

ABI Gruppe



News

News for customers, employees and suppliers

ABI MOBILRAM TM 26
in Hamburg

ABI MOBILRAM TM 13
in Munich

Mega project
Fehmarnbelt tunnel

DELMAG RH 38
in Leverkusen

ABI Equipment Ltd
expands

Full displacement in Canada

Excavator mounted
attachments

RH 20 with VDW

A commemoration
of Alfred Heichel

and much more ...



20
23
December

Premiere for the TM 26 in Hamburg

The construction company Joachim Tiesler Hoch- und Tiefbau GmbH and Co. KG renewed a flood protection wall in the Port of Hamburg.

The traditional company operates primarily in northern Germany and celebrated the 75th anniversary of its foundation in 2022. Port and water engineering projects are among the company's core competencies. To be optimally equipped for these projects, Tiesler this year invested in a new ABI machine they purchased the ABI MOBILRAM TM 26 telescopic leader. The first TM 26 was presented at Bauma 2022 and subsequently went to the USA. The TM 26 had its European premiere in Hamburg Germany, where it was handed over and immediately put into use. The TM 26 MOBILRAM-System has a stroke of guiding carriage of 26.2m and is therefore currently the largest telescopic leader on the market.

The renewal of the flood protection wall in the southern part of the petroleum port is part of the major project for the western expansion of the Port of Hamburg. Tiesler used the TM 26 with an MRZV 30VV adjustable vibrator to install a total of 1,300t of steel sheet piles. AZ profiles AZ13-700, AZ26 and AZ42-700 in lengths between 8.90 and 19.20m were used for the sheet pile wall. The total length of the installed wall is 540m.

Christian Heck, M. Eng.,
construction manager at Joachim Tiesler:

“Our construction projects are becoming more and more technically demanding. We now often have to install sheet piling profiles of more than 22 metres in length, which pushes our previous machines to their limits. In order to be able to continue to react flexibly to such construction situations, we have decided to purchase a new TM 26. This means we are well equipped for the future. In fact, it is a unique selling point that sets us apart from other companies.”

A combi wall was also constructed during the project. This consists of HZ1080 MC bearing piles with a length of 19.80 metres and AZ26 infill piles with a length of 19.20 metres. An interlock profile was used to connect the bearing and infill piles. The combi wall was additionally secured with anchors and, following the pile driving work, a reinforced concrete flood protection wall up to a height of 4.80m was installed on the top,



Photo: Arrival of ABI MOBILRAM TM 26 in the Port of Hamburg

Project: Flood protection wall in Petroleum Port in Hamburg

Contractor: Joachim Tiesler GmbH und Co. KG from Elsfleth, Germany

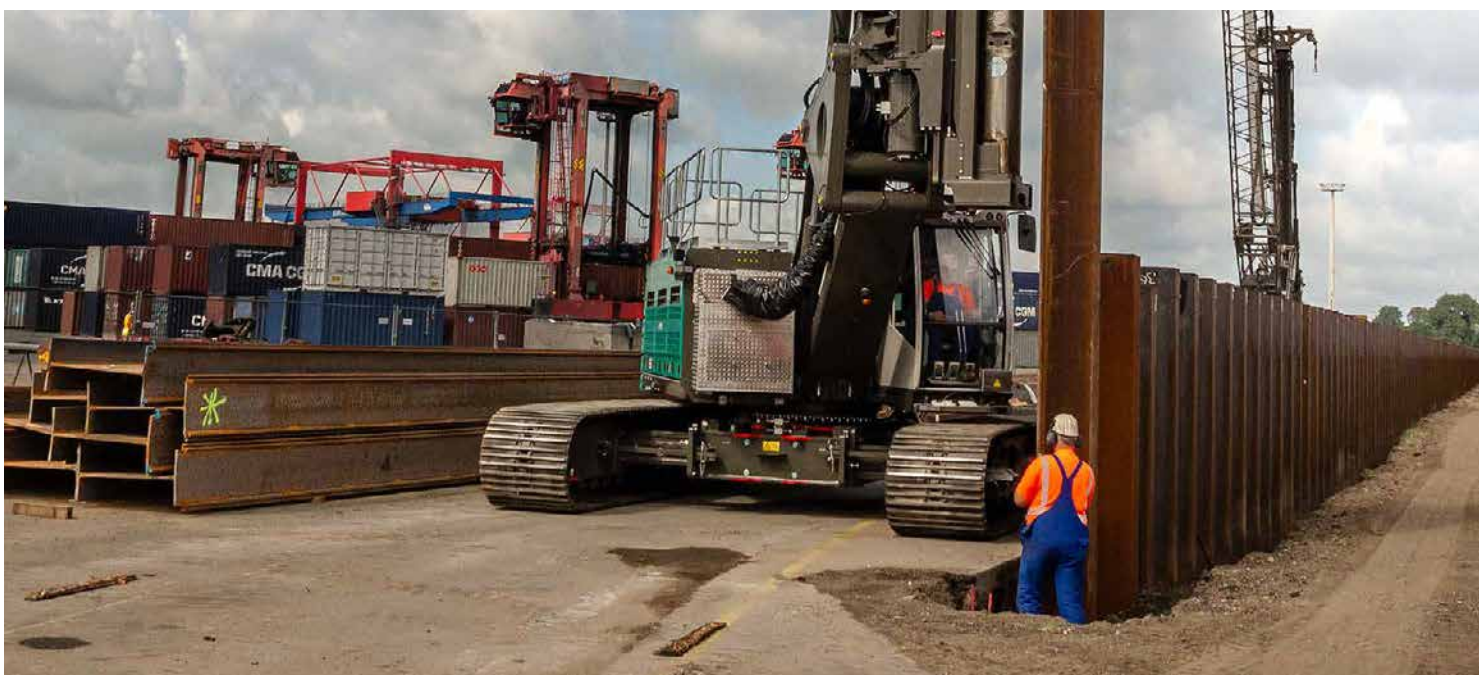
Maschinentechnik:
ABI MOBILRAM TM 26 with vibrator MRZV 30VV

Procedure:
Pile driving steel sheet pile and combi wall

Challenges:
heavy, long steel sheet piles and logistics

using approx. 130 m³ of concrete. The geology was typical for water construction sites and consisted mainly of gravel, sand and backfill.

The premiere was a success, with the new TM 26 proving its strengths above all when driving the combi wall. The piling progress exceeded expectations and the work was completed on schedule.



Photos: ABI MOBILRAM TM 26 with vibrator MRZV 30VV in the Port of Hamburg

With the TM 14/17 SL always on the move

Two construction sites - one machine: Hämmerle GmbH & Co. KG from Oggelshausen travel a lot with their TM 14/17 SL using their own low-loader.



Photos: ABI MOBILRAM TM 14/17 SL while working at the job site in Inzigkofen-Vilsingen (above)
Loading the machine for the transport to the next job site (below)

The Hämmerle construction company completed two different construction projects with its TM 14/17 SL, one in Inzigkofen-Vilsingen and the other in Viernheim. Frequently moving the machine between smaller job sites is a core part of Hämmerle's daily business.

In Inzigkofen-Vilsingen, preparations were made for a new pumping station. This required the construction of a watertight excavation pit, which was secured with a 280m² sheet pile wall. PU12 U-shaped sheet pile profiles in lengths between 7 and 8 metres were installed, these were easily driven into the cohesive and coarse-grained backfill and the underlying moraine



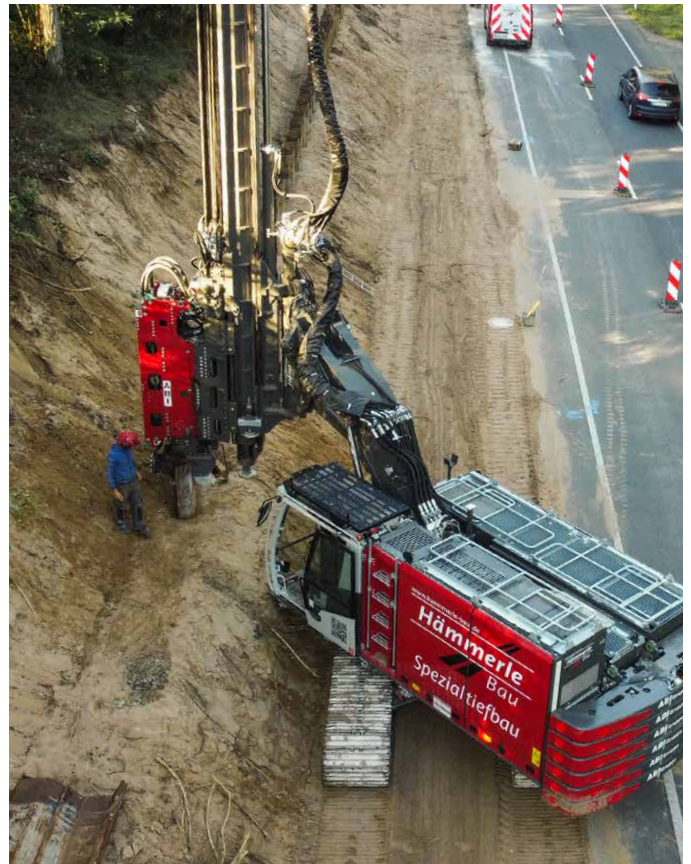
Stefan Kopp, Dipl.-Ing. (FH) , Calculation / Construction Manager special civil engineering at Hämmerle GmbH & Co. KG:

“Only by moving the pile driving machine with our own low-loader and pilot vehicle we can manage the frequent transports economically and with very little downtime.”

sand and stiff to semi-stiff silt using the MRZV 25VV vibrator. The work began on a Monday at 1 p.m. and was completed by 10 a.m. the next day. The machine was prepared for transport to the next job site in Viernheim on the Tuesday.

