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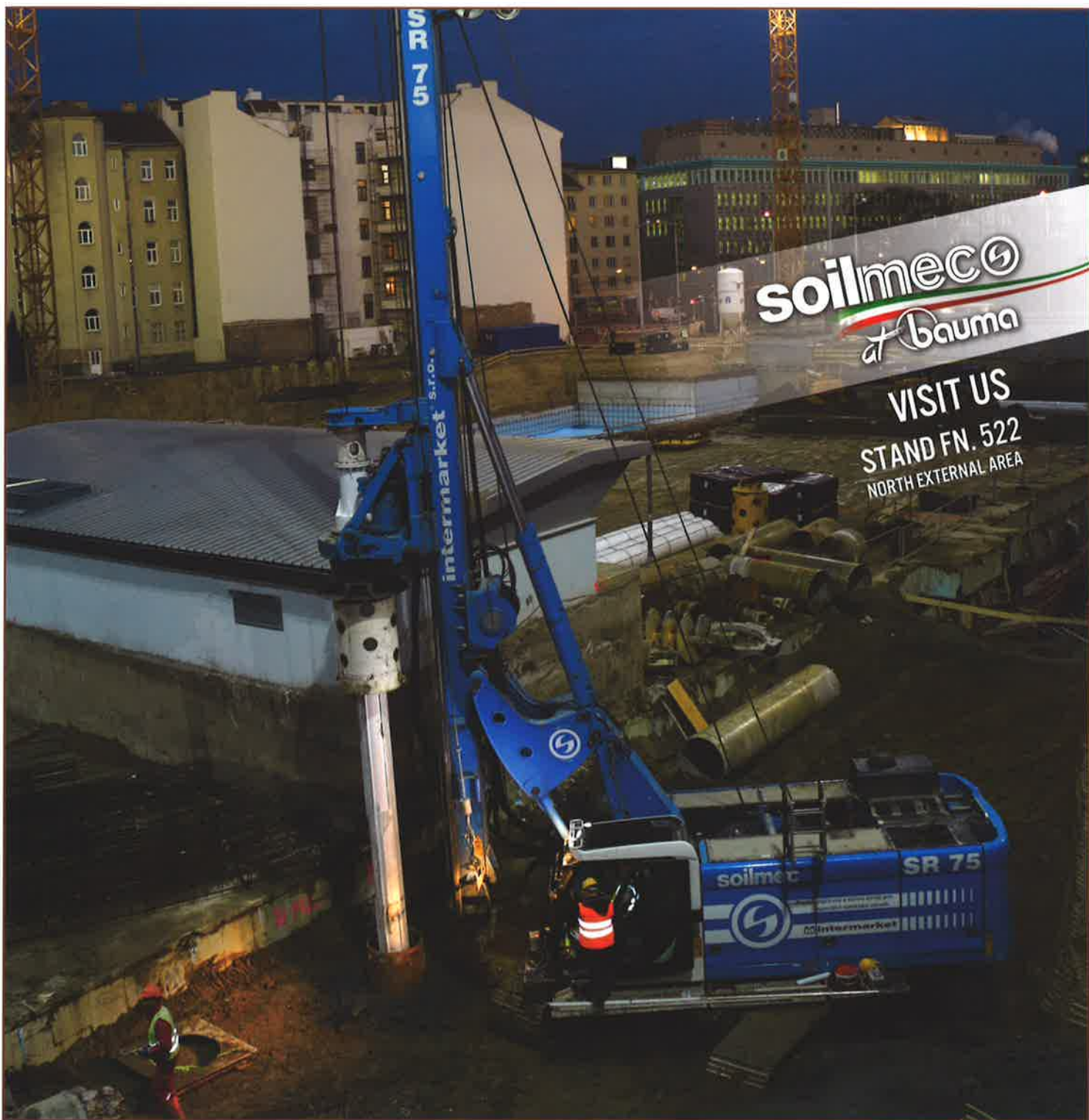
Preview of the new products and innovations at BAUMA 2016

> MARKET

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STAND FN. 522
NORTH EXTERNAL AREA

SR 75

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SR-75, the Waltz rig

The job site is located in the Landstraße municipal District, in the southeastern city center of Vienna, a heavily populated urban area with many workers and residential homes. This construction site is at the crossroad of Rennweg and Landstraßer Hauptstraße and is limited by the Otto Preminger-Starße and by the Fred-Zinnemann-Platz, close to the 18th-century palace and gardens of Belvedere, a popular tourist destina-

The SR-75 is the medium size rig of the new "Blue" Soilmec product line and will be showcased at Bauma 2016. The SR-75 has been used to work in the middle of Vienna's municipal districts for the "Trienna" housing complex project, that involves the construction of foundation piles

