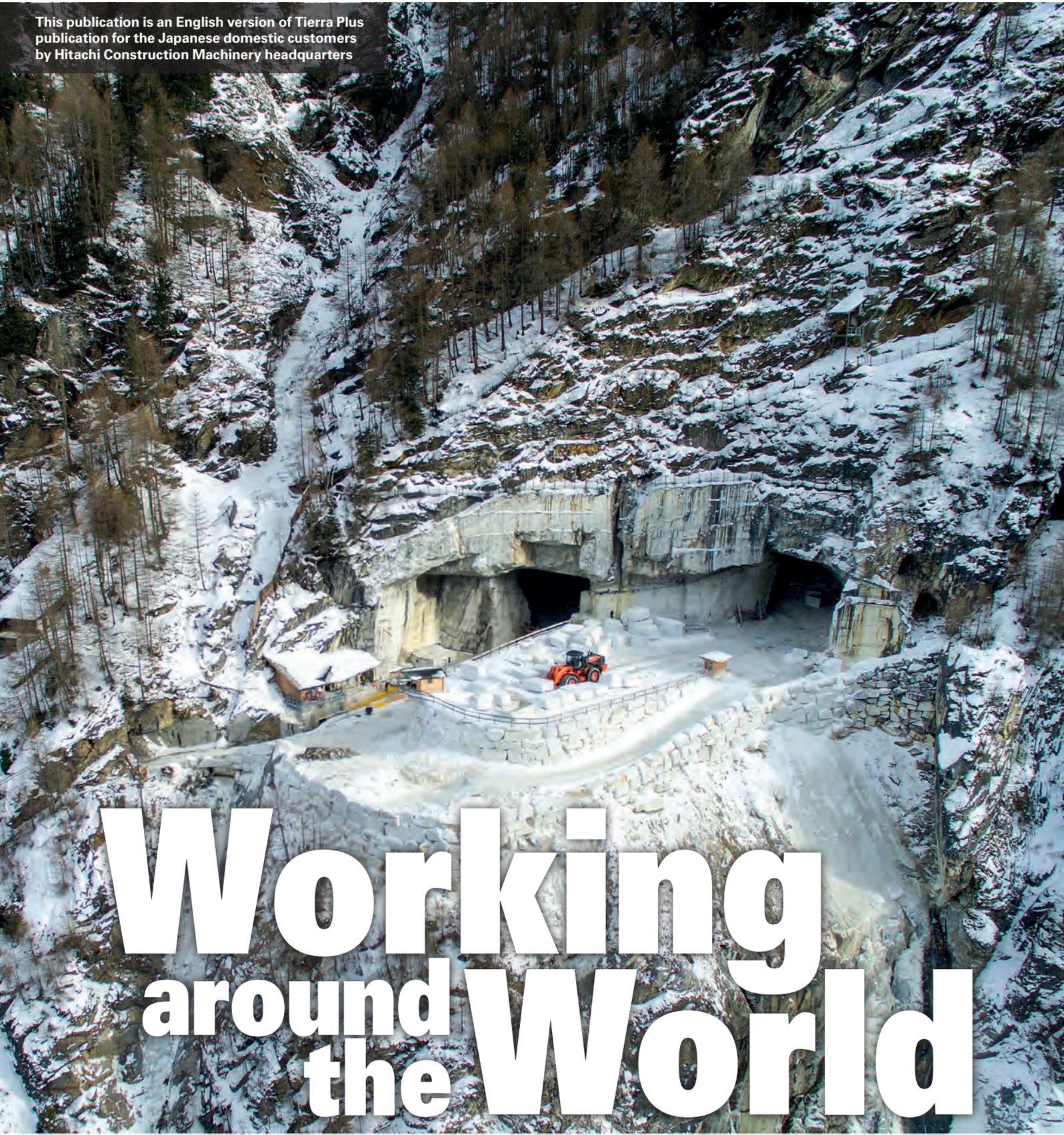


This publication is an English version of Tierra Plus publication for the Japanese domestic customers by Hitachi Construction Machinery headquarters



Working around the World

Examining the product and service strengths
being demonstrated in overseas operation sites



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The Hitachi Construction Machinery Group seeks to constantly supply "Reliable solutions" that exceed the expectations of customers, earning their unwavering trust and establishing a solid position as one of the world's top three global construction machinery manufacturers. This goal is one that we can only achieve through the evaluations of our customers. We not only drive the evolution of construction and mining machinery using advanced technology, but also meet a wide range of needs by providing solutions that use after-sale services, ICT, and IoT to help solve customer's challenges like safety and productivity improvements and lifecycle cost reductions. We are making steady progress on operation site frontlines not only in Japan but overseas as well.

