GLOBAL REPORT

DENYS GLOBAL

SHYING AWAY FROM NOTHING

by Johan Van Wassenhove
CEO Denys Global

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Most of the projects Denys takes on could be summarized using the words “It’s complex and we love it”. This might sound familiar, but to me it means much more than the usual we-love-challenges thing. It’s about sticking your neck out and launching yourself into endeavours that others would shy away from. Sure, now and then you’ll face defeat if you take these kinds of risks, but with the excellent teams we have under the hood the successes are always going to clearly outnumber any failures. And I’m definitely inclined to remember just the good outcomes.

Many of these projects are initiated through our out-of-the-ordinary real estate investor Foremost Immo. Remember the Handelsbeurs in Antwerp, Le Cloître in the city of Luxemburg, and the Van Orley Business Center in Brussels? The latest jewel in the crown is Les Anciens Thermes in Spa, which reaches completion next year. And there’s more to come.

Good outcomes? Look at that magnificent achievement at the Hinkley Point C nuclear power plant, Europe’s largest construction project right now. Denys-Socea received the highest honours, being celebrated as the best platform on the entire site and winning three silver and two gold trophies in the project’s annual Excellence Awards. No wonder the first chapter of this Global Report has the title Excellence, Performance and Scale. It also features that other huge project we’re about to complete, the Brussels-Haren prison village.

In this remarkable year when we video-conferenced like never before — sometimes I imagined that over my colleagues’ shoulders I could see cacti growing — Denys fared extremely well, confirming that our multidisciplinary approach, our international orientation and our focus on innovation continue to bear fruit even in these strangest of times. And speaking of innovation, be sure to check out our game changing Dreamcutter and Portloop solutions.

As I said, at Denys we shy away from nothing.

UK
HINKLEY POINT C

HPC IS THE LARGEST CONSTRUCTION PROJECT THIS SIDE OF THE ATLANTIC AND ARGUABLY THE MOST DEMANDING IN TERMS OF QUALITY, SAFETY, AND SITE PRODUCTIVITY.

More than
5,000 PEOPLE
work at the site at
peak times and about
170 BUSES
take workers to and from the site's
park-and-ride areas each day.

WHAT A TREMENDOUS EXPERIENCE

It's Europe's largest construction project and it's a tremendous experience for everyone working there: Hinkley Point C, the new dual unit 3,200 MWe nuclear power plant currently in the making on the Somerset shore of the UK's Bristol Channel. Last year, workers took even more pride in being part of this 'Town Called HPC', given the way they've been successfully navigating the challenges caused by Covid-19.

We had not a single High Potential Event nor any Lost Time Injury in two years.

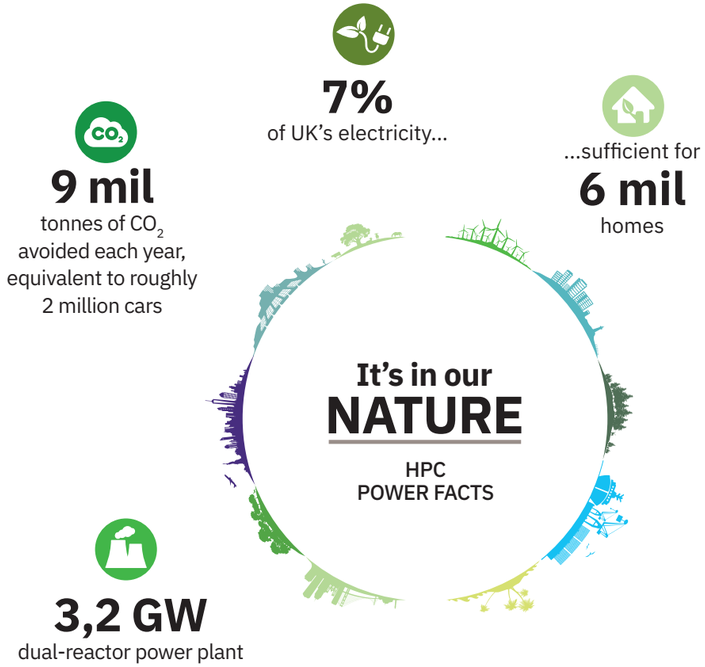
HPC is huge. Look at this video to discover the scale of the project and how all teams firmly stood up to the challenges of 2020.

THE LARGEST AND THE MOST DEMANDING

Talk of a town called HPC is no exaggeration once you know that more than 5,000 people work at the site at peak times and about 170 buses take workers to and from the site's park-and-ride areas each day. Other figures are equally impressive. Around 100,000 m³ of concrete was poured at HPC in 2020 and, in March of that year, HPC made history with the UK's largest single concrete pour of 9,000 m³ to complete the common raft foundation of Unit 2. Yes, HPC is huge.

Huge, but it's also arguably the most demanding construction project this side of the Atlantic in terms of quality, safety, and site productivity. Denys' contribution provides just one example. We've been hired together with our subsidiary Socea to manufacture, deliver and install the 2.4-3.5 m internal diameter steel core concrete pipes for the secondary cooling circuits of the two reactor units.

Years ago, Socea-Denys did a similar job at Flamanville in France, but we faced far more difficult ground conditions at Hinkley Point, leading to a significant engineering challenge and complex high-density reinforcement detailing and fixing. This challenge, along with the multi-phased handover of the construction area, made work on Unit 1 particularly tough. It took us 17 months in double shifts to install the 350 pipes.



Source: EDF Energy

WHAT A TREMENDOUS EXPERIENCE

ZERO EVENTS, ZERO INJURIES

The difficult journey at Unit 1 meant that we had an opportunity to improve for Unit 2. Before beginning installation of this second series of pipes, we went back to the drawing board and optimized the design, leading to a 14% reduction in rebar needed for the in-situ reinforced concrete, and a much more smooth-running production process, with on-site installation 50% more efficient. For smooth delivery, all pipes were also prefabricated and brought near the site before installation began.

This all greatly contributed to the much shorter time it took to complete — just 15 months of single shifts. What's more, our as-built documentation was validated within six weeks of project completion.

We even made history with the results of our safety action plan, which involved the implementation of an exceptionally strong safety culture, in line with the safety expectations in the nuclear industry. As a result, we had not a single High Potential Event nor any Lost Time Injury in two years! It encourages us to also implement this safety culture at our construction sites in Europe and elsewhere.

The managers of HPC were delighted. And they granted us the additional work for the construction of densely reinforced concrete 'planks' protecting the infrastructure against a possible airplane crash, which is an additional preventive safety measure initiated by the nuclear industry.

HIGHEST NUCLEAR HONOURS

Socea-Denys was nominated in ten of the thirteen categories, winning three silver and two gold awards, coming out top for quality commitment and team collaboration.

I CAN'T GET YOU OUT OF MY HEAD

"Socea-Denys delivers," as the project's supply chain director Christopher Quinn remarked. We have been honoured for it too. In July 2020, we were awarded the Pride of Platforms golden banner, the trophy for the best platform of the entire site. It has been waving on our platform ever since, and it will continue to do so for quite some time because HPC reconfirmed the award in April 2021.

In addition, at end of 2020, on the occasion of the annual HPC Excellence Awards, Socea-Denys was nominated in ten of the thirteen categories, winning three silver and two gold awards, coming out top for quality commitment and team collaboration. After the Covid-proof awards ceremony, EDF UK's CEO Simone Rossi joked: "I can't get Socea-Denys out of my head anymore." You're welcome!

WHAT A TREMENDOUS EXPERIENCE

MAINTAINING NATO KEROSENE PIPES

B
NATO PIPELINES

AN INSPECTION PROGRAMME REVEALED 150 POTENTIAL WALL THICKNESS REDUCTIONS AT 59 LOCATIONS IN THE NATO KEROSENE PIPELINES BETWEEN CHIÈVRES AND BEAUVECHAIN.

We investigated all potential defects and made repairs where required, which was quite a fascinating journey if only for the singular locations we needed to work in, including **GOLF RESORTS, FARMLAND, PRIVATE HOUSES AND RAILWAY TRACKS.**

MAINTAINING NATO KEROSENE PIPES

During the cold war, the Central Europe Pipeline System was created to keep aircraft at NATO bases in western Europe supplied with fuel. The network is still operated by the military although today, 90% of the operation supplies kerosene to civil aviation bases.

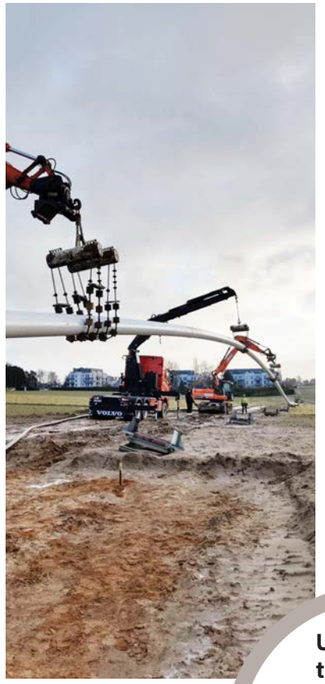
INVESTIGATING 59 LOCATIONS ALONG THE PIPELINE

An inspection programme carried out last year revealed potential wall thickness reductions at 59 locations between Quevaucamps and Glons.

NATO subsequently asked us to investigate these locations — making trial holes — and repair any defect found, which was quite a fascinating journey if only for the singular locations we needed to work in, including golf resorts, farmland, private houses and railway tracks.

A COMPLEX OPERATION AT EACH LOCATION

Work at each of the 59 sites along the 150 km stretch of pipeline involved a wide range of activities. Inspection pits are needed to allow the coating to be removed and the relevant length of pipeline has to be taken out of service, meaning the kerosine flow needs to be buffered to allow supply to continue. The defective sections are cut out and new pieces inserted and welded in place. NATO estimated that the contractor would need 600 working days to complete the job.



Under railway tracks, we had to cut out larger segments and apply HDD to insert the replacement pipe.

SIX TIMES FASTER

Six hundred? Our engineers analysed the job and were able to reduce the effort to a mere 100 working days, simply by setting it up as a regular pipeline project with several specialized teams working efficiently side by side. This allowed us to repair clusters of defects in just a single intervention, significantly reducing the fixed overheads, to the benefit of both NATO and Denys.

