

The magazine of Hitachi Construction Machinery (Europe) NV

GC

GROUND CONTROL

Issue 20 Autumn 2015 www.hcme.com

HITACHI

Reliable solutions



MOVING MOUNTAINS

- New Zaxis-6 medium excavators
- Ryugasaki Works: home of the ZW wheel loader
- Spectacular sites in France, Ghana, Italy, Japan, Sweden and the UK

GC

GROUND CONTROL

Issue 20 Autumn 2015 www.hcme.com

CONTENTS

04 News

Product launches, new factories, latest exhibitions and customer news from around the globe

12 Demand perfection

Introducing the latest range of Zaxis-6 excavators with exclusive insights from HCME's General Manager Engineering

16 A landmark investment

The first Zaxis-5 high-reach demolition excavator in the UK demonstrates its unique capabilities on a high-profile urban project

18 The home of marble

The largest Hitachi wheel loader is invaluable to the extraction of this precious construction material in Italy

24 Safeguarding the future

Three Hitachi excavators developed specifically for the African market show their durability on a vital sea defence project in Ghana

26 A rock solid performance

French quarry operator Carrières GW explains why it relies on a Hitachi ZX470LCH-5 to meet its challenging production targets

28 Strength in depth

A tour of Steffes Schakt's Zaxis-5 excavators across Stockholm's busy urban construction sites

32 A smart motorway

How several Hitachi medium excavators are playing an important role in the upgrading of the M3 in southern England

36 Where the customer counts

Peak behind the scenes at the home of the Hitachi ZW wheel loader, Ryugasaki Works in Japan



Ground Control is published twice a year and is circulated among 100,000 readers.

Hitachi Construction Machinery (Europe) NV, Sicliëweg 5, 1045 AT Amsterdam, The Netherlands

Telephone: +31 (0)20 44 76 700

Fax: +31 (0)20 33 44 045

E-mail: info@hcme.com

Website: www.hcme.com

Editor: Hitachi Construction Machinery (Europe) NV: Ghislaine Jonker

Co-ordination: Somacon, www.somacn.nl

Editorial and design: Red International Communication, www.redinternational.co.uk

Photography: Glenn Blackburn, www.glennblackburn.co.uk

Translation: UvA Talen, www.uvatalen.nl

Printing: Grafiservices BV, www.grafiservices.nl

Circulation: Vogelaar Verzendens BV, www.vogelaarverzendens.nl

© Hitachi Construction Machinery (Europe) NV (HCME). All rights reserved. Reproduction in whole or in part is forbidden except with the written permission of HCME. While every effort is made to ensure the accuracy of information published in *Ground Control*, HCME is not responsible for inaccuracies or omissions. All views expressed are not necessarily those of HCME. The manufacturer is not responsible for non-compliance to industry-standard health and safety measures by third parties, nor for any damage or loss resulting from anyone's reliance on editorial and photography in *Ground Control*.





12



36



16



32



28



Best choice for African quarry

Two Hitachi ZX350LCH-3Gs acquired by West African company Logistics Support Services (LSS) are proving invaluable assets at the Arigu Rock quarry, near Tamale in northern Ghana. The medium Zaxis-3 excavators excavate granite materials from the 45-acre site for use in road construction and concrete works, among others.

Acquired in early 2015 by LSS, the Arigu Rock quarry supplies aggregates to customers such as Brazilian firms Queiroz Galvão and Andrade Gutierrez, as well as local businesses. The site's 24 employees work 16 hours a day in eight-hour shifts, and the quarry produces 500m³ of materials per day.

The ZX350LCH-3G excavators were supplied in May 2015 by DEM Ghana, a regional subsidiary of authorised African Hitachi dealer DEM Group. Fitted with a hammer attachment and bucket, the two machines break down, sort and load the rocks, gravel and sand on to dump trucks and lorries. The materials are then processed into various sizes of aggregates: 0-0.5mm, 0.5-10mm, 14mm, 20mm and 25mm.

Site Manager Alhassan Dawda explains that the team's greatest challenge was finding reliable equipment, and he believes Hitachi was the best choice. "We looked at a number of other products available on the market. However, we were recommended to choose Hitachi and told that their products were the best. We've certainly found that to be true of these excavators."

Transschakt invests in Zaxis-5 range

Swedish construction company Transschakt has invested in a fleet of new Hitachi wheeled excavators in response to the demand from its customer base in the public sector. The five ZX140W-5s and two ZX170W-5s are proving popular due to their versatility and cost effectiveness for projects in and around the city of Uppsala, north of the capital Stockholm.

The Zaxis-5 machines have already demonstrated their flexibility, as they can easily move around between sites and even pull trailers for carrying the subcontractor's wide range of attachments. The wheels also protect working environments from unnecessary damage, and the low emissions and noise levels are beneficial in urban environments.

"The newer the machine, the better for us and our customers," explains Pelle Jensen, the owner of Transschakt. "We recommend the latest Zaxis-5 machines as they are quieter and comply with the latest emission regulations. The wheeled excavators also incur lower transport costs – as they can travel around the city – and add to the versatility of our fleet, so that we can react positively to the needs of our customers."

Transschakt was founded in 1973, bought its first Hitachi excavator (a UH81) in 1982 and currently has 40 Zaxis machines at its disposal for earthmoving, utility and general construction projects. This impressive line-up ranges from a ZX29U-3 mini to a ZX290LC-5 medium excavator, all supplied by the Swedish Hitachi dealer Delvator.



Movie magic at Intermat



A broad selection of Hitachi construction equipment was presented at Intermat in Paris in April. Hitachi Construction Machinery (Europe) NV (HCME) was one of 1,350 exhibitors from 37 countries at the exhibition, which attracted 183,000 visitors.

The highlights of the 2,600m² movie-themed HCME stand included the ZX300LC-6 medium excavator and the ZW220HYB-5 wheel loader. HCME also displayed three new Zaxis-5 mini excavators (the ZX17U-5, ZX19U-5 and ZX26U-5), and a new line-up of light compaction equipment, including vibratory rammers, reversible vibratory plates and a walk-behind roller.

The ZX350LC-5 super long front excavator and the ZX350LCH-5G model developed for the African market shared the spotlight, and the EH1100-5 rigid dump truck was another popular attraction among visitors. HCME also took the opportunity to present its ground engaging tools, designed exclusively for Hitachi mining excavators (EX1200-6 to EX3600-6).

The ZW140PL-5 wheel loader (parallel linkage tool carrier version) was on display, demonstrating its suitability for loading and unloading materials with extensive load control. The lift arm



provides parallel movement from ground level. A special edition ZW180-5 was also present, fitted with a number of standard parts and optional extras that are suited to the rigours of waste handling sites and other similarly challenging working conditions.

A focal point of the HCME stand was a 4DX cinema with high-tech motion seats, where visitors enjoyed a 3D film with advanced special effects showing a variety of Hitachi construction machinery at work. In addition, a movie about two new remote monitoring systems, Owner's Site and ConSite, was shown on a large touchscreen at the stand. An Owner's Site demonstration was also given to visitors, highlighting its advantages for fleet management.

HCME President and CEO Moriaki Kadoya said: "We were proud to present a diverse line-up of products to the French and international construction markets at Intermat this year. Our aim was to highlight the advanced technology and vast expertise behind each Hitachi machine, in an impressive and entertaining way. We hope visitors enjoyed meeting the Hitachi stars of the show and seeing them in action on the cinema screen."



NEWS

Home and abroad

For more than 30 years, Belgian company Aertssen has trusted the unique services of its local Hitachi dealer, Luyckx. Its most recent purchases include: a 29m long reach EX1200-6 excavator and 11 other EX1200-6s; several crawler cranes, such as 15 SCX2800-2s, six SCX1500-2s and four SCX1500A-3s; a ZX670-5 and eight ZX870-5 large excavators; and EX1900-6 and EX2500-6 mining excavators.

Aertssen relies on the quality and performance of Hitachi construction machinery for its excavation, infrastructure and engineering projects. Yves Aertssen, Contracting Division Director, says, "The quick and full-service support from Luyckx, the high availability of spare parts and the high performance of the machines are the decisive factors for choosing Hitachi."

Using the highest quality equipment is key to Aertssen's success, both at home and overseas. "Our subsidiary, Gulf Earth Moving, has been active in Qatar for several years now," says Yves. "One of our major projects is the Hamad Port – it's an ambitious project with tight deadlines and tough conditions, so we need the best equipment to make the difference. That's why we call upon Hitachi."

Aertssen's crane division also works internationally and is continuing to grow from strength to strength. Recently it invested in two new SCX2800-2s to take on several challenging lifting projects in the United Arab Emirates and Qatar.