Writer: Yuji Masuda

* Some photographs show overseas models and operation in conformance with overseas standards.

Italy



Extracting high quality marble essential for certain architectural styles

The largest wheel loader from Hitachi Construction Machinery, the ZW550-5B, is in use in the Whitewater marble quarry located in the north of Italy. It is located deep in the Venosta valley in the village of Laas, South Tyrol. This quarry, perched 1,600m above sea level, produces pure white, durable and high quality marble.

It is estimated to contain approximately 30 million cubic meters of marble, enough for more than 500 years. This makes it one of the largest natural marble resources in the world.

Lasa Marmo, which has 30-year lease for the quarry until 2033, was founded in 1928 with capital from Germany, Italy and the USA. A railroad was laid a year later to transport the marble excavated from the site, and it started operating in 1930, along with Europe's most modern means of transporting rock at that time.

The marble excavated from the quarry is called Lasa marble, and is one of the notable features of certain architectural styles, from the neoclassical period of the late 18th century to the present, in cities such as Vienna, Munich and Berlin. There are countless famous works constructed using Laas marble, such as the Helmuth

Wheel loader operator, Roland Spechtenhauser, 's initial impressions, were that the ZW550-5 had excellent visibility to the front and rear, including the view from the camera. Regarding the monitor's multi-functions, he also said, "In addition to the machine's different functions, I also find the availability of information on fuel consumption and checking routine maintenance procedures to be useful."

The ZW550-5B wheel loader met Lasa Marmo's purchasing criteria and has been deployed for use in a massive marble quarry in northern Italy

von Moltke statue in Berlin, the Pallas Athena fountain in Vienna, the Queen Victoria monument in London and the Heinrich Heine monument in New York.

Erich Tscholl, Lasa Marmo's Operations Manager, explains, "In recent years it has been used in the new World Trade Center Transportation Hub in New York and in Italy's tallest building. International architects are impressed with Lasa marble's color, durability and texture."

The company places a strong emphasis on processing the raw materials. Through

its marble production, it contributes to local industry and the region's artistic traditions, as well as working as a partner with the local authorities to protect the area's natural beauty.

Hitachi Construction Machinery's product strengths and dealer partnerships, selected through direct comparison with other two brands

The precious white marble quarried at the quarry is transported within the site by a ZW550-5B.

At the quarrying point, located 35m below the entrance to the site, a chainsaw is used to cut out marble columns using unique Lasa Marmo techniques. These marble columns are pulled down to the floor by a Hitachi ZX520LCH-3 hydraulic excavator. The columns are then cut into 20t blocks, and a ZW550-5B carries each block, skillfully navigating the tight route, to the storage area outside the cave (A video of the process can be seen using the QR code).

The ZW550-5B was delivered in December 2014 by a local sub-dealer (Comac*). In the roughly two months since its introduction it had been put in operation for 250 hours. At this point it was already reducing fuel consumption by average eight liters per hour over the machine previously being used. Depending on demand, anywhere from 2,000 to 4,500 cubic meters of marble are excavated per year, and the ZW550-5B has been highly regarded as the quarry's main wheel loader, responsible for transporting material within the quarry and a deciding factor in the quarry's production efficiency.

The deployment of the ZW550-5B was a significant investment for Lasa Marmo,



[Watch a video]
Scan the QR code to see a video.

and when selecting which machine to go with, it created a shortlist of three similarly classed wheel loaders. Placing a high priority on the opinions of those in the field, Lasa Marmo directly compared and tested the three models across five important criteria.

Erich discusses them, "In order to select the best product for our worksite, we established five criteria: (1) price, (2) after-sales service, (3) performance and lifting power, (4) agility and maneuverability, and (5) size.

When we summarized the results of the comparison test based on feedback from the worksite, we found that the ZW550-5B had a superior hydraulic system, stronger lifting capacity, and was able to climb the steep slopes while fully loaded. Overall, it performed better than the other two brands. The DPF filter was another essential factor. We needed to reduce emissions and noise to produce a safer working environment within the confined space of the site."

