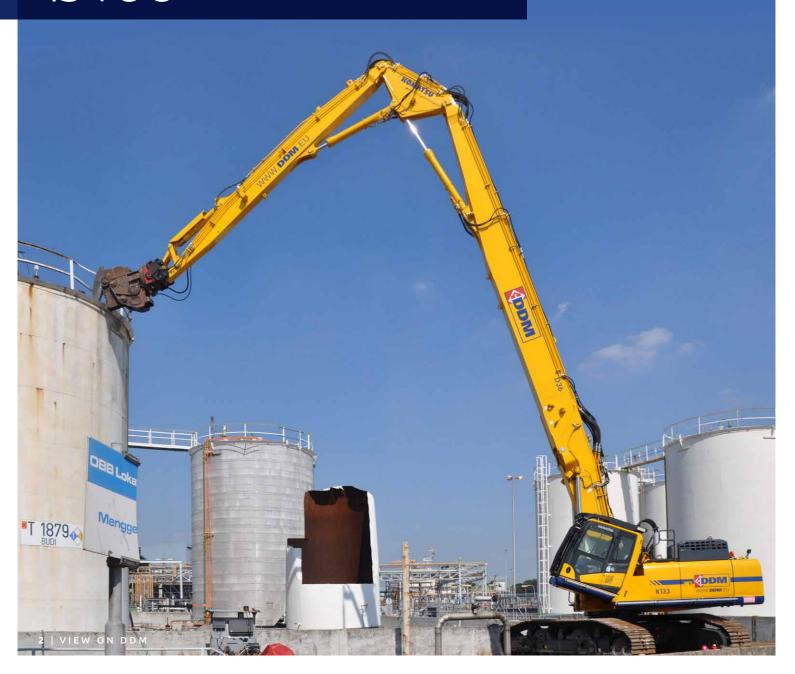


"WE'RE DRIVEN.
IT'S IN OUR DNA.
WE'RE ONLY **SATISFIED**WHEN THE CUSTOMER
IS TOO"





# Take a step back – and now take a step forward!

The last few years have been turbulent in many respects all over the world. Oil prices have fallen sharply. The energy market has changed. Peace and quiet are no longer a matter of course. Our clients have also changed. Investments are being made more and more for the short term and people are looking for certainties.

These developments are why we want to respond even faster to our client's questions and develop an even more extensive range of services. A broad overall package: from our client's first thoughts through to the full project realisation. Without requiring any other parties to get involved. We are a skilled, enthusiastic and innovative project team. This saves the client a lot of time and money.

A great deal has been invested in training and educating our employees and in equipment and materials. We have state-of-the-art machinery with low CO<sub>2</sub> emissions. Safety for our staff and for the environment are at an extremely high level. And we are working on increasing that quality every day. We want to be the best, and remain the best.

In our company office, the heart of DDM, we make agreements with our clients. We write a complete safety and quality plan, including a risk inventory, that we discuss with the client in advance and amend as necessary. When that is done, we can start work, Safely.

We and our staff are confident about the coming years. We have the answers to all your questions. We can also do what we promise, from our branches in the Netherlands, Belgium, France, Germany, Great Britain, United Kingdom, the Middle East and Asia. With management and operational teams we are proud of.

How can we help you?

Theo Velis - CFO



6



10

"A complete production line moved in less than 4 weeks!"



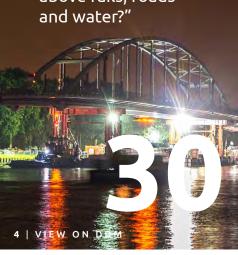
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"A relocation of 11,000 kilometres"





"How do you remove a **heavy bridge** above rails, roads and water?"





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"Removing **8,000 tons** of **reinforced concrete**"

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#### **ACKNOWLEDGEMENTS**

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## QHSE: Working with quality and safety

The Quality and Health, Safety and the Environment policy is an ongoing process. That is why DDM is continuously working on improving all these areas to keep improving safety levels.

Assurance for this process is guaranteed by certificates in the following areas: Quality via the ISO 9001 certificate, Environment via the ISO 14001 certificate, Safety via the VCA Petrochemicals certificate, Safe Environmentally Aware Demolition via the SVMS-007 certificate, Asbestos via the SCA process scheme for asbestos removal and BELAC for working with asbestos in Belgium.