Zero-tail swing proves advantageous

A fleet of eight Hitachi ZX135US-5 and ZX225USLC-5 excavators owned by Skyland Drainage Contractors, and a further two ZX225USLC-5s owned by Davey Civils have been working on the M3 smart motorway project in the UK (see pages 32-35). The zero-tail swing models, supplied by Hitachi Construction Machinery (UK) (HCMUK), have been employed on the subcontractors' drainage works.

Skyland Drainage Contractors is part of the M O'Brien Group, which has over 150 mini, medium and large Zaxis excavators at its disposal. "Our Hitachi machines are very reliable and easy to maintain, and HCMUK offers good support when required via a strong nationwide network," says Director Dan O'Brien.

"Operators love Hitachi excavators, as they have spacious and comfortable cabs, and are also easy and smooth to drive. The resale value of the machines after three or four years is also better than other brands."

Having previously hired Zaxis excavators, Davey Civils has been a Hitachi customer for one year. "We decided to invest in our own fleet and chose Hitachi because we knew the machines could do the job we wanted them to do – they were tried and tested," says Director William Blake.

The zero-tail swing of the two ZX225USLC-5 excavators is a particular advantage for drainage and pipeline projects. "They make it easier and safer to work in confined spaces such as the side of a busy motorway," he adds.



A Hitachi EX2500-6 excavator at work in Qatar for Gulf Earth Moving

New premises for French dealer

An authorised dealer of Hitachi Construction Machinery Sales and Service France (HCSF) has opened a new facility. This move by Cobemat coincided with the family-run company's 20th anniversary and its 1,000th Hitachi sale. These landmarks were celebrated at a special event in March that included guided tours, a special awards ceremony and a spectacular light show.

Cobemat is responsible for the distribution of Zaxis-5 excavators, ZW-5 wheel loaders and Hitachi light compaction equipment in the regions of Brittany, Loire and Lower Normandy. The company relocated to its state-of-the-art premises at Servon-sur-Vilaine in January 2015. Ideally positioned next to the main highway between Rennes and Paris, the impressive site includes a new parts centre and a hi-tech workshop.

Cobemat owner Xavier Beaulieu said: "Servicing Hitachi machines in the highest standard of working conditions is a priority for us. Our new technical facilities are not only first-rate, but the location and surroundings will also serve as a more pleasant environment for our customers."

HCME President and CEO Moriaki Kadoya, a VIP guest at the event, added: "Cobemat is one of our largest and most celebrated dealers in France. We have developed a strong relationship over the past two decades, and the company's excellent new facilities will help to ensure another period of success and close cooperation."



Welcome to the 20th edition!

Over the past decade, Hitachi owners have enjoyed receiving the biannual *Ground Control* magazine that has covered a wide range of interesting customers, job sites, machines and dealers. Work started on the first issue in 2004 (it was published the following year) and you are now holding the special 20th edition!

In recognition of this landmark, Hitachi Construction Machinery (Europe) NV would like to thank the hundreds of customers who have provided access to some of the best job sites in Europe, Africa, Asia and the Middle East for their excellent cooperation. In addition, none of this would have been possible without the support of the authorised Hitachi dealer network – our appreciation goes out to you all!

And finally, did you know that *Ground Control*:

- is published in six languages every issue: Dutch, English, French, German, Italian and Spanish
- has visited 36 countries for editorial and photographic coverage
- has published reports from 54 different countries around the world
- has visited and photographed more than 200 customer job sites?

NEWS

Autonomous Haulage System in development

Hitachi Construction Machinery Co., Ltd. (HCM) is to develop an Autonomous Haulage System (AHS). This will lead to increased flexibility for customers, and improved safety and operational efficiency at mines around the world.

Hitachi dump trucks already benefit from existing synergies within the Hitachi group, such as: the AC drive system from Hitachi, Ltd.; and fleet management systems from Wenco International Mining Systems Ltd.

The AHS equipment will be developed in association with Wenco, whose advanced software and hardware will ensure high levels of accuracy when tracking machines on site. This (and other) existing technology within the AC-3 range of dump trucks will play an important part in the proposed AHS solution. The equipment also comprises sensors and communication controls that can be retrofitted to existing AC-3 dump trucks. This option will allow owners to change quickly between autonomous and manual operations.

HCM's long-term aim is to operate a package that ensures multiple pieces of equipment can interact with each other from the beginning of a hauling cycle, through to the loading and dumping sites. This initiative will help to satisfy the ever-changing demands of the mining industry to work in a variety of typical operational environments and scenarios.



New technology enhances safety

Hitachi Construction Machinery Co., Ltd. (HCM) has obtained the licence for camera image processing technology – jointly developed by Nissan Motor Co., Ltd. and Clarion Co., Ltd. – for use in its rigid dump trucks and ultra-large mining excavators. The multi-camera Around View Monitor (AVM) and Moving Object Detection (MOD) technology offer excellent visibility and alert operators to movement on job sites.

The AVM offers an overhead view of the machine's surroundings in real time by composing images from four exterior cameras. The monitor installed in the instrument panel displays the position of the machine and lines to assist parking. Based on the AVM technology, which is already installed in Nissan cars, HCM has developed an overhead-view monitor with Clarion for use in its dump trucks and mining excavators.

The MOD technology analyses images of moving objects from the four AVM cameras. It enhances safety by alerting the driver to any changes in the machine's surroundings. Using the MOD significantly improves the operator's vision of other trucks and machinery in mines.

Safety on the job site is a top priority for customers and a key development theme for HCM. The company incorporates advanced technologies from other Hitachi group companies and other industries – particularly the automotive sector – in its own technologies to create products with enhanced safety features.

HCM will make further endeavours to provide products that contribute to safety by developing the overhead-view monitor equipped with MOD, by exploiting benefits of the licensed technology.

A record-breaking show

Norwegian Hitachi dealer Nasta made a big impact at the Vei og Anlegg (Road & Construction) show in May. It sold 100 machines during the five-day exhibition held near Oslo, and to celebrate each sale a Japanese-style gong was struck by the customer.

Approximately 23,000 visitors from all over Scandinavia attended the event. Nasta had a 2,600m² stand with 25 Hitachi machines on display, including Zaxis-5 excavators, ZW-5 wheel loaders, dump trucks and compaction equipment.

The largest model was the ZX870LCR-5 excavator, which was placed on top of four granite blocks and next to the EH1100-5 dump truck. Special application machines included the ZX470LCH-5 super long front and ZX135 forestry excavator. The largest Hitachi wheel loader, the ZW550-5, was also on display.

Nasta CEO Tom Johansen said: "We paid particular attention to operators at the event, with a large demo area, a competition on the Hitachi simulator and the launch of our exclusive operators' club. This online forum gives them access to technical advice from Nasta's experts."



Representatives from HCSF, Hitachi dealer XMTP and rental company Locatoumat

Significant Zaxis-5 investment

French company Locatoumat has invested in 20 Hitachi excavators for its rental fleet. Founded in 1981 and based in Gond-Pontouvre, near Angoulême, Locatoumat provides public works equipment and vehicles to customers working in Charente-Maritime, Charente, Dordogne and Gironde.

Ten ZX55U-5s and ten ZX85USB-5s were supplied in April by the local Hitachi dealer, XMTP. Renowned for high levels of versatility and reliability, as well as a comfortable and safe working environment, the Zaxis-5 mini and medium excavators have been painted in Locatoumat's corporate colours.

The order followed a successful trial, explains Pierre Gaucher, Locatoumat's founder and chairman: "We were satisfied by both the operation and design of each Hitachi model." His company will continue to rely on excellent after-sales support from the local dealer. "We have developed a very good relationship with Xavier Lagarde at XMTP," he adds.

Jean-Pierre Sudre, Head of Rental at Hitachi Construction Machinery Sales and Service France (HCSF), says: "This is one of the largest rental companies to have placed its trust in us. We hope this will be the beginning of a long and successful commercial partnership with Locatoumat."

NEWS



Hitachi Parts mean **peace of mind**



The ZW310-5 and ZX350LC-5 run continuously for 16 hours a day

Owners of Hitachi construction machinery who select genuine parts can expect to benefit from reduced running costs, higher productivity and excellent availability. This is supported by Hitachi's European Parts Depot in Oosterhout, which has 67,700 parts available for delivery. These ensure all Hitachi machines will continue to operate in line with original specifications while maintaining a strong resale value.

Based in the province of Zeeland in The Netherlands, Heros Sluiskil BV has been experiencing the benefits of choosing Hitachi Genuine Parts in facilitating its operations. On a demanding 40-hectare site, Heros Sluiskil is currently engaged in "urban mining". This sees domestic and industrial waste arrive via an adjacent canal. It is then processed to recover metals, such as copper, aluminium and iron, for reuse. Bottom ash is also produced for use in road construction.