In Viernheim, 240 kilometres away, a temporary embankment protection was to be installed for the construction of a new cycle path. In the future, the new cycle route will connect the two towns of Viernheim and Hüttenfeld along the country road L311 and avoid previous detours via a nearby forest and foot-paths. A sheet pile wall made of PU12 U-shaped steel sheet piles in lengths between 5 and 6 metres was installed to support the embankment for the future retaining wall. Hämmerle installed 1500 m² of sheet piling in the fine sandy soil in just four days.

Good logistics is essential for small and frequently changing construction sites. The TM 14/17 SL is often moved 2 to 3 times a week. Hämmerle is ideally equipped for transport with its own low-loader and its own BF3 pilot vehicle. The machine can be transported either fully ballasted with the vibrator removed having a total transport weight of 86 tonnes or without vibrator and without counterweight ballast having a total transport weight of 70 tonnes. Both transport moves were done fully ballasted.



Photos: ABI MOBILRAM TM 14/17 SL with vibrator MRZV 25VV while pile driving at the job site in Viernheim (above and below)

With the TM 14/17 SL, Hämmerle replaced its older machine: the TM 13/16 SL. The upgrade in model brought considerable advantages. According to the machine operator's observation, an estimated fuel saving of up to 30% has been achieved on the construction sites thanks to the installed ABI Efficiency Drive. In addition, the new machine is equipped with a Docking-System so that the set-up process on site and the swapping between different attachments can be carried out more quickly and safely.



RH 38 at the 'Stelze' in Leverkusen

The specialist foundation engineering company MAST Grundbau GmbH installed foundation piles at the Leverkusen-West motorway junction using the Kelly drilling method.

The expansion of the A1 and A3 in Leverkusen is one of the largest and most challenging construction projects in North Rhine-Westphalia for the next decade. The section of the A1 from the Leverkusen-West motorway junction to just before the Leverkusen motorway junction is built on piles over an elevated length of approx. 900m on so called stilts.

The heavily congested motorway junction is being renovated due to damage, the bridge over the Rhine River is also being rebuilt. The first site Mast's DELMAG RH 38 worked on was located between the slip road from the A59 motorway to the A1 and on the A1 itself.

The RH 38 drilled through the Rhine terrace gravel and sandy silt into the deeper clay soil using the Kelly drilling method. The piles at an inclination of 10 degrees and a diameter of 1180mm were fully cased and drilled to a depth of 34m. The construction site was only a few hundred meters from the banks of the Rhine River and therefore the cased holes were mainly drilled out using a drill bucket.

The new RH 38 was ideal for the inclined foundation piles; its drilling performance impressed the entire drilling team.

Photos: DELMAG RH 38 on the job site at the motorway junction in Leverkusen-West while Kelly drilling (below and right)



Project: Foundation works
at the motorway junction
Leverkusen-West

Contractor: MAST Grundbau
GmbH from Langenfeld, Germany

Machinery:
DELMAG drill rig RH 38

Procedure:
Cased Kelly drilling

Geology:
Rhine terrace gravel, sandy silt to
clay soil in deeper layers



Fehmarnbelt Tunnel – a Project of Superlatives

Per Aarsleff A/S is installing steel sheet pile walls on the Danish side of a major tunnel project in Rødbyhavn.

An extensive infrastructure has been set up for the construction of the tunnel under the Fehmarnbelt between Denmark and Germany, as the total of 89 tunnel elements are being manufactured on site. The concrete factory and the associated working harbour alone cover an area of 150 hectares. In addition, there is a residential complex with over 1,300 housing units for the construction site employees. Per Aarsleff is a member of the Femern Link Contractors (FLC) construction consortium and is responsible for the construction of the 18km long tunnel, the tunnel portals on both sides, as well as for the factory and residential complex.

Per Aarsleff used several ABI machines to install the steel sheet piles in the area of the concrete factory construction site. A TM 11/14 SL, a TM 17 and a TM 22 were on site. With the latest addition to the machine fleet, the TM 22 carried out the majority of the work. In order to ensure the stability of the dykes between the individual docks, around 14,000m² of sheet piling was installed as flow protection in difficult soil conditions.

AZ25-800 profiles were used to ensure the fastest possible construction progress. The MZK 1500 double clamp assembly was attached to an MRZV 30VV vibrator to install the wide profiles in challenging

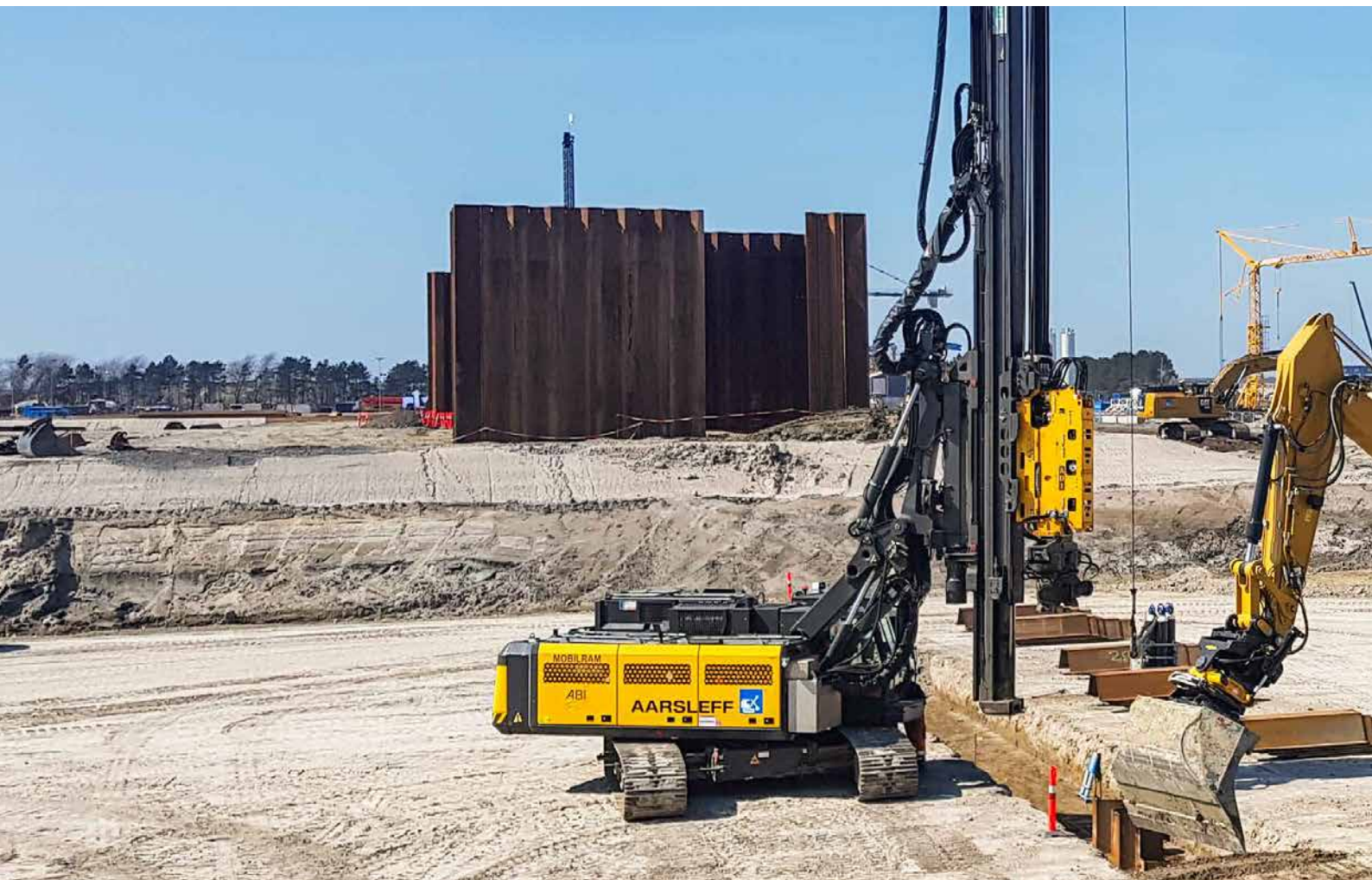


Photo: ABI MOBILRAM TM 17 with vibrator MRZV 25VV and combi clamp assembly MZK 1500 while pile driving at the job site Fehmarnbelt tunnel

ground. Over the total distance of approx. 2.4km, the ground conditions varied between marine sands and boulder clay with a shear strength of between 300 and 500kN/m².

