

Case Study

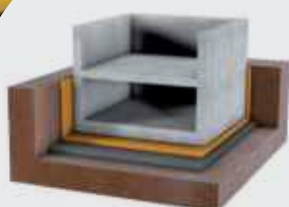
Drachen-Center Basle



» Elastic division of residential and commercial areas using full-surface decoupling

» Reduction of secondary air-borne noise arising from the commercial area

» Strategic calculation: maximum economy and proven effectiveness of the solution



Drachen-Center Basle



Description of the project

Drachen-Center Basle

An exclusive, five-storey block of apartments with an underground car park was constructed in the heart of Basle's banking centre. One major challenge this project presented was to minimise the secondary airborne sound caused by vibrations.

The disruptive vibrations primarily originate from the shopping centre that is housed on the ground floor. A further factor contributing to the problem is the tramline that runs close to the Drachen-Center, subjecting the building to additional shocks.

The requirements that have to be met concerning structure-borne sound protection are particularly high for living areas: there are set sound and vibration values for both day and night which must not be exceeded.

Implementation

Effective protection against oscillations and vibrations with Sylomer®

The first stage consisted of defining the building's natural system frequency, including the bearings. Working on the basis of these results, Getzner worked with experts from Trombik Ingenieure AG to develop a solution that protects the building from oscillations and vibrations. Trombik Ing. and Swiss sales partner Angst+Pfister Zurich were responsible for acceptance of the installation work. The mats were laid by Implenia, the general contractor of the project. Using Sylomer® mats, Getzner separated the two sections of the building



In accordance with the load transfer by the load-bearing walls, Sylomer® materials with various rigidities were used. A soft Sylomer® material (yellow) was installed as filler between these rigid supports. In this project, the bottom plate is 20 cm thick.



which are used for different purposes, thereby decoupling the building from the surrounding sources of vibrations. For the living area, a natural system frequency of 15 Hz was required. Thanks to complex calculations and professional installation of the Sylomer® mats, the vibration experts were able to obtain a precise result. In this project, as with so many others, the outstanding success achieved was due to knowledge, expertise and experience - measurements taken after completion of the building showed that the natural frequency of 14 Hz predicted in the calculations had been achieved.

Getzner delivered the optimal solution by drawing up strategic calculations - on the one hand the experienced technicians ensured that maximum efficiency was achieved, whilst on the other hand the cost-effectiveness of the solution also played a major role in the project.

Developer, manufacturer and structural engineering consultant

Getzner Werkstoffe is not merely responsible for developing and manufacturing materials to absorb and insulate vibrations. Getzner engineers also have particular experience in providing advice on structural issues relating to vibration engineering and

they are involved in the system development and implementation of projects from the very beginning. The cooperation starts with defining the framework structural conditions and often goes on to include joint development of innovations. Getzner's technical knowledge in the field of vibration insulation enables the creation of intelligent system solutions with flexible materials, offering cost-effectiveness, sound protection and comfort.

Feedback

What does the acoustic consultant responsible have to say about the project?

"With the Drachen-Center project, flexible decoupling of the building was planned, due to the particular location of the apartment block directly on top of the shopping centre. Following discussion of various technical solutions, full-surface decoupling was carried out using the material Sylomer®. The system was designed for a basic natural frequency of 14 Hz. Following completion of the structural works, we took measurements of the building section that had been decoupled in a flexible manner. Due to the wind-induced vibrations, it was possible to measure the natural