The challenging working environment requires reliable and durable machines. Heros Sluiskil depends on three Hitachi ZW310 wheel loaders (including one -5 model) and one ZX350LC-5 excavator to run continuously for 16 hours a day. While the ZX350LC-5 is tasked with loosening the raw piles of metal, the three wheel loaders are continuously moving the large volume of materials around the site.

Owing to the abrasive composition of this waste – often containing tiny metal particles – the materials can clog around the machines. This means that Heros Sluiskil chooses Hitachi Genuine Parts, including filters and lubricants, which help to

withstand the difficult conditions and reduce downtime.

Peter David, Head of Machines & Planning at Heros Sluiskil, attributes Hitachi's service contracts and parts as the key reasons the machines continue to provide such high productivity. They are covered under a 10,000-hour extended warranty through the Hitachi Extended Life Program (HELP).

"Hitachi machines are more reliable and their construction



Heros Sluiskil chooses Hitachi Genuine Parts

is solid,” says Peter. “We use Hitachi filters, because of the undoubted quality. They are supplied with genuine O-rings and seals, which help to increase safety and make maintenance easier.”

Peter is also pleased with the high standard of consumable parts that are provided in the service package: “There has been no reason for us to choose any other oils or lubricants. It is a strong guarantee for us, and there is very low oil consumption.”

Heros Sluiskil receives excellent support from Hitachi dealer Pladdet, which is based nearby in Biervliet. Its high volume of spare parts in stock allows it to provide a quick and efficient provision of replacement items, on top of a first-rate service offering. While the owner carries out his own 500-hour inspection, the dealer undertakes a 1,000-hour service, which ensures the high productivity of each machine.

“Hitachi’s components are of superior quality,” says Peter van Liere, part owner of Pladdet, “especially when we present them to the customer.” Pladdet delivered the first Hitachi machine to Heros Sluiskil in 2011 (a ZW310), although the two Peters have known each other personally for over 20 years.

“It is a strong dealership, they react quickly,” adds Peter David, who is also taking advantage of Global e-Service. The remote monitoring system is helping Heros Sluiskil to reduce fuel costs, and in turn, the company’s carbon footprint. The fuel consumption data collected from each machine is crucial for Peter, who depends on reliable information when creating working schedules for the site.

The combination of Hitachi Genuine Parts, HELP and technical support from Pladdet guarantees that Heros Sluiskil has peace of mind for the full working life of its Hitachi fleet. “There are no hidden costs,” concludes Peter. “We have discovered that the resale value of the equipment is sometimes as strong as the initial cost price as a result.”



Excellent support from Pladdet



Promotion

Stop fuel theft



FREE

Diskus padlock

with each fuel cap
(E0PP0000074)

Available until 31 December 2015

Ask your dealer for more information

Demand perfection



The mastermind behind the TRIAS and TRIAS II hydraulic systems, Tsuyoshi Nakamura started in his new position as General Manager Engineering at Hitachi Construction Machinery (Europe) NV (HCME) earlier this year. The former Construction Equipment Development Centre Manager at Hitachi Construction Machinery Co., Ltd. (HCM) speaks exclusively to *Ground Control* about the new generation of Zaxis-6 excavators

How is your new job going?

I am happy at HCME and have already had a good experience working in Europe. I would like to meet as many Zaxis-6 customers as possible, because I managed the development of these excavators in Japan. The European market has provided us with so much feedback and we need the customers' comments after their machines have completed around 1,000 operating hours.

What does the role entail?

I see my role as supporting the sales, after-sales and production departments, as well as helping Hitachi dealers and customers. They all have different viewpoints and so this is a challenge.

Could you explain the role of the engineering department?

It consists of specialists in excavators, wheel loaders and special application machines. Usually we discuss what we need to manufacture with the production department, and how we sell and promote the products with the sales and marketing departments.

What is the link between HCM and HCME?

We research our customers' needs and wants to improve future models. I receive a large amount of information and many requests from the European market, and communicate these to HCM.

What are your immediate targets?

To successfully launch various new Zaxis-6 excavators over the next three years. We are also starting the manufacturing process for this range, supporting the sales department, and presenting information to our dealers and customers.

How have you helped to develop the Zaxis-6 range?

I was the leader of the development team, a process that started in 2012. I had responsibility for the whole machine and was very proud to see the ZX300LC-6 in public for the first time at the Intermat exhibition in Paris earlier this year.

How much research was carried out in Europe?

It was a difficult project due to the relatively short period of time between the launch of the Zaxis-5 and -6 models. We started to develop Zaxis-6 by carrying out research into the first phase of Zaxis-5 models, with over 20 customers across five countries.

We then carried out the user tests for the Zaxis-6 prototype in six countries: The Netherlands, Belgium, Germany, Norway, Sweden and Italy. We received many positive comments, which confirmed that we had achieved a low level of fuel consumption.

Are there any new features derived from European customer requests?

In Europe, fuel costs are higher. So, our target was to achieve fuel efficiency with the Zaxis-6 range. To do this in isolation is relatively easy, ie by decreasing engine output.

The most important feature is controllability, and so we have to maintain this as well as the level of productivity. This means that we can't restrict the power of the engine, which was a huge challenge.

How did you achieve lower fuel consumption?

The most significant factor was the development of the new TRIAS II hydraulic system. In technical terms, we decreased the



Tsuyoshi Nakamura, HCME General Manager Engineering

pump flow, tuned the control value and changed the electrical system software.

What does the software do?

It controls all of the machine's combined movements, and our target is higher controllability. To move the boom in isolation is easy and requires no electrical control. However, moving the boom, arm and bucket, while allowing the swing motion does rely on electrical control.

The purpose of the TRIAS II system is to decrease fuel consumption and my understanding is that other excavator manufacturers only do this via the engine. Hitachi does not compromise on productivity to achieve this.

How much emphasis has been placed on environmental issues?

This is one of our most important considerations. There are currently many environmental issues, such as noise, safety, emissions and recycled parts, and we have to comply with these regulations.

What makes the Zaxis-6 range so special in comparison to the competition?

Low fuel consumption makes Zaxis-6 special – as well as high controllability and productivity. Hitachi will continue to develop these benefits for the future, as this is what our machines are renowned for. From an operator's point of view, the Zaxis-6 range offers a comfortable working environment, is precise, intuitive and easy to manoeuvre.

Have any developments been made to aid maintenance?

The launch of ConSite as part of Global e-Service is an important development. This is incredibly useful, not only for maintaining, but also for operating the machine.

Will hybrid technology become more popular?

I believe so, because of customer demand, having a wider range of products to choose from and the focus on environmental issues. Hybrid excavators are already quite popular and will continue to be so in response to high fuel prices. Japan is a leading country in the development of hybrid technology and Hitachi customers will continue to benefit from this.

No compromise

The Hitachi Zaxis-6 medium excavator range has been designed and engineered without compromise in Japan by Mr Nakamura and his colleagues for the specific needs of the European construction industry. It has been developed to perfection using market-leading technology to deliver exceptional productivity at the lowest possible cost of ownership.

Reduced costs

The new TRIAS II hydraulic system helps to lower fuel consumption, for example by 19% in ECO mode and 10% in PWR mode – with the same level of productivity – for the ZX250LC-6. This unique technology reduces the amount of hydraulic oil returned to the tank due to the cooperative control of the pump and valve.

The latest developments in the intelligent Global e-Service online application have also been integrated within the Zaxis-6 range. This allows owners to monitor their fleets remotely via the new Owner's Site (24/7 online access) and unique ConSite (an automatic monthly report). These help to maximise efficiency, minimise downtime and improve overall performance.

Environmentally friendly

HCM's advanced technology helps to reduce emissions and noise levels. The after-treatment device on Zaxis-6 models consists of a diesel oxidation catalyst, urea mixing pipe, selective catalytic reduction (SCR) system and silencer.

The SCR system injects urea into the exhaust gas to reduce the amount of nitrous oxide in emissions. In addition, a variable geometry turbocharger and high volume-cooled exhaust gas recirculation system are employed, not only to help the environment, but also to comply with EU Stage IV emission regulations.

Stronger performance

The engines in the new Zaxis-6 models will be further enhanced by a high-performance and large-capacity fuel circuit. A water separator and cold fuel resistance valve are integrated into the pre-filter for added protection against moisture.

In addition, an electric pump supplies more fuel to the engine for stronger performance. Reliability has been improved, with the combustion chamber in the engine made from stronger materials and the revised shape of the piston designed to achieve cleaner emissions.

Outstanding reliability

Hitachi's renowned reliability has also been reinforced with the reduced risk of oil leaks, thanks to the fitment of a rubber hose (with a flange) incorporated into the hydraulic return pipes. The highly durable fluorine material has been used to make the O-rings on the control valve and swing motor. This withstands

high oil temperatures and highlights the parts' reliability to make oil leaks a thing of the past.