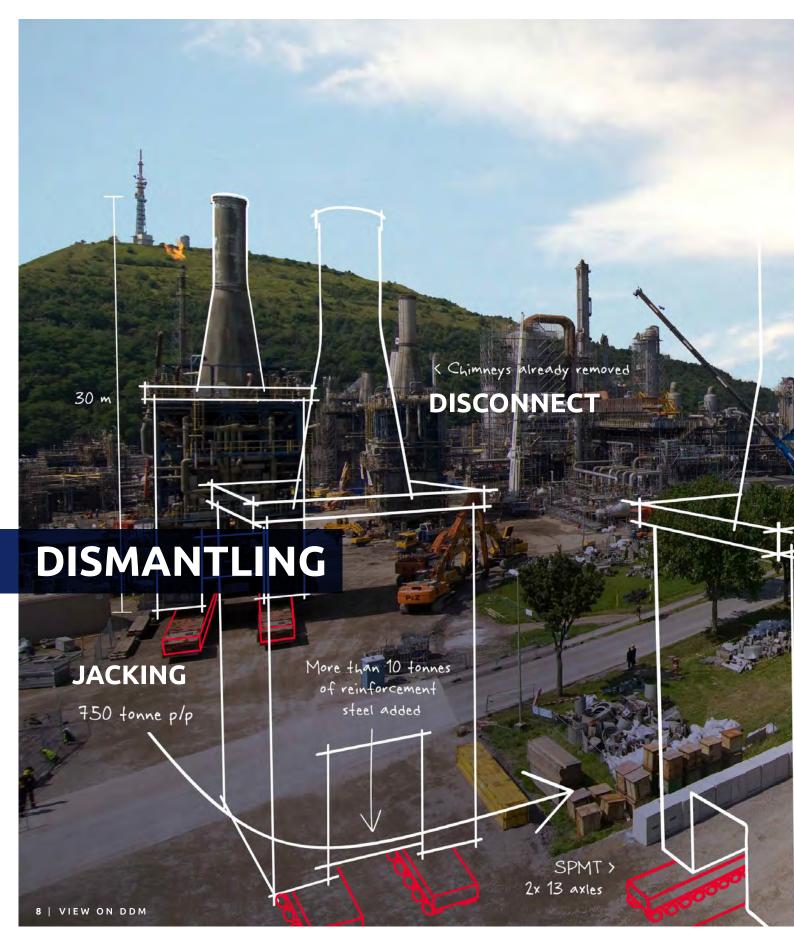
Going to work properly trained and well prepared is crucial for running a project safely. DDM makes sure that all its staff have been given the right instruction and have the right certificates, registrations and diplomas. DDM also regularly organises days on which all supervisors and all operational staff discuss safety, policy and the overall vision together. This is all about coordination and achieving the same result and goals: working safely, getting home healthy and customer satisfaction are the key. Before a project, the various options

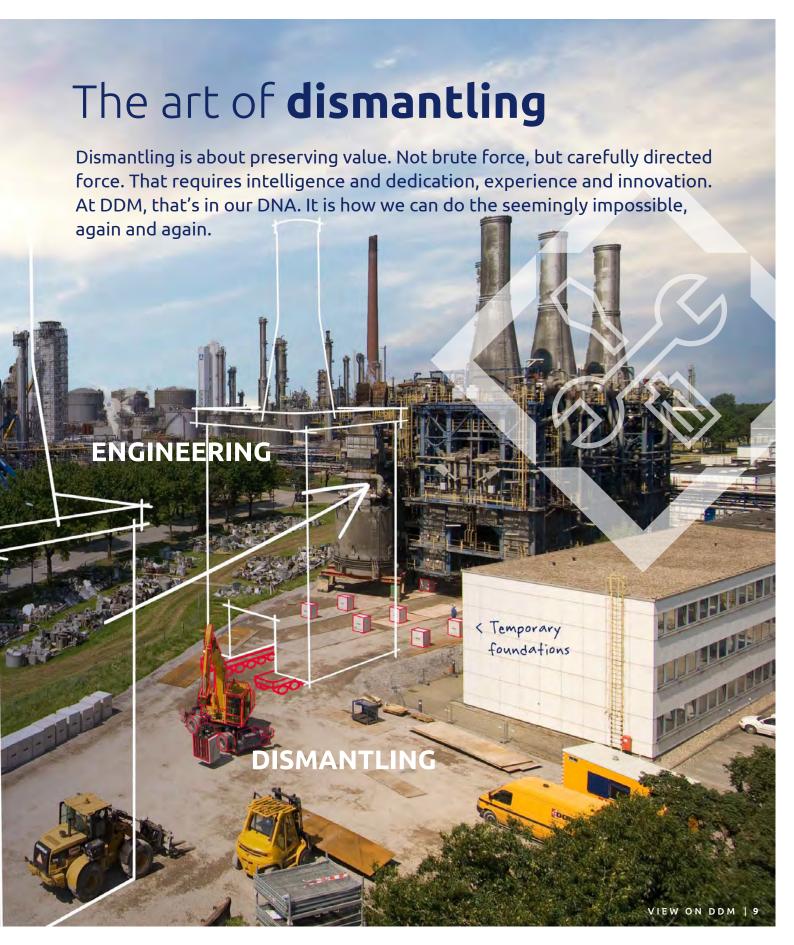
are discussed with the client so that the work can be performed safely.

