MAGNA.
GLASKERAMIK

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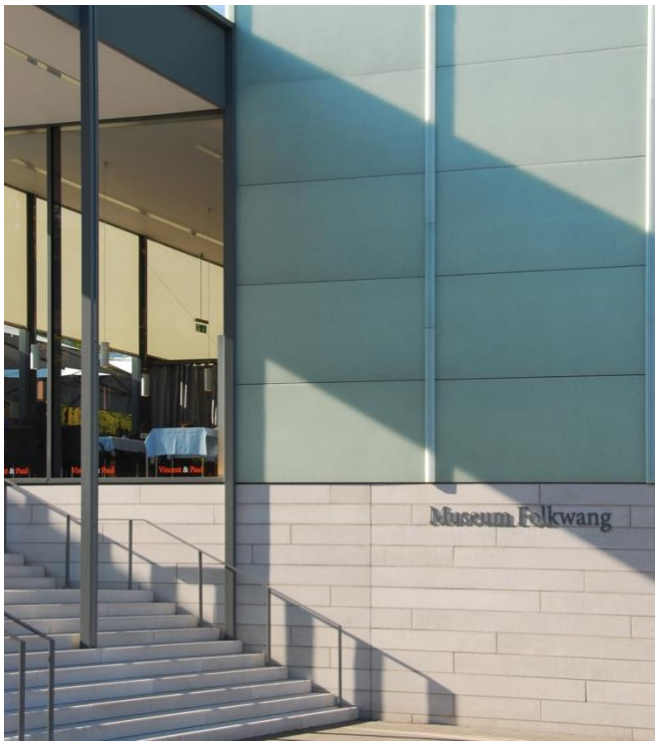
MAGNA GLASKERAMIK REFERENCE FACADE – Museum Am Folkwang, Essen, Germany.

REFERENCE PROJECT: Museum, by David Chipperfield Architects, London and Berlin

The Museum Folkwang, founded in Hagen by Karl Ernst Osthaus in 1902, was the first museum of contemporary art in Europe. The most significant works were transferred from Hagen to Essen in 1922, from which point on, aside from a period when the National Socialists temporarily divested the collection, the museum was able to pursue a high level of collecting activity. Today, it is one of the most high profile museums of Classic Modernism in Germany.

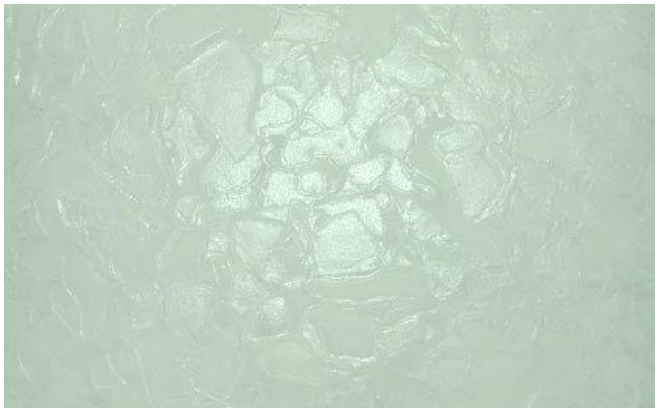


The museum extension by David Chipperfield Architects complements the original listed building, preserving its integrity while perpetuating the architectural principle with an ensemble of six volumes and four inner courtyards, gardens and covered

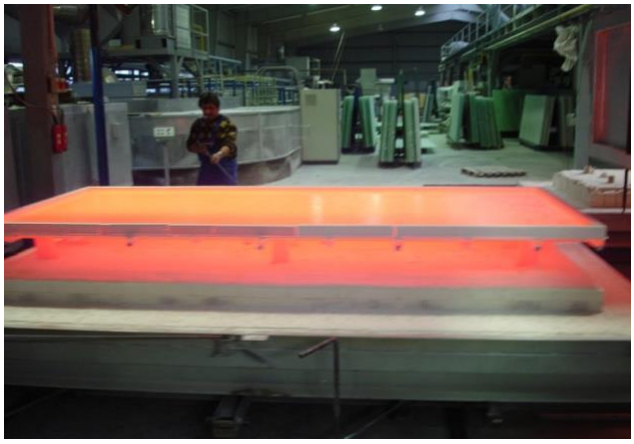
walkways. The publicly accessible areas connect seamlessly with the existing exhibition areas.

A generous open stairway leads from Bismarckstraße into the new foyer, which takes the form of an open interior courtyard with a restaurant and a bookstore and is protected from the street by a radical upcycled glass façade made from low E solar glass cullet waste stream crystallized into a new material character.