The track guards have been enlarged to provide a higher level of durability (on the ZX300-6 and ZX350-6). In addition, three track guards are now fitted to reduce the likelihood of any damage being caused to the track link (on the ZX250-6 and ZX300-6). The lower roller has been reconfigured so that mud falls out easily to prevent clogging and any subsequent damage to the oil seals.

Increased versatility

The tilt and rotary tilt modes are included within the attachment support system for the new range. These (and nine other modes)





can be registered on the monitor for the easy fitment of attachments to increase versatility.

They are also equipped with two extra spools in the control valve, which enhances flexibility by making it easier to install attachments that require multiple, large volumes of oil and on two-piece boom models.

Highest quality

The Zaxis-6 range has been manufactured from materials of the highest quality: the thickness of the travel motor cover has increased from 4.5mm (on the previous model) to 8mm; the upper structure benefits from a superior sealant (around the cooling package) and

acoustic materials to eliminate any deterioration caused by heat; and the console in the cab has been sculpted in highly durable AES-grade resin to ensure superior weather resistance.

Furthermore, the covers on the platform walkway have been reinforced and new handrails fitted. The convenient and wide-opening engine cover also allows easy access to the engine compartment and other components for routine maintenance. These add to the quality and safety of the working environment for the operator, which in turn provides peace of mind.

For more information on the new Zaxis-6 range, please contact your local Hitachi dealer or visit www.hcme.com.



A landmark investment

One of the first Hitachi customers in the UK has acquired the country's first Zaxis-5 high-reach demolition excavator. The ZX350LC-5 owned by RM Penny was in action earlier this year in England – demonstrating its precision, versatility and reliability – demolishing a prominent building to make way for a new development

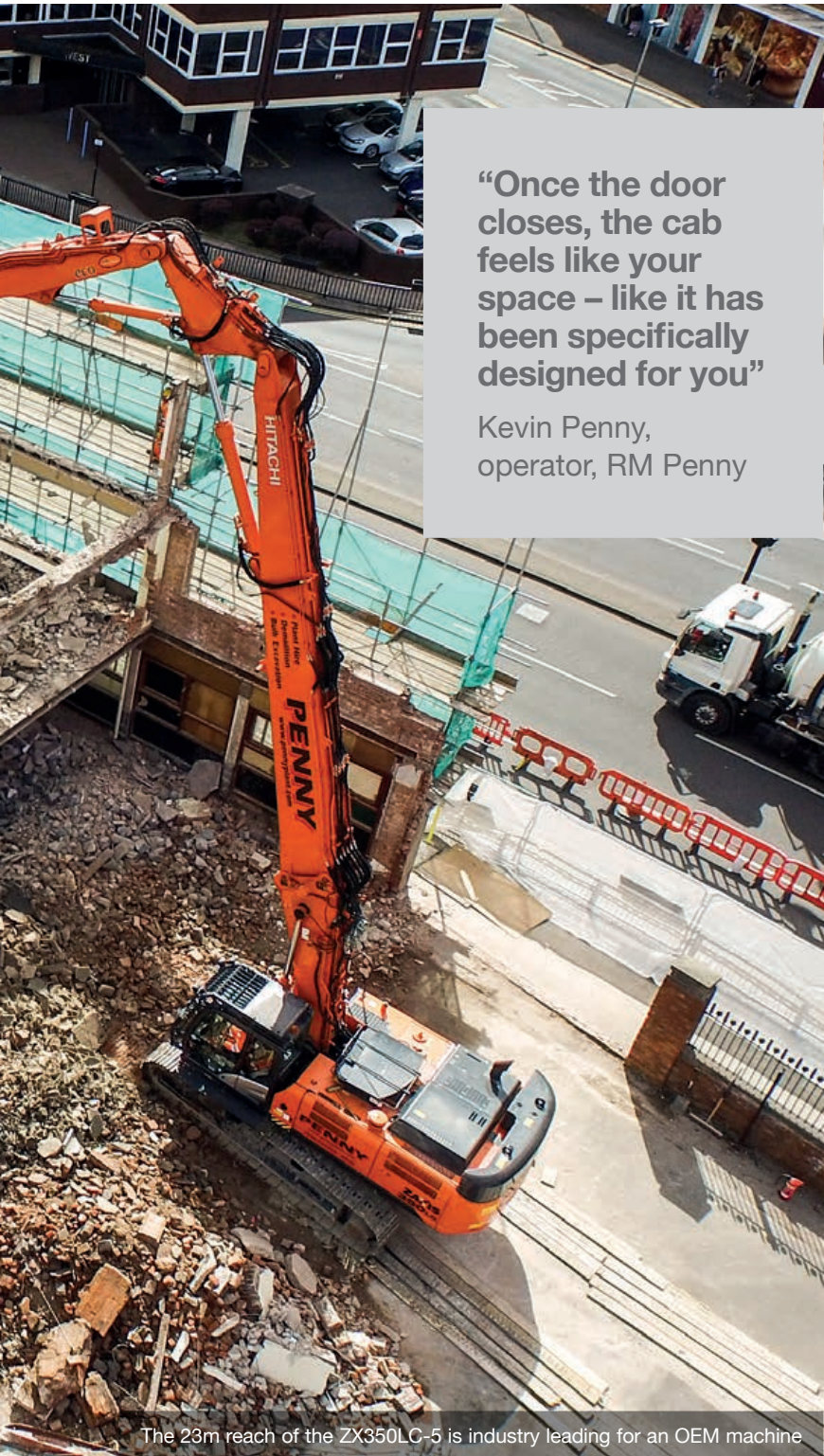
The first Hitachi ZX350LC-5 high-reach demolition excavator in the UK has been at work on a high-profile project in the city of Wolverhampton. It was used to demolish a four-storey 1960s office block, part of Marston's PLC, to make way for a multi-million pound rebuild, which is due for completion in February 2016.

The special application model is manufactured entirely by Hitachi and has an industry-leading reach of 23m for an OEM machine. Its maximum tool weight of 3,000kg is another advantage over other excavators in this class. It offers exceptional durability for demolition projects thanks to features such as a strengthened frame and tilt cylinder guard to protect against falling objects.

Andy Baker, Operations Director at Hitachi Construction Machinery (UK) Ltd (HCMUK), says: "The option of a 23m high-reach or two-piece demolition boom gives the ZX350LC-5 greater versatility

for our customers. It also provides a comfortable and safe working environment for operators. The sound-suppressed, air-conditioned cab is FOPS-compliant, with OPG front and top guards. It is also equipped with a boom angle indicator, swing angle alarm and HRD overload warning system for safe operation. And the smooth and efficient tilting mechanism on the cab enables greater visibility through the pillar-less window."

Owned by Somerset-based plant hire and demolition company RM Penny, the ZX350LC-5 was on site between April and May 2015 to demolish the landmark building. The demolition work, which involved the dismantling of steel and concrete beams, was carried out gradually and precisely over a period of ten weeks. This was due to the scaffolding attached to the exterior walls of the building, which is adjacent to a busy main road. The ZX350LC-5 was fitted with



“Once the door closes, the cab feels like your space – like it has been specifically designed for you”

Kevin Penny,
operator, RM Penny



extended glass panel in the roof is excellent.” A roof window wiper and parallel wipers on the front window ensure excellent visibility and easy cleaning, as does sufficient space between the guard and front window.

The Hitachi ZX350LC-5 is a versatile solution for working on different sites. Changing the front equipment is straightforward thanks to the hydraulic pins, and removing the additional counterweight when required is easily done.

“We can change to the standard front attachment and bucket to load trucks, dig out and finish the job,” explains Kevin. “Previously I operated the larger ZX650, which would be used to demolish two storeys, then moved to another site. The ZX350LC-5 can stay on site for longer and be used for other tasks.”

The Hitachi Zaxis-5 demolition excavator is the first high-reach model in the RM Penny fleet and was delivered in March 2014. By April 2015, it had accrued 1,500 working hours. According to owner Roger Penny, reliability is the first and most important benefit. “The residual values are also good, better than other brands in the same category.

“And in terms of service and spare parts, HCMUK has got it right. The service they provide is as good as you’ll find in the industry. They always put themselves out to help. When our fitters call, they provide advice over the phone and are very helpful – I think that’s worth so much.”

A history with Hitachi

A longstanding customer of HCMUK, Roger has been buying Hitachi equipment for 40 years. He now owns a fleet of 30 Hitachi models, including 23 Zaxis-3 and Zaxis-5 machines, such as the ZX130-5, ZX210-5 and ZX350-5 medium excavators, and a ZW220 wheel loader.

