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Expansion of MC's Bottrop site New facility with visual appeal

A major new-build project at MC's main site has now been brought to a successful conclusion. Step by step, MC has given itself a significant face-lift with its new 3,000 m²-plus facility complemented by a whole series of structural modernisations and extensions. With its aesthetically attractive carbon-concrete appearance, the façade of the new building is quite striking.

With the completion of the new entrance area with gatehouse and truck weighbridge in March 2015, the long-planned upgrade of the MC company site in Bottrop was finally in full swing. However, the project managers still had a couple of challenging years ahead of them. Various parts of the site needed to be properly adapted to current and future requirements, and there was a completely new building to erect as an extension of the office and logistics facilities. After completion of the planning and approval phase, the structural work to erect the building's shell began in January 2016.

Expansion build with operations ongoing

In order to minimise the impact on deliveries during construction, the initial work was carried out in two phases. As the first phase, six of the twelve planned loading ramps were constructed and commissioned in

July 2016. The six additional ramps were then completed ready for operation in December 2016. As early as March 2017, the 1,100 m² of warehouse and logistics space on the ground floor and 1,200 m² on the first floor of the new building were also put into service. This meant that a large portion of the new facility was already being used for its intended purpose. The 800 m² office floor was to be occupied at a later date. "The whole project represented a major challenge and we would like to thank Burkhard Schirmer, Thorsten Bockholt, Max Hanke and the rest of the team for the smooth and successful execution of all the work involved," commented MC's two managing directors Nicolaus Müller and Dr. Ekkehard zur Mühlen in unison. Not only was it necessary during the construction phases to coordinate the activities of a great many trades and companies, it was also essential to ensure that the warehouse and logistics operations could continue without disruption.

Architecture as a statement

The planning work was consistently accompanied by lively internal discussions at MC in relation to the design of the building's façade on its front-facing side. In mid-2016, the management decided on a unique frontage concept made of special concrete slabs and glass elements as designed by the Bochum-based architects SSP AG. "The concept offered

an impressive symbiosis, combining a solid and aesthetically pleasing concrete substructure with a light-flooded glass superstructure. It nicely reflects our corporate philosophy," explains Nicolaus Müller. "We are very pleased with the result – having created an elegant building that both reconciles and harmonises a site landscape that has grown up rather organically over the decades."

The glass superstructure of the building in which the office floor is located symbolises a future characterised by transparency, clarity and unhindered communication. It offers plenty of light and, with the interior concept adopted, ensures quick and easy information interchange between our people. A special feature is the unusual design of the two lower floors of the new building: With their anthracite façade elements made of textile-reinforced concrete, they symbolise the solid foundations underlying MC – the decades of expertise accumulation and technological achievement that have constantly provided the platform for MC's corporate success.

High-tech façade panels

The façade elements are intended as a powerful statement underlining MC's commitment to aesthetics and excellence in concrete technology and building construction per se. Manufacture of the unique façade panels used in the design was entrusted to

The large construction site for extension of the warehouse and logistics area of MC in Bottrop as it was in May 2016.





Fair-faced concrete and "mock marble cosmetics" provided the modern office interiors with a prestige finish.



the Hering Group. Within its Architectural Concrete department, the company from Burbach in Germany unites innovative material concepts with decades of experience in design-focused concrete façade construction. Just as well, because implementation of the design specifications required adoption of a particularly tailored approach. Hence, the project was also supported by the Institute for Solid Construction (IBM - Institut für Massivbau) at the University of Science and Technology RWTH Aachen.

Textile-reinforced concrete – a unique material

Textile-reinforced concrete has long become established as a building material for lightweight façade panels. Those used for the new building in Bottrop are each 3 cm thick and measure 0.50 x 0.77 to 1.13 x 3.67 metres. Two different types were manufactured: Blank façade panels, into which a fine-weave, rubber-impregnated carbon textile with a mesh size of approx. 2 cm was embedded; and perforated panels, which were reinforced with a coarse-weave, rubber-impregnated carbon textile with a mesh size of approx. 15 cm. In order to obtain the same strength of reinforcement as with the blank slabs, thicker individual strands were used in the latter case. The concrete employed was a very fine, self-compacting and high-strength grade with a maximum aggregate size of 5 mm.

MC admixtures – the high-performance superplasticiser MC-PowerFlow 3130, the shrinkage reducer Centrament SRA 1 and the aluminosilicate Centrilit NC II – were used both to improve the homogeneity and density of the concrete and to increase its compressive and flexural strength values. Also used were the curing agent Emcoril Compact top, which prevents rapid drying and reduces physical shrinkage, and Nisiwa L for hydrophobising the façade panels. The interaction of all these various products ensured achievement of the ultimate objective, namely to create a high-density and high-strength concrete that also exhibited a surface of great quality and aesthetic appeal.

A total of 409 elements were manufactured in Hering's precast factory, including 30 specimens for the IBM at the RWTH Aachen. The university department concerned duly tested them, with submission of an independent analysis so as to obtain the required single-case building authority approval. Once this was granted at the end of February 2018, production went into full swing. In late autumn 2018, the last panels were finally fitted by the specialist façade installers Hölscher Metallbau of Geeste.

The fairest of fair-faced concretes

Needless to say, as much emphasis needed to be given to the building's

inner qualities as had been assigned to its exceptional exterior. Inside, the concrete surfaces of six walls and 20 columns in the entrance area as well as in the offices of the Process Management, Concrete Industry and Product Management departments were to retain their natural fair-faced appearance.

Unfortunately, surface blemishes can never be ruled out in the production of such surfaces, with the result that pores, gravel pockets, spacer holes and fractured edges all made an appearance. The company Beko Betondesign from Düren was therefore commissioned to remedy the defects using the concrete cosmetic products of MC's Emcefex system. Careful cosmetic concrete retouching produced a perfect match, with both the filled and the non-filled concrete surfaces taking on the look of a fine, homogeneous fair-faced finish.

A further highlight comes in the form of three walls in office and meeting rooms, which have been upgraded with MC's "Marble Cosmetics" system. With Emcefex-Spachtel F fine filler, available in seven different shades, and the transparent MC-Color Proof pure glaze, the surfaces were given a cloudy and marbled finish with a concrete look and feel. Hence, MC's expertise has also found expression in the building's interior.

Modern spatial concept

Process Management, Logistics and the entire Concrete Industry department have moved into the new office floor. "As these departments work closely together on a daily basis, this spatial integration offers many advantages and synergies," comments Dr. Ekkehard zur Mühlen. The room plan ideally reflects the associated supply chain segment. The space comprises modern, ergonomically designed single, double and group offices and is intended to promote interdepartmental communication and fast decision-making with short distances between important interface functions. The cutting-edge open-plan design allows visual contact and is intended to enhance team spirit and social interaction as well as effective and efficient cooperation.

Fast move

The newly created workspaces were ready to receive their occupants in October 2018, with the company-internal move completed in just 48 hours – a tremendous logistical achievement for all involved. Since then, the new facility has remained a visual highlight in MC's worksite landscape.

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