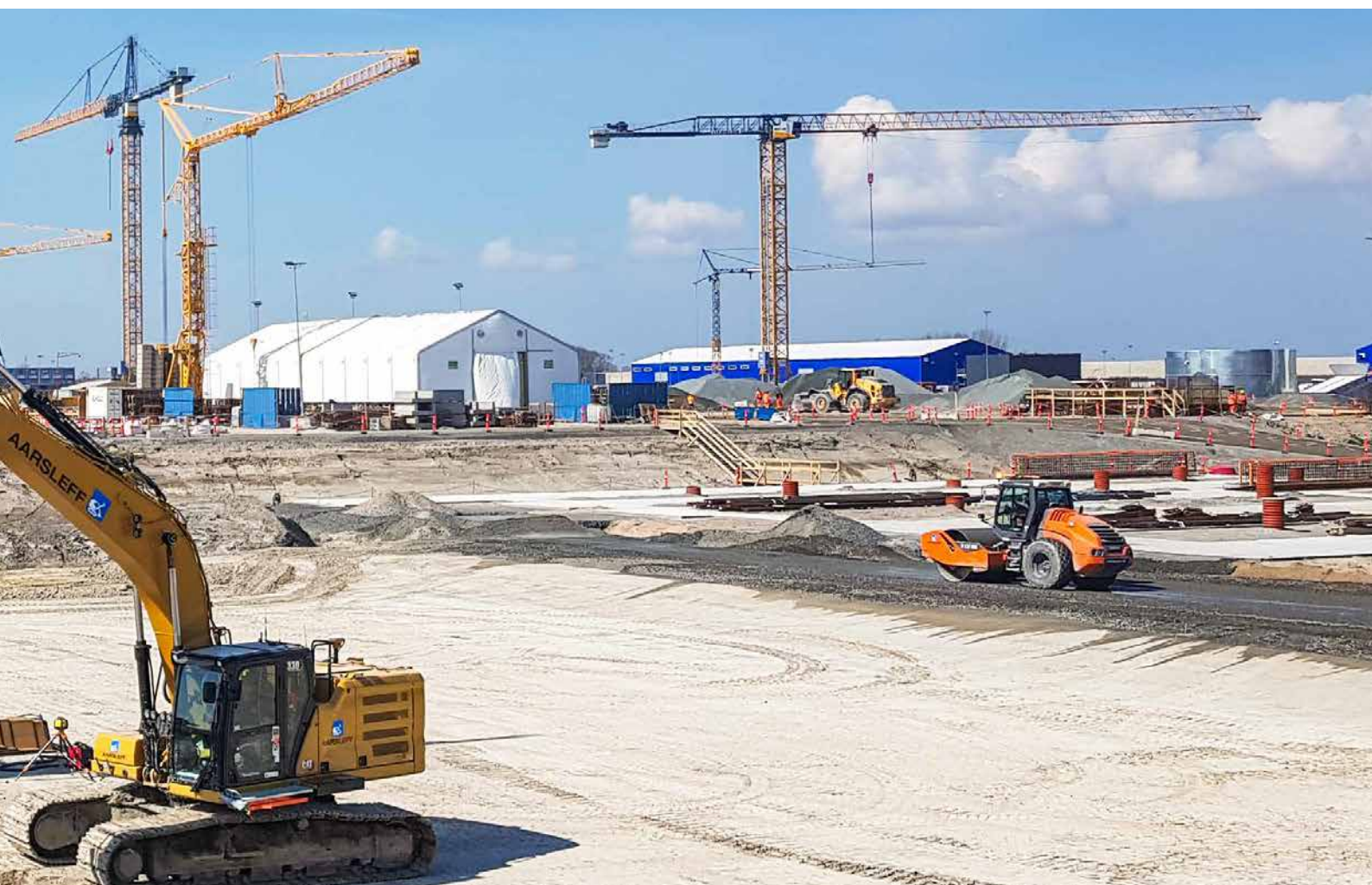
This combination enabled the construction to progress rapidly, not least thanks to a number of optional installed adjustments on the machine. The optional features were planned during the ordering phase of the rig in collaboration with the machine operators, Per Aarsleff's technicians and ABI.

Another measure was the securing of the future dock doors. Despite the very hard boulder clay with a shear strength of between 700 and 1,400 kN/m², which is located at a depth of approximately 8 metres below the sea level, the MRZV 30VV vibrator and the TM 22 were able to successfully install the AZ24-700 steel sheet piles with lengths between 5 and 6m in the base of the future dock gates. For the steel sheet pile wall as a securement for the dock doors the profiles

Christoph Valentin Olsen,
Technical Manager at Per Aarsleff A/S:

“Logistically, a very complex construction site with a very tight schedule, coupled with many players working in the same areas. This required frequent setup and relocation of the machine between the individual construction phases. The very short set-up times of the TM 22 were a huge advantage here.”

had to be connected to existing steel sheet pile wall and also fitted with several corner constructions. The leader mast slewing function was particularly advantageous in the confined space conditions.





Project: Fehmarnbelt Tunnel in Rødbyhavn

Contractor: Per Aarsleff A/S, Denmark

Machinery:

ABI MOBILRAM TM 11/14 SL with vibrator MRZV 17VV
ABI MOBILRAM TM 17 with vibrator MRZV 25VV
ABI MOBILRAM TM 22 with vibrator MRZV 30VV
combi clamp assembly MZK 1500

Procedure:

Pile driving for installation of steel sheet pile walls

Challenges:

Geology, Shape of the steel sheet pile wall and logistics

Photo: ABI MOBILRAM TM 22 with vibrator MRZV 30VV while pile driving at the job site in Fehmarnbelt-Tunnel

ABI Equipment Ltd on expansion course

Our subsidiary company ABI Equipment Ltd in Great Britain is experiencing significant expansion.

This year they have supported their customers in many prestigious construction projects, with their hire fleet equipment making significant contributions to infrastructure projects, including highways, rail track work, power plants and flood protection systems.

Earlier in 2023, for example, ABI Equipment's rental fleet was increased to include two additional new DELMAG drill rigs, an RH 38 and an RH 44, which have been working on the UK's major high speed rail project since arrival. The new DELMAG RH 38 has a rear folding mast with a clever mechanism to reduce transport length. Mobilisation and demobilisation times are exceptionally quick and efficient with ABI's unique Docking-System speeding up the installation time for its powerful BT 380 "silent" rotary head. The DELMAG RH 44 is a beast of a machine and is equipped with a powerful 563kW, EU Stage V engine and a BT 440 rotary head which delivers 440 kNm of torque.



What is most striking is the sheer variety of applications that have been undertaken in the UK utilising ABI Group equipment and products. Read on to discover some recent examples of this.

Photos: Hire fleet of ABI Equipment Ltd in Northampton (above), DELMAG drill rig RH 44 with rotary head and cat walk after arrival in Great Britain (left).

Installation of Plastic Sheet Piles

RJ McLeod Contractors Ltd have used ABI MOBILRAMs on two construction projects in the Scottish Highlands that required specialist plastic sheet piling.

An ABI TM14/17VSL MOBILRAM was used to install PVC sheet piling for the harbour development at Fort William, whilst an ABI TM13 was later used for flood prevention work at Coal and Lochyside.

Plastic sheet piles are made from recycled PVC and offer various advantages in certain applications. The rust-free material ensures good durability, especially on construction sites where water contact might be an issue. Flood protection, bank protection and other maritime structures are just a few examples of the diverse possibilities for use. They offer a low weight per metre of pile which greatly simplifies handling and reduces transport costs and associated CO₂ generation.

On the site of the first project an ABI TM 14/17 VSL MOBILRAM was used to install the 4m long plastic sheets utilising a steel mandrel to protect and support the plastic during installation. The pile line was 1000 linear metres and was pre-augered prior to pile installation to reduce ground resistance and deal with any potential obstructions. The rig achieved a daily installation rate of approximately 23 linear metres. The machine utilised a combination of ABI Efficiency Drive System and the latest low-emission engine to significantly reduce fuel consumption and both exhaust and noise emissions, thereby helping to protect the beautiful local environment.

After successful completion of the first section of work, RJ McLeod then opted to use the more compact ABI TM 13 MOBILRAM from ABI Equipment for their second section of work in more confined spaces. Here the 2020 linear metres of sheet pile wall consisted of individual piles varying in length from 2.5m to 4.0m. The ground conditions were mostly sands and gravels together with some obstructions which made it difficult to install the plastic piles without damage. To address this risk the pile line was once again pre-augered ahead of pile installation and the supporting steel mandrel utilised as with the earlier stage of works. The TM 13 proved to be an excellent machine for undertaking this work.



Photos: Finished measures for the harbour development at Fort William (above), Driven-in plastic sheet pile wall (below)



The flood prevention work was commissioned by The Highland Council following floods in 2005 which damaged 20 homes and the local sewerage works. The 2005 flood was caused by a large tidal surge in Loch Linnhe.



Stephen Moore, Site civil engineer
RJ McLeod (Contractors) Ltd

“We were extremely pleased with the way in which both the TM 14/17 VSL and the TM 13 MOBILRAMs handled the installation of the plastic sheet piling. The use of plastic sheets was a first and we learnt a huge amount about the handling of the piles during both projects.

The team at ABI provided us with excellent support throughout the projects and we’re indebted to them for the expertise and knowledge they were able to share with us.”

Photo: ABI MOBILRAM TM 13 while pile driving plastic sheet piles on the flood protection project at Caol and Lochside

Flood protection in Avonmouth on the River Severn Estuary



BAM Nuttall Limited relied on efficient pile installation using the ABI MOBILRAM TM 20, equipped with the very latest ABI MRZV 36VV vibrator, for the flood protection project along the River Severn Estuary near Bristol in South West England. The rig's combination of power, pile handling length, reach, VV hammer technology together with the overall operational efficiency and low emissions offered by the EU Stage V engine and Efficiency Drive system made for a compelling rig choice for this important project. Fuel efficiency was exceptional on this high production rate project with the rig only requiring to be refuelled every four to five days.