“I think we were one of the first companies to have a Hitachi excavator in this country,” he says. “I went to the factory in Japan and was impressed by how well they were made, how hard the employees worked and the level of teamwork. Hitachi machines are well manufactured and have always been reliable.”

crusher and grapple attachments, and often operated in economy mode to ensure a high level of precision.

An operator’s view

Operator Kevin Penny has worked with RM Penny for 35 years and is an experienced user of Hitachi construction equipment. He found the high-reach demolition model straightforward to operate: “The settings for the attachments are pre-set for flows and pressures, so they can rotate steadily and at the right speed. It’s also easy to change attachments because of this.”

The comfort and visibility of the Zaxis-5 excavator also impressed him: “Once the door closes, the cab feels like your space – like it has been designed specifically for you. I don’t always need to tilt the cab when working at heights, because the visibility through the



To see a movie of the ZX350LC-5 in the UK, please visit www.youtube.com/user/HitachiConstruction. To receive a digital version of *Ground Control* with new movies, please register online at www.igroundcontrol.com/subscribe/en



The home of marble

The largest wheel loader in the Hitachi range, the ZW550-5, has been delivered to Lasa Marmo in northern Italy. *Ground Control* visits the impressive company to establish the importance of the machine in the logistical process of extracting the precious white marble from Whitewater quarry

Deep in the Venosta valley in the German-speaking province of South Tyrol lies the village of Laas. In this picturesque location, the entrance to the cavernous Whitewater marble quarry – named after the waterfall located on the periphery of the site – is perched 1,600m above sea level.

The site is the area's main source of the 400 million-year-old metamorphic rock, commonly used for sculptures and building work. It is an exceptionally hard and durable material, which is resistant to harsh and adverse weather conditions. With an estimated 30 million m³ of marble remaining to be quarried over the next 500 years, Whitewater is one of the largest natural resources of its kind on the planet.

The marble mountains

Long before rock was being quarried on a large scale in the “marble mountains”, local people used to haul blocks into the valley and collect any of the valuable stone that fell down of its own accord. The

origins of today's marble industry date back to 1883.

In 1928, Lasa Marmo was set up with capital from Germany, Italy and the USA, and this company is still in operation today. Work on the Lasa marble train began one year later and it started operating in 1930 to become Europe's most modern means of transporting the rock at that time. By 1962, it was producing marble slabs for wall panels, flooring, stairs and steps, window seats, washbasins and various custom-made items.

Lechner Marmor took over Lasa Marmo in 2008 and the combination of the two companies marked an important milestone. The new owners had invested in a well-managed and -established firm that had the highest possible standards and earned an enviable reputation.

An architectural masterpiece

Lasa Marmo currently has 79 employees (22 of whom work in the quarry) and a 30-year lease for Whitewater and two other historic quarries up until 2033. The company's headquarters occupies



The entrance to the cavernous Whitewater marble quarry, 1,600m above sea level



“With less emissions and noise in such a confined space, we were aiming for a better and safer working environment”

Erich Tscholl,
Operations Manager,
Lasa Marmo



a 55,000m² area in Laas and this is the final station on the unique 85-year-old railway. It continues to bring the high-quality, pure white marble on the last leg of its journey from the quarry.

Between 2,000 and 4,500m³ of marble are quarried each year by Lasa Marmo, depending on the level of demand. The company places a strong emphasis on processing the raw materials in Laas. This helps it to contribute to local industry and the region's artistic traditions, as well as work as a partner with the local authorities for the protection of the area's natural beauty.

Lasa marble is still an important feature of certain architectural styles – especially from the neoclassical period – in cities such as Vienna, Munich and Berlin. The most famous works constructed in the marble from Laas include: the Helmuth von Moltke statue in Berlin; the Pallas Athena fountain in Vienna; the Queen Victoria monument (outside Buckingham Palace) in London; and the Heinrich Heine monument in New York. In addition, around 96,000 white marble crosses are located in 15 cemeteries across Italy, France, The Netherlands, Belgium, Tunisia, England and The Philippines to commemorate the fallen soldiers of World War II.

“Other more recent examples have seen 40,000m² of Lasa marble used in the new World Trade Center Transportation Hub in New York and 2,000m² in Italy's tallest building, the Torre Isozaki in Milan,” explains Erich Tscholl, Lasa Marmo's Operations Manager. “It makes me feel proud to see the photographs from our customers' projects and how they use the materials in situ.

“One of our most important activities is to present our work in the quarry to international architects. This enables them to actually feel the texture of the raw material and see where the product comes from. They are always impressed with the colour and durability of the marble, and recognise that it can be used in everything from indoor bathrooms to outdoor swimming pools.”

Block handling

The logistical system to move the 20-tonne marble blocks from the bottom of the cave – 35m below the entrance to the site – down to Lasa Marmo's yard is equally as impressive. The extraction process starts with a huge chainsaw (working at a rate of 4-5m² per hour) that is employed to cut 2-2.5m into the bottom of the marble at floor level. Long holes are then drilled from the top to the bottom of the section to be removed.

Some wire is then pushed into the top of these holes and washed down with flowing water, before being pulled out when it reaches the bottom. This is connected to the 50m-long diamond wire used to cut through the marble (at 6-7m² per hour) – due to its inflexibility – before being pulled up to the top again and on to the next hole.

This technique is repeated across the entire column to ensure a clean cut and a smooth finish. When this process has been completed, it is pulled down carefully on to the floor by a large Hitachi ZX520LCH-3 excavator. An optimum column weighs 115 tonnes and this is cut into five or six blocks of up to 20 tonnes apiece – the maximum weight permitted for onward transportation.

A large Hitachi ZW550-5 wheel loader lifts each block from the cave through a series of passageways to an outdoor storage area. From this point, each block is hoisted on to a cable system, which carries it 1,300m across to the other side of the valley. Here it is loaded on to a small train that transports it 500m around the side of the mountain.

A trolley system then takes it a further 1,000m down the side of the mountain, before the final leg of the journey with another train moving



The ZW550-5 lifts each block from the cave through a series of passageways to an outdoor storage area

the block 600m into Lasa Marmo's yard. The total transportation process takes 45 minutes and this enables the company to move up to eight blocks each day.

The main machine

The ZW550-5 was delivered in December 2014 by local sub-dealer Comac*. It had completed 250 hours at the time of *Ground Control's* visit in late February and the fuel consumption was reported to be "brilliant" – on average eight litres per hour better than the previous machine!

It was supplied with a bucket and fork attachment, which is utilised through 80% of the machine's operations. The block handler feeds the logistical process and therefore is highly regarded by Lasa Marmo as the main wheel loader in the quarry.

As this was the company's most significant investment in recent times, the decision-making process was carried out with the specific requirements of the site in mind. A shortlist of three similarly sized wheel loaders was drawn up, including the largest Hitachi

machine – thanks to the influence of the site manager Hans Hauser, who had previously worked for another company with a fleet of 40 Hitachi machines.

Lasa Marmo was then able to make a direct comparison across five important criteria: the purchase price; after-sales service; performance and lifting power; agility and manoeuvrability; and size of the machine.

Erich summarises their conclusions: "The Hitachi's hydraulics were better and the traction power was stronger – even when travelling up the steepest hill. We spoke to the operator of the previous ZW550 model and carried out some tests with the machine, such as travelling fully loaded uphill. Overall, the Hitachi performed better than the other two brands."

Lasa Marmo's approach means that it doesn't just want to have a supplier of equipment, but it also prefers to have a partner to help its business move forward. Erich explains: "The service we receive for our equipment from Comac is very important and we had heard some good reports about their support. In this case, the wheel loader must keep working, because if it stops then it costs us money."



Each block is transported from the quarry to the yard via a cable system, two small trains and a trolley system

“It can lift anything on minimum throttle, which means no stress for either the machine or I”

Roland Spechtenhauser,
operator, Lasa Marmo



easy to learn to operate the ZW550-5 and it already felt like it was part of me after only a few days.

“Due to my experience with excavators, I prefer to use joysticks as they’re easier for me to control. The sensitivity of the levers is a strength of this machine – it does exactly what you want it to do, even to the nearest centimetre.”

Roland’s initial impressions were that the ZW550-5 had excellent visibility to the front and rear, including the view from the camera. “The monitor in the cab is perfect and I like how it is possible to combine the machine’s different functions,” he says. “I also find the availability of information on fuel consumption and checking routine maintenance procedures to be useful.”

After a few months, he found the power and performance of the machine to be ideal for the unique challenges of the site. “It is really amazing, especially with the hydraulic system and its lifting capacity,” he explains. “I’ve not yet had the need to push the machine to its full capacity, but so far it doesn’t flinch when lifting even the heaviest loads.

“In fact, it can lift anything on minimum throttle, which means no stress for either the machine or I! There is also no difficulty in moving the blocks through narrow spaces or up the steep slopes in the cave.