We selected the ZW550-5B proposed by Comac due to the combination of the quality of the product, strength of the after-sales support, and excellent work-

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ing relationship with the dealer."

Lasa Marmo's decision showed that it does not only consider Comac to be an equipment supplier but also a partner that provides the service they need.

Erich explains, "We had heard good reports about Comac's support. The service we receive for our equipment is very important. If equipment stops working it costs us a large amount of money. Wheel loaders are the key to productivity, so they must always be in operation."

Optimal performance for the worksite, highly praised by operator

The ZW550-5B has had an excellent reputation in the worksite since it was first introduced. Roland Spechtenhauser, who has worked as a wheel loader and hydraulic excavator operator for nine years, says, "It handles amazingly well. It was easy to learn to operate and it already felt like it was part of me after just two or three days. The feel of the levers is a strength of this machine. It does exactly what you want it to do, even for minor adjustments."

Impressions of the machine remained high even months after its introduction. "The performance and power of the ZW550-5B is ideal for this site. The hydraulic system and lifting capacity are amazing," he explains. He never fully loaded past wheel loaders.

"The ZW550-5B, on the other hand, can lift anything with no problem, and it can do so on minimum throttle. That means there is no difficulty in moving the marble blocks through narrow spaces or up the steep slopes in the cave with no stress for either the machine or me. The smooth automatic gearshift significantly contributes to low fuel consumption. The traction control is switched on permanently so machine operation is stable. This also means that there's less wear and tear on the tires."

The key to the business success of Lasa Marmo's Whitewater quarry is to keep finding high-quality materials and moving them efficiently. To achieve this goal in such a tough working environment, Lasa Marmo has to invest in the most reliable and safe equipment. The high-performance ZW550-5B has met these requirements and is playing the lead role in the logistical process.



Marble blocks transported to the storage area at the entrance of the quarry are carried by cable to the other side of the valley and then moved via a railroad and trolley system to the Lasa Marmo's yard.

*Comac is a sub-dealer of the Italian Hitachi dealer (SCAI SpA).

France

The ZX530LCH-6 is in use in the 13-hectare Guena granite quarry. It is responsible for loading excavated granite onto two rigid dump trucks.



The ZX530LCH-6 is designed and engineered to meet the challenging working conditions of Guena quarry.

The reliability of "Hitachi" products is beyond comparison

The Guena granite quarry is located in Saint-Renan, in the Brittany region of western France. The quarry opened in 1945 to excavate and supply the vast quantities of aggregates that were required to rebuild the city of Brest, in western France, which was almost totally destroyed during the Second World War. Currently, most of the buildings in Brest have been rebuilt using granite and concrete, but the Sotravi Group has permission to continue extracting materials until 2038.

In autumn 2016, the site was one of the first in Europe to introduce the ZX530LCH-6, the newest model of hydraulic excavator. The hydraulic excavator loads blasted granite onto two Euclid rigid dump trucks at the 13-hectare site. The trucks haul the materials to the on-site crushers. Guena

currently has a production capacity of 300 tons of material per hour. This totals to 300,000 tons per year. The ZX530LCH-6 is active on the front lines of this extraction.

The President of Sotravi, Freddy Talarmin, introduced the first Hitachi machine in 1989. In the years since, it has deployed 14 Hitachi hydraulic excavators, as well as several wheel loaders and a rigid dump truck. "We aim to change machines after 14,000 hours," he explains. "The ZX530LCH-6 was selected because of its stability, strength and durability."

Eugene Laot is a veteran operator with a career spanning 40 years and extensive experience with the ZX520LCH-5, which was used before the new model was introduced. "The new machine," he says, "is powerful and smooth—even with a full bucket. It is also very stable. One of the highlights is the reversible fan, which reduces the buildup of dust and makes day-to-day maintenance easier."

The ZX530LCH-6 delivered on Eugene's birthday.

"I'm happy with this new addition to our fleet. We also enjoy an excellent working relationship with our local Hitachi Construction Machinery (Europe) NV dealer,

Cobemat. We remain loyal to Hitachi's machinery. Their reliability is beyond question," says President Talarmin.

Tilt rotator enables use in tight urban areas

A ZX145W-6, the latest model of wheeled excavator, deployed by Solotramo has been working on road improvement efforts for roughly two weeks in front of the Saint Etienne de Metz Cathedral in the city of Metz, located in the Mosel region of northeastern France. The dealer TECHNI-MAT SAS provided the machine, which is equipped with a tilt rotator attachment which enables it to tilt and turn the bucket.