The AZ36-700 double sheet piles were used in lengths of up to 14.5 meters. The soil conditions were varied and included mudstone, sandstone and a mixture of limestone, shale, and clay. The VV technology with variable static moment and variable hydraulic displacement proved to be very advantageous for the diverse and constantly changing ground conditions.

Photos: ABI MOBILRAM TM 20 with vibrator MRZV 36VV at the job site in Avonmouth while driving z-shaped profiles (left and below)



Adrian MacDonald,
Works Manager at BAM Nuttall:

"The team at ABI have been a great support to us during this project. We found the new TM 20 to be a very powerful but precise machine with incredible fuel efficiency. We made excellent progress with our piling work.

We have also been impressed with the power of the MRZV 36VV vibrator and in particular the ability to vary both the amplitude and frequency of pile vibration during installation. This helped us to deal with critical ground vibration limits in key areas and to also adjust vibration characteristics to best suit the changing ground conditions.

The project was not without its challenges, and the discovery of a section of ground with hidden obstructions required us to think on our feet. The DELMAG RH 28 was more than up to the job of removing them."



Photo: DELMAG drill rig RH 28 removing obstructions at the job site in Avonmouth

The construction project was monitored using vibration sensors on important surrounding structures. The ability to adjust the vibrator's amplitude of vibration and frequency 'on the fly' during the pile installation process, meant that all criteria regarding vibration could be complied with.

During the piling works, the team encountered significant obstructions in the ground at a depth beyond the reach of an exca-



vator. This greatly hindered the sheet piling process, so a decision was made to hire in a second machine from ABI Equipment to deal with this. A DELMAG RH 28 drill rig was deployed to remove these obstructions. A guide frame was utilised at ground level so as to ensure precise positioning for the drilling work. The drill rig carried out core drilling work along a 500m section of the pile wall. Obstructions were found to include steel

reinforced concrete sections at depths between 8 and 10 meters. After this drilling work was completed the ABI TM 20 was able to continue installing the sheet pile wall without further hindrance. It was a successful and impressive example of the interaction of modern technology using state of the art solutions to overcome challenging ground conditions.

Core drilling with DELMAG RH 34 in Cambridge

Dawson-WAM utilised the impressive DELMAG RH 34 drill rig on a construction site in Cambridge, East Anglia. The RH 34 was used to remove previously installed reinforced concrete piles and then install dewatering shafts. The drilling work took place near sensitive neighbouring properties at a busy location in the historic city centre of Cambridge, which is also of great archaeological interest.

The removal of the previously installed piles and the installation of new drainage shafts was necessary to be able to install foundations for a new 3-story underground car park and hotel. Dawson-WAM also utilised their own equipment to install 226 linear metres of perimeter secant wall at a diameter of 750mm in hard ground conditions to a depth of 17.5m.

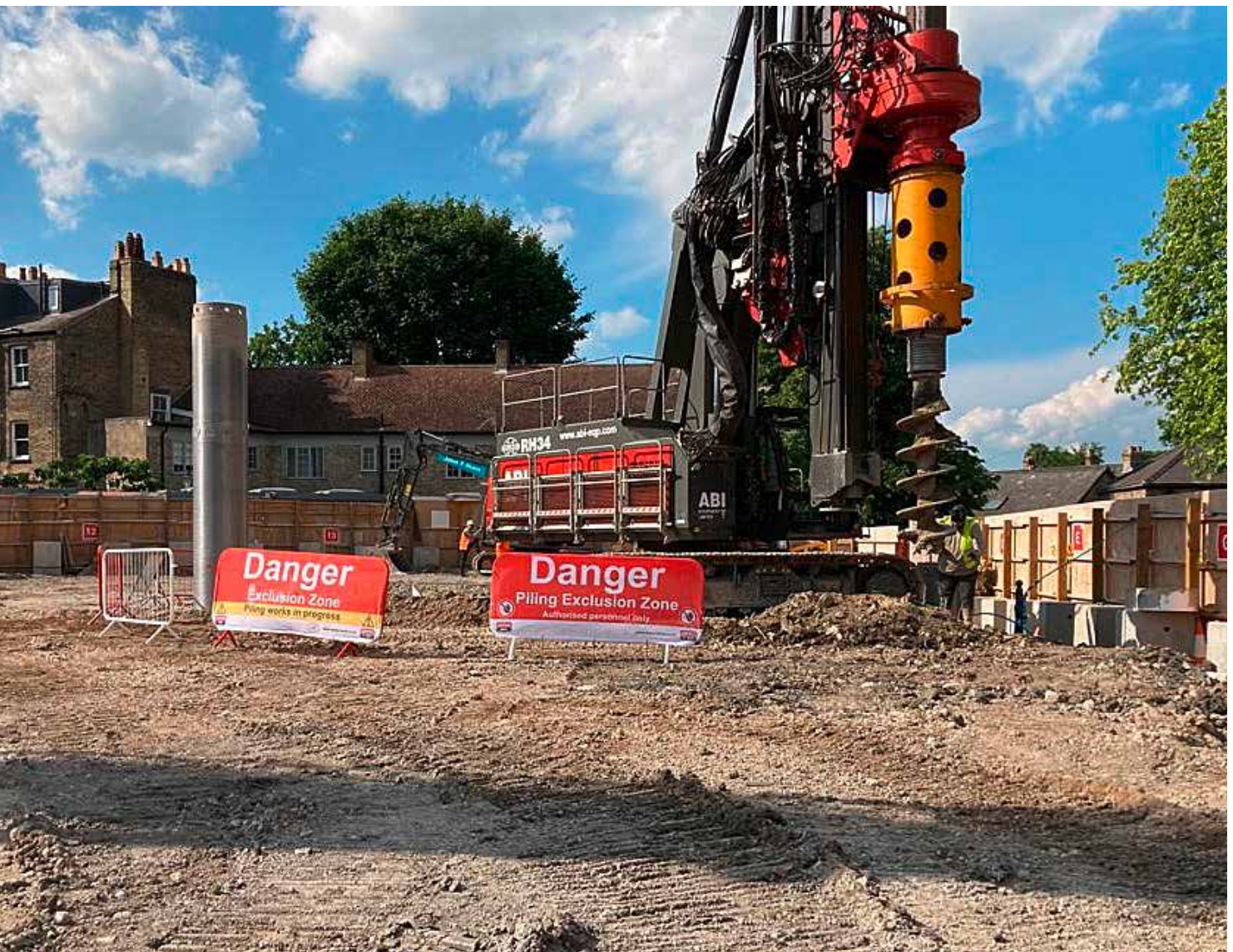


Photo: DELMAG drill rig RH 34 while Kelly drilling at the job site in Cambridge

DELMAG Drill Rig RH 34 - the Rig of Choice for Marine Works



Photo: DELMAG drill rig RH 34 with Kelly bar guiding on a jack-up barge in port of Liverpool

ABI Equipment Ltd has become a trusted partner for maritime foundation works. Such projects often require a rig that has more reach and clearance in front of the mast because it is working from a jack-up barge. Due to its power, high torque, reach, stability, durability and overall machine weight, the DELMAG RH 34 has become the rig of choice for this type of work. In many instances the rig is fitted with a drill axis offset kit, which is also available from the ABI UK hire fleet.

Construction company Wedo Marine used a DELMAG RH 34 drill rig for the installation of Ø 2400mm large diameter mono piles at the new Liverpool Ferry Port terminal. The new terminal will be used to accommodate ferries travelling between Liverpool and the Isle of Man.

A DELMAG RH 34 drill rig was used by BAM Nuttall on site at Pembroke Dock. The project involved upgrading key elements of the port's infrastructure and included the construction of new slipways and pontoons to give access to the new floating offshore wind farm planned for Celtic Sea.

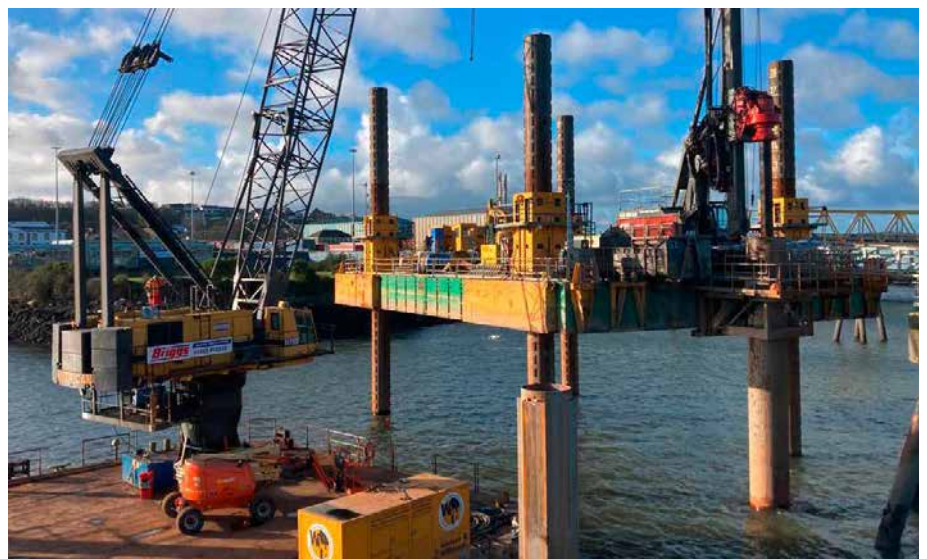


Photo: DELMAG drill rig RH 34 on jack-up barge in Pembroke Dock

The DELMAG RH 34 was fitted with a drill axis extension kit to increase reach and clearance in front of the leader mast. The rig carried out the piling work from a jack-up barge.