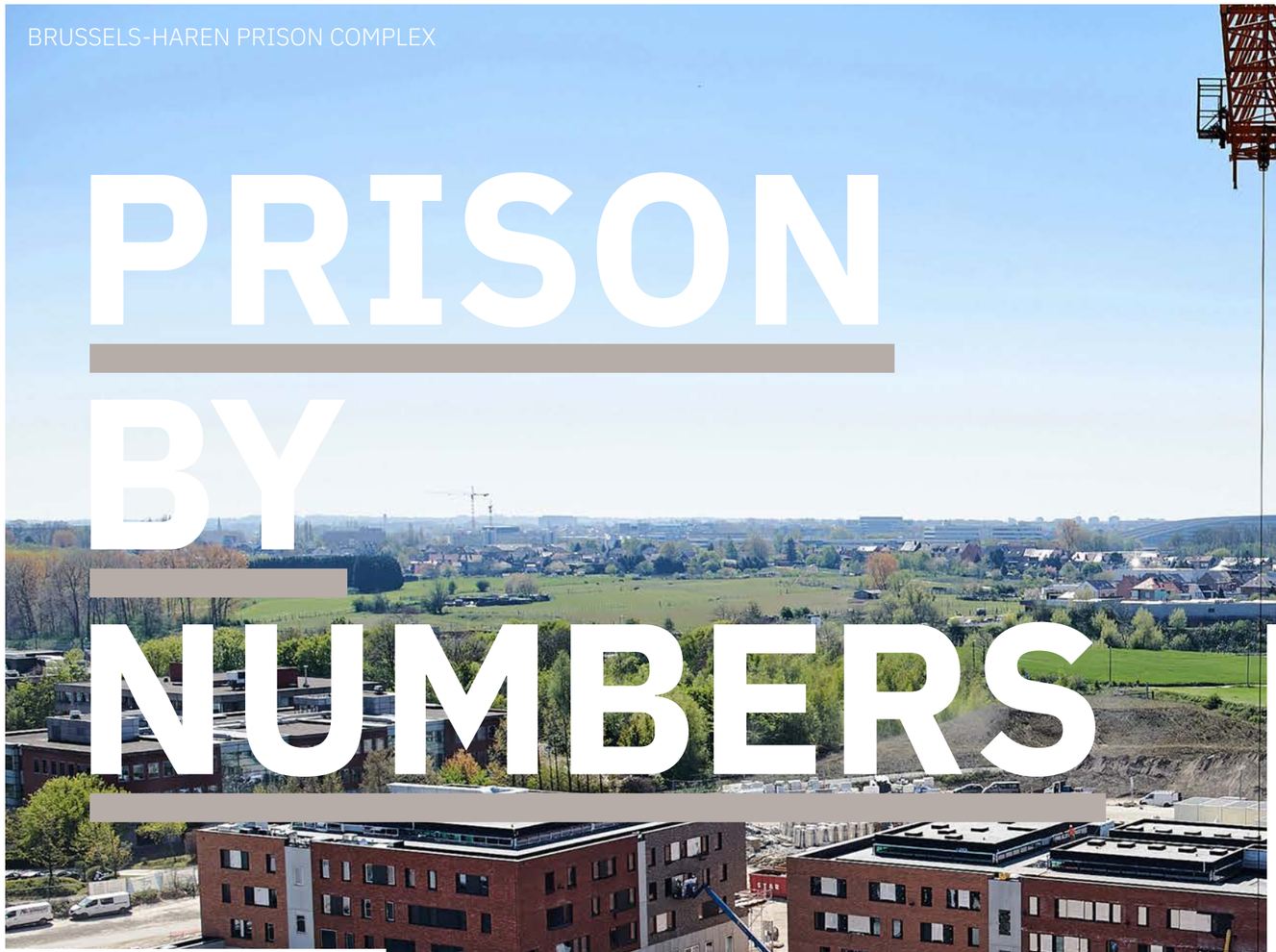
SMART SOLUTIONS FOR PECULIAR LOCATIONS

It all went without a hitch, even beneath the golf resorts, farmland and private houses where we had only a very tight space for manoeuvre. Two defects, one at Rixensart and one at Braine-l'Alleud, were located under railway track, which meant that we had to cut out larger segments, applying horizontal directional drilling to insert the replacement pipe. We also took care of the engineering for this job, giving the customer one fewer thing to worry about.

This also serves to illustrate that in projects where technical specifications are negotiable, Denys can create great value for the customer through a typically smart approach to design, engineering and procurement.

We repaired clusters of defects in a single intervention, significantly reducing fixed overheads.

PRISON BY NUMBERS



THE LARGEST AND THE MOST SUSTAINABLE

Brussels-Haren will not only be the largest prison complex in the country but also the most sustainable and environmentally friendly. Aspects such as the responsible use of space, perfect integration within its surroundings, respect for social impact, operational flexibility, ecological and energy use compliance, ease of maintenance, and careful use of sustainable materials have all been taken into account at the design stage and during construction.

B

HAREN PRISON COMPLEX

CURRENTLY BELGIUM'S LARGEST BUILDING SITE, THE BRUSSELS-HAREN PRISON COMPLEX IS ENTERING ITS FINAL STAGES OF CONSTRUCTION.

Completion is planned for
MID 2022
so that arrangements can be made
to accept a maximum of
1200 DETAINEES
by March 2023.

PRISON BY NUMBERS

© Régine Mahaux

IMPRESSIVE SUSTAINABILITY FIGURES THROUGHOUT

Built on a 15ha site, Brussels-Haren will offer 105,000 m² of net floor space. On completion, around 60,000 m³ of concrete will have been poured with 7200 tonnes of reinforcement steel. The buildings will rest on 63 km of pile foundations.

The impressive borehole thermal energy storage system (BTES) with 250 holes contributes to remarkable energy efficiency figures. The whole complex is expected to achieve a 'very good' BREEAM qualification.

Sustainability concerns were uppermost during construction too. To give just one example: we relocated a collection of rare Ophrys apifera, better known as bee orchids, to an area adjoining the site.

The sustainability figures shown below are even more impressive.

650 TREES

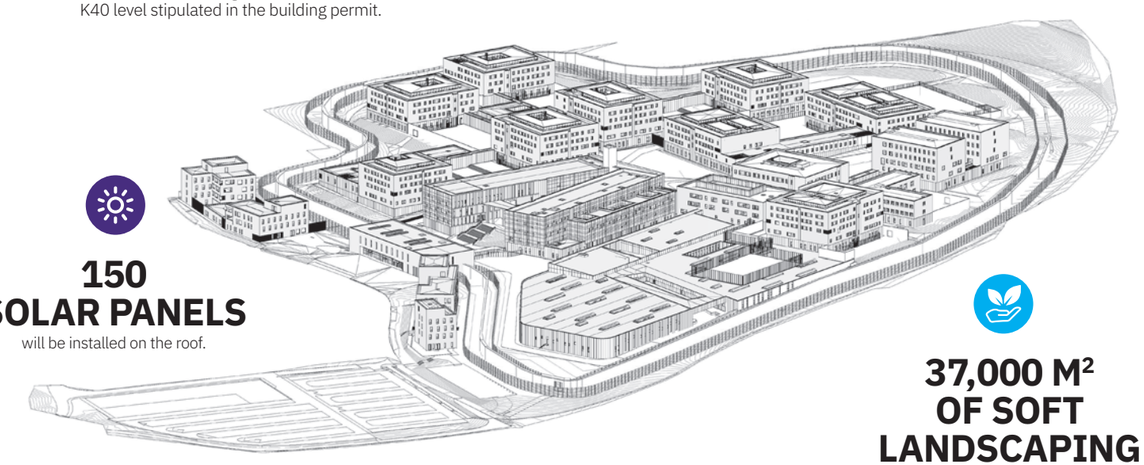
will be planted inside and outside the 1.2-km perimeter wall.

K18 ENERGY PERFORMANCE

will be achieved on average, which far exceeds the K40 level stipulated in the building permit.

22,000 M² OF GREEN ROOF

will be created across the site.



150 SOLAR PANELS

will be installed on the roof.

37,000 M² OF SOFT LANDSCAPING

will be created using local types of grass, hedges and shrubs.

77% LESS DRINKING WATER

will be used compared to the old prison facilities.

A 559,000 LITRES OF RAINWATER

will be buffered in water basins for toilet flushing and to provide water for the garden. Any excess will be filtered as far as possible through a series of bioswales.

THE ROOF IS ON FIRE

THE IMPORTANCE OF ACTING FAST

Breaking news, Monday 18 January 2021, 4pm: a fire has broken out in a technical room beneath the roof of the Brussels Palais des Beaux-Arts (also known as Bozar), the famous Art Deco masterpiece designed by Victor Horta and built in 1928. Although the fire brigade was almost immediately on the scene, live news media coverage made many people fear for a disastrous Notre Dame scenario. That didn't happen. Firefighters got the fire under control fairly quickly, preventing its spread beyond the technical rooms.

PUMP IT UP

But what about water damage? Water infiltrated the precious rooms below, not only from the extinguishers but also due to rain getting in through holes in the roof the fire brigade had to make. Enter Denys. We are very familiar with this magnificent and complex building since we've been carrying out several renovation and restoration works there for more than fifteen years. Although we don't have an intervention agreement for this type of event, we arrived quickly on site with a team of 20 to evacuate the water and help to secure valuable assets such as two Steinway pianos. Work continued through the night. At one point, there was more than 20 cm of standing water in the second balcony of the Henry Le Boeuf concert hall. Pump it up, that's what we said.

ORIGINAL ELEMENTS PRESERVED

© Régine Mahaux

In the days that followed we fixed the roof openings to allow the interior spaces to dry up and debris clearing to begin. This rapid intervention meant that all the original architectural elements in the affected areas were preserved, necessitating only limited refurbishment.

Live news coverage of the Bozar fire made many people fear for a Notre Dame scenario, but that didn't happen.

The rapid intervention meant that all original architectural elements in the affected area could be preserved.

