

British District Stodůlky, Prague, Czech Republic

While Prague is currently becoming one of the most important metropolises in Europe, the district of "Stodůlky" has been popular for years as a location for national and international companies. Along with Czech state institutions such as the Secret Service, German and international companies, such as Siemens, Wincor Nixdorf, and Hyundai have similarly settled here. The uniqueness of this district is its attractive location about 9km outside the city centre. Surrounded by village communities and an abundance of green space, it offers residents a special quality of life. It combines commercial bustle and attractive facilities such as restaurants, bars and shopping facilities with a fast connection to the airport and city centre via the motorway and metro. As a logical consequence, more and more residential housing is being developed in Stodulky. The British District is just such a residential unit consisting of modern apartments. Building sections D + E are located in close proximity to the district's metro station. The achievement of the high-quality standard of living in these building sections was down to vibration control optimisation of the building's foundations.

The vibrations that occur from the adjacent metro station and the underground train line are caused by trains passing through, but especially by trains coming to a halt and accelerating. Corresponding measurements were carried out before construction started and were from the very beginning part of the planning concept. The task of vibration control optimisation is a reduction of 10-25 dB depending on the vibrations occurring in the critical frequency range. In addition, a bearing frequency of 10-12 Hz for the foundation system was determined as an effective basis by a leading acoustic consultant. Based on the static analysis of the building, the concept and choice of materials for vibration isolation were defined and elaborated in close collaboration with the architectural firm involved and in constant coordination with the acoustic consultant. For this, three main load areas were identified that cover the load range between 0,005 – 1.5 MPa. The material types were selected depending on the location, the compression occurring and desired bearing frequency and were optimised in their respective thickness. The resulting interpretation plan for the various materials served during the process as a basis for the installation on the construction site.

In addition to the horizontal vibration isolation, the lift shafts inside the building were also vertically decoupled, thus providing the property and its residents with additional comfort. **Regupol® vibration 450**, which was specially developed for vertical decoupling, was used.

Shortly before the start of the corresponding building phase, an extensive review was conducted by BSW and the building contractors PRUMSTAV. At the start of the installation work,



two technical engineers were sent to the site by BSW to supervise the installation work on site and ensure assistance. After completion of the installation, the vibration control **Regupol®** insulation layer was then built over by the overlying storeys during the course of the construction activity and thus became a technically effective component part of the building foundation.

The vibrations occurring outside the building are decoupled within the building foundations and the overlying building parts effectively protected against disturbing vibrations.

Project type:

Strip-shaped foundation decoupling and additional vertical decoupling of the lift shafts

Material choice

Regupol® vibration 300

Regupol® vibration 450

Regupol® vibration 550

Regupol® vibration 1000

Bearing area

960 m²

Parties involved

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