease caring  
about this  
Art Deco gem

© Regine Mahaux



# CARE AND CRAFTSMANSHIP



© Regine Mahaux

## STYLISH FAÇADE SUBTLY ECHOING THE PAST

The restoration and repurposing of Confiserie Roodthooft, a site in Antwerp where internationally renowned sweets and toffees were made, is taking shape. Consisting of a listed Art Nouveau entrance building and industrial spaces to the rear, the site is being remodelled as a residential area with a range of dwelling units.

Built in 1905-7 by former students of Victor Horta, the entrance building subtly echoes the original function as a butter production unit. The façade is of white Silesian brick and bluestone. Typical details include the iron lintels, the forged decorative anchors in the shape of buttercups, some contrasting layers of red brick, and the striking wrought iron gate in a typical Art Nouveau pattern.

Denys stored and cleaned the façade to give it back its original splendour. The interior too is being restored and upgraded to meet today’s standards of safety and comfort.



© Regine Mahaux

# CONFISERIE ROODTHOOFT

## PRESTIGIOUS, JUST AS IT USED TO BE

Denys is renovating the former Panquin military base close to Tervuren Park near Brussels. The complex was built in the 18th century as a prestigious entrance to the now-disappeared summer residence of Charles of Lorraine. It consisted of a horseshoe-shaped complex with stables and servants’ quarters.

The site and its immediate surroundings are being transformed into a residential area with apartments, luxury penthouses, a hotel, and a museum. Work started in April 2022 and should be completed by 2024. We’re engaging all our experience and craftsmanship to restore the historic buildings, which involves a lot of specialist woodworking, natural stonework, and plastering. Always good to call in the experts if a historic site must be reconverted into a top location.



© ion develop different

# PANQUIN



© ion develop different



# CARE AND CRAFTSMANSHIP

## REINSTATING AN EXQUISITE 1905 BEL-ÉTAGE



© Regine Mahaux

Talking of the built heritage, here's one that's been neglected for quite a while. Still widely known as the Museum Pieter Smidt Van Gelder, this belle époque building in Antwerp was closed to the public in the 1990s after a fire and due to stability issues. Its origins go back to 1905 when the Thijs banking family engaged architect Joseph Hertogs to integrate two town houses to form a richly decorated urban dwelling with a garden in the romantic style.

Pieter Smidt van Gelder hired architect Edouard de Winter to adapt it in 1937 to house his remarkable collection of Western European industrial art, transforming the upper floors in the much more functional style of the day. The building was donated to the city of Antwerp to make it into a museum in 1949. But after the fire the collection was removed and put into storage for use by other museums.

Denys is now renovating this beauty with due respect for its architectural history, which basically means that we're restoring the original splendour of the bel étage while creating contemporary spaces above. It will probably serve a mix of private and public functions, but that's still to be decided.



© Regine Mahaux



© Regine Mahaux



© Regine Mahaux



© Regine Mahaux

# MUSEUM PIETER SMIDT VAN GELDER



CARE AND CRAFTSMANSHIP



© Regine Mahaux

A TOUCH OF CHARM

We're regularly called in for some interesting renovation and restoration projects in the Brussel Capital Region. One ongoing job is at Le Logis Floréal in Watermael-Boitsfort, a pioneering cooperative social housing project built in the 1920s by architect Jean-Jules Eggerickx and urban designer Louis Van der Swaelmen and listed as a monument since 2001.

It's a remarkable picturesque whole with a variety of buildings in a rather traditional style with distinctively colourful window frames and doors. The spatial arrangement of



© Regine Mahaux



© Regine Mahaux

houses in the green surroundings creates an attractive mix of neighbourhoods, squares, and alleyways which, after almost a century, have lost none of their charm.

Except that many of the houses are in poor condition. We've now been hired to renovate the woodwork in several of the houses. Our work ranges from just repainting the doors and windows to renewing the entire frames, depending on the condition they're in.



© Regine Mahaux

LE LOGIS FLORÉAL

PRECIOUS WITNESS TO MEDIEVAL TIMES

Another project for Brussels Capital Region is the restoration of the Chateau of Three Fountains in Auderghem, one of the last to bear witness to Belgium's once-rich legacy of medieval castles. Built in the 14th century in the Sonian Forest, it successively became the hunting lodge of the Dukes of Brabant, residence to forest and hunting masters, and a prison for robbers and poachers. Despite its unique façade, Gothic chimney and dungeons, the building has been subject to neglect for decades. But we're now restoring it completely.