"Thanks to this attachment," says a representative of Solotramo, "we can handle a more diverse range of work. It can be used even in the confined spaces and tight areas of urban locations, helping us stand out from our competitors."

Before purchasing the machine they received a demonstration, and according to Solotramo, one factor that was instrumental in their decision-making was the positive impression they received of pre-sales support and after-sales follow-up. Their impressions remained positive after deploying the equipment.

"The ZX145W-6 has a very compact, stable body. It's easy to use and fast, and can be easily maintained. This, together with the low fuel consumption, makes it a highly economic addition to our fleet"



The ZX145W-6 is working in front of the Saint Etienne de Metz Cathedral, constructed during the Middle Ages.



Indonesia

The ZX110MF-5G is uniquely designed for Indonesian agriculture and forestry sector. As an optional extra, it has wide 960mm shoes to handle the unstable, marshy ground. Customers engaged in the cultivation and maintenance of palm oil farms use it for water channel and road construction, timber loading, and more.



An optimally tailored machine for Indonesian agriculture and forestry industry

A new model, revamped to fit Indonesian working environment

Hitachi Construction Machinery Indonesia has been a forerunner in developing, manufacturing a model optimized for Indonesian agriculture and forestry industry in conjunction with the Tsuchiura Plant in Japan. It meets Indonesian particular needs, featuring a high degree of work adaptability that enables it to be used in work such as primary forest logging, timber transport, and other farmland reclamation and plantation maintenance work.

The ZX110MF-5G, together with its larger sibling model, the ZX138MF-5G, are new, revamped models for agricultural and forestry use, making their debuts



Forestry and agriculture models can be outfitted with buckets or other fixed grapples as customers desire (the photo shows the ZX138MF-5G with a fixed grapple). The component beneath the counterweight is called a skidding bar (optional), a hook used when loading felled timber onto a sled. This also fills a common need in Indonesia.

this summer. To further improve the capabilities of existing models, over 30 changes have been made, achieving greater fuel efficiency and durability, as well as heat balance for use in tropical climates. These models are optimized for use in harsh primary forest environments. These products have been adapted for local use, such as through the installation of engines capable of operating with low purity fuel.

In addition to operating its own roughly 200 hectare palm oil farms, CV SINAR KEBIAU also serves as a farmland reclamation contractor for other companies, so even before the model change it purchased three models for use in agriculture and forestry, all of which were Hitachi machines.

The company has established a strong relationship with PT Hexindo Adiperkasa, a Hitachi Construction Machinery Group company responsible for sales and service in Indonesia.

"Hitachi's after-sales service is extremely reliable. When we contact them they send mechanics immediately. We also appreciate the fact that we can use ConSite to monitor machinery operating conditions at any time," says President Toni S. Sos.

According to President Toni, the sites where the ZX110MF-5G is used are remote and difficult to reach, so equipment must be highly reliable. Many are marshy areas with unstable footing, requiring wide undercarriage (single high

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New model launch events (exhibitions) have been held at six locations in Indonesia. Attendees have expressed interest in the models' technical strengths, maintaining high levels of work ease while reducing fuel consumption.

grouser shoes).

"We're very happy with the ZX110MF-5G. It is easy to operate, has excellent front response, and excellent cab comfort. It also has great fuel efficiency, helping keep down running costs."

Hitachi Construction Machinery Indonesia strives to listen to customers and create products with the functional capabilities needed in customers' fields. The ZX110MF-5G is an excellent example of this.

China



A ZW310-5A outfitted with a log grapple carries a large log. Unprocessed timber is large, and balancing it during transport requires special techniques, so newly deployed equipment needs to be highly maneuverable so that operators can control it at will.

High quality, high performance wheel loaders working 24 hours a day in confined spaces

High performance makes 24 hour continuous operation possible

The Jingjiang Yingli Port Co, Ltd. owns nine piers on the north bank of the middle and lower Yangtze River, that flows across China, at which it loads, unloads, and stores large amounts of lumber, bulk steel, coal, and more. The company, which handles over 10 million tons of product per year, has purchased 19 wheel loaders of ZW310 series since 2008, using them year-round in unprocessed timber transport operations on its piers.

