

## 10 Years ABI Equipment Ltd.

It was 10-years ago this year that ABI Equipment Limited started trading in Northampton, England as the UK subsidiary company of ABI GmbH.

Mark Lee, the founding Managing Director of the UK subsidiary, confirms that it was the right step to take and at the right time as customers in the UK and the Republic of Ireland were immediately able to benefit from closer, more attentive, customer support and service. The number of employees has grown steadily over these years, from six employed persons in the beginning to twenty. ABI Equipment distributes machines of the ABI Group and attends to its customers throughout the entire „life of the machine“.



Photo: Company premises of ABI Equipment Ltd. in Northampton

The year 2018 sees continued significant investment into the UK based hire fleet. ABI Equipment will receive two new ABI MOBILRAMs this year - one TM 14/17 VSL in August as well as one TM 22 with MRZV 36VV vibrator in the autumn. A new DELMAG RH 34 drill rig will also be added in the summer of this year.

Last year a number of new machines were delivered to customers in the UK by ABI Equipment including: a new TM 14/17 VSL to both Berryrange and Keltbray Sheet Piling; a new TM 13/16 SL to VolkerGround Engineering, and a third fixed leader mast BANUT 300 to Aarsleff Ground Engineering (covered in ABI News 2017).

What customers appreciate the most about ABI Equipment Limited is their attentive service and competent product support. ABI GmbH says thank you for the successful collaboration and is looking forward to more joint projects in the future. ■

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## In-house Exhibition at SPD AB in Sala 2018

On April 26 and 27 the company SPD Scandinavian Pile Driving AB invited its customers and interested persons to their in-house exhibition in Sala, Sweden.

SPD AB presented its entire product portfolio as well as the newest addition to its rental fleet, an ABI MOBILRAM TM 11/14 SL. The new ABI MOBILRAM will stay in Sweden after the exhibition and will add to the rental fleet of SPD for the Scandinavian market.

For the event, the company premises were spruced up and the visitors could have a look at the production, find out about the SPD products and watch demonstrations of machines. One of the demonstrated machines was a drill mast DT 145 on a Liebherr LH 936R, that was equipped with a DTH hammer and a clamping and breaking device for drilling applications in hard rock. A second excavator assisted with a SPD handling system for drilling rods and showed a perfect teamwork of the two products.

The new TM 11/14 SL was also shown in pile driving action. The audience was quite enthusiastic about how easy it is to change the attachments via the Docking-System, e.g. from vibrator to auger drive.

The supporting program was organized at the best as well. Among other things, historic motorcycles in the wall-of-death, helicopter sightseeing flights over Sala and a rock band at the evening event livened things up. ■



Photo: Magnus Andersson and Christian Heichel



Photos: Demonstrations: Docking-System on the new TM 11/14 SL of the SPD AB rental fleet (above) and drilling mast DT 145 and casing handling system of SPD AB (below)



## INTEROC Made in Sweden

ABI transfers the development and production of INTEROC anchor drill rigs to its subsidiary SPD Scandinavian Pile Driving AB in Sweden.

SPD AB has gained a good reputation as a manufacturer of machines for micro-piles and drilling into rocks. This is where the product lines SPD and INTEROC complement each other. For the anchor drill rigs the same auger drives are used in part and the structural steelwork is similar as well.

In general, the use of synergetic effects is an important issue to be able to survive in the hard competitive environment. After having acquired the company shares of SPD AB in 2017, possible intersections were examined and measures decided. The development and production of INTEROC anchor drill rigs will be moved to Sweden. ABI will take care of distribution and service in the German-speaking areas.

SPD AB already has an INTEROC anchor drill rig AN 120 in its rental fleet and supports its customers with excellent know how in realizing the most different projects. ■



Photo: INTEROC anchor drill rig AN 120 of the SPD AB rental fleet

## TM 20 on a Large Scale Job Site in Graz



Photo: ABI MOBILRAM TM 20 at the river of Mur in Graz, Austria

The company PORR Bau GmbH carries out comprehensive sheet pile wall works at the central water-storage sewer in Graz using its ABI MOBILRAM TM 20.