“The automatic gearshift is incredible and could be one of the main reasons for the low fuel consumption. The traction control is switched on permanently and I am very happy with the way that the machine handles as a result. This also means that there’s less wear and tear on the tyres.”

The key to the success of Lasa Marmo’s Whitewater quarry is to keep finding high-quality materials and moving them efficiently to the company’s production facilities in the village. To achieve this goal in such a tough working environment, the company has to invest in the most reliable and safe equipment to work with. Fortunately, the high-performance ZW550-5 has met these requirements with some distinction and is already playing the lead role in the logistical process.

*Comac is a sub-dealer of the Italian Hitachi dealer for construction machinery, SCAI SpA.

“The height and width of the machine were among the most important parts of the required specification. The ZW550-5 is 3.3m wide and this even had to be taken into consideration for the delivery to the site. With three tunnels to navigate en route to the entrance, we had to remove the cab and wheels, before fitting some smaller steel wheels to negotiate these ‘obstacles’ successfully.

“The DPF filter is another essential feature – with less emissions and noise in such a confined space, we were aiming for a better and safer working environment within the site. So, we eventually opted for the Hitachi due to the unbeatable combination of the quality of the product, strength of the after-sales support and excellent working relationship with the dealer.”

User-friendly operations

Roland Spechtenhauser, who has worked as an excavator and wheel loader operator for nine years – the last three of which with Lasa Marmo – has found the machine to be incredibly user-friendly: “It was



To see a movie of the ZW550-5 in Italy, please visit www.youtube.com/user/HitachiConstruction. To receive a digital version of *Ground Control* with new movies, please register online at www.igroundcontrol.com/subscribe/en



Safeguarding the future

Xara Developers is constructing a government-funded sea defence revetment in West Africa to protect local communities and their resources from potentially devastating tidal damage. To complete this challenging project, it is relying on the durability of three Hitachi excavators, as well as the support of local Hitachi dealer, DEM Ghana



The Republic of Ghana is a geographically varied country with an estimated population of 27million and the ninth largest economy in Africa. With headquarters strategically located in the capital city of Accra, the authorised Hitachi dealer, DEM Ghana, first opened its doors in 2013. DEM Ghana's team of 30, led by General Manager/Director Patrick de Bantel, brings 25 years of experience to the market.

Xara Developers is one of DEM Ghana's key customers. An important player in the quarrying industry since it was incorporated in 2008, the Accra-based company also has an impressive portfolio of construction projects, as well as marine and coastal engineering works.

One such project can be found in the town of Aboadze and its surrounding communities, located on the edge of the Gulf of Guinea. The area is particularly at risk from persistent tidal waves, which crash against the coast, destroying homes and risking lives. In addition, the Takoradi Thermal Power Station is located

nearby. In order to protect these locations, the Ghanaian Government has initiated a \$30million coastal revetment project.

This is the first job of its kind to be given to a local contractor. Supported by DEM Ghana and the local community, Xara Developers is committed to exceeding expectations and providing the area with a safe, resilient solution to the issues it faces.

Preparations for the 5.5m-high, 2km-long coastal defence project began in 2013. Xara Developers has two Hitachi ZX350LCH-3Gs and one ZX470LCH-5G working on site. Supplied in January 2015, the three machines each have a two-year/4,000-hour service contract.

Head Mechanical Engineer Jan Dekker explains the main reasons behind the investment: "Hitachi has been operating in Africa for a long time. With such a time-sensitive project, we needed to choose a company and equipment we could rely on. In addition, our relationship with DEM Ghana is excellent."

Initially, the Xaxis excavators are used for earthmoving on the



beach until the minimum depth for the revetment's construction is reached. In areas where no natural rock can be used as a base, geotextile materials are laid down to establish strong foundations.

Once an area is ready, the machines complete a number of important tasks, which include: moving large rocks in order to construct the actual revetment; keeping areas of the beach clear of materials to allow vehicles to pass; and creating small stockpiles of rocks for later use.

Operator Samuel Addo finds the Hitachi excavators comfortable and easy to operate. "In addition, the machine is very powerful," he says, "which is important when moving such heavy rocks."

A long-lasting solution

Several different sizes are used for the construction, with smaller stones filling the gaps between the larger ones, which can weigh 4-6 tonnes. As time passes, natural geological movement

and pressure from the incoming tide will strengthen the structure and provide the area with defences estimated to last 300 years.

Under the project management of Niels Elsnab, the construction is due for completion in January 2016. "On a project such as this, the weather often dictates our processes," he explains. "Sometimes we are unable to work due to the tide, so when we do, it is important we don't have any problems with our equipment."

"The Hitachi machines work very well, and we have minimal downtime. They're also durable, which is vital to this type of work. I can only strongly recommend Hitachi construction machinery."



A rock solid performance

French quarry operator Carrières GW relies on a Hitachi ZX470LCH-5 excavator to meet its demanding daily production targets. Demonstrating its capabilities in Brittany, the Zaxis-5 model lives up to its reputation for a high level of performance

“Hitachi machines have a reputation for reliability. The ZX470LCH-5 is also highly productive”

Michel Krembs,
Quarry Manager,
Carrières GW



Thanks to the diverse geology of the north-west region of France, quarrying is an important and competitive commercial activity. It requires reliable machinery to extract materials efficiently, ensuring a high level of productivity for quarry operators and owners.

Carrières GW, part of Groupe Marc, operates nine quarries in the area. Its team near St Malo has been using a Hitachi ZX470LCH-5 since June 2013. Seven people are currently employed at the 16.7-hectare site, extracting cornéenne, a metamorphic rock used in concrete production. The process begins with the drilling of holes into the rock in order to plant the explosives necessary to loosen the materials.

The ZX470LCH-5 equipped with a 2.8m³ bucket then loads the materials onto the primary and secondary crushers. Afterwards, the aggregates are loaded onto an articulated dump truck, which transports them to the treatment area and tertiary crusher.

The aggregates produced (sand, notably sizes 4/6, 6/10, 10/14 and 14/20) can be sold either washed or unwashed. The washed sand produced meets the demands of concrete plants.

Since it arrived on site, the Zaxis-5 excavator has worked

approximately 3,000 hours. It was supplied with an extended warranty and the associated service contract by the region's official Hitachi dealer Cobemat.

Groupe Marc has enjoyed a strong relationship with the dealer since 2009 – its first purchase was a Hitachi ZX210LC-3. Quarry Manager Michel Krembs, who has worked with Groupe Marc since 1980, says: “Our relationship with Cobemat is based on professionalism and trustworthiness.”

A positive experience

Throughout his career, Michel has had a positive experience working with Hitachi excavators and has fond memories of the EX450 in particular. “Hitachi machines have a reputation for reliability,” he says. “The ZX470LCH-5 is also highly productive and it supports us in the daily challenge of meeting our targets.”

Production is the greatest challenge facing the team on this site, according to Michel, but the company's investment in the ZX470LCH-5 is helping to meet demand. Operator Lionel Deline agrees: “This machine is excellent for extracting the materials in the quarry.”

With 16 years of experience operating a variety of equipment, including other excavators and wheel loaders, he has gained a positive impression of the company's latest Hitachi model: “The breakout force is incredibly strong, it's reliable and works fast – the loading time is excellent. Also, the cab is very comfortable and the controls are well within reach.”

Emmanuel Rabiller, who is responsible for equipment, explains his reason for choosing Hitachi: “We did test other equipment, but Hitachi products offer an excellent price/quality ratio and represent a good return on investment. In addition, Cobemat's reputation for first-rate after-sales services was an important factor in the purchase.”



To see a movie of the ZX470LCH-5 in France, please visit www.youtube.com/user/HitachiConstruction. To receive a digital version of *Ground Control* with new movies, please register online at www.igroundcontrol.com/subscribe/en



Strength in depth

Stockholm is home to construction company Steffes Schakt's expanding fleet of Hitachi Zaxis excavators. *Ground Control* takes a tour of the Swedish capital and visits four job sites to find out how well equipped it is to tackle a wide range of challenging projects



Compact and powerful performance with the ZX180LC-5

With approximately 1.4million people living in urban Stockholm, it is the most populous city in the Nordic region, spread across 14 islands on the coast of southeast Sweden. It is the cultural, media, political and economic centre of the country, accounting for over a third of the country's GDP.

Steffes Schakt was founded in Stockholm by Stefan Eriksson in 1993 with one crawler excavator at his disposal. Another two excavators were added the following year and the first Hitachi machine – a ZX210LC – joined the fleet ten years later. The company has continued to grow and now has 14 employees and 15 Hitachi crawler excavators working on its various construction and civil engineering projects in and around the city.