Visitors are welcomed into a succession of differing rooms – exhibition areas with ceiling heights of up to six metres, a library and reading room, a multifunctional room, an events space, storage and restoration workshops. The extension, which is oriented towards Essen's city centre, provides a new urban focus together with the neighbouring Institute for Advanced Study in the Humanities. This 4000M2 translucent, alabaster-like façade consists of large rectangular recycled glass slabs. The colour of the façade glaskeramik shifts with the changing natural light and the integrated window openings sit flush with the façade. Polished screed was used for the floors, which is similar in colour and texture to the concrete elements used for the plinth.



The building is entirely clad in a rainscreen of an area of 4000 M2 of Magna Glaskeramik in our type called Galaxy Patinated, thickness 21mm panels with 10mm open joints between panels and a specially developed and paired up Fischer ACT FZP-GZ undercut anchor fixing method; this hangs on an aluminium rail under-construction method to take the cladding forces back onto the main concrete structural frame.



This material offers a new and C2C accredited sustainable and truly circular economy ethic, whereby the entire contents are sourced and upcycled from trade waste glass and can be locally recycled by glass processors at the end of a long life. The material is heavily durable, offering true performance and tested certification as well as suited to both hot and cold climates, closed surface against vandalisation, impervious to staining and almost self-cleaning in its finish.

These design details opposite show the arrangement of the Glaskeramik panels at fixing point, the positioning of the anchors at 100mm from edges and there is even the potential to mitre bond the material at outside corners. Most cladding formats were cut to 1200 x 600mm sizes with 10mm open joints.

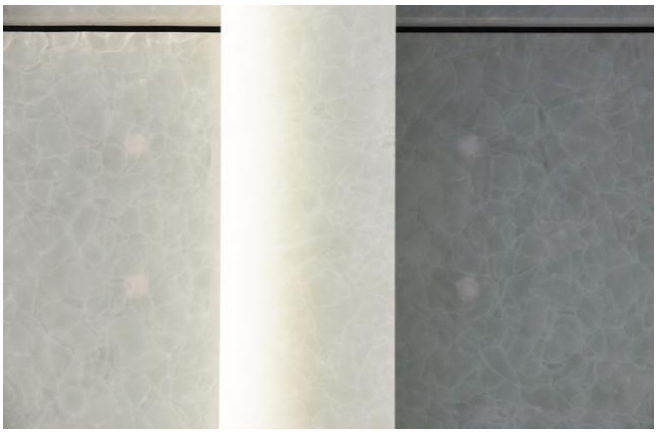


Photo Credits: Christian Richters, Magna Glaskeramik GmbH

Magna form the material from glass industry waste stream, in this case low iron glass, those industries forming flat glass or bottle glasses can be used as source, this waste is then reprocessed by sintering in a computer-controlled manner, without additives and the outcome will reflect the input material. Green beer bottle source will produce a dark green and low iron glass from solar panels can provide a very white coloured Glaskeramik. A range of types can be studied on manufacturer website: www.magna-glaskeramik.com

This material is circular, (fully recyclable) as it has no additives (such as a resin bond which many companies resort to reduce the issue of tension) and is categorized as crystallized glass ceramic in its nature and character much as a tested ceramic slab. The technology allows for the growth of these strong crystals and deals with the air bubbles captured by the sintering process whilst also removing the tension in the sheet formation. This means that the true advantage over cast glass types is that the material slabs (of currently 2780x1260mm but also 3500x1500mm maximum sizes) can be premade, without a mould, and stocked in quantity affording a swift processing for projects. The material thus covers applications in the glass, cast glass and the natural stone market but offers light translucency and randomized interior details. The patinated, natural surface offers an unusual textural and aesthetic effect in the changing light and weather conditions which makes it stand out amongst the usual façade solutions.

Glaskeramik is more usually specified as a rainscreen but is even available in laminated curtain wall façade applications. It is generally regularly specified in interior applications from light walls, interior surfaces, flooring slabs and reception desks and kitchen splashbacks through to works of art, water fountains and shower screens. The material is made in Germany to a high quality and standard and with a wealth of leading glass consultancy and technical advice in order to create a stable outcome. If you would like to know more about this exciting new material or require technical advice please contact the author or via the manufacturers website. Magna Glaskeramik GmbH is pioneering the circular economy in its production of 100% recycled and 100% recyclable façade material which is being taken up by global accreditation and test data, the water use is also circulated within the plant and the energy use is offset by a large solar array on the roofscape.

European Test Approval for Anchored Rainscreen, Environmental Product Declaration, ISO 9001, EN 12600, Cradle2Cradle Gold Certification. Independent Solar Impulse Foundation Label: www.solarimpulse.com

Author and architectural consulting: Andrew Savile ARB, Low Impact Ltd.