The newest of the machines in use are the two ZW310-5A delivered this summer by Hitachi Construction Machinery (Shanghai), one of Hitachi's Chinese sales companies. The work process con-

sists of attaching a log grapple, clamping an unprocessed log in the lumber yard and pulling it out, raising the grapple, and lowering the unprocessed log into a carrier.

The work spaces at the piers are confined, and the equipment must frequently be moved forward and reversed back, so the wheel loaders used for this work require high levels of transmission and torque converter quality. The longer cargo lowering takes the greater the mooring costs, so the machines also need to be able to speedily handle the lumber constantly being unloaded from ships by crane. Cargo handling also must take into consideration how to most efficiently store cargo for future shipping, so the wheel loaders working on the piers are often required to operate 24 hours a day.

"These worksites present true quality and performance challenges for wheel loaders," says a Yingli Port representative. "The ZW310-5A offers extremely stable, smooth, well-balanced operation, even in these harsh working environments, achieving a high level of operation efficiency. They are comfortable, quiet, fuel efficient, and have great cost performance. They are products we can rely on. They are meeting our complex and exacting harbor cargo handling needs."

With regard to Hitachi Construction Machinery (Shanghai), he continues, "Not only do they provide dependable maintenance and management for machinery as

a valued partner, but we are especially impressed that they provide technical training for operators. We will continue to choose Hitachi wheel loaders in the future."



19 wheel loaders of ZW310 series have been deployed since 2008, working efficiently in the harsh working environments of the piers along the Yangtze River.

Australia

Experiencing the toughness of Hitachi machinery through the digging of trenches for residential development land

DigginIt Earthworx, located in Port Lincoln, South Australia, performs trenching for residential development land. Owner Matt Christian's first Hitachi machine purchase was a used mini-excavator. Since then, he has stayed with Hitachi, purchasing a ZX38U-5, ZX50U-2, ZX55U-5, and ZX85USB-3.

"The wear and tear we put our machines through is tough to say the least, but Hitachi equipment, starting with that first used excavator, well and truly outperformed all other equipment. I was stunned that we were able to do 3,000 hours without any problems on a second hand machine."

Matt explains that he chooses the Hitachi brand because Hitachi produces machines that are able to withstand the harshest conditions. The new ZX50U-2 he purchased operated 7,000 hours without a problem, further reinforcing his impression of Hitachi's quality and reliability.

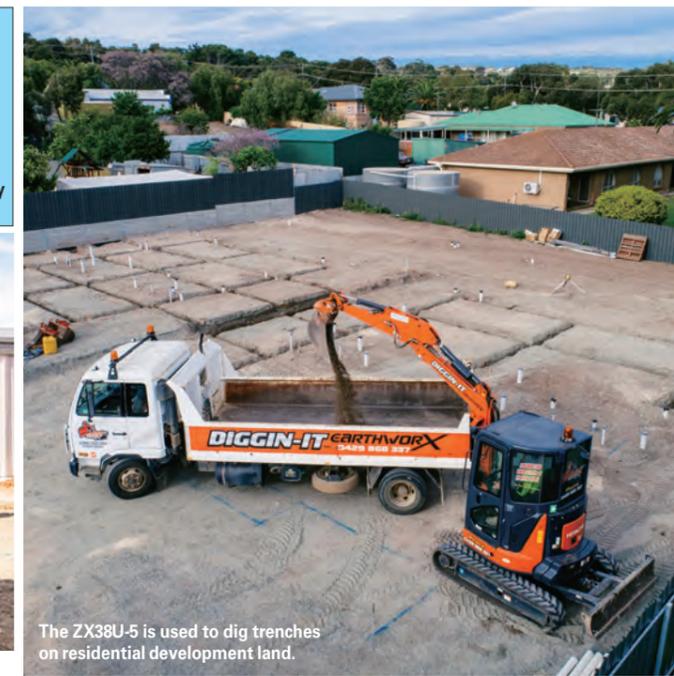
"All of the mini-excavators I have are powerful enough to excavate rough terrain, and their sensitivity and response make them the best to operate in any job. They are usually operated for 10 hours

per day, so both durability and operator comfort are important. Hitachi mini-excavators satisfy both of these requirements. Hitachi Construction Machinery Australia's after-sales service is another factor

in my reason for choosing the Hitachi brand. The site service is always speedy and prepared with parts, keeping worksites running, which is important in my line of work."



Matt is a dedicated Hitachi user.