The central water-storage sewer is the largest construction project in the field of environmental protection in the history of the city of Graz. The construction work will last from 2017 to 2022 and the estimated costs are 84 million Euros.

The sewerage system of Graz is mainly arranged as a combined sewage sewerage system as is the case in most of the bigger cities. Here, the rainwater and the sewage of the households is mixed and flows to the sewage treatment plant. On heavy rain in particular, the current storage means are not sufficient and the combined sewage flows into the Mur uncleaned. With the construction of the central water-storage sewer, an additional storage

volume of 94,000 m<sup>3</sup> will be created. The sewer will run alongside the Mur for 8.4 km. On high volumes of water, the combined sewage will be collected and conveyed to the sewage treatment plant later. Thus, the load of the Mur with sewage will be clearly reduced.

The construction work will be carried out upstream in sections. The steel sheet piles will be introduced on the right and left side of the sewer route and hydraulically supported the further the excavation progresses. After completion of the concrete work the steel sheet piles will be extracted and brought to the next section.

The company Porr Bau GmbH, Linz subsidiary, was awarded the contract to carry out the comprehensive sheet pile wall works along the construction route. The machine chosen for the task was the TM 20 with variable vibrator MRZV 30VV that ABI delivered by end of last year. The ABI MOBILRAM-System is equipped with some extras like the Efficiency Drive and the clamp assembly camera. The Docking-System praised by operator Harald Sampl is standard on machines of this family. It allows for a quick change of attachments from vibrator to auger drive, e.g. in areas where pre-drilling is required. In general, the ground on site is easy to drive, only now and then big boulders have to be removed.

Double sheet piles PU 28 with a length of 15 m are used for the temporary steel sheet pile walls. When work progresses in the best possible way without longer interruptions, daily outputs of up to 900 square meters of steel sheet pile walls are not uncommon. The threading of the sheet piles is supported by the clamp assembly camera mounted on the vibrator with display in the cabin.



Photo: TM 20 called „Julia“ with vibrator MRZV 30VV

The team lead by engineer Wolfram Albert was quite enthusiastic about the Efficiency Drive. „We have to refuel two times a week only. We are consuming up to 30 % less diesel as compared to machines without Efficiency Drive.“, says Sampl.

The sheet pile wall installation is progressing so well that the following works cannot keep the pace, and the machine can be used for smaller building projects in the meantime.

The efficiency of this machine is outstanding and the company Porr already ordered a second identical machine that will be delivered in summer 2018. It will be a jubilee machine, the 20th ABI MOBILRAM-System ever since the foundation of the pile driving department of the company Porr in Linz. ■

Photo: Ongoing site work at Central storage sewer in Graz



## **■ New Pier for Fish Feed Plant in Kyleakin**

SPI Piling Ltd, a customer of ABI Equipment Ltd., carried out sheet piling works for the construction of a fish feed plant of the company Harvest Marine in Kyleakin, Scotland.

The main contractor RJ McLeod commissioned SPI Piling Ltd with the execution of comprehensive sheet piling works on the island „Isle of Skye“. The construction site is on the location of a disused quarry that has been chosen as the site for the new plant due to its favorable location and the direct access to the sea.

The existing quay comprises a sheet pile finger pier extending some 110 m into the sea north from the shore. The construction of the new quay includes extending and expanding the size of the current pier to allow for the installation of all the necessary plant equipment, like conveyors and crane rails. In addition to the existing steel sheet pile wall a new wall was introduced either side of the existing wall and the outer end extended app. 23 m seaward. The new 147 m berthing face will allow to load and unload modern ships.



*Photos: ABI combi clamp assembly MZK 1200 mounted on vibrator MRZV 30VV (above)  
Piling works with TM 20 in Kyleakin, Scotland (left)*

For the expansion of the pier, a combi wall consisting of tubes and Z steel sheet piles has been chosen, with the space between the old and the new wall having been filled in. The tubes were connected with tie rods and the wall in the shore area was also anchored to the land.

