The Architectural Monument Schöne Brunnen of the Schönbrunn Imperial Palace, Vienna, Austria: Assessment of the structure and condition, and formulation of a conservation plan

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INTRODUCTION
The architectural monument Schöne Brunnen, part of the baroque concept 1693-1780 of Empress Maria Theresia [1], is the fountain after which the Schönbrunn Imperial Palace in Vienna is named. An artificial naturalness, typical for the baroque art of gardening, is achieved with grotto architecture-dangling cones cover the pavilion on the outside. Inside reeds are used as decorative wall elements, as shown in figure 1. A nymph, Egeria, holds the amphora in her arms from which the spring water flows.

A number of fountains in the Schönbrunn Park have already been treated in conservation campaigns, whilst the present campaign is for the Schöne Brunnen. Aim of this campaign is securing the current state of the monument with consideration to returning it to the appearance within the context of the historical park program. Prior to the conservation measures an examination of the monument’s condition was conducted by the author in the course of her diploma thesis under the supervision of Marija Milcin and Prof. Gabriela Krist. It consisted of an assessment of the historic structure and an identification of the major sources of damage [2].

ANALYSES & RESULTS
Microscopical examination confirmed that originally the monument’s interior and outer St. Margarethen lime stone walls were painted in white. The stone base of the fountain was left without paint, in conscious contrast to the walls and the white sculpture hewn from Sterzinger marble.
Beginning with the mid 19th century major changes were made to the Schöne Brunnen that altered its appearance significantly. The entire stonework surrounding the shell-like basin as well as the drainage situation was modified. Instead of flowing into a large reservoir at ground level, the fountain’s water was channeled through the shell basin. The cupola also underwent changes during this period.

Measurements of strength and hardness, surface weathering, moisture content (figure 2) and salt contamination (figure 3) were conducted [3]. It was concluded that the main problem for the Schöne Brunnen is moisture in combination with salts. Large areas of efflorescence, mainly magnesia sulfate, result in lifting of paint layers and sanding surfaces. Moisture was determined to be at levels of 60% within the lime stone walls. It functions as transportation media for salts and thus is connected to all types of damage.

CONCLUSION
Periods of change were identified and specifically the question of original paint layers pursued and answered. The types of damage were researched and found to be caused by moisture and salts. For the conservation campaign this implies that first there must be structural measures to ensure dehumidifying of the stone walls, before conservation measures are carried out. Following the structural measures a desalination of the stone surface with multiple compresses will be conducted. After evaluation of the desalination results the final decisions regarding the conservation/reconstruction of paint layers will be made and accordingly carried out.

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Figure 1: Interior view of the Schöne Brunnen before the conservation campaign. The walls are sculpted lime stone and spring water flows from the marble nymph Egeria. © Institute of Conservation, S. Ohl, Nov 2010.

Figure 2: In thermal image of the section next to the shell-like basin (conducted by G. Fleischer).

Figure 3: Results of ion chromatography (analyzed by J. Weber and W. Prochaska). The x-axis begins at the interior surface.

REFERENCES: