



# STATE CHANCELLERY DÜSSELDORF

## ELEGANT STEPS IN NATURAL STONE RESTORED USING A CUTTING-EDGE SYSTEM

Known to the inhabitants of Düsseldorf as the Stadttor, or “Gate to the City”, this imposing glass and steel building is shaped like a parallelogram with a large, empty space in the middle. Considered to be one of the best examples of contemporary cityscape architecture, it is 75 metres tall (20 floors above ground level) and was built above the Rheinufer Tunnel, the city’s main traffic hub.

The Stadttor complex is the headquarters of numerous companies and professional firms. Some of the floors are occupied by the State Chancellery of North Rhine-Westphalia, of which Düsseldorf is the capital city, including the head office of the Prime Minister of the Land.

Access to the complex from the road is up a series of steps in dark Gabbro stone, but the steps themselves are open to the elements and are constantly exposed to direct sunlight and bad weather. Over the years, the stone on the steps has started to suffer from the damp conditions and some of the slabs have become detached and efflorescence has also started to appear on their surface. It had become necessary, therefore, to put the steps back into a safe condition by repositioning the large stone slabs. During the intervention, while the stone

was being reinstalled, it was also planned to repair the damage caused by aggressive atmospheric agents.

### **A SYSTEM WITH A GUARANTEED SERVICE LIFE**

The flooring company appointed to carry out the work proposed using the MAPEI BDC SYSTEM, an innovative system marketed by Mapei GmbH for installing ceramic and natural stone in external surroundings such as balconies, terraces and steps. Thanks to a combination of carefully selected, well known products of the Mapei Group (MAPELASTIC, PLANITOP FAST 330, MAPENET 150, ELASTORAPID, ULTRACOLOR PLUS and MAPESIL LM), the system forms a rapid-drying substrate which offers high performance characteristics, good adhesion for the covering materials and excellent drainage, without having to create intermediate layers.

Work commenced with the removal of the stone from the old substrate (around 200 m<sup>2</sup>) and then a new screed was installed using TOPCEM PRONTO, ready-mixed mortar for normal-setting and quick-drying screeds, in combination with bonding slurry made from TOPCEM, normal-setting, quick-drying hydraulic binder, PLANICRETE, a special type of latex



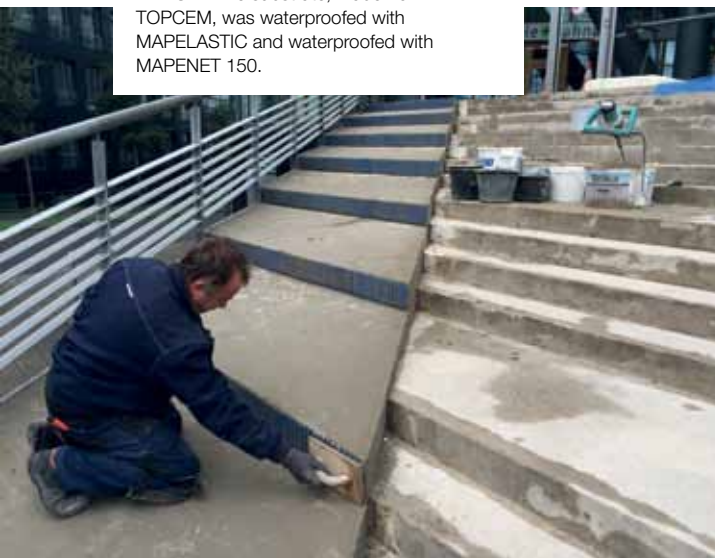
for cementitious mixes, and water.

Once this phase had been completed, a layer of MAPELASTIC, two-component cementitious mortar, was applied over the entire surface. MAPELASTIC is applied with a spreader or by spray on clean surfaces dampened, where necessary, with water. When hardened it forms a highly flexible, protective waterproof coating.

Once the MAPELASTIC was fully cured, a layer of PLANITOP FAST 330 fibre-reinforced, rapid-setting cementitious levelling mortar was applied and then MAPENET 150, alkali-resistant, glass fibre mesh, which is used to reinforce protective waterproof layers and anti-fracture membranes, was pressed down lightly into the mortar. This intervention will guarantee

**ABOVE.** Views of the steps after completing installation of MAPEI BDC SYSTEM.

**BELOW.** The substrate, made from TOPCEM, was waterproofed with MAPELASTIC and waterproofed with MAPENET 150.



### IN THE SPOTLIGHT ELASTORAPID

Cementitious (C) adhesive with improved performance (2), rapid-setting (F) and non-slip (T) properties, extended open time (E) and high deformability (S2), class C2FTE S2. Suitable for bonding all types and formats of ceramic tiles and natural and engineered stone slabs that require a rapid-

drying adhesive on internal and external substrates. Helps earn up to **2 points** towards **LEED** certification.



that, over the years, any water will drain off quickly without harming the structure or staining the stone.

To bond the slabs of stone, it was recommended to use ELASTORAPID two-component, non-slip adhesive, particularly recommended for bonding ceramic tiles and large stone slabs rapidly on external surfaces.

The grout lines were filled with KERACOLOR FL-S quick-drying mortar for grout lines from 2 to 20 mm wide, which guarantees a high level of protection against dirt and, thanks to DropEffect technology, it also shows a water absorbency close to zero.

### TECHNICAL DATA

**State Chancellery of North Rhine-Westphalia, Düsseldorf** (Germany)

**Designer:** Petziska, Pink and Partner

**Year of Construction:** 1992-1998

**Period of Intervention:** 2016

**Intervention by Mapei:** supply of products to make and waterproof substrates and to install stone slabs on the external steps

**Client:** Hannover Leasing GmbH & Co.KG

**Flooring Contractor:** Naturstein Volker Lindholm

**Mapei Distributor:** Schmidt Rudersdorf

**Mapei Co-Ordinators:** Marcus Winkler and Volker Harter (Mapei GmbH)

### MAPEI PRODUCTS

**To make substrates:** Mapelastik, Mapenet 150, Planicrete, Planitop Fast 330, Topcem and Topcem Pronto

**To install stone slabs:** Elastorapid, Keracolor FL-S\* and Mapesil LM

\* Manufactured and distributed on the German market by Mapei GmbH

For further information about our products visit our websites at [www.mapei.de](http://www.mapei.de) and [www.mapei.com](http://www.mapei.com)