To minimise the environmental DDM always separates, records and processes waste materials at authorised final processors. DDM also keeps investing in environmentally friendly measures. Among other things, this includes acquiring more economical and environmentally

friendly equipment. There's a good reason why DDM's motto is Safety First! The specialist work that DDM does is full of safety challenges. The DDM QHSE department has existed from day one and safety is in DDM's DNA. Our global operations let us acquire knowledge everywhere and we continue to innovate. We ensure safety together. Because safety may start with you, but it doesn't end there!









## **Efficient** dismantling and **installation** of a cab production line

After a long period of preparations, the truck factory in Ghent closed for one month according to schedule. In that time, DDM dismantled the complete cab production line and rebuilt it.

Over the full length of the production line, the majority of the steel structures were dismantled and then reassembled and installed at a new location. All the high-tech tools were also moved and reinstalled. All the electrical systems, air conditioning, safety systems and computer control systems were adapted to the new situation.

The floor chain lane systems were changed, as were the drives. In addition to the production line, the associated storage warehouse was also completely revamped. Various hoisting facilities, racks and conveyor belts were reinstalled. In less than 4 weeks' time, all items and tools were moved and the production line was set up more efficiently. After a number of extensive and successful test runs, production was able to start up again.

DDM managed to optimise the complete production line for the truck cab within the planned schedule. Thanks to the change, which was done for the client's European Optimization Program, more trucks are being produced now than ever before: production increased by over 14%.









## Fast and within budget: a precision job for replacing rotating dryers

Dismantling and swapping two rotating dryers in the heart of an operational factory in Rotterdam: a job that required detailed preparation. Just right for DDM!



A custom-made frame held the dryers together.

Firstly, a flat working floor was made outside. The two dryers were removed as a whole through the exterior wall so that the materials containing asbestos in the outer casings could remain intact. To avoid dust being produced, the dryers were first hosed down and packed in foil before being towed outside on rails.

To remove the dryers as a whole, the rotating inner mantle had to be fixed to the outer casing. A custom-made frame held the dryers together. After the frame was assembled. the drive train and motors of the dryers were removed.

The frame with the dryers was jacked up several millimetres so that the supports could be removed from under the dryers. The dryers were then lowered again, put on the rails and towed outside. Once outside they were jacked up again to a height of about 1.5 metres. A self-propelled modular transporter (SPMT) was placed under the dryers. It then manoeuvred the machines out from the very tight space between the buildings.

DDM's specialists later installed the new dryers using exactly the same method and equipment. The old dryers were taken from the building, loaded on a low-loader transported to the DDM vard in De Meern for the asbestos to be removed. The work was completed within budget and a day earlier than planned.



## **Dismantling** a complete factory and transporting it to Germany...





**Location:** Deventer, Netherlands

**Scope:** 250 tonnes of dismantling equipment

**Deployment:** 10 dismantling specialists, forklift trucks, hydraulic cranes, low-loader

transport trailers

Project duration: 3 months

#### DDM was responsible for dismantling an additives plant in Deventer.

This factory used a chemical agent that increased the lifespan of car tyres. To safely dismae the production line, the installation had to be thoroughly cleaned first. The piping was then removed to make room for dismantling the reactor vessels and heat exchangers. Due to the restricted space DDM used hoists

and sets of rollers to move the equipment from its place. After that the components were hoisted out of the building using a hydraulic crane. Final cleaning of the equipment was done in a spraying area set up specially for this purpose. A final inspection was then performed by the German TÜV.



#### How do you fit a compounding unit in sea containers?







**Location:** Kuantan, Malaysia

**Scope:** 2 silos, extruder, transformer, electrical installation and part of the steel structure

**Deployment:** 4 dismantling specialists, forklift truck, hydraulic platforms, 35t hydraulic crane

Project duration: 3 weeks

In Kuantan (Malaysia), DDM efficiently dismantled a compounding unit, placed it in sea containers and shipped it to Egypt. An unusual job!