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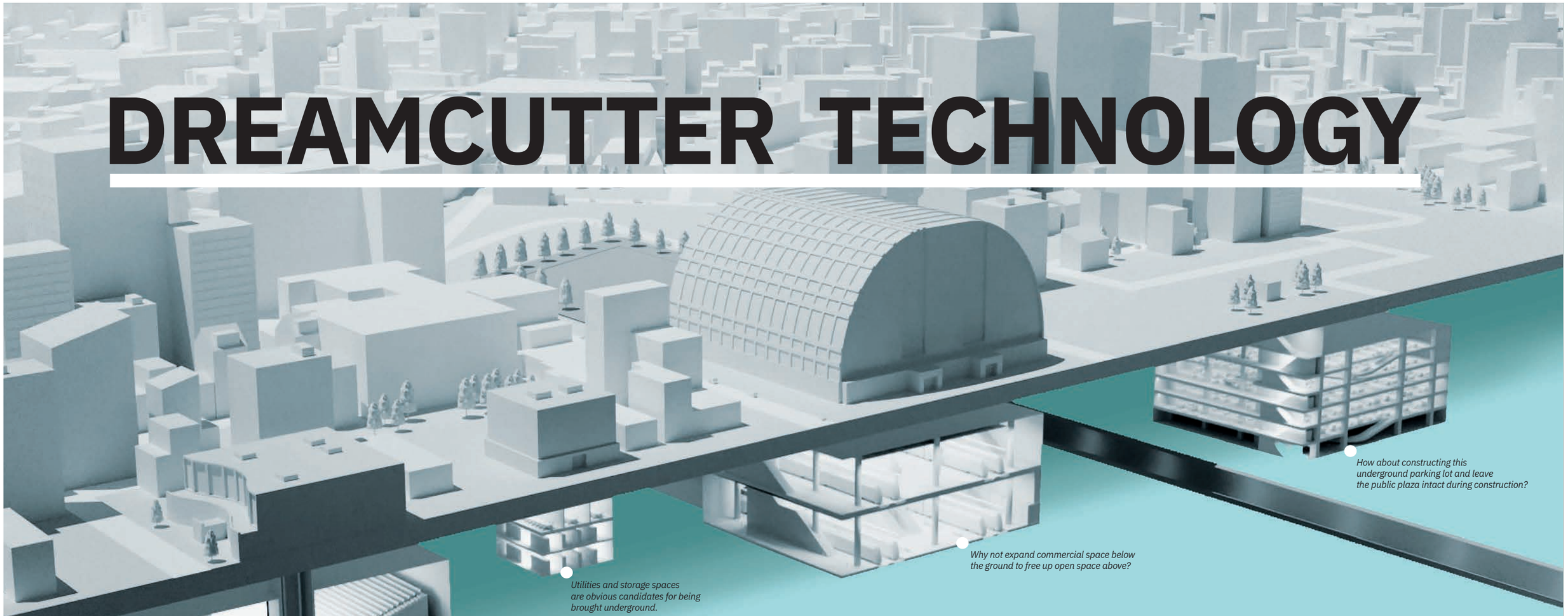
DREAMCUTTER TECHNOLOGY



How about constructing this underground parking lot and leave the public plaza intact during construction?

Why not expand commercial space below the ground to free up open space above?

Utilities and storage spaces are obvious candidates for being brought underground.

Dreamcutter allows underground theatre space to be constructed below a historical building.

A MOLE CONSTRUCTING SLURRY WALLS. Isn't it every city administration's dream to be able to develop a large new underground space without disrupting life above ground? You bet! Rising populations in cities around the world are putting pressure on the urban landscape. And more open space is needed to provide recreational opportunities for residents, enhance the environmental quality of neighbourhoods and in general improve inner-city living conditions. Think of green space, playgrounds, public plazas and seating areas, and space for active mobility such as cycling, walking, and skating. This need has become even more pressing during a time of pandemic.

The Dreamcutter is proven technology reshaped to better address today's construction challenges. Take a look at this video to see how it works.

DENYS X BAUER

dreamcutter

Cities could relieve this pressure by increasingly putting things underground. Utilities, storage spaces, and parking lots are obvious candidates, but workshops, commercial spaces, indoor sports facilities, theatres and cinemas could also go underground.There's just one big problem: wouldn't you have to destroy large parts of the urban fabric and leave open wounds for years as you develop those new large underground spaces? Really? Denys has come up with something that will change the subterranean construction game forever in the inner city.

NO OPEN WOUNDS IN THE URBAN FABRIC

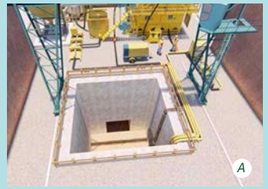
A SLURRY WALL MACHINE TURNED HORIZONTAL

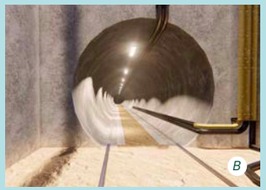
The solution is the Dreamcutter and it's a kind of a mole that constructs slurry walls from inside a 4-m diameter micro-tunnel. The idea is based on a classic slurry wall machine, but with the cutter, pumping unit and hose drum system arranged horizontally to form a series of four container-sized frames in the tunnel. This ingeniously designed system can construct slurry walls up to a metre thick and to depths of up to 40 metres, even below groundwater level. Apart from this horizontal arrangement, the system works in the usual way, digging up the soil while adding bentonite, then inserting steel reinforcement cages, and finally casting concrete from below while the bentonite is removed.

CHANGING THE GAME OF SUBTERRANEAN INNER-CITY CONSTRUCTION

The fact that the Dreamcutter operates from inside a micro-tunnel means that only a small area above ground needs to be laid bare to accommodate an access shaft for the tunnel boring machine. Everything else happens out of sight. And out of mind. Imagine what cities could do with this build underground parking below busy streets or buildings, add platforms or circulation space to existing metro stations, construct logistics areas beneath airport runways, extend utility tunnels, or create underground water or energy storage facilities, for example. Think, too, of the city of Brussels.

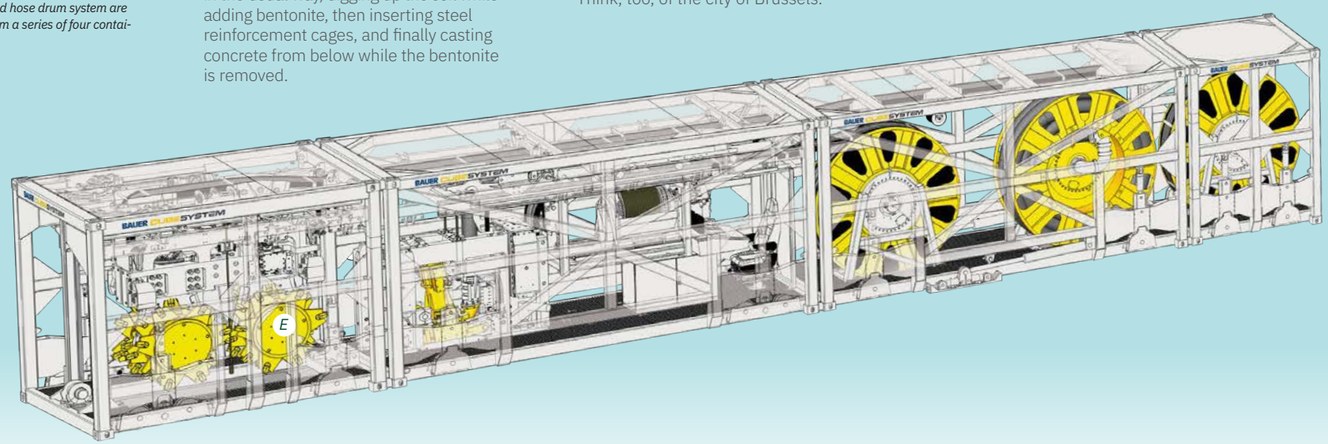
With the Dreamcutter, we could return Sablon Square to pedestrians and flaneurs by creating a parking lot below the square without causing socio-economic deadlock during construction. We could also increase capacity in the North-South connection, arguably the busiest railway tunnel in the world. And talking about the upcoming Metro 3 subway extension project: we could replace the sheeted trench technique in all four underground stations and possibly avoid ground freezing.





A REWARDING COOPERATION WITH BAUER MASCHINEN

We're developing the Dreamcutter in close collaboration with the renowned German foundation equipment specialist Bauer Maschinen GmbH. This is a textbook cooperation of equals. Denys brings more than 60 years' experience in tunnelling and foundation works as well as its expertise in developing innovative construction solutions. Bauer has almost 40 years of experience making trench cutter units, with more than 300 units in operation around the world. The Dreamcutter is proven technology reshaped to better address today's construction challenges.



- A *Only a small area above ground needs to be laid bare as a launch pit.*
- B *Dreamcutter works from inside a 4-m diameter micro-tunnel.*
- C *Apart from the horizontal arrangement, the system works in the usual way.*
- D *Dreamcutter constructs slurry walls up to depths of up to 40 metres, even below groundwater level.*
- E *The cutter, pumping unit and hose drum system are arranged horizontally to form a series of four container-sized frames.*

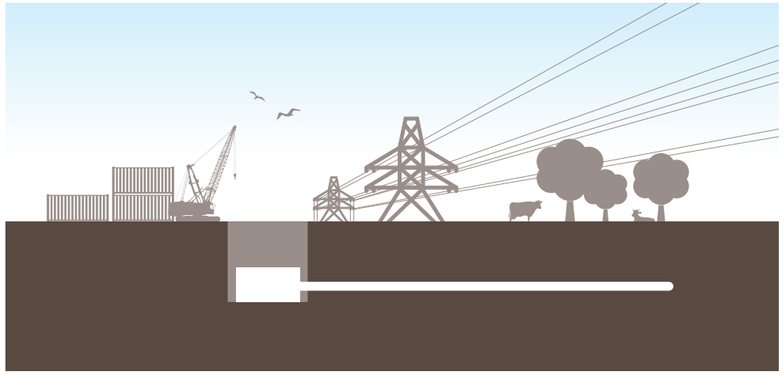
DENYS × BAUER

dreamcutter

A WORLD PREMIERE

AT THE FOREFRONT OF LESS-DISRUPTIVE TECHNIQUES

All of us, from the authorities to ordinary citizens, now expect utility infrastructure work to be carried out faster, with greater care for the natural environment, and without disrupting rural areas and the urban fabric. The subject is also increasingly being covered by the media, who report on how residents and farmers are organizing to put pressure on politicians, demanding that pipeline or underground cabling create little or no disturbance to the landscape and everyday life.



