Plastic Blast Media

FISCHER JETplast®

FOR THE PERFECT SURFACE

A brilliant product.

Restauration of the Bandenburger Tor in Berlin in the year 2001

The „Brandenburger Tor“ is one of the most famous national monuments and worldwide known as landmark of Berlin. From a modest gate in the town wall it has been extended in 1788 into the present shape and dimensions and became a Symbol, - first as Berlin being the “Athens of the North”. In 1815 the Quadriga has been brought back from Paris and the building became for the first time national monument. After the separation of Berlin as a result of world war II it became more or less a memorial for future generations. After the German reunification the building has been reopened again. Today celebrity guests enter the City of Berlin symbolically through the “Brandenburger Tor” again.
The cost for a thoroughly planned and executed renovation at the highest possible level of technology has been estimated to be about € 5.000.000,-.
The owner of the Brandenburger Tor is the state of Berlin. The somewhat strained budget situation of the state of Berlin, however did not allow a medium term extensive renovation of that volume.
Therefor the State of Berlin, represented by the Senate of Science, Research and Culture has authorized the Foundation of Monument Conservation to take over to function of a principal for a limited period of time. The foundation thus carried out the financing of the renovation. One precondition was that a sponsor would take over the cost for the enclosure of the scaffolding. It had to be paid attention that the dignity of the building would not be harmed and the appearance of the building would not vanish during the time of renovation. This goal had been achieved by projecting the true shape of the building onto the enclosure.
The last renovation of the Brandenburger Tor took place 1900 – 1991. Ten years later a further step of renovation became necessary for the following reasons :

1.The structural safety of the building.
In some areas of the Brandenburger Tor small cracks have been detected, which did, however, not endanger the structural safety. These damage symptoms had several causes and could be explained mainly by the fact that the original design by the architect Langhans was not sufficient for todays requirements such as traffic and pollution.
The following measures have been taken: a) The cross studs above the three through passings have been reinforced. b) the fundament, which had been weakened by the installation of pipes and cable ducts has been force fitted again. C) The three basic elements of the building, which are the gates, the passage halls and the gate houses have been mechanically uncoupled.

2. The appearance of the building
Over the years the surface of the stones at the weather side of the building had turned black. This blackening consisted of a gypsum crust which developed itself as a result of a chemical reaction between the industrial (traffic) dust and the stone surface. Those crusts had to be removed.

Unlike the renovation of 1990 – 1991 there were now two methods available to clean th stone surfaces. One was the use of a high power YAG Laser. The other method was blasting the surface with the plastic blast medium FISCHER JET plast. This medium is made of recycled Urea parts pulverized a particle size 0,1 – 0,5 mm and applied by a hand held blasting device. (1990 – 1991 the only way of cleaning was with water under high pressure)

3. It was also important to check the joints around the through passings and the gate houses because the joints are generally critical spots where water and moisture penetrate into the stone, thus creating damages at the building. The decision how to treat such damages had to be made case by case.

4. One more cause of damages could have been the settling of dust which in the long term resulted in accumulation of micro organisms within small cracks of the stone. According to the present state of know how it cannot be ruled out that such micro organisms can also damage the building.

5. It needs to be further investigated which kind of conservation would be chosen. Some long term measurements have proved that the pollution of the stone by sulfur dioxide can be neglected.

The main purpose of the restauration has been to eliminate the causes of the damages and to put this beautiful national monument back into a condition which would allow long term conservation by just regular checks and cleaning operations. Most important will be to remove the deposition of dust in regular time intervals.

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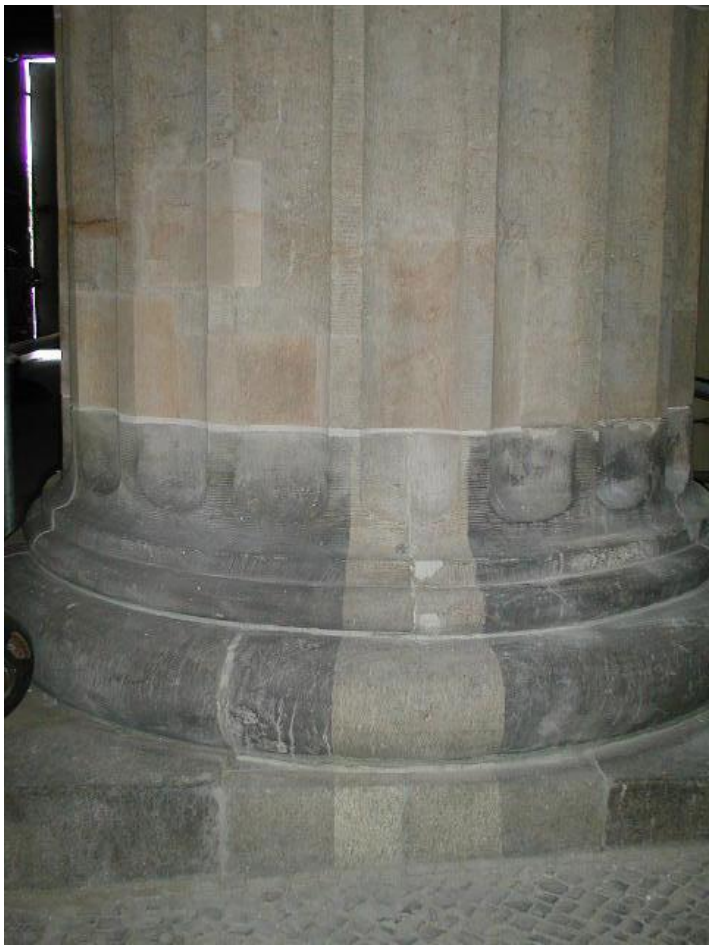

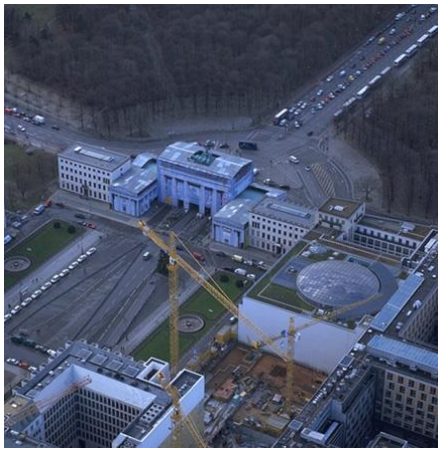

2. Arbeitsschritt:

Mikro-Trockenstrahlen im Verfahren NovaPlast sys® 2000

Es werden ca. 4500 m² gereinigt