The challenge in moving this installation was that the building and part of the steel structure had to remain intact, and there was nowhere to put heavy equipment. The compounding unit was placed in its entirety 7 years ago through the roof of the factory hall. However, removing the systems through the roof was no longer

possible. DDM had the solution: take the installation apart completely. Special equipment was using for dismantling the extruder, which was then moved using a roller system and placed in a sea container. All switching panels, cabling, the transformer and various large and small silos were also dismantled, packed and loaded.



## Extreme relocations From the largest objects and heaviest machines to entire factories: DDM Relocation is about extreme removals. Gigantic projects where it is all about planning and management. Even the smallest details weigh very heavily. **SPECIALIZED PERSONNEL** Aluminium silos **DISCONNECT** < After dismantling of equipment and building, removal of concrete foundations 45m high mobile elevated work platform (mewo VIEW ON DDM | 17





## The task: **remove** a car production line and install a new one

DDM dismantled a complete old production line and built a new one for one of the world's largest car manufacturers. Right on schedule.

All systems were removed from the buildings up to just below the roof. All usable machinery and systems that could be reused were carefully disconnected and dismantled. The production machines were packed and transported to the new user. After the usable parts had been taken

the other systems out. were disconnected and removed. DDM separated out all the materials and sent them to certified recycling companies. Once the factory halls were empty, the reconstruction of the production line started. DDM expertly and carefully put the new

machines and installations in place, connected them and set everything up. Floors, stairways and stocks were also put in place and set up. The production of cars restarted not long afterwards. Efficiency is greater: the factory now makes 20% more cars per day.













## From Zeeland to **Uruguay**, taking 27 wind turbines

A power company wanted to replace 27 wind turbines in Zeeland with even more efficient ones. DDM removed the old ones and found them a new home in South America!

Talking about efficiency: DDM was able to sell the old wind turbines straight away to a company in Uruguay. As preparatory work, various hoisting equipment was made to size, such as a beam for hoisting the nacelle. The work planners at DDM prepared all the paperwork and planned the other activities.



The actual hoisting was done using 2 lifting cranes. The advantage of this type of crane is that they can be driven independently to the necessary positions. The rotor blades were fixed in horizontal position, after which they were hoisted down in one go along with the nacelle. Once down, the blades were dismantled, loaded onto trailers on wooden saddles and driven to the port. The nacelles went onto the low-loaders. The towers consisted of two parts that were also hoisted using custom-made hoisting equipment, loaded onto trailers and moved to the port.

All 27 wind turbines were dismantled and transported within 3 weeks. Currently they are running at full speed in Uruguay and generating clean energy there.



## **Moving** a PET factory from Germany to the Netherlands





Locations: Offenbach, Germany and Maasvlakte Rotterdam. Netherlands

**Scope:** 5,000 tons of equipment **Deployment:** 120 specialists. various transport methods, multiple (hydraulic) cranes of 200-500t, transport trailers

**Project duration:** 12 months

#### How do you move a PET factory from Germany to the Netherlands? With DDM

Dismantling specialists from DDM first meticulously mapped out the factory. They determined the 'as-built' situation by a combination of measuring and 3D scanning. After each part had been carefully labelled, everything was dismantled. With the exception of the concrete structures, each part was labelled, packaged and relocated. The other structures and the foundations, which were largely made of concrete,

were demolished. The site in Germany was handed over, looking as if nothing had ever been there.

At the new location in Rotterdam. each component was put back in the right place. All the nuts and bolts were screwed in and the cables were reconnected. The collaboration with the client was perfect: the factory is running again as before.