EMBRACING INNOVATION

That's more than fair, we think. Infrastructure projects help regions to prosper and develop, but construction firms need to embrace low-disruption techniques if they want their work to be accepted by those who feel the impact most.

Denys has always been at the forefront of this evolution. Trenchless techniques such as micro-tunnelling, HDD, pipe jacking, direct pipe and segmental lining tunnelling entered our repertoire from the moment they became available. We have also developed and embraced a range of techniques to speed up construction, including automated pipeline welding and coating.

ADDING E-POWER PIPE TO THE REPERTOIRE

One of the latest additions to our repertoire is E-Power Pipe. It's a trenchless technique to lay protective pipework for high-voltage cables two meters below the surface. Construction is in two stages, using a launch shaft and a target shaft. First, jacking pipes are inserted from the launch shaft using a tunnel boring machine, similar to that used in micro-tunnelling but with a much smaller diameter of 50 cm. Upon entering the target shaft, the machine is withdrawn, and the protective piping is attached to the jacking pipes, which are subsequently removed in reverse order, pulling the piping into place.

TWO KILOMETRES IN ONE GO, A WORLD PREMIERE

We'll be using this technique in the Netherlands, where transmission system operator Tennet is modifying and extending its grid. Until now, the longest track ever laid using E-Power Pipe is 700 meters, but we're on course to break that record by some distance with shafts two kilometres apart. Longer tracks mean fewer shafts, less lowering of the groundwater (if any), less disturbance, and need fewer permits. This means happy farmers, happy residents, a happy customer, and nature is preserved. Talk about success!

ANOTHER FIRST WITH PIPE EXPRESS

Another innovative technique we're using to reduce disruption is Pipe Express, an economical alternative to traditional open-trench pipeline construction. It uses a trolley equipped with a cutting wheel, which progressively excavates the ground as the pipe is pushed forward by a jacking unit. Because ground excavation and pipe laying happen in one operation, this can be achieved using a 70% smaller working corridor, a spectacular improvement.

We're using this technique for the OGE gas pipeline project in Leverkusen.

UCM PORT LOOP / ANTWERP

UNDERGROUND CONTAINER MOVER

B
PORT OF ANTWERP CONTAINER TRANSPORT

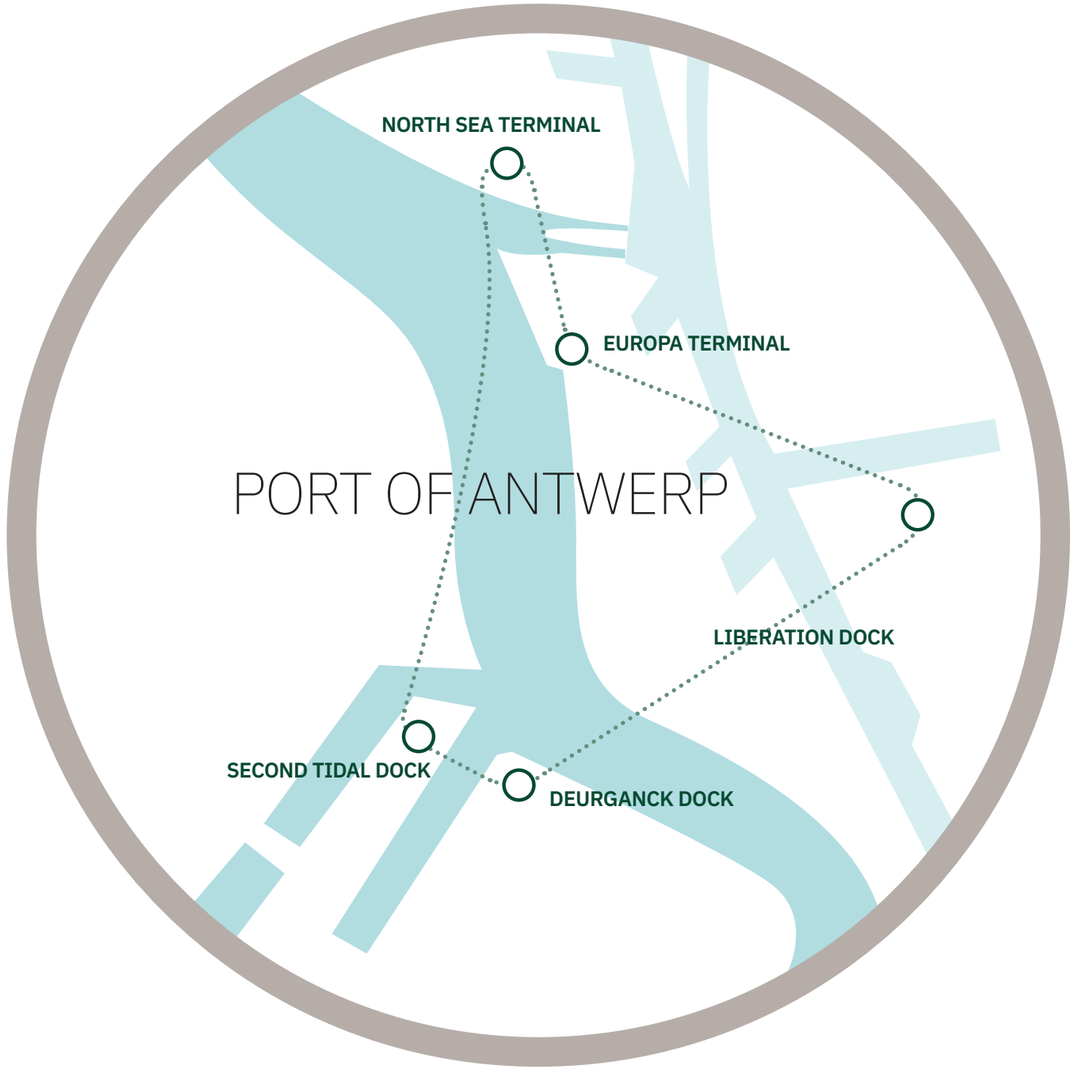
DENYS HAS DEVELOPED A SMART, COMPREHENSIVE SOLUTION THAT WILL REVOLUTIONIZE PORT LOGISTICS.

THE PORT LOOP concept builds on **THREE PILLARS**: a tunnel connecting strategic port locations, a fleet of autonomous electric vehicles and a network of fully automated stacking systems.

PORT LOOP: REVOLUTIONIZING IN-PORT CONTAINER LOGISTICS

The loop will allow 24,000/24h TEUs to be transported by AEVs running in the tunnel at a constant speed of 50 km/h.

World container throughput has been on a continuous upward trajectory since the 1960s and is expected to reach a volume of 1 billion TEUs per year by 2026. This not only puts pressure on ship transport routes, as we all witnessed when the Ever Given became stranded in the Suez Canal, but also on port operations. Major ports are facing huge challenges arising from this boom in container handling and transhipment. In the Port of Antwerp, for example, traffic is so dense that vessels and barges often need to wait several hours before being able to moor or pass through a lock. Trucks face similar problems of congestion. Container handling and intermediate storage operations are also becoming more complicated and time-consuming, with limited space meaning that operators often have to shuffle containers around. The Port of Antwerp is now planning a major project, known as ECA (Extra Container Capacity Antwerp), to increase capacity, but it will be vitally important that the additional space is used as efficiently as possible.



A TUNNEL LOOP FOR FAST AND EASY IN-PORT CONTAINER TRANSPORT

Denys has developed a smart, comprehensive solution for this problem. Called UCM Port Loop, it builds on our Underground Container Mover (UCM) system, a tunnel serving as a route along which autonomous electric vehicles (AEVs) can transport containers.

UNDERGROUND CONTAINER MOVER

We're proposing that the UCM Port Loop links Liberation Dock with Deurganck Dock, passing through Europa Terminal, North Sea Terminal and the future second tidal dock which is planned to be built west of Deurganck Dock. The loop will allow 24,000/24h TEUs to be transported by AEVs running in the tunnel at a constant speed of 50 km/h. These AEVs with their container loads will enter and leave the loop in a controlled manner via inclined access roads.

Liberation Dock will serve as the primary hub, because of its immediate access to the major hinterland connections, including the Scheldt-Rhine Canal, the Albert Canal, the A12 highway, and the Antwerp North shunting station.

MAKING CONTAINER HANDLING MUCH MORE EFFICIENT

To further improve storage and handling operations, we use automated stacking systems. These are modular container storage racks providing easy direct access to each individual container. Container handling is fully automated, much like an automated warehouse. Automated container scanning equipment can be integrated too. All this improves the use of space by more than 50%, eliminating the need to shuffle containers, and making container handling and security checks much more efficient.

OPERATIONS ON BOTH SIDES OF THE NEW DOCK

This space-saving arrangement has the additional advantage of allowing us to implement a Narrow Quay concept at the planned second tidal dock, meaning that it can be built closer to the Deurganck Dock. This allows containerships to be moored and handled on both sides of the dock.

Take a look at this video to see how UCM works.

x 600

600 container-sized building constructed in about 30 days.

THE SMART AND SWIFT WAY TO PUT UP TEMPORARY FACILITIES

You could think of a lot of reasons to put up temporary accommodation and infrastructure. One could be the slow speed of administrative procedures as, for example, the European School in Brussels has experienced in recent years. The organization, which runs 13 schools across Europe, including four in Brussels, is an initiative of the European Union to provide multilingual and multicultural education at nursery, primary and secondary levels to the children of people working for the EU, NATO, the UN, and other international institutions.

INTERIM SOLUTION FOR THE EUROPEAN SCHOOL

Demand for this kind of education has been growing steadily and the organization has been on the lookout to open a fifth campus for some time. A few years ago, it was given the green light to occupy part of the former NATO site in Evere, but design and construction of the new school for 2,500 students would take too long, as it is part of a much larger redevelopment plan which includes housing, government buildings and a business district.

Enter the temporary solution, a smaller building for 1,500 students, erected quickly. It opens in September 2021 and it will serve until the permanent facilities are completed in around 2027.

600 RECYCLABLE MODULAR UNITS

Denys has been hired to design, build and maintain this temporary facility. We're using the same modular system we used a few years ago for the Jan Palfijn Hospital extension in Ghent. It's smart and it's swift. We use 600 container-sized units to rapidly create a range of spaces, including classrooms, a library, sports facilities, a nursery, offices, an industrial kitchen, and several cafeteria. The pace of construction was bewildering: it took us a mere 30 days to put all the modular units in place before we immediately moved on to applying the finishing touches.
Each unit can be entirely recycled and reused, so it's not only practical for this type of emergency use, it's sustainable.

