



Case Study



Property Owner
Pannon University



Main Contractor
VÉP-Mester Kft.



Acoustic Consultant
Andor FÜRJES

OVERVIEW

On the Pannon University campus in Veszprém, Hungary, a new laboratory building opened, housing a very sensitive electron microscope. At this state-of-the-art research facility the structure, composition, and morphology of solid materials, from atomic resolution to the micrometer scale, using a wide variety of electron microscopy techniques is being studied.

During the design process, low-frequency vibrations were detected. It was not clear if they were coming from an unknown source, Veszprém being a home for several factories for the automotive industry, or if it was just the background vibration naturally occurring in the ground.

Stravimech Bearing-Air

- Isolation systems are intended for isolation of very low frequency vibrations, typically generated in industrial applications such as textile machinery, vibrating machinery, etc.



SOLUTION

To shield the sensitive electron microscope from the measured vibrations, a massive inertia block installed on top of Stravimech Bearing-Air isolators, was designed. These air cushions have a resonant frequency of less than 2 Hz.

CDM Stravitec supplied 24 double-chamber bearings together with the air-pressure regulating system so the air cushion isolators would operate as they were designed to.

Lateral stability of the machine base, which is always an issue in case of low internal damping solutions, was solved with custom-made pre-compressed elastomeric bearings.

AT A GLANCE

CHALLENGES

- System with less than 2 Hz resonant frequency
- Installation of the air-cushions under the 53 ton inertia mass
- Providing sufficient lateral stability for the machine base

BENEFITS

- CDM Stravitec's air cushion range allows very low-frequency solutions
- Regulated air cushions allow fine-tuning of resonant frequency and height of the system
- Pre-compression technology allows materials to be installed already in operational condition

4 ton
installed on a
53t inertia mass

