

Civil Engineering Innovations from the bauma Trade Fair

■ Christian Weinberger, Schlüsselbauer Technology GmbH & Co KG, Austria

Conceptual, holistic thinking is Schlüsselbauer Technology's basis for establishing individual concrete plant solutions and developing precast concrete product systems, as well as the manufacturing technology needed for this purpose. The numerous production plants recently put into operation that were presented at the bauma 2025 trade fair demonstrated the wide range of services at Schlüsselbauer, all with the guiding principle "from concept to output". The range covers everything from large-volume production of round and rectangular manhole components to the production of corrosion-resistant concrete pipes for installation in open trenches and in pipe jacking.

Conserving resources is a key requirement that Schlüsselbauer Technology is confronting in many different ways. This includes minimal use of materials for the production of individual monolithic concrete manhole bases, as well as the manufacturing of concrete-plastic hybrid pipes with PE inner lining as corrosion protection. However, saving space when setting up hardening zones for concrete components in the form of automated bay racks also counts as conserv-

ing resources, and at the same time helps business operators to lower new construction investment costs or, in the case of annex buildings, to continue making optimum use of the valuable existing industrial building. As bauma is the world's leading trade fair for the entire construction industry, for many years Schlüsselbauer Technology has seen it as the place to present groundbreaking developments, particularly for the concrete pipe and concrete manhole element manufacturing divisions. This overview covers a phase of new and further developments stretching back over 20 years at Schlüsselbauer as the engineering partner of the precast concrete parts industry.

In 2004, the production of concrete manholes involved a lot of work by personnel to produce precisely fitting manhole bases. The channel run and berm were produced manually by manhole masons in a subsequent step, after the holes were first made for the required pipe connections or the heavy steel recesses provided for this purpose had been removed. There was hardly any alternative to this process, until Schlüsselbauer presented individual manhole bases made



Presentation of the various engineering services from Schlüsselbauer at the bauma 2025 trade fair stand using multimedia presentations and numerous Perfect precast part exhibits from the manufacturers Beton Heller (Germany), Beton Müller (Germany) and Libaud Préfa Béton (France).

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One of the first largely automated Perfect Base production plants installed at HABA Beton, one of Europe's leading providers of concrete pipes and manholes.

of self-compacting concrete at bauma 2004. This astounded people and provoked a lot of doubts, but it definitely attracted attention. A detailed report about the production of the new manhole bases was published for the first time in CPI 4/2004. The manufacturing system is now used worldwide and the Perfect brand has become synonymous with high quality concrete manhole bases.

After its rapid market penetration into many European countries within just three years, the Perfect Base system was once again the focus of the Schlüsselbauer Technology display in 2007. The last remaining doubts in the specialist world of precast component manufacturers had been dispelled and the pioneering role of this process had been confirmed by various "fast follower projects". Schlüsselbauer continued developing the system further, meaning that Perfect products

were available in most European countries after just a few years, with the range covering sizes from DN800 to DN2100 on a country-specific basis.

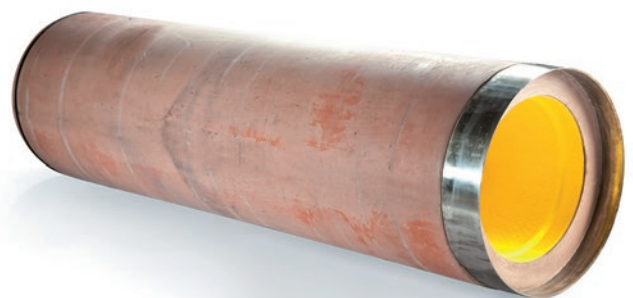
For both visitors and exhibitors, bauma 2010 was affected by the ash from Iceland's Eyjafjallajökull volcano, which had a huge impact on international air traffic. For the bauma visitors that made it to Munich in spite of the difficulties, Schlüsselbauer unveiled the early phase of the concept development for the next pioneering innovation: Perfect Pipe.