© Regine Mahaux



© Regine Mahaux



© Regine Mahaux



© Regine Mahaux

CHATEAU OF THREE FOUNTAINS



CARE AND  
CRAFTMANSHIP



We're adding a  
roof terrace with  
a garden on top

© Origin



© Tim Fisher

AN ICON OF BELGIAN  
MODERNISM

Denys has just started renovating the most iconic building in the Vrije Universiteit Brussel. Originally just called Building M, this modernist creation by the renowned Belgian architect Renaat Braem (1910-2001) acquired fame due to its peculiar elliptical shape, which inspired students to give it lovely nicknames like The Cigar or Caprice des Dieux. And peculiar it is, with its 76-metre length, 16-metre maximum width in the middle, and its similarly shaped central staircase made of concrete and meranti wood. In his construction notes, Braem wrote: "Don't forget that our home, the Milky Way, is a spiral inside an ellipse."

Completed in 1976, the Braem Building was listed as a monument in 2007.



© Tim Fisher

THE BRAEM BUILDING

BUILT HERITAGE



© Origin

Between 1976 and 1984, the architect himself had made a series of colourful wall paintings, which are also listed.

ADDRESSING  
CHLORIDE ATTACK

We're now renovating the upper levels of the building, from the second to the fifth floor, and adding a roof terrace with a garden on top. This means we have to extend the central staircase and the lift.

Much of our work will involve repairs to the concrete, which is suffering from chloride attack. We've a BCCA certificate proving our expertise in that matter!



# CARE AND CRAFTSMANSHIP



© Regine Mahaux

## THERMALLY INSULATED AND SHINING BRIGHTLY ONCE MORE

Ah, Den Bell! We just completed the façade restoration of this iconic 13-storey office tower, designed and built in 1953 for the international Bell Telephone Company in Antwerp. But first we had to remove the white limestone façade plates to be able to reinstate the structural concrete behind it and apply thermal insulation. We then produced and installed much thinner façade plates from huge limestone blocks sourced from the same place as the originals, Chauvigny quarry 20 km from Poitiers, in France. A total volume of 225 m³ of plates were cut, each weighing 200 kg, polished and bush hammered as they were in 1953. Look at it, an insulated façade that looks exactly like the original, shining brightly once more!



© Regine Mahaux



225 m³ limestone plates for an iconic office tower

© Regine Mahaux

# DEN BELL



# BUILDING BRIDGES

## ELEGANT BRIDGE MADE FROM WEATHERING STEEL

We are currently finishing the new Kruger bicycle and pedestrian bridge crossing the Antwerp-Puurs railway in Hoboken, south-west of Antwerp. A delightful construction made from weathering steel and a made-to-measure stainless-steel parapet with integrated lighting, the bridge replaces its worn-out concrete predecessor and elegantly connects the centre of Hoboken with the Hobokense Polder nature reserve and the Antwerp Blue Gate green industrial cluster, currently under development. A second, smaller steel bridge connects the Kruger bridge with the Jef Van Linden bicycle highway, which runs parallel to the railway.

### MULTIPLE JOBS IN ONE SMOOTH OPERATION

Both bridges were prefabricated in the workshop and brought in place by means of KAMAG transporters. But that was not even the most challenging aspect. The main bridge's curved shape is continued in the concrete abutments, which were designed very slim and with dense reinforcements. We needed to engineer and cast them with great care, and then finish them off with bush-hammering. We faced similar challenges with the staircases in exposed concrete. And we installed a tree root bunker system for a Greenspire lime tree to be planted later.

Interestingly, the project also involves creating a freshwater pipeline and the missing link of a district heating network under the rail track. All of this will be realized in 300 days. Multiple challenging jobs in one swift and smooth operation, that's Denys.

© LUCID

## BE MOBILITY

### NEW BRIDGES IN ANTWERP AND GHENT

The **KRUGER BICYCLE BRIDGE IN ANTWERP** and **TWO BRIDGES IN GHENT** are examples of infrastructure bringing delight and convenience.