The ZX38U-5 is used to dig trenches on residential development land.

Kenya

Why a Leading Kenyan cement producer switched to Hitachi for many of its machines



The ZX870LCH excavates limestone, to be used in cement production.



The ZW310-1 carries clinker and raw ingredients within a factory.

Mombasa Cement Limited, with two plants in Kenya, is one of East Africa's leading producers of the cement used primarily in the Kenyan and Ugandan construction industries. It uses its technical strengths to produce 1.8 million metric tons of cement and 1 million metric tons of clinker (an aggregate produced by sin-

tering the materials used to make cement) that meet exacting Kenyan government standards and international standards.

The company owns 14 units of 30 to 80 ton Hitachi hydraulic excavators and 15 30t Hitachi wheel loaders. Most of these were switchovers from competitors based on proposals from Rock Plant, a Hitachi dealer. The hydraulic excavators are mainly used to mine limestone, one of the materials used to make cement, and the wheel loaders are used to transport clinker and raw materials within the company's plants.

"Rock Plant provides far superior product support and after-sales service than other dealers. The large ZX870LCH hydraulic excavators were major investments for us, and they have proven to be high productivity machines. The dealer's support system is incredible. One of the

deciding factors in our selection of Hitachi was the 24/7 telephone support service, helping reduce downtime risks. With the latest models, we use ConSite, which enables us to perform highly efficient machine maintenance and management, to greatly reduce maintenance costs. Both our hydraulic excavators and our wheel loaders have been praised by operators for their speed, performance, and fuel efficiency, and they are significantly contributing to improving productivity and reducing per-ton production costs," says B.T. Shah, director of Mombasa Cement.

In the 3rd week of January HMEC product support TEAM in combination with HCM product specialist will assemble one EX 1900-6 which recently was added to their fleet. In combination with one SCX2800-2 It has now become the HCM showroom of East Africa having many products out of our product range to achieve the best possible production.

* 24/7 telephone service is provided by the Rock Plant dealer.

India * Japan

Participation in a joint governmental and private industry program between Japan and India to promote manufacturing skill transfer Developing core Indian manufacturing site personnel



With the participation of the Hitachi Construction Machinery Group, a new Japanese-style manufacturing institute has been established in Tata Hitachi's Dharwad Plant. The plant had already offered training courses for employee development.

The governments of Japan and India are working together to implement a "Manufacturing Skill Transfer Promotion Programme." Through this program, government offices and private companies in both countries are working together to establish Japanese-style manufacturing schools in various locations in India with the aim of raising the overall level of manufacturing personnel development.

The objective of this program, which contributes to the current Modi administration's "Made in India" and "Skill India" policies, is to develop 30,000 manufacturing personnel over the course of ten years. Toyota, Suzuki, Daikin, and Yamaha Motor have already opened schools in India through local subsidiaries.

These Japanese-style manufacturing schools, or Japan-India Institutes for Manufacturing (JIM), are "institutes where Japanese companies directly teach the discipline and attitude required at manufacturing sites and practical skills to young people in India to train future shop floor leaders*1." After being accredited by the Ministry of Economy, Trade and Industry, JIM education facility construction and preparation and education program design are carried out by Japanese companies through their local subsidiaries.

The efforts of the two countries, and the objectives of the program, resonate with Hitachi Construction Machinery, which is why it decided to participate in the project through Indian Group company Tata Hitachi. Tata Hitachi has provided an educational facility on the grounds of its Dharwad Plant, which boasts the most advanced production equipment of the company's three Indian plants, with JIM functions. Over the course of three years it plans to develop 30 future leaders through lectures*2 and on-the-job training (OJT). The plant already had a training course for employee development, but as part of its participation in the project, it plans to create new training content involving Japanese skill transfer.

In India, which is experiencing rapid economic growth, the Hitachi Construction Machinery Group has supplied construction machinery such as the hydraulic excavators and wheel loaders used in social infrastructure maintenance. It has also used the ConSite service solution to perform predictive diagnosis and preventative maintenance for customer-owned equipment, and to rapidly and accurately identify abnormalities, providing ICT and IoT solutions that contribute to reduced lifecycle costs. In addition to these efforts, through this program it will contribute to personnel development in India.

*1 Excerpted from a Ministry of Economy, Trade and Industry newsletter.

*2 Lectures will be given at a nationally-accredited educational institution located in the city of Dharwad.