Adrian MacDonald,
Works Manager at BAM
Nuttall:

“The marine environment is always challenging to work in given the vagaries of the British weather and tides, however the rig with ABI’s operator at the controls performed impeccably.

Drilling conditions were difficult with the limestone having UCS values in places exceeding 120 MPa. However, with the combination of our temporary works design and the sturdy, powerful DELMAG RH 34 and tooling package provided by ABI Equipment we were able to accurately place each pontoon pile to its required depth and comfortably within permitted tolerances.”

Rapid Impact Compaction with TM 13/16 SL and Diesel Pile Hammer

ABI MOBILRAMs are exceptionally versatile machines. For many customers a MOBILRAM is the first choice of rig for sheet piling work, but that is not all that they're able to do. When combined with a diesel pile hammer for example they are able to carry out other procedures such as Rapid Impact Compaction (RIC). The MOBILRAM was coupled with a DELMAG 19-52 diesel pile hammer which is ideal for this type of work as it is extremely robust and easy to use. The compaction foot with a diameter of 1500mm was designed and developed by ABI Equipment Ltd and has been used on numerous similar RIC projects around the UK in the recent past.

ZTL Contracting used an ABI MOBILRAM TM13/16 SL to undertake RIC work on a site in Knottingley during the first half of 2023. It proved to be the ideal machine for the task, achieving or exceeding the required levels of compaction. They also found the rig to be highly productive, efficient, and maneuverable, with several compaction locations able to be reached from one standing position at any one time. This site required 8000 No individual compaction "dimples" to be formed and the equipment averaged around 180 No per day.



Photo: ABI MOBILRAM TM 13/16 SL with DELMAG diesel pile hammer D19-52 and compaction foot

Rapid Impact Compaction is a ground improvement technique that is used on reclaimed or disturbed ground. A series of controlled dynamic blows are made across the site on a regular grid pattern in order to densify the ground. The blows are made from a low height, at a fast rate, using a heavy piston hammer for maximum effect. The compaction foot is typically penetrating the ground by 300/400mm to form treated "dimples" in the ground.

Wayne Morris, Commercial Director at ZTL Contracting :

"Using the ABI MOBILRAM TM 13/16 SL on our recent project in Knottingley has been a game-changer for us. The machine's exceptional performance, coupled with the reliability of the DELMAG 19-52 diesel pile hammer, allowed us to achieve and surpass the required levels of compaction effortlessly. ABI Equipment Ltd has provided top-notch service throughout."

TM 20 LR on the St. Louis River

Northland Constructors of Duluth, Inc. relies on the precision and long reach of the ABI MOBILRAM TM 20 LR (Long Reach) for sheet pile work on the St. Louis River.

Northland has been operating primarily in the states of Minnesota and Wisconsin for over 50 years. Over the years, the company has grown into a team of over 200 dedicated employees committed to building stronger and more connected communities in the region.

Northland hired a TM 20 LR from ABI sales and service partner Hammer & Steel for a project to relocate a transshipment point for the C. Reiss company. C. Reiss currently operates a transshipment terminal on the Duluth side of the St. Louis River. Due to rising water levels resulting in annual flooding at their current facility, the company is seeking to relocate over to Superior to an existing dock. The project costs which amount to approximately 22 million dollars, includes the repair and replacement of 770 linear

meters (2525ft) of quay wall, as well as the levelling of certain areas, plus a new maintenance building. C. Reiss handles over two million tons of bulk goods annually at a total of four dock locations, goods in-

Charlie Bell, Project Engineer
Northland:

"We were delighted at the prospect of being able to perform this work without requiring the use of a template. We are thrilled to see that we are also able to double our production rate. Overall, this machine is safer, requires less manpower, and allows us to perform the work in less time."



Photo: ABI MOBILRAM TM 20 LR with Vibrator MRZV 30VV on the St. Louis River, USA

clude coal, limestone and petroleum coke and salt. Of those two million tons, 650,000 tons are shipped from Duluth.

The Northland team used the TM 20 LR to install a 770m (2525ft) long sheet pile wall consisting of NZ-22 profiles with lengths of almost 16m (52ft). To ensure a longer service life, the upper 5m (17ft) of the profiles surface were treated with a special coating.

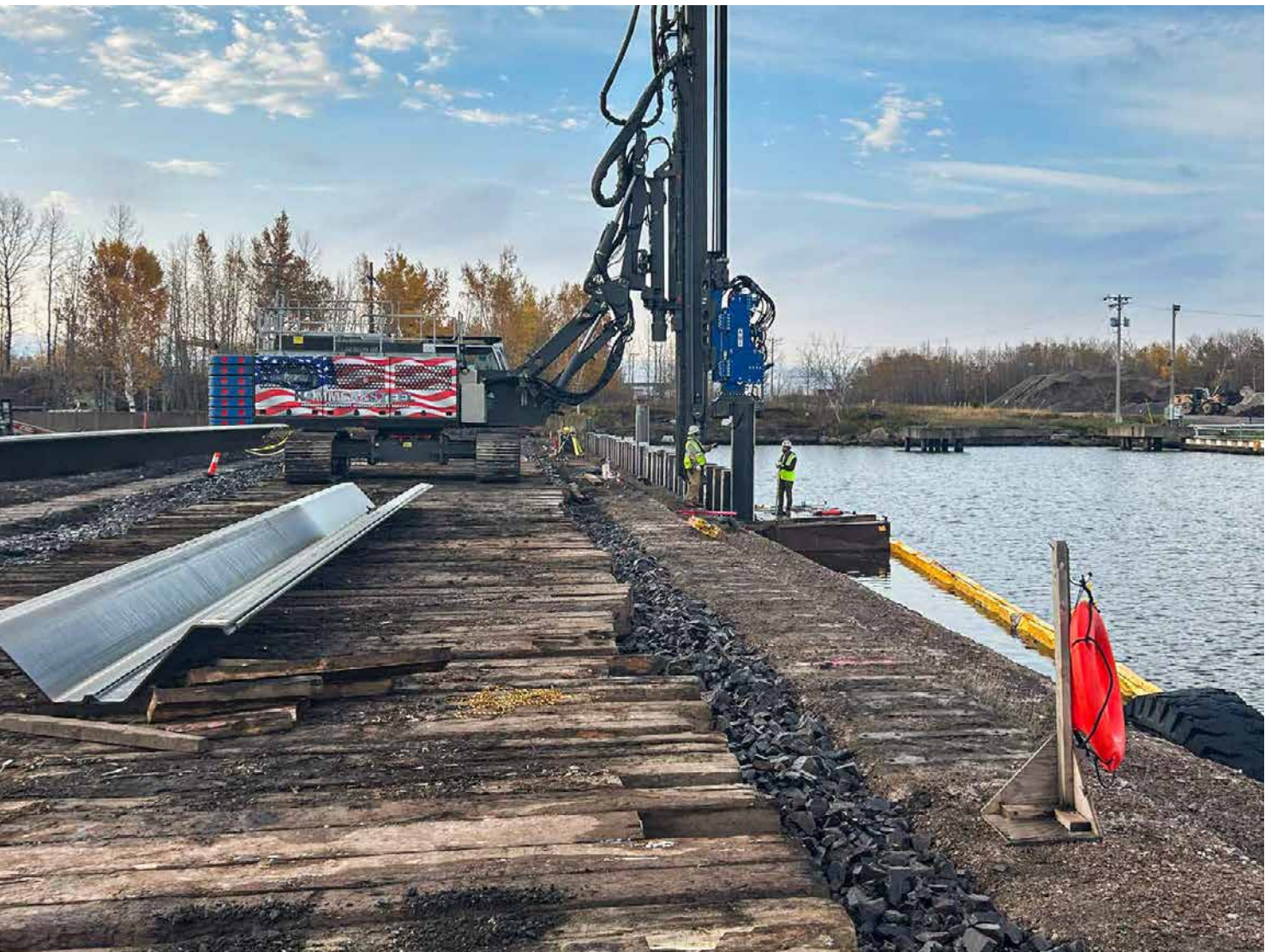
When selecting the machine, it was important that the piling work could be carried out without the requirement of any template. The TM 20 LR offers precise positioning and control of the leader with a significantly increased reach. This allows the machine to be moved stably at a safe distance from the pile driving axis. The sheet piling could be controlled, checked and installed using a laser and a straight line, reducing the time and cost of the project.