# **AT LONG LAST, THE VERAPAZ BRIDGE,** **AFTER MORE THAN 20 YEARS**

One of the most  
anticipated  
projects in  
Ghent



# BUILDING BRIDGES



The Verapaz bridge over the old docks in Ghent is one of the most anticipated projects we know of in our home city. Offering two lanes in each direction for cars with a separated cycle track on each side, it will dramatically improve circulation on the north-east side of the city’s R40 inner ring road while opening up opportunities to create low-traffic areas in the docks and in the Muide neighbourhood.

The first plans were drafted around the turn of the century, but the project faced a series of legal proceedings, budget discussions, delays, and other obstacles for more than 20 years. Now, it’s finally being realized, and Denys started preparatory work earlier this year.

Verapaz will dramatically improve the urban fabric in the north-east of inner-city Ghent

© Maatontwerpers



## LET THE CHALLENGES COME

Ironically, the project began with a fresh dilemma, this time about the foundation method to be used after a pile-driving test raised feasibility concerns. And there’ll be more challenges to come, given the difficult location and the need to guarantee continuity of road traffic nearby and water traffic below the bridge. Let them come, we say.

## CONSTANTLY REPOSITIONING

We’re also involved in the Ghent-Dampoort renewal project, which is linked to Verapaz because it’s a kilometre to the south and it’s due before the bridge can be taken into operation. The Dampoort site is an even more difficult location as it’s one of the busiest traffic intersections in the city.

For the renewal of the wastewater and rainwater pipes, we created 10 sheet piled pits 11 metres in diameter and 7 metres in depth. We’re carrying out fourteen pipe jackings in total, with diameters ranging from 900 cm to 2000 cm. The limited space means we’re constantly having to reposition our machinery. And it’s tight!



# ELEGANTLY CROSSING THE ROWING RACECOURSE

And here's another long-awaited beauty we're about to create in our hometown of Ghent. It's a bicycle and pedestrian bridge crossing the Watersportbaan, the five-lane 2.3-km rowing racecourse located just outside the city centre and directly connected to rivers and canals, including the Coupure, the Graslei, the Ghent-Bruges Canal, and the Lys River.

Because of its length, the racecourse has always been an obstacle for the non-motorized coming from the northwest wanting to reach the Blaarmeersen recreation area and the main railway station to the southeast. That's all going to change with this elegant 90-m cantilevered steel bridge designed and engineered by Ney & Partners in a landscape created by Omgeving.

Preparations are ongoing and construction will take place in 2023.









**BE-NL**  
MAKING IT IN  
THE NETHERLANDS

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DENYS IS BEGINNING TO EXPORT  
ITS WINNING BELGIAN CONCEPT

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We're taking our Dutch operations to the next level by making a name for ourselves as **HIGHLY VALUED** forward-looking construction, renovation, and restoration specialists.

# OUR WINNING CONCEPT HEADING NORTH



# OUR WINNING CONCEPT HEADING NORTH

Over the past few years, Denys has significantly increased its operations in neighbouring countries Germany, France, and the Netherlands. The Dutch story is particularly noteworthy because it shows how we’re gradually exporting our winning Belgian concept, which is based on diversification with a multiplier effect, backed by multidisciplinary expertise, engineering intelligence, and sound entrepreneurship.

We’ve been constructing pipelines, micro-tunnels, HV cables, and district heating networks in the Netherlands for many years with astonishing success. Bids for these projects were often won on sustainability, innovation, cooperation, quality management, and care for the environment.

Now we’re taking our Dutch activities to the next level by making a name for ourselves as highly valued forward-looking construction, renovation, and restoration specialists. Cases in point are two remarkable bids won by our Dutch subsidiary Denys Engineers & Contractors B.V.



© EGM architecten

## A SOLID APPROACH WINS DEALS

One eye-catcher is the Walcheren-Middelburg police station we discussed in the Genius Buildings chapter of this Global Report. It’s a project that combines architectural finesse with technical mastery. Look at the chameleon-like façade with brownish SIPS panels, and the mysterious atrium with its wood-finished steel staircases. On a technical level, all the materials used can be fully recuperated at the building’s end of life, taking circularity principles as far as possible.

A decisive factor for us winning the bid was the approach we proposed, including comprehensive management of stakeholders and the socio-economic and natural environment. For example, we engaged local firms for many of the subcontracting jobs, we clearly demonstrated how we would limit disturbance and nuisance, and we’ve been using smaller-footprint construction sheds fitted with PV panels.