These range from a ZX48U-5 to a ZX350LC-5 SLF (super long front), and include a ZX290LC-5, ZX250LC-5 SLF, ZX250LC-5, ZX225USRL-5, ZX180LC-5, ZX130LCN-5 and ZX130-5 supplied by the Swedish Hitachi dealer Delvator. Steffes Schakt's first Hitachi super long front was purchased in 2008 and this brought a new dimension to the subcontractor's business.

"The relationships that we have in place with the local and international contractors working in Stockholm are so important," explains Stefan. "Likewise, we receive excellent backup from our leading suppliers, Delvator and Hitachi Construction Machinery (Europe) [HCME]. They are trustworthy, and provide an appropriate level of technical support and genuine parts when required.

"The specialist equipment we've bought has also added value to our proposition. Hitachi offers the best reliability and this has been supported by excellent service from Delvator. There is nothing missing from the Hitachi excavator line-up – it's the complete range.

"In general, the key to excavator performance is controllability and the Hitachi machines are outstanding. The hydraulic systems are also very good and the new -5 machines have shown a decrease in fuel consumption in comparison with the previous models.

"Our operators are highly skilled and it is important that they look after their machines. This helps to minimise repairs and enhance reliability. The combination of impressive operating skills and immaculate construction machinery makes a good impression for Steffes Schakt."

"Hitachi offers the best reliability and this has been supported by excellent service from Delvator. There is nothing missing from the Hitachi excavator line-up – it's the complete range"

Stefan Eriksson,
Owner, Steffes Schakt



ZX180LC-5: compact performance

Across the road from the Stockholm South station, a ZX180LC-5 is working in a tight space overlooking part of a major railway construction project in the city. A second track is being constructed to alleviate the congestion created by the current single-track system on the line that runs south from Stockholm Central station. The new system should be in operation by 2017.

The Hitachi medium excavator is being used to lift excavated materials, load trucks and lower pipes underground. “The machine’s size complements the rest of our fleet,” explains Stefan. “It is ideal for working in tight spaces, while still offering a high level of performance.”

Operated by Patrik Lindskog, this is the ZX180LC-5’s first project. “It is an excellent machine,” he says, “and the whole package is strong in terms of its versatility. We benefit from its compact size, and its strength, power and smooth swing motion. There is also good visibility from the cab, which is relatively spacious and very quiet.”

ZX250LC-5 SLF: digging deep

In the south of Stockholm, Steffes Schakt’s ZX250LC-5 SLF is digging a shaft large enough to house a machine used to drill a 30m-long tunnel under a main road. This will link up to a trench on the other side of the road that will take a 1m-diameter pipe a further 70m to a bus station.

The pipe will be used to feed a supply of natural gas from a storage tank – to be erected on top of the shaft after it has been filled in – to



Digging deep with the ZX250LC-5 SLF

fuel the buses. “The ZX250LC-5 SLF has been on the site for three weeks,” explains Stefan, “and is the main reason we got this job. With an 18m reach, it is the ideal solution for this project.”

It is one of the first jobs for the super long front excavator, which was delivered in May, with operator Anders Lundberg enthusing, “This is the perfect machine, as it has an excellent hydraulic system, and is so smooth and easy to operate. The cab is also spacious and offers good visibility, including the rear-view camera.”

ZX290LC-5: excellent stability

One of the largest machines in Steffes Schakt’s fleet, a ZX290LC-5, has been working in northern Stockholm since the beginning of 2015. It has been deployed on a 400m drainage project with new rainwater and sewage pipes being laid in a trench, up to 7m deep.

“This is also a typical project for our company: digging trenches, lifting pipes and filling in again,” says Stefan. “The size of the machine is crucial for this type of application, not only for placing the heavy pipes, but also excavating deep into some of the sections.”

“The ZX290LC-5 is even better than the previous model,” says operator Kim Lindskog, “as it offers excellent stability – while lifting and moving. The cab is more comfortable, there is better storage, the visibility is good, there is less noise and the control panel is easier to use. The TRIAS hydraulic system also means that it is precise, and makes it possible to travel while operating the front attachment.”

ZX225USRL-5: enhanced versatility

In the west of the city, the land surrounding the former headquarters of the Swedish energy company Vattenfall is being developed into a new housing estate. A Hitachi ZX225USRL-5 – originally modified by HCME for forestry use – is preparing foundations, installing utilities and building roads on the site.

“This is a typical project for our company in that we are supplying the complete civil engineering package,” says Stefan. “The machine has been prepared for forestry applications with a heavier counterweight, reinforced undercarriage, and overhead window for



Excellent stability with the ZX290LC-5

enhanced stability, durability and visibility respectively. It can also be fitted with a variety of attachments, making it extremely versatile for general construction jobs.”

Operator Jocke Bjorkman, formerly a professional service technician, says, “This is an excellent machine, which is easy to control due to the superior hydraulic system. I prefer the elevated cab height for loading trucks and its outstanding versatility – it can do everything on this site. I am also able to work with a smile due to the quiet and comfortable cab.”

Please note that images may include modifications/attachments, which were made by the local dealer.



To see a movie of the Steffes Schakt fleet in Sweden, please visit www.youtube.com/user/HitachiConstruction. To receive a digital version of *Ground Control* with new movies, please register online at www.igroundcontrol.com/subscribe/en



The versatile ZX225USRL-5



A smart motorway

Smart motorways, such as a new upgraded section of the M3 in England, are a safe and cost-effective solution for improving road journeys. *Ground Control* visits earthworks subcontractor MJ Church on the innovative construction site to find out how Hitachi construction machinery is playing a significant part in the development

“My job is to ensure that productivity is high, so from my perspective reliability is the number one strength of Hitachi machines”

Vernon Creed,
Works Manager, MJ Church



‘refuge’ areas built into the design. Electronic signs – operated by a regional control centre – will be introduced to manage the flow of traffic in response to driving conditions.

HE is also installing the latest technology beneath the road surface to monitor traffic flow. It is estimated around 130,000 journeys are made on the road daily, with that figure set to increase by 30% over the coming years.

In addition, the M3’s road surface will be treated for the entire length of the upgrade with a brand new, low-noise material. The motorway passes through Chobham Common, one of the largest areas of heathland in Surrey, and Balfour Beatty’s sustainable design will take into account ecological considerations with natural habitats reinstated and enhanced.

The main construction work started in November 2014 with completion scheduled for December 2016. This includes the installation and refurbishment of gantries, new static and variable signs, concrete safety barriers, drainage and surfacing works.

Earthworks contract

After a tender process, MJ Church was awarded the earthworks contract by Balfour Beatty. Based in south-west England, the subcontractor is one of the largest civil engineering, earthworks and waste management companies in the region. It joins Balfour Beatty in recognising the importance of health and safety, quality and protecting the environment – key elements of their work together on the M3 smart motorway project.

MJ Church is also renowned for its capacity to produce an extensive range of recycled aggregates and soils. In this respect, its services are also being utilised on the M3 project to offer a cost-effective alternative to the use of primary materials.

“The M3 project is a real showcase for MJ Church and Hitachi

One of MJ Church’s ZX130LCN-5s working on the M3’s central reservation

in terms of the excavation work, range of machinery and recycling process,” says Steve Blower, MJ Church’s Managing Director. “The project ethos is about recycling the materials that are claimed from the site. The main drivers behind this are to reduce the amount of aggregates brought in from external sources and waste materials sent to landfill sites.

“Work commenced on 6 January 2015 and we hit the ground running. We started four weeks’ behind schedule, but after six weeks we were back on track with as many as 40 trucks, and 15 Hitachi excavators.”

The recycling process

Once the necessary permits were in place, MJ Church was able to start stripping off the topsoil and excavating the subsoil materials. The large majority of these were then transported to the site compound – designed by Balfour Beatty – ready for recycling, along with all of the sand and hard materials, such as concrete and asphalt. As part of the Balfour Beatty project philosophy and mitigation for environmental impact, all (majority of excavated) material is to be reused back into the main works.



A ZX130LCN-5 sifts through the materials

At first there were two ZX210LC-5s in the recycling yard at the compound. However, with high quantities of material being hauled in for processing, the contractor replaced one of the Zaxis medium excavators with a larger ZX350LC-5.

After a significant quantity of materials had been accumulated, MJ Church installed its own crushing and screening equipment. After the asphalt, concrete, sand and soil had been segregated, the harder materials were broken down and processed with the addition of a percentage of sand into: “Type one” (used in the new road construction, and under the new concrete barrier); and “6N” (used as backfill for structures such as gantries) sub-bases. These were tested for possible contamination before use by Balfour Beatty and are still subject to random testing.

The Hitachi fleet

At the time of *Ground Control*’s visit in June, the ZX210LC-5 was feeding the crusher and the ZX350LC-5 was loading MJ Church’s fleet of immaculate trucks from the stockpiles. There were between 1,000 and 1,500 tonnes of recycled materials being transported back on to the site every day during this busy period.

