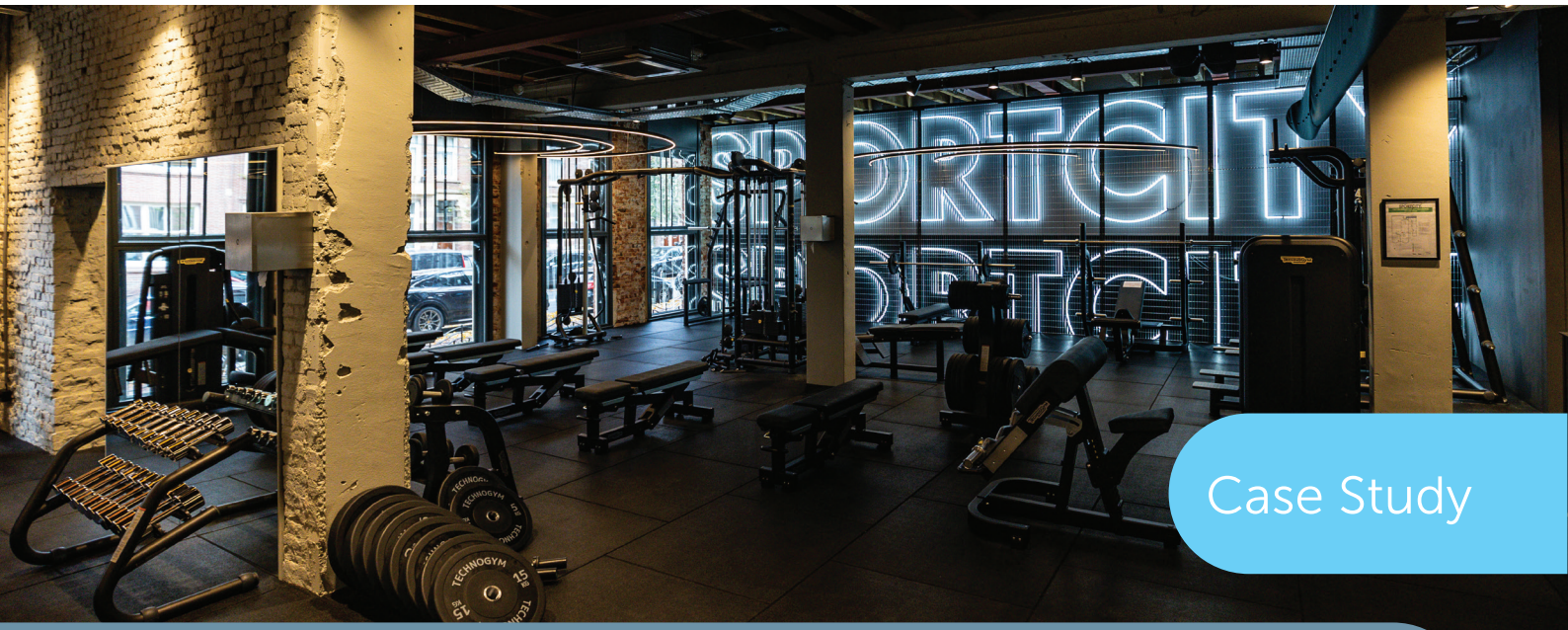
SportCity Cornelis Schuyt
Amsterdam, NL

cdm stravitec
Making your world a quieter place



Case Study

Property Owner
SportCity

Main Contractor
Building Retail

Architect
Architectenbureau Tank

Acoustic Consultant
Cauberg Huygen

Structural Engineer
CNSTRCT

Stravigym XP

- "Extreme Performance" discrete isolator floating floor system specifically intended for use in free-weight areas
- Engineered to reduce noise, damp vibration and minimize rebound

OVERVIEW

Always wanted to work out in a monumental building in Amsterdam? This is possible at SportCity Cornelis Schuyt, a beautifully restored historic building, converted into a modern gym.

The main concern at SportCity Cornelis Schuyt was the noise from falling weights and weight stacks in fitness equipment, which can reverberate considerably in the building and at the neighbors' homes. These low frequency impact sounds can be perceived as disturbing if not properly addressed. In order to determine exactly what noise levels are generated by the various fitness activities and to prove the efficiency of the chosen acoustic system, a test set-up of the floor was installed months prior to the installation of the final floor, after which sound measurements were carried out by Cauberg-Huygen. In one test, 35 kg dumbbell were dropped from a height of 500 mm. In another, the noise generated by falling weight stacks in a leg press machine and the noise generated by people running on a treadmill were measured. These measurements showed that the Stravigym XP system, which was installed, meets the set requirements. The subsequent control measurements also demonstrate this.

AT A GLANCE

CHALLENGES

- Two different floor setups
- Located in a residential area
- Wood beam structure between the floors (lightweight solution which doesn't offer proper sound insulation)

BENEFITS

- Engineered floating floor systems designed to accommodate different requirements
- Tested and proven high levels of isolation performance

632 m²
Stravigym XP

SOLUTION

Together with our local partner Delta-L, we were involved in the acoustic improvement of SportCity Cornelis Schuyt. After a thorough study, it was decided to install two special sound-insulating Stravigym floating system on each floor of the club to prevent noise pollution as much as possible.

Ground Floor:

- Build-up: Stravigym XP with dBooster® technology and GympactLayer-20 + 40 mm rubber tiles as floor covering
- Subfloor: 130 mm concrete + 60 mm screed
- Tests: 35 kg dumbbell from a height of 500 mm & falling weight stack in a leg press
- Results in the adjacent room ($L_{A,max}$): BGN 28-40 dB, Bare Slab 84-87 dB, Slab+Tiles 68 dB, System 30-36 dB, Leg Press 100kg < 35 dB

First floor:

- Build-up: same system + 2 x 12.5 mm gypsum fiber boards (to add mass to the structural floor)
- Subfloor: wood beam floor
- Tests: 35 kg dumbbell from a height of 500mm & people running on a treadmill
- Results in the adjacent room ($L_{A,max}$): BGN 38-41 dB, System 38-46* dB, Treadmill < 41 dB

*Difficulties to measure due the BGN

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