## A delicate job: dismantling and transporting storage tanks





Location: Rotterdam, Botlek, Netherlands

**Scope:** Various storage tanks and other tanks, 1,400 tons of scrap

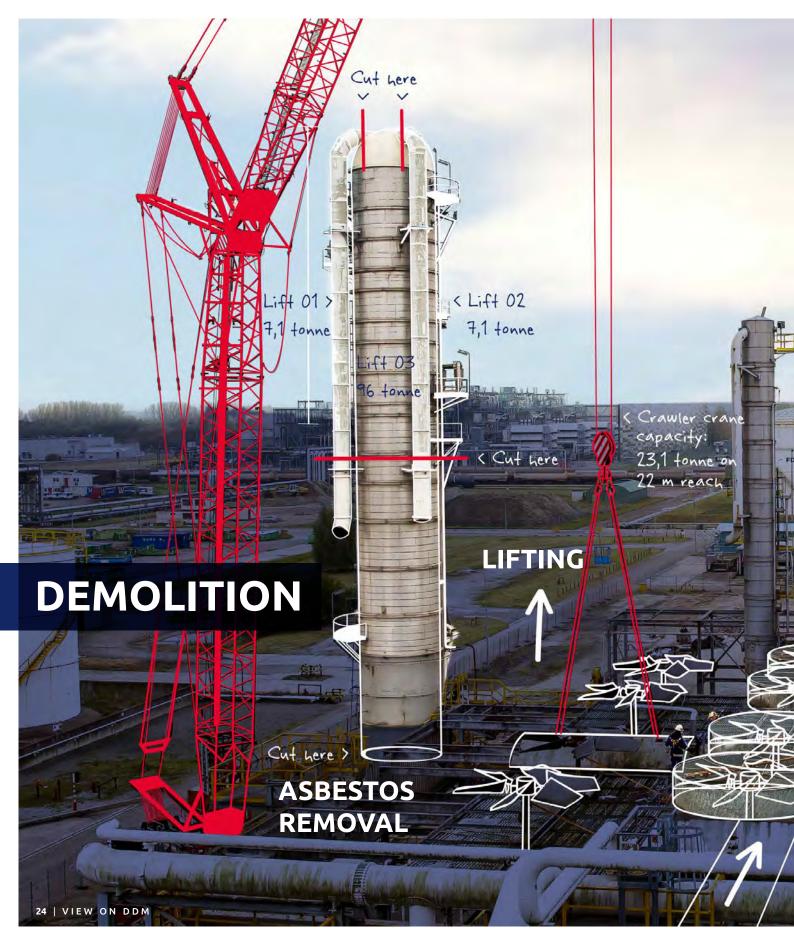
**Deployment:** 4 specialists, 250t hydraulic crane, low-loader, transport trailers, 21-45t demolition excavators

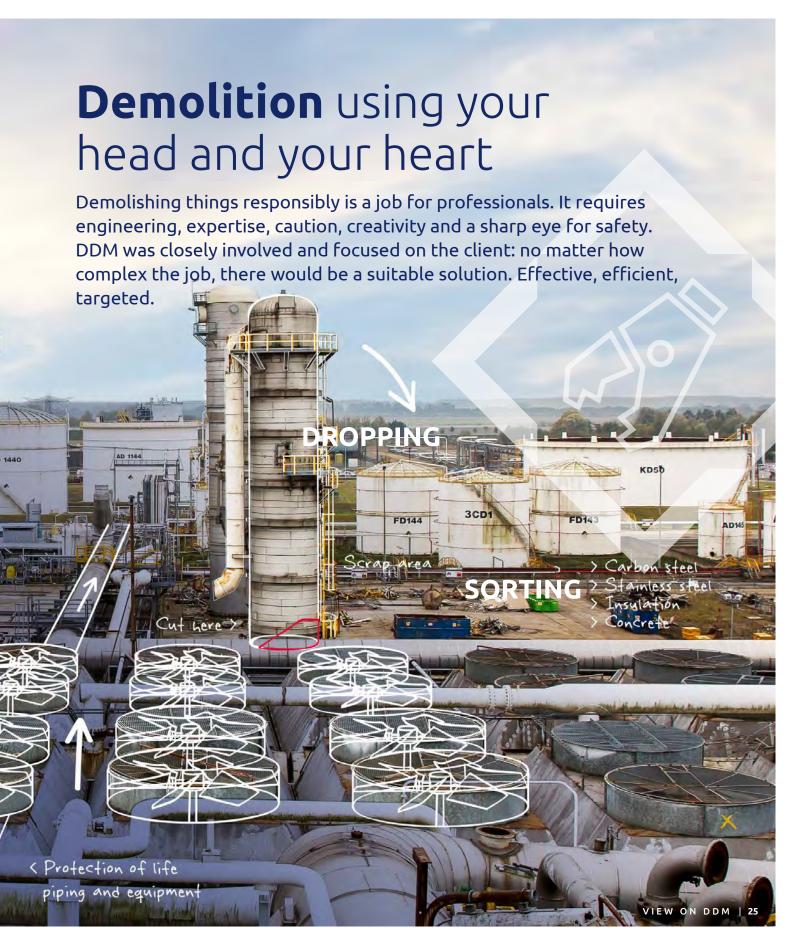
Project duration: 5 months

#### DDM handled a very unusual job in the port of Rotterdam: moving large storage tanks.

The partial demolition and relocation of large storage tanks came with a significant risk: chemical pollution. For safety's sake, DDM decided to use machinery to cut up and scrap the entire terminal. To do that, the pipelines and instrumentation were first removed, after which demolition excavators also cut up the smaller tanks and other items.

