

Luka Rental Apartments Prague, CZ



Case Study



Property Owner

Luka Residential, s.r.o.



Main Contractor

Hinton a.s.



Structural Engineer

Building s.r.o.



Architect

CAMA Architekti s.r.o.



Acoustic Consultant

Modus-Fz (Fülöp Augusztinovicz)

OVERVIEW

BD Luka is a new residential building with 3 basement floors and 16 floors above ground. The investor has built these apartments not to be sold, but to rent them for long term.

Since the building is situated right next to Luka Station on line B of the Prague metro network, it posed a challenge for the designers to meet the noise level criteria. The vibration isolation study concluded that in order to reach this value for the apartments, the vibration isolation system needed to have a resonance frequency of maximum 13 Hz.

Stravibase VHS

- Isolate buildings from vibration and structure-borne noise caused by trains or trams running nearby or underneath buildings
- Designed to support very large loads whilst being significantly smaller in plan dimensions than traditional elastomer bearings



SOLUTION

The height of the building and the resulting load values made it almost impossible to propose any other solutions than [Stravibase VHS](#) which can be loaded up to 12 MPa. The vibration cut was located mostly above ground level which allowed a clear approach for modelling and a solution without perimeter isolation. The investor chose the 3-layer Stravibase VHS bearings (having a resonance frequency of 13 Hz).

After the installation, the measured noise levels in the apartments were very similar to the estimations based on the FEM model. The noise limits were achieved. The building was also awarded as Energy Project of the Year, the Real Estate Project of the Year and received the Best Development and New Concept Award.

443 600 kN

Acoustic
Design Load