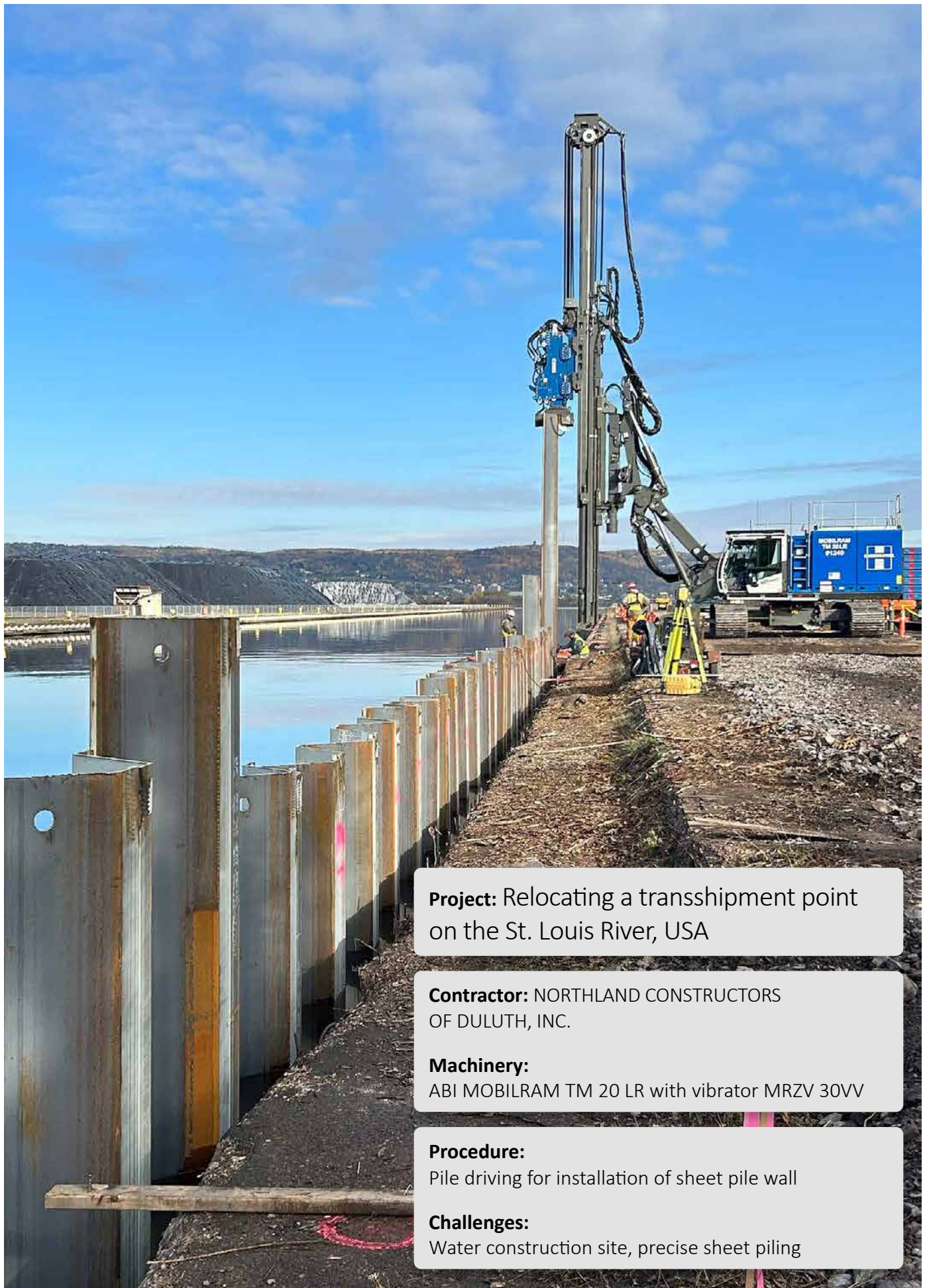
Trey Drougas, operator Northland:

"The ABI TM 20 LR is a very technical machine with lots of great features and capabilities as opposed to installing sheet piling the traditional way. The self-auto alignment is a great feature for operator and crew."

Northland Constructors construction manager Don Renne highlighted the excellent collaboration with Todd Maxa from Hammer & Steel, who made the perfect choice for this project with the TM 20 LR.

*Photos: ABI MOBILRAM TM 20 LR with a special film wrapping on the right side of the machine (below)
Pile driving works on the quay wall in Duluth (right)*





Project: Relocating a transshipment point on the St. Louis River, USA

Contractor: NORTHLAND CONSTRUCTORS OF DULUTH, INC.

Machinery: ABI MOBILRAM TM 20 LR with vibrator MRZV 30VV

Procedure: Pile driving for installation of sheet pile wall

Challenges: Water construction site, precise sheet piling

ABI MOBILRAM TM 13 in Munich

Osterried Tiefbau und Abbruch GmbH from Freienried carried out special civil engineering works on the construction site of the new development centre for the MTU Aero Engine AG.

On the construction site in Munich-Allach, Osterried was commissioned to carry out various works, such as the construction of watertight sheet pile boxes, well drilling and soil compaction.

The level of construction site was approximately one metre below groundwater level. As a dewatering measure, Osterried installed 13 dewatering wells with a total capacity of up to 180 litres per

second. For the first step, the ABI MOBILRAM TM 13 was equipped with a MRZV 16VV vibrator and a casing with a diameter of 1000mm and a length of 6 metres to install the wells. The Docking-System D6 came into action to change the attachment and the soil material in the casing was removed using the MDBA 7000-2 auger drive. After cleaning the casing, the well pipe was set, filled with filter gravel and the casing was pulled out again.

The MRZV 16VV was also used to produce the three watertight sheet pile boxes. The profiles used were up to 8 metres long. In total approx. 1000m² steel sheet piles were installed. The bottom of the boxes was sealed with underwater concrete.

The soil compaction measures were completed in two days and took place in an area where there had previously been a sewer.

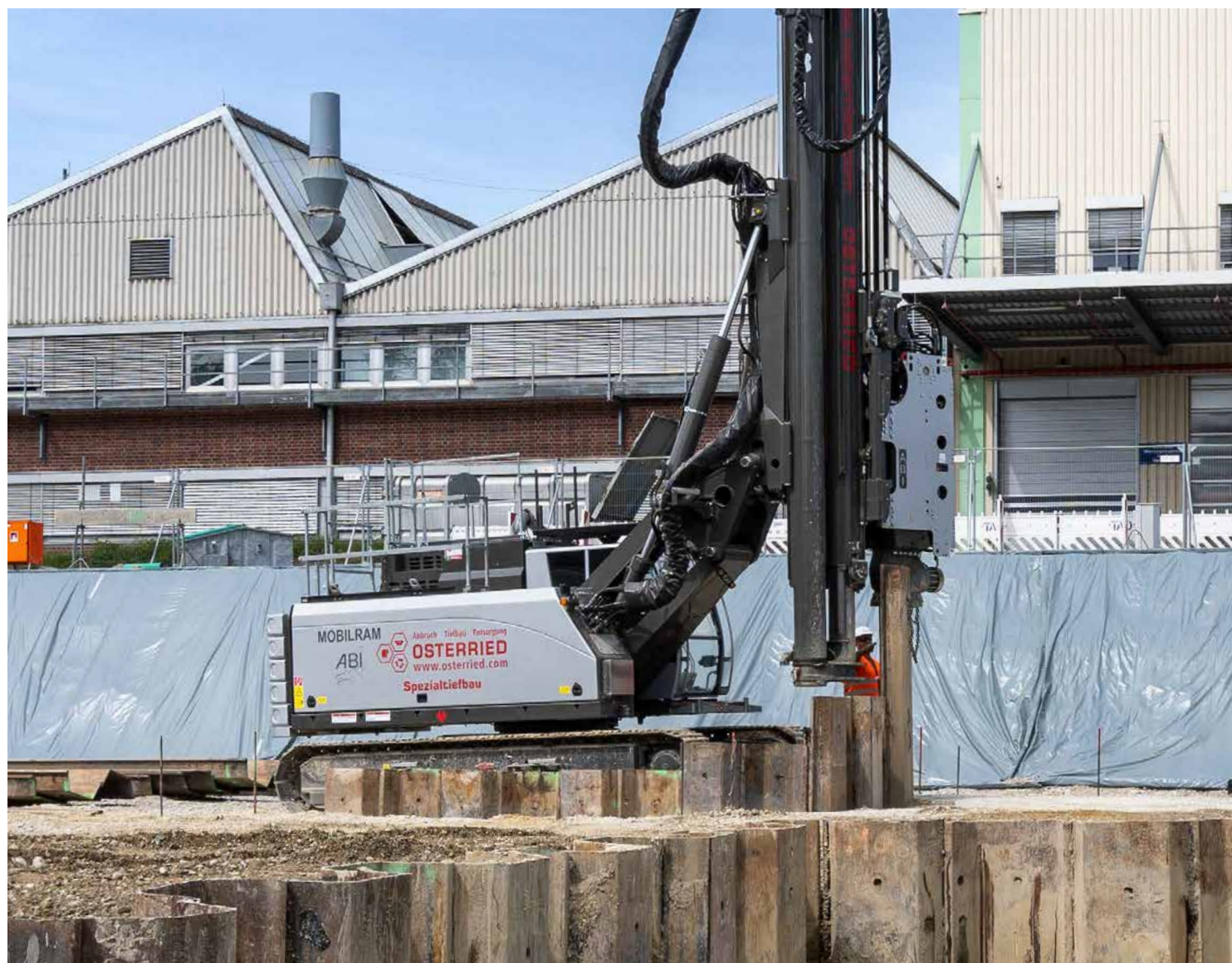


Osterried equipped the TM 13 with a vibrator and a probe to compact the loose backfill in this area.

The construction site was tailor-made for this small and manoeuvrable machine. Thanks to the Docking-System, works that required frequent changes of attachments could be carried out very efficiently without long setup times.