Two stainless steel tanks remained intact: DDM placed them on trailers for transport to their new destination. In the meantime, the demolition excavators made short work of the other silos, even though they were up to 22 metres tall.









## Precision work: removing a power plant in Amsterdam

DDM was asked to dispose of the Hemweg power station in Amsterdam. After careful preparations and planning, the dismantling began.

First of all, hazardous materials such as asbestos were removed. After the buildings and components had been cleaned and released, the actual demolition could commence. That was done not only with heavy machinery; in some cases the dismantling was precision work done by hand. The boiler was stripped completely.

All applications of asbestos, ceramic materials and insulation were removed and the 6.000-ton boiler was cut into small pieces are carried away.

The chimney had a steel internal sheath that had elements that contained asbestos. An ingenious hoisting and lowering method for the

complete internal duct using strand jacks allowed all the harmful materials - including the internal duct - to be expertly removed from the chimney. The concrete tower, 171 metres tall, was then removed by cutting it into chunks from the top down, with the chimney itself acting as its own disposal chute. The 150 MW gas turbine and generator were dismantled. All parts were packaged, preserved and transported for reuse.





The customer was delighted. "DDM was responsible for the complete dismantling, asbestos removal, dismantling, demolition, separation and disposal of all the technical and other systems and buildings. The project was carried out by a professional team, with modern machinery and equipment."







### **Demolishing** a styrene factory in Terneuzen

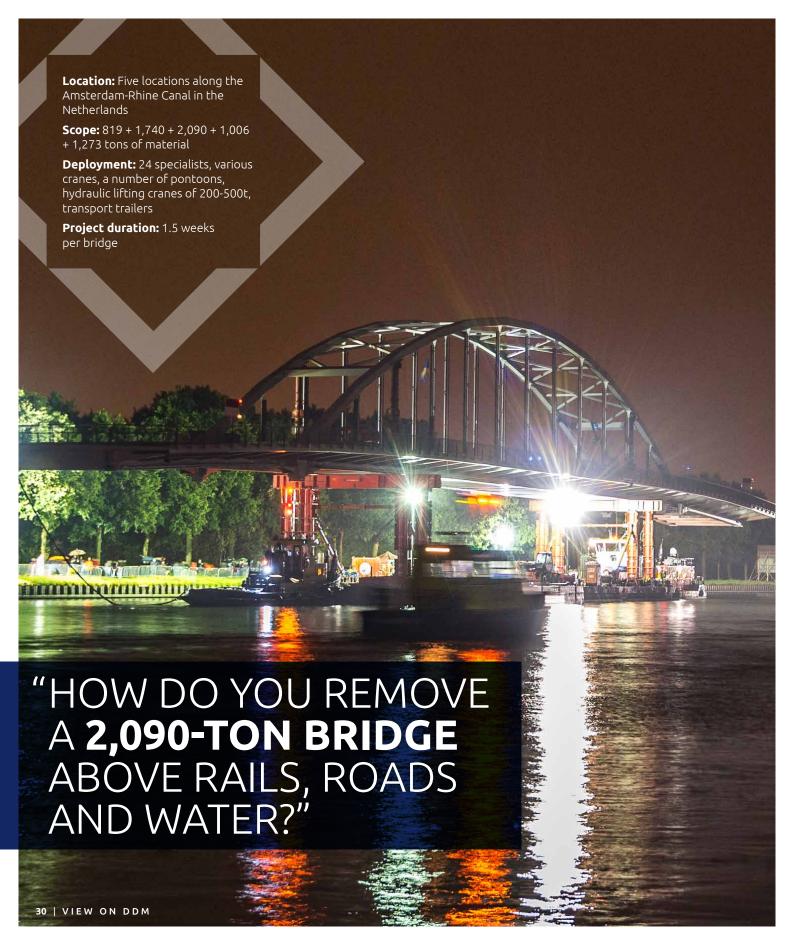
A major producer of chemicals asked DDM to remove an old styrene factory. It wasn't the first time DDM had taken on such a task, after all.

So DDM knew what was needed. All the asbestos was removed. The activities covered removing various systems at a variety of locations. This included electrical systems, instrumentation, piping, equipment and steel structures.

