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Lower Cretaceous building sandstones in NW-Germany and their worldwide use

Ehling, A.¹ & Lepper, J.²

¹Federal Institute for Geosciences and Natural Resources (BGR), 13593 Berlin, Wilhelmstr. 25-30,
angela.ehling@bgr.de

²30625 Hannover, Ahldener Str. 10e

The building sandstones in Germany have been systematically investigated for over more than 10 years to provide comprehensive basic knowledge, which is required especially for the modern concepts of protection and restoration of stone monuments. Also new aspects of methodical, geological and historical interests have been gathered. They will be presented through the example of Lower Cretaceous sandstones of NW-Germany which have been used all over the world: the Wealden Sandstone, especially from Obernkirchen and the Bentheim Sandstone.

Both sandstones are mainly white, light grey or light yellow, fine grained, quartzous bound with more than 90 % quartz, some lithic fragments, some feldspar and kaolinite. There are only narrow differences regarding the content of heavy minerals, fossils, silification. The extensive investigation of the Wealden Sandstone, which forms 7 separate hills in the region SW of Hannover shows, that even these can be differentiated by the occurrence of Dickit and the degree of kaolinite crystallization using mobile NIR-spectroscopy [1].



*Figure 1: Batavia Sandstone Portico,
made of Bentheim Sandstone (1629)*



*Figure 2: Noviy Peterhof station, made
with Obernkirchen Sandstone (1857)*

The good building stone quality of these sandstones as well as the favourable location concerning routes of transport ment they have been used not only regionally. The Bentheim Sandstone decorates many facades in the Netherlands and should have been transported to Batavia already in 1629, but the ship

sank before arrival near the coast of Australia [2]. The Wealden-Sandstone of Obernkirchen had been shipped along the Weser river to Bremen for many centuries and from there into many countries all over the world.

References:

[1] Ehling, A. and Lepper, J. (in press): Bausandsteine in Niedersachsen und Nordrhein-Westfalen

[2] WEBER, J. & LEPPER, J. (2005): Tracing a 17-20th Century Odyssey: The Provenance of the Batavia Sandstone Portico.- Bull. Australasian Inst. Maritime Archaeology, 29: 53-60; Parramatta

