

# TERRATEC & JIM TECHNOLOGY FORMALISE RELATIONSHIP



*TERRATEC ø10m Double Shield TBM and JIMT ø16m EPBM*

**T**ERRATEC is proud to announce the incorporation of its business partner, JIM Technology from Japan, as shareholder of the Company.

Both companies have been working together for the last eight years and delivered over 60 TBMs for global markets including India, Thailand, Turkey and Europe. In all these cases, TERRATEC has been the main contractor and JIMT it's subcontractor for the provision of key components and designs for EPB and Slurry TBMs. After all these years of successful partnership, both

companies decided to take a step forward and seal their relationship.

JIMT is the company created by three Japanese industrial giants: IHI Corporation, Mitsubishi Heavy Industries and JFE Engineering Corporation, to merge their TBM divisions, thus combining their technology and experience of over 3,000 TBMs delivered since 1936 of every type and size up to 16 metres in diameter, for both Japanese and overseas projects.

JIMT will now hold half the

shares of TERRATEC. The other half will remain with the existing partners, who will keep running the business, since the company will keep the same structure, key managers and teams for the operation of its Marketing, Sales, Production, After Sales and Field Service Divisions.

*"TERRATEC has a very efficient team working all over the world. They have achieved to become number one TBM supplier in important growing markets like India and Thailand and achieved continued sales in established markets like*

Europe. We want TERRATEC to keep operating and expanding the business as they do, but now with JIMT's full and direct support from the Engineering and Production side" said Takanobu Miki, President of JIMT.

TERRATEC will keep its global network of regional offices and country representatives. The contact persons for clients will remain same as before. Furthermore, the market will see in the coming months TERRATEC expanding its global presence further.

As in past years, the design of the machines will continue being carried out using JIMT's technology for the Shield Machines (EPB and Slurry) with

TERRATEC's team in Australia taking care of the Hard Rock TBMs, Raise Boring Machines and Conveyor Systems.

The main parts of the TBM, such as the cutterhead drive unit, will keep being fabricated by JIMT in Japan, with the key components including Electric and Hydraulic Systems being sourced in Japan, Australia and Europe. The assembly and testing of the TBMs will keep being done at TERRATEC's plant in GuangZhou, which is now just one hour away from the company's global office in Hong Kong via the recently opened high-speed railway.

Regarding the Raise Boring Machines and Conveyor Divisions, these will remain

fully managed from Australia with the entire design and production being done in TERRATEC's facilities in Tasmania, as it has been since 1990.

"It is a great day for the Company. We have been cooperating eight years with JIMT so closely and now with this formal union there are no doubts that we are together and capable to build, deliver and support any type and size of TBM for any project in any market globally. As we expand our team and with the increased support from our partner I think that, to coin a phrase, "the sky is the limit";" says Bruce Matheson, TERRATEC's Sales & Marketing Director.

with some cobbles expected. The TBM's high-torque soft ground cutterhead features a spoke style design with a spoke style design with a 49% opening ratio and cutting tools consisting of fixed and back-loading knife bits to ensure rapid advancement and minimum interventions.

The tunnel will be excavated at an average depth of 25m, beginning with an approximately 400m radius curve and continuing along an essentially straight alignment, reaching a maximum slope of +/- 2.0%. As the machine progresses, it will install a

precast concrete segmental lining ring consisting of six (four parallelograms and two keys) 250mm thick, 1400mm wide, segments.

"From the initial concept to this point in the process it has been refreshing working with TERRATEC. They have listened to our requests and, as a result, we have just accepted a machine that we are all sure will do a good job," says Ezio Collinelli of CMC di Ravenna. "The TBM will arrive on site on time thanks to efficient production on TERRATEC's part and our project team is looking forward to working with the

TERRATEC field service support team."

In recent years, TERRATEC's order book has demonstrated significant growth around the world. Machine performance and client satisfaction have provided the foundations of a loyal customer base and are making the Australian manufacturer the first choice for more and more contractors.

Last year, TERRATEC opened a new large-diameter TBM facility that has delivered more than 12 new machines in the second half of 2017 and beginning of 2018.