DDM's specialists used excavators to remove the lower and smaller items. The machines had scrap metal shears for the purpose. A sorting grab was used for sorting and collecting the cut materials. Higher up parts were hoisted down with lifting cranes and processed further on the ground. Storage tanks were scrapped using a demolition excavator with a long reach. Various systems were also dismantled for reuse. The live pipe bridges were protected during these activities

using scaffolding, steel floors and fire-retardant blankets. In some cases, the concrete around-level floors were removed. All materials removed were given to certified and recognised waste processing companies, who then processed it as per the legislation and regulations.







#### **Removal** of 5 bridges across the Amsterdam-Rhine Canal

Could DDM remove five large arched bridges across the Amsterdam-Rhine Canal, of which the largest was 187 metres long and weighed over 2,090 tons? A heavyweight job, for sure. But not too heavy for DDM!



To avoid nuisance for the surrounding area as much as possible, each bridge had to be removed and replaced in a single weekend. Because of the tight planning, it was decided to use a very challenging method that would require the very maximum in effort and expertise of all parties involved.

As preparation, the asbestos was first removed, under the supervision of and with advice from DDM's specialists. Lifting cranes were placed on both sides of the canal. At the same time, the concrete road deck was removed

from the static bridge ramp by cutting it into segments and hoisting them away. Part of the steel structure was removed too. This meant that over 560 tons of concrete and 236 tons of steel were removed, making the bridge light enough that it could be lifter from the water.

After it was shipped away, the bridge was lowered and placed on various supports. DDM had facilities available in Amsterdam for unloading the bridges. To transport the bridge there, the first arch had to be removed. Only then was the bridge low enough to be transported by water, underneath the other bridges crossing the Amsterdam-Rhine Canal.

Unloading began the moment it arrived in Amsterdam. The concrete road deck was sawed into pieces and lifted from the boat. All the concrete and steel were taken away. These materials were recycled in full at recognised disposal companies.

The planning challenge: the Amsterdam-Rhine Canal is the busiest canal in the world.









## **Caution** as the keyword

Disposing of two steel cooling towers with asbestos sheeting in Godorf (Germany) was precision work, as they had been completely surrounded by other structures since being built in 1959.

The nearest factory system was less than 3 metres away from the cooling towers. To be sure that this factory and others would not be adversely affected by the work, and to be able to work both safely and with the environment in mind, protective scaffolding was placed and nets hung up. Water was also sprayed during all the work in order to limit dust production. Mobile cranes and sorting grabs removed the plastic and wooden interiors of the cooling towers. The plates that contained asbestos were then removed one by one. These had been attached on the inside of the steel structure and had to be detached

at height using a tower crane with a working cage, delete then placed into plastic asbestos disposal bags and taken away. The steel structure was cut into pre-designated pieces and hoisted away with a lifting crane, as per the dismantling sequence and method calculated beforehand by the DDM designers. The concrete foundations were demolished using hydraulic demolition excavators with jack-hammers. After completing the dismantling and demolition work, the site was made suitable for the new construction work that was planned there.









#### **Expert demolition** of four fire-damaged furnaces

Four furnaces at a chemicals factory in Litvínov in the Czech Republic were damaged by a fire. Working with a well-known furnace manufacturer, DDM was able to remove the furnaces more quickly than planned.

This was about as complex a project as you'll ever see. All the documentation was drawn up in 3 languages: there was a detailed description for every task, including an extensive risk inventory.

The big challenge was safety: the structural stability had been affected, so it was not safe to go inside the furnace units. The basic structures were therefore reinforced first. In some cases petroleum products delete remained in the systems and pipelines. This meant that a special clean-up team had to be deployed to deal with those elements.

Parts of the furnaces, which were up to 25 metres tall, had to be dismantled and hoisted away. From 25 metres height upwards, excavators with long reach arms could be used.

In less than 2 months, DDM was able to remove the furnaces and pipe bridges completely. In the 4 weeks that followed, the foundations were removed as well. The contaminated soil was dug up, after which the site was made ready for construction work again.

The removal of the 4 furnaces and all the associated activities were finished a month earlier than planned. More than 8,000 man-hours of work were logged during the 3 months of dismantling and demolition. And in all that time, the first aid kit was never once taken out of the cupboard.







## What's the **correct** way to remove a huge storage hall?

A large German copper manufacturer wanted to demolish its largest storage hall. Despite the vast roof span of 94 metres, DDM was able to remove it without any problems.



The circular hall had a diameter of 94 metres and it was almost 30 metres tall. Because of the enormous roof span, which was made entirely of concrete, the decision had been made when it was constructed to use pre-stressed concrete. A pre-stressed concrete ring was placed on the outside of the concrete stanchions. A specific construction that demanded a highly specific approach from DDM.