INTRODUCING BIM IN TUNNELLING PROJECTS

Although the construction industry has been a late adopter of digital modelling techniques, the Building Information Modelling method, or BIM, has been picking up momentum over the past few years, especially when it comes to the design, construction and management of office buildings. BIM has almost become standard practice in this area, improving how projects are managed, making planning more stable and reliable, and providing a solid foundation for maintaining buildings throughout their lifecycle.

LIÈGE AIRPORT EXTENSION CALLING FOR INNOVATION

But progress cannot stop there. More complex construction projects, such as infrastructure, should also reap the benefits that BIM can bring. That's why Denys has taken the initiative to start using BIM in tunnelling projects.

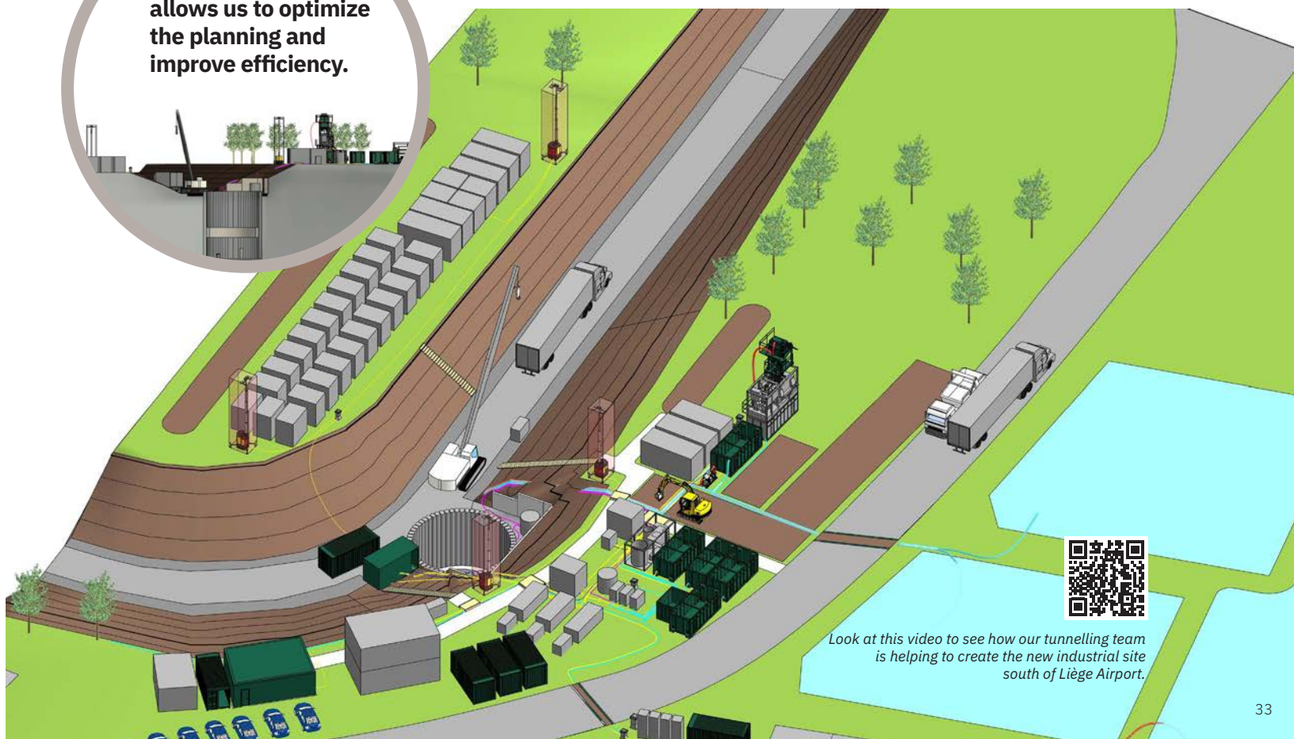
We are currently using the method for the Liège Airport extension, a project which involves transforming 100ha of greenfield land into an industrial site. This includes laying 3.9 km of DN1800 and DN2000 pipes as well as 2 km of DN1300 and DN800 pipes to drain excess rainwater into the Meuse River. Challenges include passing underneath the A604 highway and a railway line, as well as breaking through the Meuse quay walls.

REDUCING PROJECT RISKS AND IMPROVING EFFICIENCY

BIM is being used here for modelling the complete tunnelling site installation in great detail. We converted, optimized and expanded our existing library of 3D elements to include every asset we use in the project. Additional information such as the correct electrical feed and the pipes and cables needed for the asset are also recorded.

The BIM model allows us to graphically optimize the arrangement of assets so that installation takes less time, improves site logistics and makes for a safer and more efficient site. In addition, the entire model is recorded into a database, leading to a very accurate estimation of the quantities needed. This should allow us to optimize the planning, ensuring that all items are brought on site exactly when they are needed in precisely the right quantities, significantly reducing project risks and increasing overall efficiency by 10%.

BIM in tunnelling allows us to optimize the planning and improve efficiency.



Look at this video to see how our tunnelling team is helping to create the new industrial site south of Liège Airport.

SHAPING TOMORROW'S ENERGY LANDSCAPE

A Zero Pollution Europe

Sustainable Transport

Clean, Reliable and Affordable Energy

Achieving Climate Neutrality

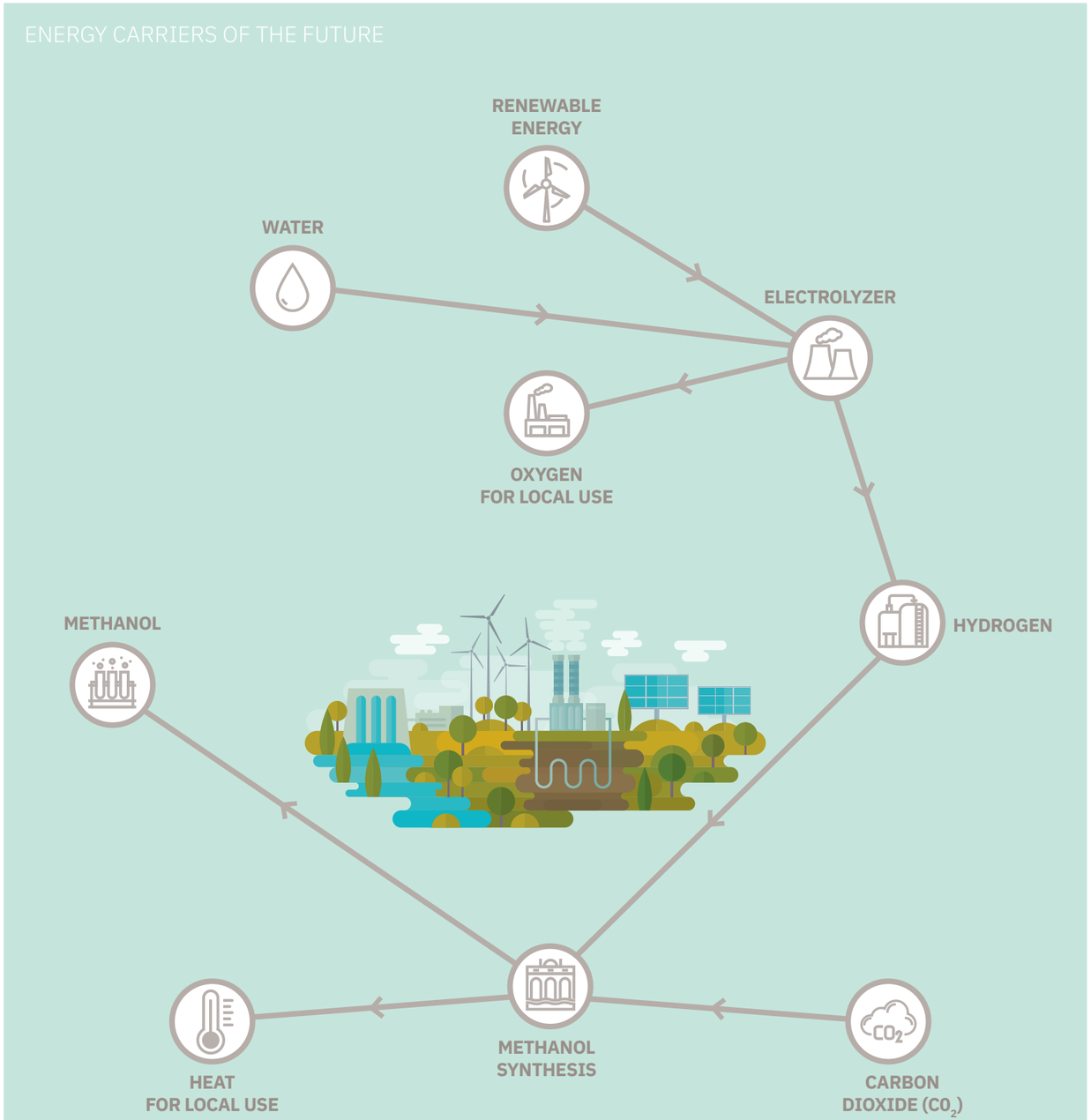
Transition to a Circular Economy

Preserving Europe's Natural Capital

It's a mere 24 pages, but it's arguably the most radical and ambitious plan the European Union has ever outlined. The European Green Deal signals the EU's aim to become the world's first climate-neutral bloc by 2050. This means putting an end to releasing more greenhouse gases into the atmosphere and making it a prime objective to take care of the natural environment and biodiversity. European Commission President, Ursula von der Leyen, says that the deal is to become the ultimate strategy for Europe's growth, not just a series of restrictions imposed on industries, farmers, service providers and people. Representing a €1 trillion investment, the Green Deal is designed to create new jobs, result in a cleaner environment and improve quality of life for everyone. At the core of this ambition is the transition towards a robust system of clean, affordable and carbon-free energy. This fascinating journey has already begun, with more renewable energy sources being integrated into the grid, energy systems becoming interconnected, and with innovative technologies and modern infrastructure promoted. Shaping the future.