The first of two new 4.66m diameter TERRATEC Earth Pressure Balance TBMs have been delivered for a 13.5km potable water tunnel system, in Buenos Aires, Argentina.

## TERRATEC EPBMS TO ASSIST ARGENTINA'S LANDMARK AGUA SUR WATER TUNNEL PROJECT

TERRATEC, is celebrating the delivery of the first of two new Tunnel Boring Machines (TBMs) that will excavate the Río Subterráneo a Lomas tunnel, in Buenos Aires, Argentina, following successful factory acceptance testing last week.

The 4.66m diameter TERRATEC Earth Pressure Balance Machine (EPBM) will be deployed by Italian contractor CMC di Ravenna

on a 13.5km-long tunnel that will carry drinking water from the newly expanded General Belgrano Water Treatment Plant, in the city of Bernal (Quilmes district), to the city of Lomas de Zamora.

The tunnel is a key component of the multi-billion-dollar Agua Sur system that is currently being built by Argentina's national water and sanitation company AySA. Financed by the Government and

the Development Bank of Latin America (CAF), it is the country's largest water infrastructure project in 40 years and will provide fresh water for 4 million inhabitants in the southern metropolitan area of Buenos Aires.

The 4.66m diameter TERRATEC EPBM has been designed to tackle the variable soft ground geology along the project alignment, which ranges from silts to sandy silts



# TERRATEC EPBM TO STEER FOR SUCCESS IN BANGKOK

**A**t the end of November, TERRATEC celebrated the successful Factory Acceptance Test of another tight radius machine. This machine is a new 4.27m diameter Earth Pressure Balance Tunnel Boring Machine (EPBM) destined for the Klong Daan Cable Tunnel Project, in Bangkok, Thailand.

The event was attended by representatives of Bangkok's Metropolitan Electricity

Authority (MEA) and Thai contractor See Sang Karn Yotah (1979) Co., Ltd. Designed to accommodate a new high-voltage cable system, the Klong Daan Cable Tunnel Project is one of a series of tunnelling projects being undertaken by the MEA, which are being built to meet increased power demands in the Thai capital.

Located to the south east of

the city, the Klong Daan Cable Tunnel Project is situated in the Bang Bo District of Samut Prakan, and is subject to tight alignment constraints imposed by the need to follow public road easements. To achieve this, the TERRATEC EPBM has been designed with an X-type articulation system, which can accommodate extremely tight horizontal curves. The machine, which is capable of excavating a minimum radius

*A new 4.27m diameter TERRATEC tight radius TBM will enable a challenging alignment on the Bangkok Metropolitan Electricity Authority's Klong Daan Cable Tunnel, in Thailand.*

curve of 48m, will be used to conduct three tunnel drives (of 1,128m, 875m and 795m in length), at a maximum depth of 31m, each beginning or ending with a tight curve.

*"We have used a number of TERRATEC machines on past tunnel projects, including contracts for the Bangsue Wastewater Collection System and Installation Main Underground Conduit for Electric and Relation Works," says See Sang Karn Yotah (1979)'s Project Manager, Mr. Ekaphong Rungruang. "Those machines were very well suited to the ground and that, along with TERRATEC's experience in designing high-performance TBMs and the quality of*

*its field service, was the reason we decided to select TERRATEC for the cable tunnel at the Klong Dan Substation."*

Geological conditions along the tunnel alignments will consist of mixed faces of very stiff to hard or silty clay and very dense to very fine sand. The TBM's soft ground cutterhead therefore features a spoke design with a 70% opening ratio and the addition of knife bits to assist break-in and break-out of the concrete shaft eyes.

Traditionally reinforced, 250mm thick by 1200mm wide, Universal tapered precast concrete segments (4 + key) will be installed as the machine

progresses and muck removal, segment transport and machine supply will be via rail bound equipment.

Machine operation will be assisted at all times by TERRATEC's highly-experienced Field Service staff, providing quality after sales support to ensure optimum performance and successful project completion.

Following the successful factory acceptance test, the machine will be now shipped to Thailand and is expected to arrive in mid-2019. The TBM will then be transported to the project site where it will be launched on its initial 1,128m-long drive.



## WATCH US ON YouTube

A video featuring TERRATEC's TBM S65 – On Site Testing in Istanbul



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