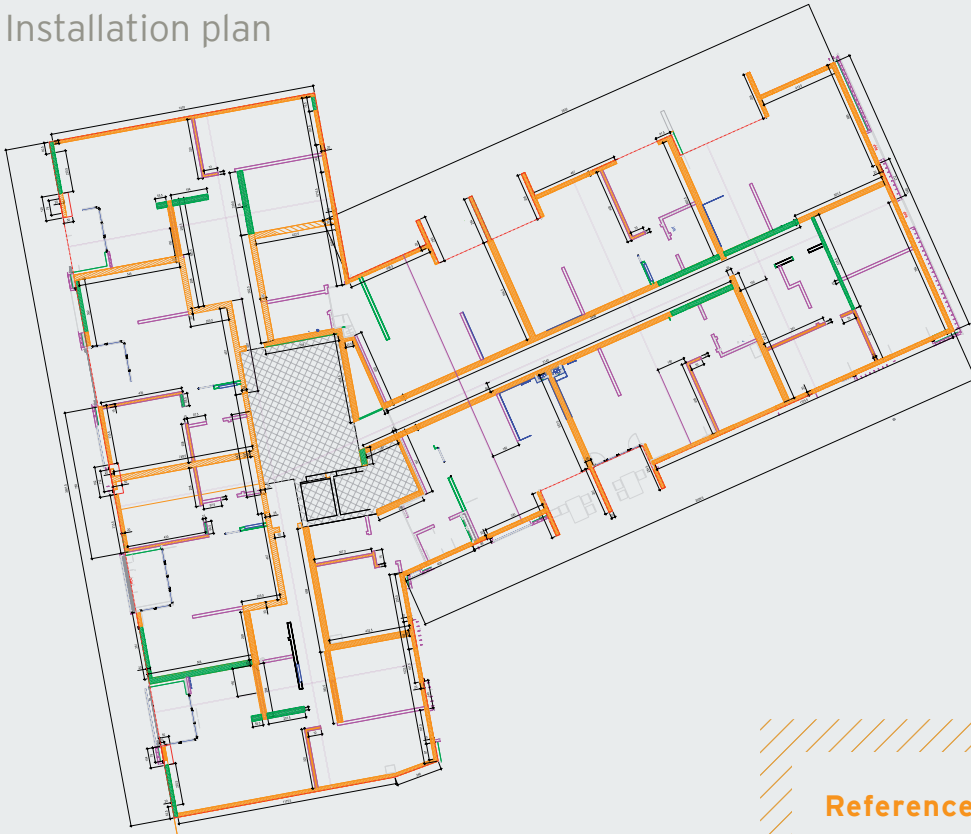
frequencies in various positions and the results of the calculations were proven in terms of quality.

For many years, Getzner Werkstoffe has been a competent partner in the field of structure-borne sound insulation. It is tremendously important to provide the customer with long-lasting and high-quality solutions, particularly when constructing bearing systems for buildings and foundations. Working together with the technicians from Getzner, we are able to develop technically flawless and cost-effective solutions that are precisely tailored to our customers' requirements."

Peter G. Trombik
Qualified Civil Engineer (Swiss
Federal Institute of Technology)
Trombik Ingenieure AG

Trombik Ingenieure AG is a Swiss engineering company that was established more than 50 years ago and is based in Zurich. The services provided by Trombik Ingenieure AG encompass work in practically all fields of construction engineering. The diverse range of services available includes, in particular, building dynamics, building physics, vibration protection and sound proofing, as well as room acoustics.

Installation plan



Getzner Werkstoffe GmbH

Foundation:	1969 (as a subsidiary of Getzner, Mutter & Cie)
Chief Executive Officer:	Ing. Jürgen Rainalter
Employees:	220 in Bürs, 100 abroad
2014 turnover:	70.3 Mio. EUR
Business areas:	Railway, construction, industry
2014 output:	7,367 tonnes of technical PU materials
2014 recycling:	17 tonnes of residual PU materials
Headquarter:	Bürs (AT)
Locations:	Berlin (DE), Munich (DE), Stuttgart (DE), Lyon (FR), Amman (JO), Tokyo (JP), Pune (IN), Beijing (CN), Kunshan (CN), Charlotte (US)
Ratio of exports:	86 percent

References

- Beisheim Center Ritz-Carlton, Berlin
- Biogen Institute - Central Boston
- Casino and hotel, Jerusalem
- National Training Centre, Tokyo
- Lufthansa Head Offices, Frankfurt
- Kirloskar Oil Engines, Kagal, India
- EADS, Manching site
- KahokuShimpo, Sendai, Japan
- Ccppdeirali, Syria
- Teatro Nacional de Catalunya, Barcelona
- Oslo Opera House
- Riverside Boulevard - Manhattan, NYC
- Skyline, Vienna