This innovative system in pipeline construction for wastewater discharge combined the benefits of robust concrete pipes and resistant plastic liners. The Austrian family company and engineering entrepreneur demonstrated its innovative strength once again.

In 2013, the new Perfect Pipe wastewater pipe system was ready for the market for applications up to DN 1200 at this point. The nominal width range has since been extended up to an internal diameter of 1500 mm. In order to offer a com-



One of the hot wire saw lines, which are used to manufacture complete channel formations with only a few manual steps.



The ideal suitability of the new Perfect Pipe concrete-plastic hybrid pipe, particularly for trenchless installation, could already be seen in 2010.



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Micro-tunneling with lined concrete pipes – increased efficiency in pipe jacking due to connectors, particularly for nominal widths at which the pipe system is not accessible or only offers restricted accessibility.

prehensive presentation of the high-quality concrete components both in the concrete pipes product segment and in manhole components, Schlüsselbauer increased the area of its stand at bauma.

Once there was already talk of market saturation in many European countries 12 years after the first presentation of the individual monolithic Perfect manhole bases, the manufacturing process started its success story in North America with users in Canada and the USA. More than ever, for Schlüsselbauer bauma 2016 was influenced by the numerous visitors from around the world, but particularly from North America. At the same time, Schlüsselbauer's US site, Schlüsselbauer



In 2016 Fortier 2000 Ltée started a quality campaign in the Canadian civil engineering market with the production of mould-hardened, monolithic concrete manhole bases.

North America based in Nashville, Tennessee, celebrated its 10-year anniversary.

The next bauma in 2019 showcased a success story for high-quality, precast concrete products for rainwater and wastewater sewage systems. Meanwhile, the Perfect brand name became synonymous with reliably watertight, monolithically manufactured concrete parts. In addition to concrete manhole bases, the brand portfolio comprises other manhole components and pipes made with or without additional factory-made corrosion protection in the form of a HDPE lining. Schlüsselbauer Technology focused on the impressive range of durable concrete products for different variants of sewage



Various levels of automation allow Schlüsselbauer's customers to operate their own highly efficient production.

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Flexible production plants from Schlüsselbauer, which offer impressive efficiency and overall performance, are now in use around the world. Highly automated plants for the production of custom-fit Perfect manhole bases and more components manufactured using the wet cast process are being installed by Ameritex Pipe & Products at two locations in Texas.

systems as well as options for gradually automating their manufacturing in their presentation at bauma 2019.

2022 was characterized by both uncertainty and hope for trade fair organizers and bauma exhibitors. There had not been any shows of this size for around two and a half years. A decision was made at an early stage to move the trade fair

to October instead of its traditional spring scheduling. This was due to the hope that by this point there would not be any contact restrictions and trade fair visitors would be willing to travel again. In the weeks before the trade fair in October, it became apparent that this hope would become reality. Ultimately more guests than expected were welcomed to the Schlüsselbauer stand at bauma 2022. Specialist visitors from around the world were relieved and pleased to be able to meet people face to face again and interact on both a professional and personal level. Due to this experience, after two years dominated by video conferences for both visitors and exhibitors, the trade fair seemed much more important than in previous years.

For Schlüsselbauer Technology, bauma 2025 was once again an ideal opportunity to present innovative plants for the production of high-quality concrete components to international experts. Alongside the commitment to quality at product level, the display focused on flexible automation. Based on customer requirements, automated curing areas are set up with either crane installations or high-bay racks.



Increasing efficiency and conserving resources at the same time. Optimum use can be made of hall volumes with either Transexact automatic cranes or bay racking.



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SCHLÜSSELBAUER 
TECHNOLOGY

Schlüsselbauer Technology GmbH & Co KG
Hörsbach 4, 4673 Gaspoltshofen, Austria
T +43 7735 71440
sbm@sbm.at, www.sbm.at