

# Zahálka (Phase I)

## Prague, CZ



## Case Study



### Property Owner

Karlin Group / Horizon



### Main Contractor

Průmstav a.s.



### Architect

AED project a.s.



### Acoustic Consultant

Fülöp Augusztinovicz Dr.Sc



### Structural Engineer

HSD Statika s.r.o.

## OVERVIEW

Phase I of the BREEAM-certified 'Zahálka' development project on the outskirts of Prague is nearing completion. Despite the corona pandemic and the resulting lockdown, almost all the apartments in the first two building units have been allotted. This should come as no surprise, as Zahálka can boast plenty of amenities, such as a golf course, a wonderful location amid lush greenery on the banks of the Vltava River and proximity to public transport.

Building F was the first of seven buildings to be erected. Three of them are located next to the railroad.

## Stravibase VHS, Stravifloor Channel

- Designed to support very large loads whilst being significantly smaller in plan dimensions than traditional elastomer bearings (Stravibase VHS)
- Isolated steel floor batten system with enhanced stiffness (Stravifloor Channel)

**12 m<sup>2</sup>**  
Stravifloor  
Channel

**204 m<sup>2</sup>**  
Stravibase  
Lateral

**172.5 MN**  
Stravibase VHS  
5 Layers



## SOLUTION

After conducting a thorough study of the building, the acoustical consultant specified a 12 Hz noise and vibration isolation solution to achieve the required  $L_{A,max}$  noise limit of 30 dB at night.

In cooperation with the different stakeholders, CDM Stravitec designed and oversaw installation of a [Stravibase VHS](#) system consisting of 5 elastomeric layers, reinforced with steel plates. To prevent excessive bulging of the elastomer, horizontal reinforcement plates are integrated between the elastomer layers, reducing the shape factor and increasing the compressive stiffness of the bearing. Stravibase VHS bearings are designed to support very large loads whilst being significantly smaller in plan dimensions than traditional elastomer bearings.

After installation in situ measurements were carried out, which proved the effectiveness of the damping system and its design by CDM Stravitec engineers.

Being a major contributor to the horizontal stiffness of the building, the separate elevator shaft fell outside of the vibration cut and had to be decoupled from all adjacent walls and structural floors to ensure optimal vibration isolation. Therefore, the bottom of the shaft was built on a carefully planned out [Stravifloor Channel](#) high-performance floating floor, whereas the walls are separated from the rest of the structure using [Stravibase Lateral](#) resilient mats.



## AT A GLANCE

### CHALLENGES

- Freight and commuter trains passing
- Heavy building with 12 floors above the vibration cut
- Dilatation between building E and F, both buildings share a common basement

### BENEFITS

- Quick and easy to install
- Flexible damping in the walls and ceilings prevents the transmission of vibrations to another building further from the noise source