The work spanned over 15 weeks until May 2018. In particular in the winter months, the team had to face the harsh weather conditions on the island. Snow, rain and strong winds considerably affected the run of the foundation work and the handling of the steel sheet piles.

SPI Piling relied on its TM 20 with a variable vibrator MRZV 30VV for the works. Especially for this job, ABI Equipment Ltd. delivered a combi clamp assembly MZK 1200 for a better handling of the double steel

sheet piles. A total of 215 AZ 26-700 pairs of steel sheet piles and 80 AZ 28 pairs of steel sheet piles was installed. The 81 tubular piles with a diameter of 1220 mm were driven using a crane suspended vibrator.

The combi clamp assembly enables a better introduction of the prestressing forces as well as a better transmission of power from the vibrator to the pile elements, which greatly improves the driving efficiency and reduces the wear on the pile elements and the

machine. Both of these factors also help to eliminate the lateral vibrations of the pile during driving thus reducing noise, energy loss and ground disturbance.

Managing director of SPI Piling Alan Smith commented the use of the MZK 1200: "We have been extremely impressed with the way in which the combi clamp has performed. It was relatively easy to install onto our existing TM 20 and the handling during service was quite easy." ■

## ■ Flood Control with RH 24/270



*Photo: DELMAG drill rig RH 24/270 of the rental fleet of the company BWH Bohrwerkzeuge Hoffmann working in the centre of Chemnitz, Germany*

**The expert in civil engineering Swing & Cut from Großrueckerswalde in the Erzgebirge used a DELMAG drill rig RH 24/270 in Chemnitz.**

The drill rig is provided by the company BWH Bohrwerkzeuge Hoffmann from Hainichen in Saxony, that has several DELMAG drill rigs and also ABI MOBILRAM-Systems in its rental fleet. The newest addition was an ABI MOBILRAM TM 14/17 V in May 2018.

BWH Bohrwerkzeuge Hoffmann rented out its RH 24/270 to Swing & Cut to build a secant pile wall in

Chemnitz. On behalf of the city of Chemnitz the bank wall at the Chemnitz river will be renewed. The project is only one part of the comprehensive measures to eliminate the flood damages.

The retaining wall is directly downstream at the Chemnitz river and is linked to the bridge structure at the Hartmannstrasse in the city center of Chemnitz. The estimated construction time is from November 2017 to August 2018. In order to keep the tight schedule, work was not interrupted even under the most adverse weather conditions in winter.



The drill rig installed app. 130 piles with a diameter of 880 mm using the Kelly drilling procedure. With a torque of 270 kNm the rotary head easily worked its way through the soil layers down to the final depth of 12 m. The finished secant pile wall will be fitted with a head beam of reinforced concrete and then faced with natural stones.

Working in city centers and in direct vicinity to waters in particular is often subject to strict specifications regarding the machines used. The RH 24/270 complies with the current emission standard EU Stage IV and, in addition, is filled with biodegradable hydraulic oil to minimize possible negative effects. ■

*Photo: DELMAG drill rig RH 24/270 with rotary head BT 270 while Kelly drilling*

## ■ RH 06 Floats in Dresden

A DELMAG drill rig RH 06 from the ABI rental fleet was used by the company Wayss & Freytag to install a secant pile wall in Dresden.

A private investor builds a house with 10 rental apartments and an underground parking lot in a backyard. At the beginning of the building activities, the RH 06 was lifted over the front house into the backyard in a spectacular way.

The company Wayss & Freytag installed a total of 196 drilled piles with a diameter of 620 mm. The length varied between 7 and 11 m. The secondary piles were provided with a steel-cage reinforcement. The concrete was supplied via the passage of the front house. Due to the access to the construction site that was far from being easy, the organization on the construction site had to be perfect. After a short phase of coordination, Wayss & Freytag could realize a daily output of 6 piles.