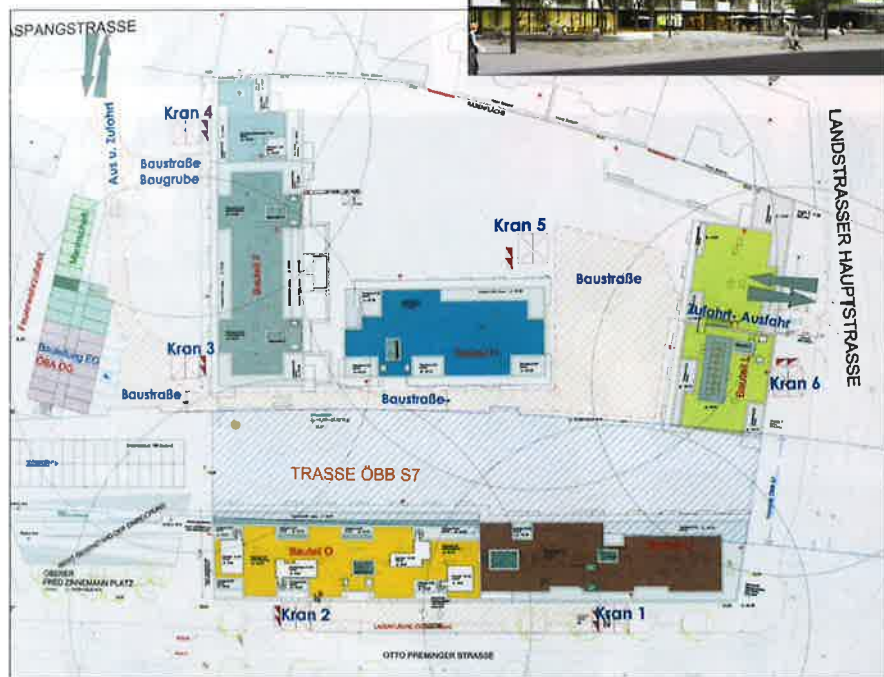
tion, which houses the Österreichische galerie (Austrian Gallery). The project envisages the construction of four single buildings with 8 or 9 floors for a total of 400 free-financed freehold flats, with underground parking for about 300 cars and an open passage with supermarket and shops that will be located in the ground floor.

The entire "Trienna" project development was awarded to BAI Bauträger Austria Immobilien GmbH and the construction works of the housing complex was contracted to ÖSTU-Stettin, an Austrian construction company, who has entrusted the foundation work to Keller Grundbau Ges.mbH, a special foundation engineering company. The foundation work of the project, whose completion is expected by the end of 2017, began in late September 2015 as underground foundation with

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Photo of the project signboard and 3D rendering of the future Trienna housing complex



the execution of foundation piles in addition to the slurry walls and relative anchors of the underground section. The geology of Vienna strictly depends on its geographical location at the western margin of the Vienna Basin, a sedimentary region formed by the later-

al extrusion and tectonic movements between the Eastern Alps and the Western Carpathian, and by the sediment deposition and debris flows of the Danube river that borders Vienna's downtown. This is why the subsurface conditions of the city's area includes cu-

mulative layers of sand, silt and clay within gravel sequences. In particular the job site geology is characterized by a first 1,5 m thick layer of a compacted fill material on the top, followed by medium/coarse calcareous sandy gravels, deposited along the ancient course of the Danube, up to a depth of 15 m, with an increase of sand intercalation within gravel units in the first meters. These strata are underlay by a deposit of medium to high plasticity silty clay with presence of gravel and cobbles in the last meters.

Due to soil conditions and project needs the segmental cased bored piles technology was chosen to perform the foundation piles. The piles, spread along the whole job site area, ranging from 600 mm to 1,200 mm diameter, were drilled up to a depth of 25÷33 m respectively with 15÷20 m of them cased. The SR-75 involved in the job site is the 70 tons class hydraulic drilling rig of the new SR-Advanced line. The machine is equipped with the renewed crowd winch system, improved with an optimized number of



Side view of the job site area. Six tower cranes are installed around the entire perimeter as support machines



The special cage used for all the piles near the train cut-off wall structure

blocks and tackles, able to transmit an high force value with a long stroke on the mast this system allows to drive a long steel casing sections in a single passage and faster. The boreholes were drilled by means of a straight 2,5 m long auger, equipped with rock teeth, operated by a 4x9 m telescopic mechanical locking kelly bar. The casing, driven directly by the rotary head, is composed of a double wallet section 4 m long, mechanically connected each other with bolts fixed manually. The job site location, crossed in all its length by the train underground line, has added another level of difficulty in the working process, because of particular reinforcement cages to be used in all the piles adjacent to the existing train line structure, in order to limit the vibrations and prevent any possible collapse. These cages are composed, from the bottom, of a first standard cylindrical section followed by a second part to be coupled to a pre-assembled cylindrical cover made in polystyrene, in the end the cage is completely wrapped in stretch film. The SR-75 ADV, employed for the execution of 900 mm diameter piles, showed immediately a great driving ability due to the mechanical performance of the crowd system with a pull up force of 408 kN and the new rotary head with 290 kNm torque value. Furthermore the rotary head is equipped with the high speed soil discharge system "Spin-Off" that in cohesive soils guarantees a perfect cleaning of the tool in a very short time, recovering up to 5 seconds each discharge session.

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The Soilmec Spin-Off System in action