BUILDING THE ENERGY CARRIERS OF THE FUTURE

Energy has been a huge catalyst for opportunity ever since humans first inhabited the earth, from the earliest attempts by homo erectus to control fire two million years ago to the vast range of energy sources we exploit today. The discovery of fossil fuels has had probably the greatest impact, especially once tools such as the steam engine were invented, and processes were developed such as oil distillation and electricity generation. The economy boomed, millions of industrial jobs were created, and populations grew to unprecedented levels.



BUILDING THE ENERGY CARRIERS OF THE FUTURE

Source: Northccuhub.eu

HARVESTING SUN AND WIND IN INDUSTRIAL QUANTITIES

Eventually, the fossil fuel economy also managed to dramatically improve the quality of life for large sections of the population. But the downside of our dependence on fossil fuel became clear after 1970 with air and water pollution rising, oil crises disrupting the economy, and global warming gradually presenting itself as perhaps the most challenging threat humankind has ever faced.

Some say that there's a touch of irony in the fact that the oldest sources of energy used by humans—sun and wind—are now seen as being the prime solutions to meet our energy needs. That may be true to an extent, but let's not forget that we wouldn't be able to harvest solar and wind power in industrial quantities if we hadn't first developed the industry.

NUCLEAR POWER IS EXPECTED TO REMAIN CRUCIAL

The energy transition is not, however, limited to solar and wind power. Many experts anticipate that nuclear power will continue to represent a significant share of the world's energy mix, because it is carbon neutral and because new advancements are emerging which increase efficiency and bring waste and other negative environmental impacts down to very low levels. And the nuclear industry is committed to safety and security like no other industry in the world, as Denys witnesses every day in the project to construct the secondary cooling circuits at Hinkley Point, Somerset in the UK.

GAS IS NOT DEAD

Our current project portfolio is a clear indication that it will be a multitude of energy carriers fuelling tomorrow's economy. For example, we have just completed gas pipeline projects in the Czech Republic, Germany and France, and are currently laying gas pipelines in Italy, Germany, Denmark and France. Natural gas will indeed still be important for many years to come. What's more, initiatives launched as part of the European Green Deal to reduce carbon emissions will allow the gas supply to be mixed with increasing volumes of biogas and synthetic natural gas (converted from CO_2 in a power-to-gas arrangement). To paraphrase the late Frank Zappa: "Gas is not dead (it just smells funny)."

THE PROMISE OF CLEAN HYDROGEN

In the future, gas pipeline infrastructure may also be of vital importance in transporting other gaseous energy carriers such as methane (CH_4) and hydrogen (H_2). Hydrogen is a very interesting one. In his 1874 book L'île mystérieuse, science fiction writer Jules Verne wrote that "water will one day be

employed as fuel, that hydrogen and oxygen which constitute it, used singly or together, will furnish an inexhaustible source of heat and light, of an intensity of which coal is not capable".

Today, his vision is not so far from becoming reality. More and more countries are developing national hydrogen strategies. Australia, for example, is said to be able to get to an amazing 200% renewable energy when leveraging advances in producing clean H_2 (using excess wind and solar power to fuel the electrolysis process). Projects to produce clean hydrogen are being launched all over the world in places with abundant sunshine and wind. It is expected that clean hydrogen will increasingly be used as feedstock in processes to decarbonise the industry and that hydrogen demand will increase ten-fold by 2050. Denys is involved in this evolution too as a key participant in the Dutch-Flemish Hydrogen Academy. We are currently laying hydrogen pipelines for Air Liquide in Quareignon, Belgium and Moerdijk, in the Netherlands.

REINFORCING HIGH-VOLTAGE GRIDS

Other energy carriers are booming too. In Germany, the decision to completely abandon nuclear power means that investments are being made in developing wind turbines, especially in the north where there's more wind. This in turn is triggering the country to launch a comprehensive programme to reinforce its high-voltage transmission grid to allow excess wind power to get to areas in the south.

Denys is qualified for 50Hertz and TransnetBW in Germany and we're laying underground HV cables for Elia in Belgium and Tennet in the Netherlands. In the latter project, we're using the innovative trenchless E-Power Pipe technique (including world-record micro-tunnelling for up to 2 km at a stretch) to reduce impact on the environment.

A COOPERATIVE APPROACH TO HEAT NETWORKS

And then there are the heat networks being developed everywhere. They are a brilliant solution for making good use of excess heat from industrial processes. One project we are involved in is the Swiss GeniLac hydrothermal energy project, which uses water from Lake Geneva to heat or cool city-centre buildings.

Closer to home, we developed the 2.2 km heat network Warmte Verzilverd in Mortsel, which brings excess heat from the Agfa Gevaert chemical site to a housing district nearby. We developed this project from scratch, including design and engineering, in close cooperation with Agfa Gevaert engineers and two citizen cooperatives. Construction was completed in exactly nine months.

PORTS: PRIME CATALYSTS OF THE TRANSITION

If there's one kind of place where the energy transition is already a reality in Europe, it's in the ports of Rotterdam, Antwerp and Ghent-Terneuzen-Vlissingen (North Sea Port). Ambitious projects to capture carbon for storage (CCS) or reuse (CCU) are being developed in almost every port. The same can be said of large-scale (green) hydrogen and district heating projects. Ports, in fact, are prime catalysts of the transition.

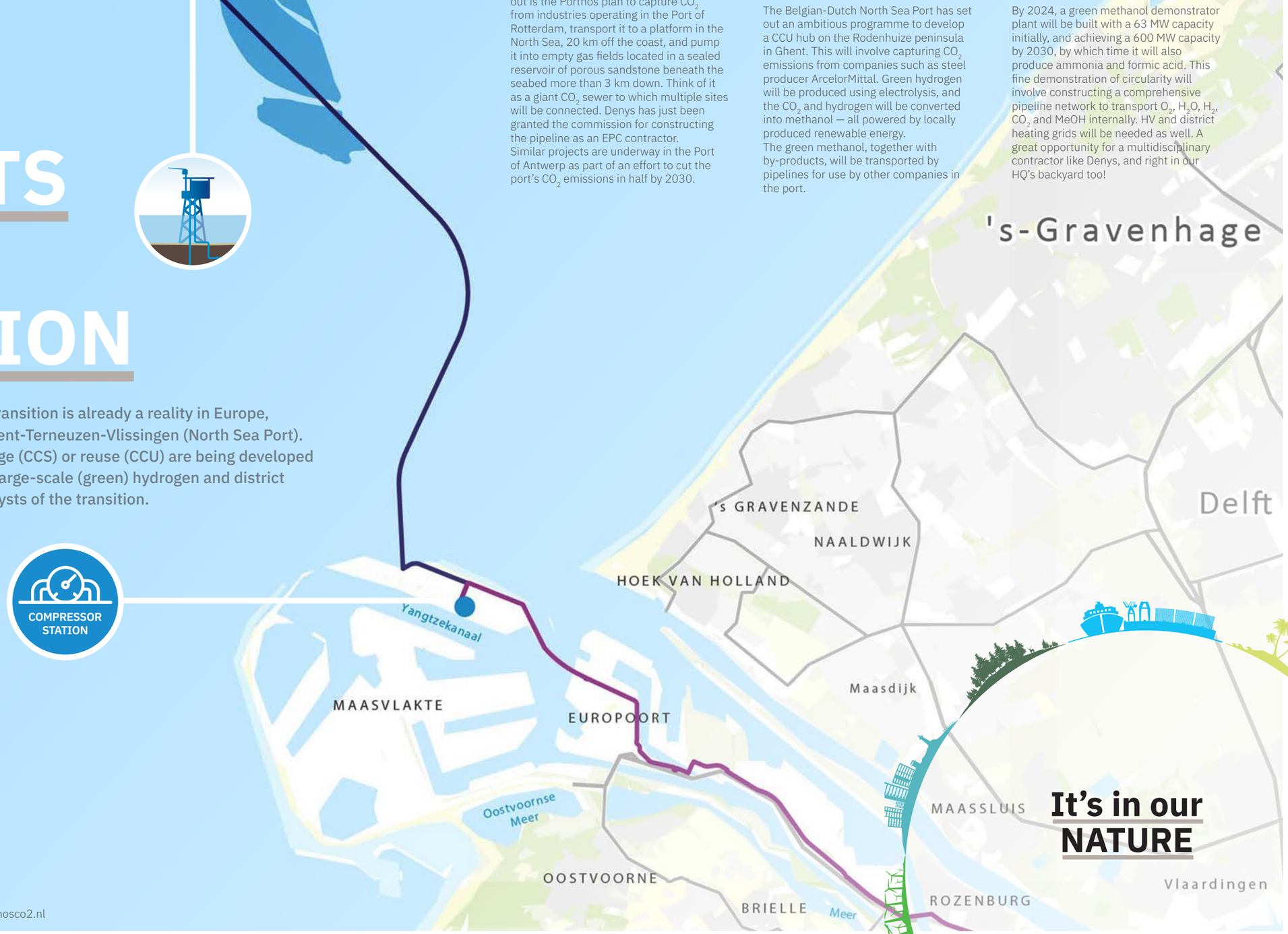
GIANT CO_2 DRAIN PIPE

One of the biggest CCS projects now rolling out is the Porthos plan to capture CO_2 from industries operating in the Port of Rotterdam, transport it to a platform in the North Sea, 20 km off the coast, and pump it into empty gas fields located in a sealed reservoir of porous sandstone beneath the seabed more than 3 km down. Think of it as a giant CO_2 sewer to which multiple sites will be connected. Denys has just been granted the commission for constructing the pipeline as an EPC contractor.
Similar projects are underway in the Port of Antwerp as part of an effort to cut the port's CO_2 emissions in half by 2030.

A FINE DEMONSTRATION OF CIRCULARITY

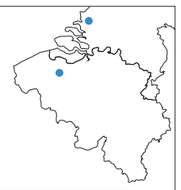
The Belgian-Dutch North Sea Port has set out an ambitious programme to develop a CCU hub on the Rodenhuize peninsula in Ghent. This will involve capturing CO_2 emissions from companies such as steel producer ArcelorMittal. Green hydrogen will be produced using electrolysis, and the CO_2 and hydrogen will be converted into methanol — all powered by locally produced renewable energy.
The green methanol, together with by-products, will be transported by pipelines for use by other companies in the port.