The drilling work progressed quite fast and had only to be interrupted in bad weather. After completion of the work, the machine was lifted over the houses again for transport.

The RH 06 is mounted on a CAT 312 with an output of 70 kW. The rotary head delivers a torque of 62 kNm, and depending on the selected Kelly bars depths of up to 15 m can be reached with a drilling tool of 1.5 m.

The RH 06 can be rented, please contact the ABI rental department when required. ■



*Photo: DELMAG drill rig RH 06 being lifted over the row of houses in Dresden, Germany*



### DELMAG Drill Rig RH 06

Engine power	70 kW
Max. drilling depth up to (depending on Kelly bar)	15 m
Free diameter in front of the rope pulleys	1450 mm
Rotary head	BT 60
Stroke rotary head	4700 mm
Crowd system	cylinder
Torque rotary head up to	62 kNm
Operating weight approx. (with rotary head and standard Kelly bar, without drilling tools)	26,2 t

*Photo: Finished secant pile wall and DELMAG drill rig RH 06 while drilling in Dresden*

## Successful Launch for Machine Number 1

End of 2017, the new drill rig RH 12/140 was delivered to S+H Spezialtiefbau GmbH in Neustadt-Ferenthal.

Mounted on the new carrier SR 20 with stackable counterweight, the RH 12/140 is a compact, maneuverable machine with a transport width of 2.5 m that is especially suitable for urban services in restricted space. Furthermore, the machine is particularly silent due to the new drive concept.

S+H Spezialtiefbau used the brand-new RH 12/140 to drill piles for a soldier pile wall as well as piles for a crane base on the construction site of the company Bonava Deutschland GmbH. The customer erect

apartment houses with underground parking lots for the project „Stadttor Bonn-Beuel“.

To build the crane base, four single piles with a diameter of 620 mm and a depth of 9.3 m were made. For the back-anchored soldier pile wall, 49 piles with a diameter of 620 mm and lengths from 6.0 to 10.7 m were drilled. On the construction site, at the same time several machine operators were instructed on the new machine and they were very pleased by the innovations straightaway.

The RH 12/140 convinced with fast operating sequences and the new control concept was described to be very good as well. ■





*Photo: RH 12/140 of the company S+H Spezialtiefbau, construction number 1, with rotary head BT 140 in Bonn-Beul, Germany while spinning-off the soil*



*Photo: RH 12/140 of the company Hoch- und Tiefbau Reichenbach, construction number 2, while Kelly drilling along the creek of Wildenfels, Germany*

## **RH 12/140 in Wildenfels**

**The new DELMAG drill rig RH 12/140 with the factory number 2 was involved in the building activities for flood control along the Wildenfels creek.**

The company Hoch- und Tiefbau Reichenbach GmbH was awarded the contract for the installation of secant pile walls in Wildenfels. The retaining walls are part of comprehensive construction measures for flood control and to eliminate flood damages in the catchment area of the Zwickauer Mulde river. Work started in 2018 and will span over a period of three years.

The Hoch- und Tiefbau Reichenbach GmbH carries out drilling works in sections no. 4 and no. 5 with a retaining wall length of app. 130 m and app. 70 m respectively. In section 4, a total of 234 piles with a diameter of 620 mm in different lengths from 2 to 7 m

were installed. The center distance between the primary and secondary piles was 500 mm and the overall output in this job site section was 700 running meters of piles. The secondary piles were reinforced, app. 27 t of steel sunk into the concrete.

On the left side of the creek, the drilled pile walls serve as protective and retaining wall for the directly adjacent Wildenfelser Strasse. On the opposite side, they protect the adjacent premises against washout.

The dimensions of the new RH 12/140 turned out to be very advantageous for the work on the narrow construction site, reported Lars Kohl, project engineer of the company Hoch- und Tiefbau Reichenbach GmbH. ■

## IFCEE 2018

The US distribution partner Hammer & Steel Inc. presents an ABI MOBILRAM SM 18/22 HD and a DELMAG drill rig RH 34 at the IFCEE (International Foundations Congress and Equipment Expo).