© Regine Mahaux

## DIVERSITY OF CHALLENGES

In Bergen op Zoom, we’re restoring and renovating the former Government House. Originally built in the 13th century as a hospital, it had served as a school for much of the 1500s before becoming the home of the Governor, who had it completely renovated in 1771, demolishing the former chapel to create space for a front garden. Sadly, the building has since undergone many more transformations and recently served as a shopping centre.

We’re now renovating it, turning it into a 200-seat restaurant with 17 apartments above. The goal is to restore the building’s historical military style as much as possible, especially the brick façade with its remarkable windows. Preliminary investigations revealed that the foundations needed to be strengthened too. And we’re reinforcing the timber roof and the floors. You heard it right: a job with a diversity of challenges where Denys’ expertise and experience are the perfect match.



© Regine Mahaux



OUR  
WINNING CONCEPT  
HEADING NORTH



KEEPING KINDERDIJK  
CLEAN AND DRY

Another challenging project Denys is carrying out in the Netherlands is the renovation of the J.U. Smit pumping station in the magnificent UNESCO World Heritage village of Kinderdijk, widely known for its historic windmills. The 1972 pumping station, which houses 2 x 530 m³/min. and 1 x 440 m³/min screw pumps, needed an upgrade to meet current environmental and technical requirements.

The station is there to ensure that the village stays clean and dry, so all the renovation activities must be carried out while the screw pumps are in operation. In Holland they like to call this 'working with the shop open', meaning we must take extra safety precautions and carefully confer with the other contractors. A complex project indeed, just the way we like them.





# ROLLING UP OUR SLEEVES AGAIN

While every continent has suffered a lot from the economic turmoil caused by Covid-19, it seems safe to say that Africa was struck even harder. Indeed, because it often depends on foreign funding for major infrastructure projects, the continent suffered important delays for the simple reason that there was a travel ban for many authorities. It proved impossible to tackle all project hurdles just by conference calls.

Fortunately, 2022 is bringing new hope, and Denys has set out on fresh projects in Gabon, Ivory Coast, Ghana, and Uganda. Rolling up our sleeves again!



## AFR

AFTER  
THE TURMOIL

2022 IS BRINGING NEW HOPE FOR  
INFRASTRUCTURE PROJECTS IN AFRICA

Armed with our much-appreciated experience,  
we embarked on new projects in **GABON,**  
**IVORY COAST, GHANA, AND UGANDA.**



# ROLLING UP OUR SLEEVES AGAIN



## 70 KILOMETRES IN THE NILE VALLEY

The new project starting this year in Uganda is an example of how investment plans have been put on hold due to Covid-19. The tender for this 70-km cross-country water pipeline from Karuma to Gulut was launched early 2020, but more than two years passed before the project was awarded to us.

We will start construction in the spring, and it involves quite a few challenges, including 8 kilometres of pipeline laid in the Nile valley swamps, and several sections in the vicinity of nature reserves.

## EXPERIENCE MAKES FRIENDS

In the port of Abidjan, the Ivory Coast capital, we are rehabilitating a fishing harbour quay wall, which was built by another contractor 10 years ago but proved to be ill-conceived. The wall suffered deformation shortly after commissioning, making 80 metres of quay unusable, a significant loss of capacity.

Experience matters. Our foundations specialists investigated the problem and found that it was due to inappropriate sheet piling anchoring in this lagoon geology. We first stabilized the quay wall and are now replacing the sheet piles and anchors, all to the delight of the port operator who can continue operations while we're working.

We had a similar come-to-the-rescue project in Ghana, where we reconstructed a small biodigester which the initial

contractor had built with the wrong kind of concrete. Problem solved—customer happy. Experience makes friends.

## HAPPY TO HELP MINING FACILITIES

In Gabon, we're constructing a pumping station, 10 kilometres of pipes, and a small basin near Franceville to feed water from the Ogooué river to a manganese mining plant's washing facility. It's a turnkey EPC contract all the way, meaning that we're unburdening our customer completely. That's how we like it: our customer tells us what they need, and we design, engineer, and build the solution without them having to worry.

And we're convinced that we can do much more for this kind of enterprise. Mining companies need water and energy supply, sewage infrastructure, transport facilities, and railways. We'd be happy to help them with solutions tailored exactly to their needs.



The port operator can continue operations while we're working



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