By 2024, a green methanol demonstrator plant will be built with a 63 MW capacity initially, and achieving a 600 MW capacity by 2030, by which time it will also produce ammonia and formic acid. This fine demonstration of circularity will involve constructing a comprehensive pipeline network to transport O_2, H_2O, H_2, CO_2 and MeOH internally. HV and district heating grids will be needed as well. A great opportunity for a multidisciplinary contractor like Denys, and right in our HQ's backyard too!



Source: www.porthosco2.nl

NL-BE
NORTH SEA PORTS



THE ENERGY TRANSITION IS ALREADY A REALITY IN THE DUTCH AND BELGIAN PORTS.

Ambitious
CCS AND CCU
projects as well as
GREEN HYDROGEN
and
DISTRICT HEATING
projects are being developed.

PRECIOUS PLANET PLANS

ENGAGING WITH SUSTAINABILITY

In *De Architectura*, the Roman author, architect and engineer Marcus Vitruvius Pollio (1st century BC) said that constructions need to comply with the divine triad of *firmitas* (strength or stability), *utilitas* (utility or functionality) and *venustas* (beauty or attractiveness). While the triad is still valid today, I would add sustainability as a fourth pillar, but I couldn't find a suitable Latin word for it. That's not so surprising, because the term only makes sense in the industrial era, which gathered pace when Latin was no longer the lingua franca.

We can hardly blame Vitruvius for the fact that the construction industry has been rather slow to adopt the principles of sustainable development, but the time has come to catch up. At Denys, we are scrutinizing our practices to dramatically reduce our environmental footprint and greenhouse gas emissions. We are gradually introducing concepts of reuse and circularity (hey, how about circularitas?). We are powering our construction sites with renewable energy, making them greener and less disruptive, aiming for 100% climate neutrality in the mid-term.

But there are more and even greater ways we can contribute to the coming transition. Think of how our pipelines are getting hundreds of truck loads off the roads every day. Pipelines already represent 70% of all material transport, but much more can be done, especially in the area of physical goods for which our revolutionary underground transport facilities are a perfect fit. In general, we should look again at the way we use space in our cities. Goods need to be brought underground as much as possible, leaving the open space above ground to a more biodiverse ecosystem for us to enjoy. I dream of a future in which only the last mile of any transport will happen above ground. I also dream of bringing clean manufacturing sites back into our cities, in underground facilities close to where the products will be purchased and consumed. This all could dramatically reduce the environmental impact of industrial activities.

We already have the solutions to make this happen. Society must simply dare to deploy them, just like we need to develop more techniques to bring the construction industry up to 21st century standards. Why not robotize construction processes such as putting roofs in place and laying tramways or streets? What is to stop us organizing construction sites to be radically cleaner, safer and more efficient?

Bruno Geltmeyer
CEO Denys NV

IT'S A GREEN DEAL

New Air Liquide infrastructure keeps
150
TRUCKS OFF THE ROAD EACH DAY

THINKING BIG AND SMALL AT THE SAME TIME

Climate change and the loss of biodiversity arguably represent the biggest challenge humanity has ever faced. We all know that radical action is needed and it will have to be sustained if it is to turn the tide. It's the collective responsibility of authorities, organizations, companies, communities and individuals. Which inevitably means that it's a matter of thinking big and small at the same time. From individuals reducing their carbon footprint to large corporations calling a halt to exploiting the earth's resources and the natural environment. It also means we have to be smart.

Brussels-Haren prison
22,000 M²
OF GREEN ROOF

PRECIOUS PLANET PLANS

New Antwerp Province Headquarters
74%
LESS ENERGY CONSUMED

ZERO EMISSION
CONSTRUCTION SITES AS A REALISTIC GOAL

© Régine Mahaux

THE BENEFITS OF UNDERGROUND TRANSPORTATION

Here's a telling example of thinking big and being smart. Last year, Denys completed a 35 km oxygen pipeline for Air Liquide between Temse and the ArcelorMittal site at North Sea Port Ghent, in Belgium. The new infrastructure means that Air Liquide can supply oxygen to the steel mill without having to send it by road. This keeps 150 trucks off the road each day.

In general, pipelines are extremely efficient and sustainable as forms of transportation. Once in place, they cause no harm to the environment, they don't disrupt aboveground economic activity, and they don't need much maintenance. What's more, construction methods are getting better, with less impact on the surroundings. Some of the Air Liquide pipeline was put in place using trenchless drilling techniques so as not to disturb the nature reserve above.

CATALYSING A MORE SUSTAINABLE SOCIETY

Today, about 70% of all materials and resources are transported through underground pipes, cables or ducts. This includes liquids and gases supplied to industry as well as commodities such as the drinking water, electricity, and telecommunications supplied to our homes. But why not show even more ambition? Perhaps we could transport packaged goods underground?

The technical solutions are there, we just need to implement them on a large scale. That's thinking big too. And here's another nice figure: energy consumption at the new Antwerp Province Headquarters, which we completed two years ago, is about 74% lower than it used to be in the old building. We'll be able to report similar gains once the inmates of the Saint-Gilles, Forest and Berckendael prisons move to the new facility we're completing in Haren. This illustrates how beneficial it is to renovate or replace existing patrimony in both budgetary and environmental terms.

10 FOCUS AREAS FOR SUSTAINABLE DEVELOPMENT

These are all areas where a multidisciplinary company like Denys can bring huge benefits. But in addition to being a catalyst for a more sustainable society, care for the environment and the gradual reduction and net elimination of greenhouse gas emissions are also our everyday concern. We chose sustainable development as our 2021 company theme, with a comprehensive programme built around the United Nations Sustainable Development Goals, focusing on 10 areas:

1 SUSTAINABLE CONSTRUCTION SITE INFRASTRUCTURE

We're making our site accommodations much more energy efficient and comfortable, reducing carbon footprint and improving wellbeing.

2 BATTERY PACKS

We use battery packs in situations where we have short periods of peak power demand. This arrangement allows us to significantly reduce or even eliminate the need for diesel generators. We are also investigating other possible uses of battery packs during construction activities.

3 MEASURE, REPORT AND REDUCE

We're systematically monitoring the energy consumption of all our equipment and taking measures to bring energy demand down as much as possible. For example, we have developed a solution involving a solar power installation with battery pack for our site accommodations.

4 ELECTRIFICATION

We're gradually electrifying our vehicles and equipment. We're conducting awareness programmes to encourage staff to select an electric vehicle as their next company car. Diesel equipment is replaced by electrical alternatives whenever they are available and applicable to our activities. We are also making sure that sufficient charging stations are installed at our construction sites.

5 NEW INITIATIVES

We encourage all our personnel to put forward fresh ideas for sustainable development. In addition, every construction project should at least implement one sustainability initiative. This will be a particular stimulus for younger staff members who already demonstrate their enthusiasm and ingenuity.

6 WELLBEING

We're taking multiple initiatives to promote staff wellbeing, for example by serving free soup on cold days and organize special webinars with topics on wellbeing on the job. Initiatives such as Loto lunch, monthly team meetings and Young Denys social activities allow people to keep contact with colleagues and better integrate new people.

7 ORDER AND CLEANLINESS

Special attention is paid to on-site order, cleanliness and waste management.

8 SUSTAINABLE PROCUREMENT

We're gradually integrating sustainability criteria into our supplier contracts.

9 INVOLVE THE SOCIETY

We're taking several initiatives in close collaboration with our clients to involve local communities living near our sites.

10 RESPECT

We have developed a code of conduct to actively promote diversity, combat discrimination and act honestly.

It's in our NATURE

OUR 10 SUSTAINA BLE COMMITMENTS

PRECIOUS PLANET PLANS

EUROPE IN THE PIPELINE

The European pipeline construction market is seeing a gradual shift from huge projects like the Nord Stream and TAP natural gas pipelines towards much smaller networks of various types. This shift can be observed mainly in western European countries like Belgium, Germany, France, Italy, the Netherlands and Denmark. Along with this evolution, construction is increasingly taking place in more densely built areas where there are many roads, railways, canals and other obstacles in the way.
Another challenge constructors need to address is the potential disturbance to nature reserves, which in these countries can be fairly small in size, making them particularly vulnerable.

EU

NATO AND BRUSSELS
AIRPORT BELGIUM
LEVERKUSEN GERMANY
BRITTANY FRANCE
MESTRE ITALY
FUNEN DENMARK

DENYS HAS DEVELOPED A SMART, COMPREHENSIVE SOLUTION FOR THE LACK OF SPACE IN LARGE CONTAINER PORTS.

It's also about combining techniques such as **HDD, MICRO-TUNNELLING AND DIRECT PIPE** to traverse obstacles with as much care and as efficiently as possible.

© Régine Mahaux

PIPELINE CONSTRUCTION, A MULTIDISCIPLINARY CHALLENGE

CAREFUL ENGINEERING AND PLANNING

These smaller pipeline projects are most of the time inherently complex. This is no longer a game of laying kilometre after kilometre of pipeline at record speed. It's about maximizing the use of trenchless or low-disruption techniques to reduce environmental and economic harm. It's also about combining techniques such as HDD, micro-tunnelling and Direct Pipe to traverse obstacles with as much care and as efficiently as possible. This in turn involves a lot of engineering and planning work to align the different activities. And it also means special equipment is needed.

CONSTRUCTING FASTER AND DISRUPTING LESS

No wonder Denys' pipeline department seems to be living in golden times right now. Customers greatly appreciate our highly effective multidisciplinary teams equipped with state-of-the-art machinery, backed by a particularly strong inhouse engineering department. This arrangement means we can optimize designs, plan more accurately, construct faster, disrupt less and reduce risks and costs. Recent projects illustrate exactly that.

IT
MESTRE

Denys has just started constructing their first gas pipeline in Italy, a new 40 km DN400 project in the north-east of the country from Mestre to Trieste for infra-structure operator Snam Reti Gas. Quality criteria were of critical importance in the tender, with SRG very appreciative of the fact that Denys is not subcontracting the six micro-tunnels.

A ballet of cranes and pipes. Here's a video of our pipeline construction project for Net4Gas in the Czech Republic.

EUROPE IN THE PIPELINE

© Régine Mahaux

DK
FUNEN

In Denmark, Denys is laying almost 80 km of DN900 gas pipes on the island of Funen as part of the Baltic Pipe project to bring natural gas into Poland from Norway.