The geo-engineering and special civil engineering industry met in Orlando, Florida from March 5 to 10, 2018. The well-attended international event, a mixture of conference and trade show, is dedicated to the design and construction of foundation systems and the use of latest geo-engineering and geo-construction technologies.

Hammer & Steel ordered two ABI machines that were shown on the exhibition grounds. The ABI MOBILRAM SM 18/22 HD is a fixed leader mast with a usable length of app. 22 m. The machine was displayed with a Triplemix auger drive TMBA 3-7000 that is able to mix three piles in one go. The attachments are mounted quickly and efficiently via the Docking-System D6. Besides the TMBA, a vibrator MRZV 30VV, a auger drive VDW 14050 or a DELMAG diesel pile hammer can be mounted. The machine is driven by a CAT engine with an engine output of 563 kW.

With a stroke of 18.5 m, the second machine belongs to the big ones as well. The drill rig RH 34 was presented with a rotary head BT 340 with a torque of 340 kNm and a clamping device (chuck). During soil mixing, the clamping device allows to install and remove mixing rods so that even greater depths can be realized and are not limited by the stroke. The machine shown was equipped with a short leader mast foot that allows for pile diameters of up to 3500 mm upon uncased working methods. For the classic Kelly drilling procedure the free diameter in front of the rope pulleys is 2200 mm.



Photo: RH 34 with rotary head and chuck and the ABI fixed leader mast SM 18/22 HD behind at the trade fair in Orlando

The response of the visitors towards the two machines was very positive and the first operations already took place. ■

### Job site at the Eastern Wharf area in Savannah, Georgia, USA

Equipment: ABI fixed leader mast SM 18/22 HD

Contractor: HJ Foundation

Installation of CFA piles, diameter 457 mm (18 inch), depth 21,3 m (70 ft).

Foundation for family residence, retail and municipal parking



## ABI Group Is Ready for the New Emission Standard EU Stage V

The next emission standard EU Level V for mobile machines and equipment will come into force in the European Union from 1/1/2019.

The reduction of the air pollution through internal combustion engines is pushed massively. Since the introduction of the emission legislation in 1999, the limit values for mobile construction machinery were tightened up four times over the last 20 years. With Stage V the limit values will be reduced once again and the valid range will be extended for small engines with an output of less than 19 kW as well as for powerful engines above 560 kW.

In the relevant class from 130 to 560 kW (175-750 HP), the limit values for diesel particles will be reduced from 0.025 g/kWh to 0.015 g/kWh. For the first time, a limit value of  $1 \cdot 10^{12}$  #/kWh for the number of particles will be introduced what makes the use of a diesel particulate filter (DPF) indispensable. The limit values for carbon monoxide (3.5 g/kWh), hydrocarbons (0.19 g/kWh) and nitrogen oxides (0.4 g/kWh) remain unchanged as compared to Stage IV.

For machines with an output of over 560 kW, the limit values of Stage V are defined clearly higher. They are 3.5 g/kWh for nitrogen oxides and 0.045 g/kWh for diesel particles which is 9 times and 3 times the value respectively. The limit value for the number of particles is not defined. Other limit values for carbon monoxide and hydrocarbons are identical to those for engines with an output of under 560 kW.

With the new emission standard the requirements with regard to the construction space that is already very limited and the costs associated with this will raise.

ABI is prepared for the introduction of the new emission Stage V. Many of the engine systems used in ABI MOBILRAM-Systems or DELMAG drill rigs will be available with the standard EU Stage V from 2019 and will be presented to the professional audience at the bauma 2019 in Munich. Only a few models will be converted during the transition period. ■

## DELMAG Production Facility in Esslingen Will Be Closed

The production facility of the DELMAG GmbH & Co. KG in Esslingen will be closed on 9/30/2018.