All the components, the indoor hoisting facilities and conveyor belts in the building were removed, followed by the steel wall cladding and

the roof panels. The entire building was stripped until only the main load-bearing structure remained.

The concrete rafters had been laid during construction on the outer pre-stressed concrete ring and on the concrete top ring. The rafters could only be removed if the top ring was backed up by an auxiliary structure, which was placed up against the ring using a jack system. Once this had absorbed the weight, the rafters could be taken away. The long reach arm and the concrete shears of the demolition excavator were used to cut

them loose and lift them away. The concrete top ring was removed using two hydraulic lifting cranes.

To eliminate the stresses from the outer ring, it was first weakened at specific spots by breaking the concrete. Once this had been done. the rest of the hall could be demolished by conventional methods. Demolition excavators were used for breaking up the concrete structures and separating out the rebar steel.





## Oil platform in the Baltic Dismantling – Piece Small







**Location:** German Baltic Sea. 35m above and 25m below sea level

Scope: oil platform plus helicopter deck

**Deployment:** 15 specialists, crane pontoon, various seagoing pontoons, floating trestles

**Project duration:** 6 months

To remove the Schwedeneck platform from the German part of the Baltic Sea, we worked together with the client and used a seagoing crane pontoon. The 'Piece Small' method was used, breaking the platform up into small pieces on site and then transporting them away.

Dismantling, cutting with torches and shears on hydraulic excavators: the platform was dismantled and carried away. The extremely large pieces such as the helicopter deck were taken by floating cranes, the larger pieces on pontoons and the smaller ones in containers. Everything was then processed and disposed of on dry land. Once the topside had been fully removed, air was pumped

into the cylinders of the foundation structure so that the platform would float – stabilised with various pumps and ingenious systems. Tugboats then took it to the quayside for further demolition and disposal. All materials was separated at the source and taken away.



## **Explosion** flattens a German power station





In Görlitz in Germany, DDM set off a controlled explosion that levelled part of a power plant. The resultant rubble was then removed.

**Location:** Hagenwerder, Görlitz, Germany

**Scope:** 55,000 tons of concrete; 380 kg explosives

Deployment: 8 specialists, 1 explosives specialist, various cranes

**Project duration:** 8 weeks preparation, 6 months equipment removal

Part of the Hagenwerder power plant at Görlitz in Germany had already been removed. Only the bunker building and the machine room were still standing. DDM was given the order for demolishing the buildings. After an extremely short preparation period of 8 weeks, everything was stripped and the explosive demolition was prepared.

The glass, sheeting and cladding material were removed first, along with the secondary structures. Holes were then drilled and 980 explosive charges applied. More than a kilometre of detonating cord was required for the bunker building, which was over 187 metres long and 55 metres high.

At 211 metres, the turbine hall was even longer. As the final precaution, a large area was covered with sand and tarpaulins in order to dampen vibrations and prevent dust from forming. Continuously spraying the surroundings with a water mist ensured that the demolition produced as little dust as possible. Safety officers cordoned off a wide exclusion area. Other than the DDM experts. nobody was allowed to access the work area.

And then the moment of truth: after a rapid series of concussions, the extremely large building subsided gracefully and completely. Exactly as planned.

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#### PROUD OF...



ExxonMobil 2003 - Award for Excellent Safety & Quality Performance 2003



DOW 2010 - Outstanding Safety Performance 2010



ExxonMobil 2010 - Award for Excellent Execution in Safety & Quality of Rotterdam Flexicoker Turnaround 2010



ExxonMobil 2010 - Award of Recognition for Excellent Execution of Turnaround 2010



M/s. DDM Asia Sdn. Bhd
CONGRATULATIONS!

Shell 2010 - Award for the Excellent Project Execution of the AGT Demolition Project



ExxonMobil 2013 - Award for Excellent Performance on Safety & Execution 2013

#### **AWARDS**



Sabic BPA1 2014



World Demolition Awards 2015 Winner of Civils Demolition Award



DOW - Outstanding Safety Performance 2016





World Demolition Awards 2017 Shortlisted for the Industrial Demolition Award



World Demolition Awards 2017 Highly Commended



"WE WANT TO **DELIVER QUALITY ANYWHERE AND** ANYTIME"







# "OUR **CORNERSTONE**? WE ALL PULL TOGETHER AS A TEAM! EQUIPMENT CAN BE BOUGHT, BUT A GOOD TEAM HAS TO BE BUILT."