FR
BRITTANY

The major French pipeline network operators Teréga, GRTgaz and Trapil also very much appreciate the Denys one-stop-shop service in evidence in commissions such as the Teréga Capens-Pamiers renewal project and the southern Brittany network strengthening project, GRTgaz A22.

BE
BRUSSELS AIRPORT

Our specialized teams also worked efficiently side by side to construct the hydrant refuelling network extension.

BE
NATO KEROSINE

Denys was able to cut a 600-workday plan down to a mere 100 days just by being smart.

DE
LEVERKUSEN

Denys is preparing to build a very complex pipeline network — including 2.3 km of new DN900 pipes and 3.5 km of replacement DN700 pipes — with very little room for manoeuvre and no fewer than 40 crossings. With all our extensive know-how in tunnelling and low-disruption techniques on display, a major highlight is the construction of six micro-tunnels (concrete and steel), one of which goes under a somewhat steep 30° slope.

STRENGTHENING THE PRESENCE IN AFRICA

AF
STRONG PRESENCE

PIPELINE PROJECTS IN AFRICA ARE INCREASINGLY ABOUT THE SEPARATE COLLECTION OF RAINWATER AND WASTEWATER STREAMS.

The multidisciplinary nature of Denys is still an asset on this continent as much as anywhere.
HIGHLY COMPLEX PROJECTS keep coming our way.

We've been carrying out extensive measurements in Eldoret, Kenya to prepare for the design of the 40 km wastewatercollector network.

A lot of pipeline projects in Africa are still about supplying drinking water, but as networks reach full coverage in many parts of the continent, the focus is now more on putting in place appropriate rainwater evacuation, wastewater collection and treatment infrastructure. There is also now a tendency to separate rainwater and wastewater streams, which has become the recommended practice in Europe too. Unfortunately, however, Covid-19 seems to have brought significant upfront delays, with funders deferring decisions to launch projects.

The new water evacuation system in Abidjan is entirely based on gravitational flow, leading to a significant reduction in operating costs.

STRENGTHENING THE PRESENCE IN AFRICA

GROWING INTERNATIONAL WORKFORCE

Denys, even so, has a strong presence in a number of African countries, including Ghana, Ivory Coast, Kenya, Niger, Mali and Liberia. We also have on the continent a growing international workforce of project managers and support staff, including locally based Africans who have been studying and undergoing specialist training at Denys in Belgium or elsewhere in Europe.

PROJECTS WITH A HIGH DEGREE OF COMPLEXITY

The multidisciplinary nature of our organization is still an asset on this continent as much as anywhere. Highly complex projects keep coming our way, and we develop projects ourselves. This is the case, for example, in Eldoret, Kenya where we're about to construct a 40 km wastewater collector network with a treatment plant. We've already been doing extensive measurements on site for several weeks to prepare for the design phase which will be completed in the summer of 2021. Work can start in September and will take about 30 months.

BREAKING NEW GROUND

Breaking new ground in Niger, we commissioned our concrete batching plant in the capital city to facilitate the construction of two additional 2500 m^3 water towers. The construction of the water distribution network in Niamey is going faster than ever, with 195 km of pipes laid over the past ten months.
And we're pressing on with another project to enlarge the Niger River water intake basin. It's at this point the treatment plant extracts about 170,000 m^3 of water each day, and the basin is always at risk of running out of supply in the dry season. That means we're dredging and raising the basin's threshold by 40 cm to significantly increase the basin's capacity.

The construction of the water distribution network in Niamey, Niger is going faster than ever with 195 km of pipes laid over the past ten months.

CONSTRUCTING AND FINANCING

Another project we've been helping to develop is a pipeline and micro-tunnelling job in Abidjan, the capital city of Ivory Coast. The Denys scope is part of an elaborate wastewater and rainwater evacuation master plan. Denys is the EPC contractor and finance partner for the construction of a wastewater collector, a rainwater collector, and a pumping station in one of the city's lowest areas, with very high groundwater levels. It involves replacing the existing water evacuation system, which made extensive use of pumping equipment, by a system based on gravitational flow, leading to a significant reduction in operating costs.

REVIVING BUILT HERITAGE

B
REVIVING BUILT HERITAGE

WE LOVE COMPLEX, MULTIFARIOUS AND CHALLENGING RESTORATION AND RENOVATION PROJECTS.

Current projects include
LES ANCIENS THERMES IN SPA
BRUSSELS BOURSE
DEN BELL IN ANTWERP
&
THE CASTLE
IN TOURNAY-SOLVAY PARK
IN WATERMAAL-BOSVOORDE

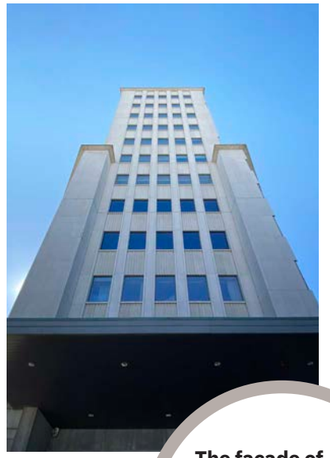
FROM STOCK EXCHANGE TO BEER EXPERIENCE CENTRE

The architect who created the building, Léon Suys, also designed and built the Brussels Bourse a few years later. The building came into use in 1874 serving as a stock exchange until 2015 by which time it had become way too big for trading in the digital era. Denys is now restoring and renovating it to accommodate Belgian Beer World, a museum and experience centre focusing on the rich gamut of Belgian beers. The experience centre will occupy the second and third floors, with a sky bar above, offering a splendid view over the famous Grand Place. The ground and first floors will serve as circulation and meeting areas, almost as an extension of the majestic stairs out front, which over the years have become a popular resting area, sometimes used for all kinds of events. One remarkable detail is the pair of beautiful 'artificial suns' set in circular openings in the ceiling, equipped with gas burners and baskets, originally designed to radiate a subtle warm glow throughout the building.

We have already come up against a few difficulties, especially with the stock market floor slab, despite it having been renewed in the 1980s. It took some time for the contracting authority to agree that it should be broken out and replaced. This, along with other issues, has resulted in the work being delayed by some six months, which is somewhat frustrating for all the parties involved. But we're looking to make up as much time as we can.

Look at this video to see the progress in Denys' restoration and renovation of Brussels Bourse.

REVIVING BUILT HERITAGE



The façade of Den Bell is being renewed with Chauvigny limestone, exactly the same as used in 1953.

IT'S COMPLEX IT'S MULTIFARIOUS

It's complex, it's multifarious, it's a challenging business venture, and we love it. We're talking about the project to revive Les Anciens Thermes, the distinguished edifice designed and built by architect Léon Suys in 1868 in Spa. The venue was a favourite of the late 19th century beau-monde of artists, writers, politicians, and businesspeople visiting the Belgian town whose name resonates in health resorts around the globe.

Over the past few years, Denys has been restoring and renovating this architectural gem. We have almost finished restoring and reconstructing the exterior, part of which is in neo-Rococo style. Inside, we discovered that some remarkable belle-époque paintings had been hidden from view by earlier refurbishments. Authorities are now assessing whether the paintings should be restored and exhibited or just documented before being protected and hidden once again. Similar discussions are ongoing about the restoration of a number of previously hidden neo-classical columns to which Art Nouveau elements had been added. It's all a matter of money.

Which is important, because restoration is one thing but making it work as a business enterprise is another. The good news is that business partner AccorHotels have decided to convert the building into a high-class Mövenpick Resort, which perfectly suits the distinguished character of the building.

CUTTING AND FINISHING CHAUVIGNY LIMESTONE

In Antwerp, we're restoring the façade of Den Bell, the iconic 13-storey office tower designed and built in 1953 for the International Bell Telephone Company and now serving as the city's administrative nerve centre.

Issues with the structural concrete meant that the façade had to be removed to allow the concrete to be reinstated. We're now preparing to renew the white stone covering, which we were able to identify as pierre de Chauvigny, a limestone still quarried today about 20 km from Poitiers, in France. We're now in the process of cutting the blocks with a total volume of 225 m^3 into plates weighing 200 kg each. Then we'll polish and bushhammer them to the exact state they were in 1953.

40 YEARS AFTER THE FIRE

In Watermaal-Bosvoorde, a Brussels residential suburb, Denys is restoring the castle in the grounds of Tournay-Solvay Park, which was the victim of a fire in 1982 and fell into ruin due to neglect. Almost 40 years after the event, the building is being restored in the original Flemish neo-Renaissance style. We also need to take protective measures because of the presence of owls in the attic and bats in the cellar.

After restoration, the castle will serve as an interuniversity research centre in theoretical physics, showcasing and continuing the work of Georges Lemaître (1894-1966), Robert Brout (1928-2011), and Nobel Prize winner for physics François Englert (born 1932).

©MDW Architecture

SMALL BUT FASCINATING

As we reach the final stages of the huge project for the new Brussels-Haren prison, our newbuild department is also carrying out a number of much smaller projects that are nonetheless fascinating in their own way. For example, we are building a low-energy sports centre for the city of Brussels. Called Terre Neuve, it's quite an architectural feat with a stunning curtain wall, which has made for some technical challenges. It's also right next to the busy North-South railway connection, giving us very little room for manoeuvre.

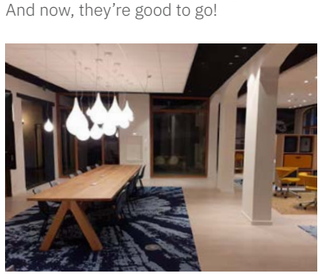
Terre Neuve is an architectural feat with a stunning curtain wall.

©MDW Architecture

© Régine Mahaux

GOOD TO GO

In Ghent, we completed Obelisc, the last of three research and development buildings at Zwijnaarde Technology Park, and a happy collaboration with Ghent University and the Flemish Institute of Biotechnology. And in Middelburg, in the Netherlands, we refurbished the entrance and reception area of the old Zeeland Province headquarters building.
And now, they're good to go!



FOR CYCLISTS AND PEDESTRIANS

We're also working on bicycle and pedestrian bridges in Belgian cities: two in Brussels, one in Antwerp and one in Ghent. They will all contribute to encouraging us to change the way we get around in favour of more active and planet-friendly modes like walking and cycling.

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