DELMAG is known as worldwide manufacturer of special civil engineering machinery. After the bankruptcy of the „old“ DELMAG Maschinenfabrik at the end of the nineties, ABI acquired the piling and drilling technique branches in 2000 and transferred it to the „new“ DELMAG GmbH & Co. KG with its head office in Niedernberg and a factory in Esslingen.

In 2005 the production of drill rigs was discontinued at DELMAG as the fabricated number of pieces of this complex equipment could not cope with the expenditure. From this moment on, the DELMAG drill rigs were developed, manufactured and distributed by ABI. As they were quite similar to the ABI pile driving machines, considerable synergies could be used in this way. From then on, the DELMAG piling technology and the production of different components for ABI were the main sources of income for DELMAG.

Due to the heavy fluctuations of incoming orders in the field of piling technology, the production facilities of

DELMAG could not be used continuously to capacity in the last years. As there was no telling if the order situation would change in the mid- to long-term future, the company owners had to act in order to assure the survival of the company DELMAG.

The decision to dismiss long-time and valued employees and to close down the traditional premises at the Esslingen site was not easy for the company owners. The balancing of interests and a social plan were agreed between the two parties in order to ease the circumstances for the employees a little. Esslingen is one of the strong economic regions so most of the 36 dismissed employees hopefully will quickly find a new job. DELMAG wants to thank all employees for their many years of commitment and wishes them all the best for the future.

From 10/1/2018 at the latest, customer inquiries will be handled at the head office of DELMAG GmbH & Co. KG, Boschstrasse 8, 63843 Niedernberg.

Your contact:

Matthias Heichel, phone: +49 (0) 6028 123 400, fax +49 (0) 6028 123 409, e-mail: info@delmag.de. ■

## Steel Sheet Pile Boxes for the Wilhelmsburger Reichsstrasse

The contractor Hermann Koth Ingenieurbau GmbH & Co. KG contributes to the special civil engineering works at structures 4 and 22 for the relocation of the Wilhelmsburger Reichsstrasse in Hamburg.

It was for the sheet piling works that the newly acquired TM 22 was used for the first time. The telescopic leader mast is installed on the carrier SR 45 that has an engine output of 563 kW. According to the high driving power,

the TM 22 was delivered with the most powerful variable vibrator MRZV 36VV with a static moment of 36 kgm. The machine came as a reinforcement for two other ABI machines: one TM 13/16 and one TM 14/17. The soil conditions on the construction site were quite difficult in some sections and the specified sheet pile lengths also demanded for a bigger machine. In deeper layers there were very dense sands that partially turned out to be difficult to drive.

The work on structure 4 consisted of the installation of an app. 300 m long and app. 30 m wide steel sheet pile box with six bulkheads. The steel sheet pile box was executed as a watertight construction pit and serves as temporary structure to make a reinforced concrete trough. The trough leads the new route through under two railroad bridges. Depending on the static requirements, the AZ profiles AZ 20-700, AZ 26-700 and AZ 32-750 were used as double steel sheet piles with lengths between 10 and 18.30 m.

The sheet pile wall works on structure 22 consisted of making a watertight steel sheet pile box of 18 x 10 m. The Z profiles AZ 26-700 were used as double steel sheet piles with a length of 18.3 m.

In total, the company Koth drove app. 1600 tons of steel sheet pile wall into the ground by vibration, this corresponds to a sheet pile wall surface of 10,800 square meters.

The Wilhelmsburger Reichsstrasse runs through the Wilhelmsburg district and connects downtown Hamburg to the Harburg district in the south of Hamburg. The app. 4.6 km long section will be relocated to the west side of today's railroad line. The overall costs of the large scale project are estimated at app. 295 million Euros at the moment. The original estimate of costs was 235 million Euros. This increase is explained with difficult soil conditions among other things. The new route section is planned to be put into service at the end of 2019. ■

*Photo: ABI MOBILRAM TM 22 with variable vibrator MRZV 36VV while driving Z-shaped steel piles in Hamburg, Germany*



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