A ZX130LCN-5 had also joined the fleet to work in an additional

field acquired for stockpiling the high percentage of excavated subsoils that come back to compound. The 13-tonne Zaxis excavator sifts through these materials with a riddle bucket to take out the lumps and prepare them as suitable backfill around structures and drainage work.

At the busiest period during the spring, 107 MJ Church employees were working on the M3 project, supported by a fleet of ten ZX210LC-5s, four ZX130LCN-5s and the ZX350LC-5. “The 20-tonne excavators really looked impressive in the confined space of the central reservation,” says the subcontractor’s Works Manager Vernon Creed. “They were working close together in teams of three: one clearing the topsoil, one carrying out the excavation work and the other putting the stone in.”

MJ Church is concentrating on the verges and central reservation of the M3 project. “We are currently active on 14km of central reservation – which is ahead of schedule and going well – and 8km of verges,” explains Vernon. “When these sections are complete, the traffic management system is moved and we start the next section, with much of the work carried out at night.”

“This isn’t the only demand for the Zaxis excavators. If you asked



A ZX350LC-5 (foreground) and ZX210LC-5 working in the recycling yard

ten operators which machine they'd like to drive, eight of them would say 'Hitachi'. They are the operator's first choice, because they are great machines to drive, are well balanced and smooth.

"My job is to ensure that productivity is high, so from my perspective reliability is the number one strength of Hitachi machines. I can't afford to have breakdowns. We look after our machines with support from Hitachi Construction Machinery (UK) [HCMUK]. They provide us with an excellent service and even come in on a Saturday if required to avoid unnecessary downtime."

Close working relationships

MJ Church has a long-standing business relationship with HCMUK, the success of which has been based on the quality of the products as well as the strength of the support service. "We've been buying Hitachi excavators for a long time," explains Steve, "and we value HCMUK as a very strong supply chain partner."

"The performance of the machines is impressive and they deliver a favourable cost of ownership – this is something that we monitor closely. We are reliant on the efficiency of our equipment and team working in harmony. The level of support we receive is second to none and this backup is so important to our operation."

The factors taken into consideration for tender processes such as the M3 project include: the brand of excavator; the reliability of the machines; their maintenance and service schedules; the contractor's workshop capabilities; the life cycles of the equipment; and the current emission regulations.

"All of this means that we need to operate the latest construction equipment," concludes Vernon. "We have a relatively new fleet of Hitachi Zaxis-5 excavators and this also helps to attract good operators."

"Balfour Beatty is a really good company to work for and has a high level of expertise. Also, it has enough resources and a strong management structure in place, which always makes life easier."

Please note that images may include modifications/attachments, which were made by the local dealer.



To see a movie of MJ Church on the M3 project, please visit www.youtube.com/user/HitachiConstruction. To receive a digital version of *Ground Control* with new movies, please register online at www.igroundcontrol.com/subscribe/en



Where the customer counts

Ground Control visits Japan to bring you an exclusive behind-the-scenes look at the home of the Hitachi ZW wheel loader – Ryugasaki Works – and an insight into the latest advanced product development: a hybrid model

The two wheel loader assembly lines at Ryugasaki Works



Hitachi Construction Machinery Co., Ltd.'s (HCM) Ryugasaki Works manufactures and distributes Hitachi wheel loaders all around the world. Established on a 258,000m² site in the city of Ryugasaki, north-east of Tokyo, the factory assembles a wide range of compact and medium ZW-series machines.

Ryugasaki Works was established to make forklifts in 1952 and the first wheel loader made in Japan (a USA-licensed product) came off the production line at the plant in 1960. The first product developed using only Japanese technology followed 24 years later and the factory became part of the HCM group in 2005.

This takeover led to the launch of the first generation of ZW-series wheel loaders in 2006, with the latest range of ZW-5 machines introduced in 2012. The current output ranges from the



The main components are welded on site

ZW140-5 through to the ZW250-5 – currently available in Europe – plus a line-up of eight smaller models, from the ZW20 to the ZW120/120-5 for the Japanese market.

The impressive Ryugasaki Works encompasses separate facilities for welding, machining, painting, assembly, testing and development, and is the base for 750 HCM employees.

A single shift operates on the two assembly lines, one for the ZW20-90 and the other for the ZW100-250. These are combined with the two shifts allocated to the welding and other lines to manufacture 6,000 ZW-5 wheel loaders per year. The most popular model is ZW100/100-5, due to demand from the domestic market.

The manufacturing process starts with the welding of the components that form the main structure – the front and rear frames, as well as the lift arm and bucket – followed by the necessary machining and painting of these parts.

Assistant Manager of Machining and Welding Masaaki Watabe says, “We are proud that Hitachi wheel loaders are being used throughout the world. Our main concerns are for safety, quality and delivery, and every day safety comes first in the factory.”

The advanced technology at Ryugasaki Works includes 20 welding robots and a series of laser cutting machines (for smaller components and metal plates). The axles and some of the transmissions are produced by Hitachinaka Works, and the cab is delivered by an external supplier.

Foreman Yoshiaki Hashimoto has responsibility for the assembly lines, including the personnel and parts, as well as health and



Safety, quality and delivery are the main priorities at the factory

safety. “It takes five hours to assemble one unit through eight distinct stages,” he explains. “This is a typical day in the factory, when we will be producing ten units in total.”

The assembly process starts with the joining of the rear frame and axle, followed by the fitment of the front frame and axle, plus the counterweight, to link the front and rear frames. The engine is installed next, before the cylinders, oil tank, engine cover and other covers are fitted.

The cab is then added to the increasingly recognisable structure, followed by the steps, fender and remaining covers. The penultimate stage encompasses the addition of the hydraulic oil and diesel, so that the engine can be switched on, and the movement of the lifting arm and bucket tested. Finally, the wheels, front fender and lights are the finishing touches to a new ZW-5 wheel loader.

“I am very proud of my position on the assembly line,” adds Mr Hashimoto. “Ryugasaki Works is the ‘mother factory’ for Hitachi

wheel loaders and so this is an extremely important role. The biggest challenges are safety – the number of incidents must be zero – achieving the highest level of quality and making the JIT [just-in-time] system more efficient.”

Any requests for customising the products can take place at the factory or at one of the Hitachi dealers in Europe. These vary according to the application that the machine will be used for (such as quarrying or waste handling) but the type of bucket and reinforced frame are among the most popular items specified by the customer.

The final checking and inspection procedure for each product is typical of Hitachi’s dedication to manufacturing products of unfailing quality in response to customer needs. With this in mind, Ryugasaki Works also features an interior rolling road and an extensive 720m test track for checking speed, braking and handling. This is routed around the periphery of the site and includes a steep uphill section.



It takes five hours to assemble a wheel loader



The final checking and inspection procedure



The innovative new ZW220HYB-5 was conceived at the Ryugasaki Works

Advanced technology from Ryugasaki

Hitachi unveiled its first mass production hybrid wheel loader at the Internat exhibition in Paris (April 2015). The innovative new ZW220HYB-5 was designed and constructed at the Ryugasaki Works.

It has been developed as part of HCM's quest to manufacture an eco-friendly product, which will use significantly less fuel than it did in 2010. This is in response to the world's focus on protecting the environment and as a result of increasingly strict emission regulations.

The ZW220HYB-5 incorporates 100% proven Hitachi group technology from the bullet train and EH-series dump trucks, which has been specially developed for the hybrid wheel loader.

Its four-cylinder engine powers a generator, which produces energy to drive two electric travel motors. When the machine is rolling or braking, it continues to store electricity in a capacitor. Under acceleration, it uses energy from the generator and the capacitor, and so less revs are required when it reaches normal travel speed.

The control units are the key to the electrical power process

and engine operation. For example, when lifting and loading automatically the engine rpms increase in relation to the load – and there is no need to use the accelerator pedal.

There are four main benefits of the hybrid system: reduced fuel consumption; enhanced reliability and safety; less noise; and easy operation. Feedback from extensive testing by HCM's customers at quarrying and waste handling sites in Japan has been extremely positive. This has helped the development team to successfully fine-tune the ZW220HYB-5 before introducing it to the local market.

"HCM is constantly focused on enhanced customer satisfaction by developing the latest advanced technology," says Hitachi Construction Machinery (Europe) NV's Wheel Loader Product Specialist, Vasilis Drougkas. "Customers demand a high level of performance, reduced fuel consumption and a low cost of ownership – this is the challenge for the future development of Hitachi wheel loaders."

Now available at
www.hcmewebshop.com



EH5000AC-3
Dump truck
Scale 1:87



Mousemat



Construction pen



Tape measure