Photos: ABI MOBILRAM TM 13 with vibrator MRZV 16VV while pile driving at the job site in Munich





Project: New development centre
MTU Aero Engines AG in Munich

Contractor: Osterried Tiefbau und Abbruch GmbH
from Freienried, Germany

Machinery:
ABI MOBILRAM TM 13 with vibrator MRZV 16VV

Procedure:
Installation of dewatering wells using pile driving and drilling methods
Installation of sheet pile boxes with vibrator
Soil improvement measures with vibrator

Challenges:
Dewatering, frequent repositioning of the machine
with frequent changes of the procedure

Photo: ABI MOBILRAM TM 13 with vibrator MRZV 16VV while driving U-shaped steel sheet piles

Industrial Culture in the Centre of Munich

Gebrüder Huber Spezialtiefbau GmbH undertakes foundation work for the conversion of historic industrial halls in the centre of Munich.



Photo: Template for a secant pile wall

Industrial history is experiencing a new lease of life in the centre of the Bavarian metropolis of Munich. Two listed industrial halls, the 'Jutierhalle' and the 'Tonnenhalle', are currently being transformed into new cultural hotspots by extensive rebuilding works. The ambitious project promises not only to preserve the architectural heritage, but also to create spaces for cultural diversity and social encounters.

Gebrüder Huber is involved in this project with various works. One of the most important steps for the further course of the project was the construction of a secant pile wall using the VDW procedure. The RH 20 drill rig was used to install over 170 piles with a diameter of 610mm and lengths between 6 and

12 metres. A reinforcement cage was inserted into every fourth pile after the concreting process.

VDW stands for 'in front of the wall' and the drilling method is mainly used for the construction of single piles and secant pile walls. The special features of this method are it can be drilled very close to existing structures and the drilling and concreting process are carried out in one go. While drilling down, the soil material is conveyed upwards in the casing in a protected manner. During extraction, the bore hole is filled with concrete. The process is extremely low-noise and low-vibration. These properties are particularly advantageous in urban areas.

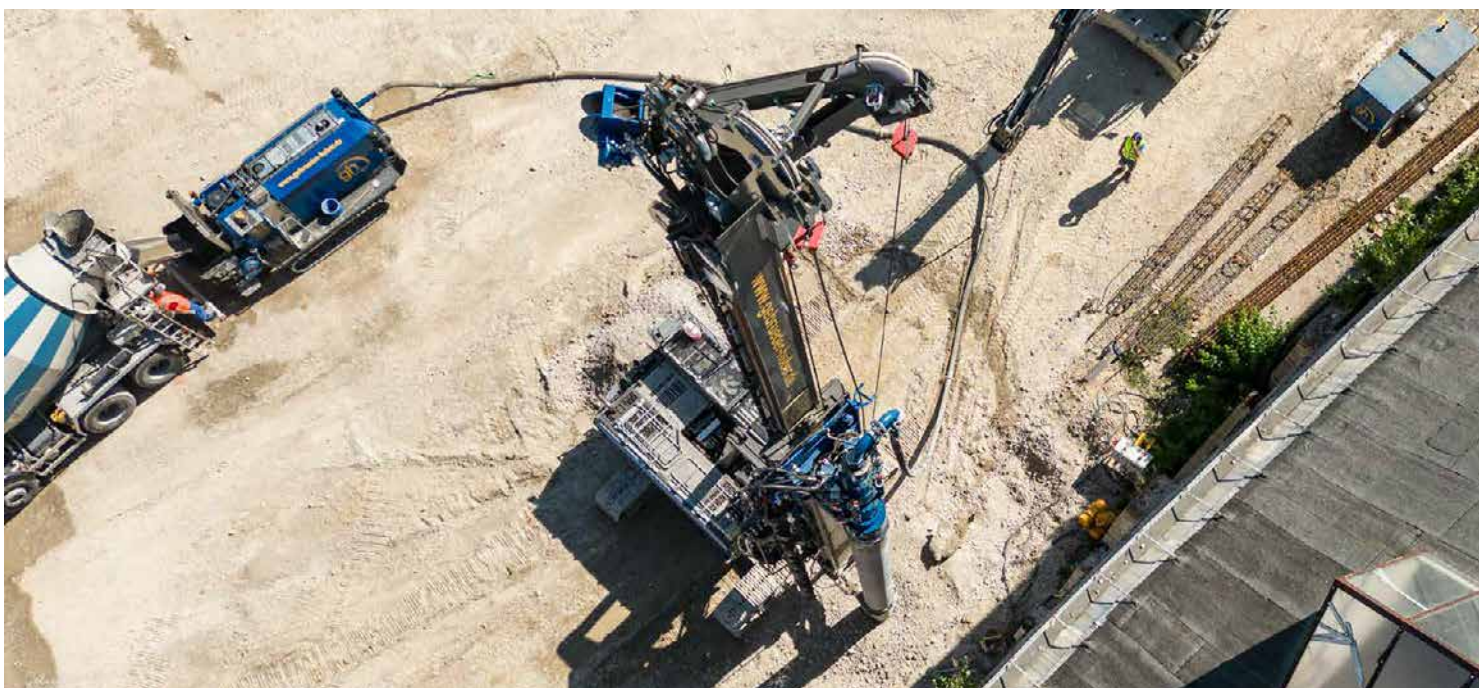


Photo: DELMAG drill rig RH 20 with VDW double auger head system while drilling a secant pile wall



Project: Creative quarter 'Jutier- und Tonnenhalle' in Munich

Contractor:
Gebr. Huber Spezialtiefbau GmbH
from Dietramszell-Ascholding, Germany

Machinery:
DELMAG Drill rig RH 20
with VDW double auger head system

Procedure:
VDW drilling

Challenges:
adjacent to historic building structures,
inner-city construction site

Photo: DELMAG drill rig RH 20 with VDW VDW double auger head system while installing secant pile wall

Installation of Full Displacement Piles in Canada

PRECO-MSE installed thousands of full displacement piles for an industrial project in Coteau du Lac.

The industrial area in Coteau du Lac is being expanded to the north. PRECO-MSE supported the project from start to finish. Extensive ground improvement measures had to be carried out before the actual construction of the industrial hall. PRECO-MSE used an ABI MOBILRAM TM 20 and a DELMAG RH 34 drill rig to install full displacement piles in various ground conditions.

Unlike a standard machine, the TM 20 is mounted on a smaller SR 30 carrier and has an output of 340kW. The machine was equipped with a winter package for use in the harsh climatic conditions in Canada, as well as numerous other options, such as the clamping and breaking device and down-the-hole hammer attachment kits.

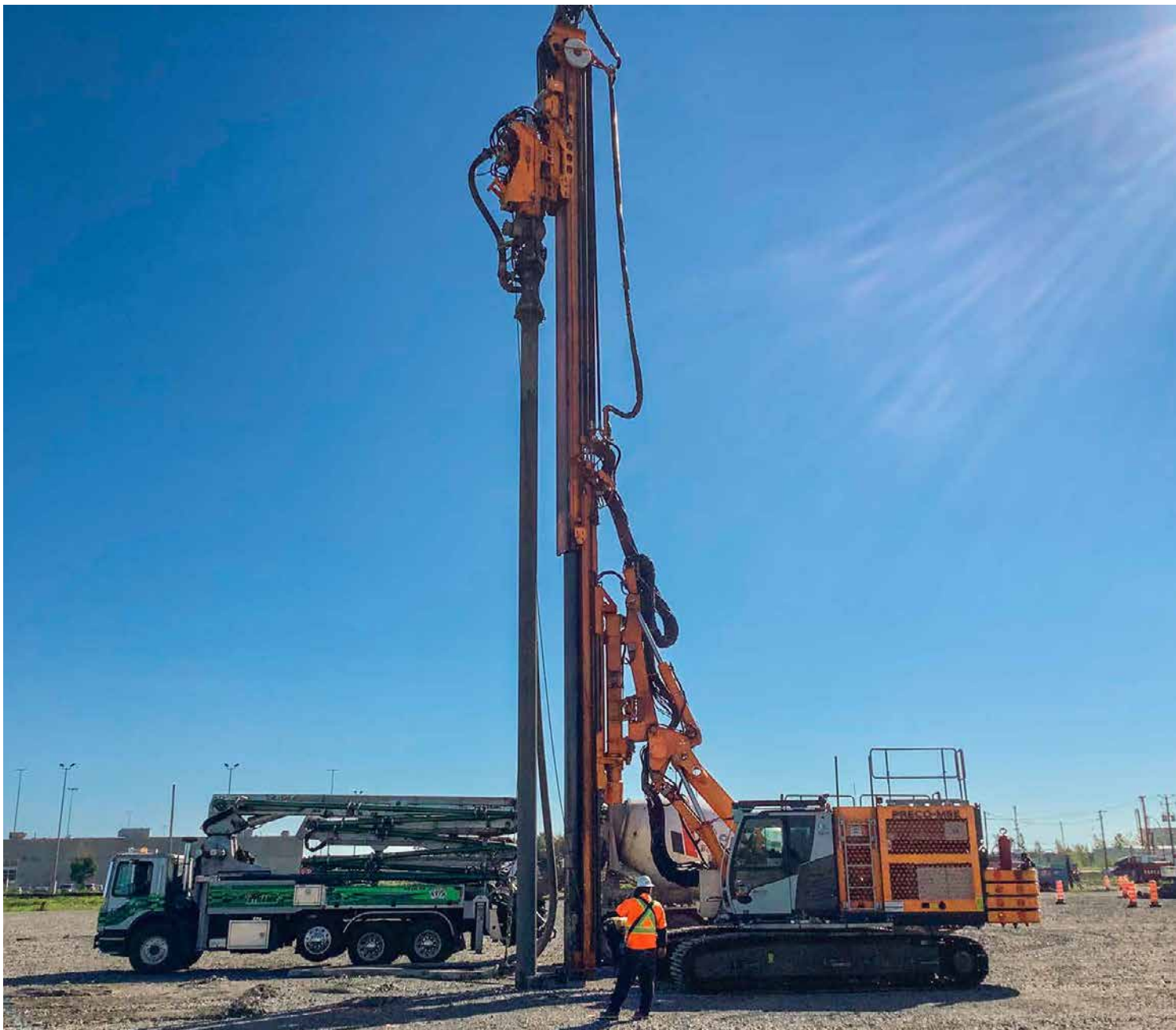


Photo: ABI MOBILRAM TM 20 with vibrator MRZV 20VV



*Photos: DELMAG drill rig
RH 34 with rotary head and
Kelly extension (left)*

*Full displacement job site at
Coteau du Lac (below)*

Project: Building D in Coteau du Lac,
Canada

Contractor:
PRECO-MSE from Vaudreuil-Dorion, Québec

Machinery:
DELMAG drill rig RH 34 with Kelly extension
ABI MOBILRAM TM 20 with vibrator
MRZV 20VV

