

MUSEUM ISLAND BERLIN

World Cultural Heritage since 1999

Engineering geological conditions and problems:

The Museum Island is located within the course of the river Spree in the city center of Berlin. This area was part of a drainage system during the Weichsel glacial period. Its sediments consist of glacio-fluvial and fluvial sands partially with basal layers of blocks and gravels. Organic deposits with thicknesses of a few decimetres up to more than 40 metres are found, all directly underneath the Museum Island, along the Spree meander in many places. All Museum buildings were founded on wooden posts.



Pile foundation of 1912

Protection measures already have been taken or have to be taken:

Multiple ground water depressions caused serious damages to the post foundations during GDR time. As a result differential settlements of up to 40 cm occurred.

Renovation works on the foundations were carried out between 1989 and 1994. Nearly 2600 small drilling piles of 9 to 30 m length had to be put down beside the existing foundations. Afterwards loads were transferred onto the new piles. From 1994 to 1998 structural engineering renovation followed, ranging from simple closing of cracks to the installation of up to 20 m long anchors.

The master plan, agreed upon in 1999, comprises further renovation works, an architectural integration of the different museums, the erection of an entrance building, and a reorganization of the collections. The construction pit of the intended entrance building will be water-impervious by using sheetpile walls and an anchor-equipped HPI pit bottom. During renovation works the ground underneath the existing foundations will be hardened by freezing method.



Museum Island, aerial view toward the South



Load transmission construction

Other information:

The five museum buildings of the Museum Island were built between 1830 and 1930 (1830 Old Museum, 1859 New Museum, 1876 National Gallery, 1904 Bode Museum, 1930 Pergamon Museum). During World War II they were destroyed by more than 70 %, but, except for the New Museum, later repaired during the nineteen fifties.

References on studies already performed:

WEDEL, C. (2002): „Die neue Museumsinsel“, Nicolai, 200 S.

LIPPSTREU, L.; SONNTAG, A.; STACKEBRANDT, W.: „Quartärgeologische Entwicklung des Berliner Stadtgebietes“, *Geowissenschaften* **14** (1996) Heft 3–4, Ernst & Sohn, S.100–107.