

# Čtvrť Emila Kolbena, Building B Prague, CZ



## Case Study



### Property Owner

Skanska Reality a.s.



### Main Contractor

Skanska a.s.



### Acoustic Consultant

Ing. Jan Stěnička



### Architect

EBM Expert s.r.o.



### Structural Engineer

HSD Statika s.r.o.

## OVERVIEW

The Čtvrť Emila Kolbena project is a new residential development located in the prosperous area of Prague 9 in Vysočany. The project is part of the ongoing redevelopment of former brownfields in the area, and it aims to provide modern and comfortable residential units for the residents. However, one of the challenges faced during the construction of the residential tower was the issue of vibrations caused by the subway and road below the building. To address this issue, anti-vibration systems were implemented to dampen the vibrations and building noise, ensuring a comfortable living environment for the residents.

## Stravibase VHS

- Isolate building structures from vibration and noise generated by external or internal sources
- Designed to support very large loads whilst being significantly smaller in plan dimensions than traditional elastomer bearings

## Stravifloor Prefab

- Pre-manufactured modular floating floor solution that offers excellent structure-borne and airborne noise isolation thanks to the elastomeric bearings



## SOLUTION

Due to the acoustic requirements of the residential tower Building B, it was crucial to implement effective anti-vibration systems to minimize the impact of vibrations from the subway and road traffic. The building was divided into lower uninsulated and upper insulated superstructures, with isolation already in place at the interface below the ceilings of the first floor. To further dampen the vibrations, [Stravibase VHS](#) discrete elastomeric bearings were installed on the walls and column heads at this level. Additionally, the box-in-box construction of the associated elevator and staircase was also dampened using the same system to minimize the transmission of vibrations.

To address the issue of noise transmission from the elevators, [Stravifloor Prefab](#) high-performance floating floor systems were installed horizontally in the elevator shafts. This floating floor system effectively isolates the elevator from the surrounding structure, minimizing the transmission of vibrations to the surrounding rooms. Additionally, [Stravibase Mat](#) full surface mats were installed vertically to further dampen the vibrations. Furthermore, reinforced concrete stops with higher load capacity were used to ensure the stability of the superstructure in the horizontal direction.

The implementation of acoustic isolators in the Čtvrť Emila Kolbena Building B project proved to be successful in mitigating the impact of vibrations from the subway and vehicular road on the residential tower, ensuring a comfortable living environment for the residents. The low vibration levels were confirmed by measurements taken by an accredited laboratory after completion of the construction.



## AT A GLANCE

### CHALLENGES

- Vibrations from metro tunnel below
- Very exposed location in the centre of a new residential development
- Minimum system delivery costs

### BENEFITS

- Fully integrated solution
- Tailor-made system
- Solution with proven track record in many other applications
- Compliance with the hygienic noise limits

**750 m<sup>2</sup>**

Stravibase  
Mat

**43 MN**

Stravibase VHS  
(5 layers)

**33 m<sup>2</sup>**

Stravifloor  
Prefab