Procedure:
Drilling and driving full displacement piles

Challenges:
variable Geology, big depth, tight time frame



On the construction site, the TM 20 was used in areas where a shallower depth was required, driving full displacement piles with a diameter of 356mm (14 inches). The MRZV 20VV vibrator easily brought these to the required depth of over 15 meters (50 feet).

The DELMAG drill rig RH 34 was additionally equipped with a 7.5m Kelly extension to reach the specified depths of up to 22m (72 feet). The diameters of the full displacement piles were 320mm (12.5 inches) and 356mm (14 inches). After the drilling tool was inserted at depth, the concreting process followed during the pulling process. Together, the two machines installed 6300 piles in total.

Caroline Théorêt, General Manager
PRECO-MSE

"We would like to thank ABI who contributed in every way to the success of this project, which was completed ahead of schedule. Day after day, we witnessed the robustness and efficiency of this equipment, which can easily drill 320mm and 356mm holes. The installation of the extensions and mandrel was essential to achieve the required depths on this site. We were able to carry out operations without encountering any problems, breakdowns, or interruptions on site."



TM 20 on a railway project in Norway

Hercules Fundamentering is participating in a complex infrastructure project for the Norwegian Railways.

Since September 2021, Hercules has been carrying out a variety of foundation work on the railway line from Drammen station to Sundhaugen, which is a central part of the Vestfold Railway. This includes work on and around Drammen train station, on a river promenade, a pedestrian tunnel and on parts of the new city bridge over the rail track area.

The project client for the route extension from Drammen to Sundhaugen is Bane NOR. The government agency is responsible for the operation and expansion of the Norwegian railway network, including stations and infrastructure facilities. For the NCC group, to which Hercules is a part, this is one of its most complex infrastructure projects ever.

The ABI MOBILRAM TM 20 was initially used to install part of the 6100m² of sheet piling for the culvert construction at the level crossing between Sørlandsbanen and Vestfoldbanen.

As the project progresses, the TM 20 will be used for sheet piling work for the pedestrian and bicycle underpass as well as for some smaller work in connection with the foundations of the new city bridge in Drammen. The expansion of the new route is expected to be completed and the line will go into operation at the end of 2025.



Photo: ABI MOBILRAM TM 20 with vibrator MRZV 30VV on the job site in Drammen

Project: Railway development from Drammen to Sundhaugen, Norway

Contractor: NCC- Hercules Fundamentering

Machinery:
ABI MOBILRAM TM 20 with vibrator MRZV 30VV

Process:
Pile driving for installation of sheet pile wall

Challenges:
Complex project, works in and near Drammen station were carried out during ongoing operation, near trains and public.



Photo: ABI MOBILRAM TM 20 with vibrator MRZV 30VV while pile driving

ABI Excavator Mounted Attachments – the Solution for Smaller Construction Projects

The ABI excavator mounted attachments for hydraulic excavators are primarily used to carry out foundation work on smaller construction projects where space can be at a minimum.

The attachments are easy to use, and some of the advantages include easy handling and short set-up times. The HVR vibrator attachments are used for pile driving works and the BA auger drives are used for drilling works. If a drilled hole is to be installed and needs to be cased, the auger drive is supplemented with a casing twister. No complex modifications or additional controls are required on the excavator.

Popular areas of application include construction sites where space or headroom is limited, such as under bridges or inside industrial buildings. For a greater usable length and reach, the excavator attachment can be supplemented with a stick extension of up to 2.5m. Depending on the type and size of excavator,

usable lengths of up to 10m can be achieved using a stick extension.

When using the quick-coupling system, setup times can be shortened and handling simplified. When using the combination of a quick-coupling system and stick extension on a special transport frame the equipment can be ready for use on the construction site in just a few minutes.

The ABI excavator attachments are suitable for hydraulic excavators from approx. 15t and are ideal for frequently changing construction sites conditions and for providers of rental construction machinery.



Photo: ABI excavator mounted auger drive BA 2200 and 'plug and play' combination of HVR vibrator with stick extension, quick-coupling system in transport frame

**Advantages:
of excavator mounted attachments:**

- Compact
- Short setup times
- Quick training of operating personnel
- 'Plug and play'- solution for the combination of HVR vibrator or BA auger drive with stick extension and quick-coupling system



Photo: ABI auger drive BA 2200 with quick-coupling system and stick extension with 10m auger on the job site

Geothermal drilling with ABI excavator mounted auger drive and casing twister

Immo-Control GmbH builds ClimaBalance houses with a climate-friendly overall energy concept. The drilling works for the use of geothermal energy is carried out using the compact ABI excavator mounted attachments.

The highlight of a ClimaBalance house is a heating concept using an energy mix of geothermal energy, temperature control and heat recovery from exhaust air and photo-voltaics. A ClimaBalance house should not generate any heating costs and should not be more expensive than a conventionally built house.

To use geothermal energy, probes are installed in the ground and attached to a steel structure. Depending on the ground conditions, uncased drilling is carried out using only the auger drive, or cased drilling is carried out using auger drive and casing twister. The drilling depth is approx. 4m with a diameter of 650mm. The geothermal probes have a total pipe length of 65m and are wound into a spiral with a diameter of 500mm. After setting the geothermal probe, the casing is removed using the casing turning device and is ready for the next installation.



Photo: cased drilling with ABI excavator mounted auger drive BA 2200 and casing twister



Photo: uncased drilling for a geothermal probe with the ABI excavator mounted auger drive BA 2200



Photo: installation of geothermal probe in the cased bore hole

Commemoration of Alfred Heichel

The founder of ABI, Alfred Heichel would have been 100 years old on December 11, 2023.

Alfred Heichel was born 1923 in the Sudetenland, the border region in the former Czechoslovakia. Like most of his generation his youth was shaped by the Second World War. At the end of the war, he was taken prisoner by the Russians near Voronezh in the former Soviet Union. As a technically skilled young man, he worked there as a construction manager during the reconstruction of the dismantled Buna rubber factory. After his release in 1948, he went to Meißen in Germany and studied mechanical engineering. After completing his studies, he took up the position of technical manager at the Meißen cable factory. In 1955, he escaped the former German Democratic Republic for West Berlin via the S-Bahn escape route with only his briefcase and found work at the AEG company as head of work preparation.

In 1962 he moved from West Berlin to the CONTI company in Babenhausen Hessen and helped set up the foil products branch.

His passion though lay in construction machinery and in 1967, before the actual ABI company was founded, he introduced the MOBILRAM 7500 used for installing trench sheet piles. This machine was the prototype for the later successful ABI MOBILRAM RE series.

In addition to his professional successes, 1967 was a very pivotal year in Alfred Heichel's private life, he mar-



Photo: Alfred Heichel while visiting a job site, this is where he drew his inspiration for further machine developments.



Photo: Alfred and Ingrid Heichel - Behind every successful man is a strong woman.

ried his sweetheart Ingrid, who consistently supported him both in his personal and professional endeavours.

In 1974 Alfred Heichel founded ABI in Babenhausen, his first and obvious choice as employee was his wife, Ingrid. Just one year later, he presented the first leader mast system ABI MOBILRAM RE 7500, which as it later transpired, was the most important starting point for the future of the ABI company.

He tirelessly pushed forward the development of the leader systems. In the trade press in the 1970s he was described as the inventor of the economical telescopic leader systems, which he sold under the motto "ABI is



Photo: Alfred Heichel at a job site - Increasing efficiency and making everyday work on the construction site easier for the workers was always important to him. He was interested in user feedback and tackled the problems.

always one step ahead". When explaining his machines, he liked to use the phrase "the muscle is hydraulic, the nerve centre is electrical".

He shaped the company's culture for over 20 years with his enthusiastic and professional attitude and introduced several new machine developments, such as the ABI rotary drill rigs (BE series) and the HVR add-on vibrators, the Hydro-Press system, and the acclaimed TM leader mast series in the nineties.

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Despite his health problems, he remained involved in the company's activities right up until the end. He passed away peacefully on August 7, 1995 at the age of 71.



Photo: Alfred and Ingrid Heichel on the occasion of the ABI in-house exhibition in connection with Alfred Heichel's 70th birthday in 1993.

He would be very proud of the continuous development seen at ABI. An entrepreneurial legacy that is successfully continued by his sons Christian and Matthias.

