Basic-Fit Headquarter's
Wasquehal, FR

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Case Study

Property Owner
Basic-Fit

Main Contractor
Builthings

Acoustic Consultant
ORFEA Acoustique

Stravigym XP

Extreme Performance discrete isolator lightweight floating floor system specifically intended for use in free-weight areas offering superior structural resistance and acoustical performance.

OVERVIEW

As a Cross-Laminated Timber (CLT) construction, the new Basic-Fit headquarters in Wasquehal, France, presented unique acoustic challenges.

The company set up operations in a newly renovated 3,000 m^2 (33,000 ft^2) multi-storey office building that includes a gym facility on the ground floor.

While the building was designed to provide modern, collaborative workspaces across two upper levels, an acoustic study carried out by Orfea revealed a significant risk of noise and vibration transmission from the free weight area to the offices above. This raised concerns about preserving acoustic comfort in a mixed-use environment combining fitness and office functions.

Such projects come with added challenges, particularly when a gym is part of the design, as gym activities generate high-intensity impact noise and vibrations at low frequencies, which are notoriously difficult to isolate in lightweight constructions like Cross-Laminated Timber (CLT).

AT A GLANCE

CHALLENGES

- Mixed-use building constraints: The gym was located directly below office spaces, creating a high risk of noise and vibration transmission that could disrupt work activities and reduce acoustic comfort for staff.
- Impact and vibration control: The free weight zone involved heavy and repeated impacts, requiring a robust acoustic isolation system to control structure-borne sound transmission.
- Challenging structural type: The use of Cross-Laminated Timber (CLT) in the building introduces increased acoustic challenges, particularly in isolating low frequencies, as well as limitations in the allowable additional load.
- Tight installation schedule: The installation timeline required that the entire acoustic floor system be installed within just one week, demanding a fast and efficient solution.

BENEFITS

- Superior acoustic isolation: Effectively reduces impact noise from free weight activities, ensuring acoustic comfort in the office spaces above.
- Lightweight and designed for disassembly: This solution is ideally suited to the building type - mass timber, thanks to its reduced weight and minimal footprint.
- Rapid and efficient installation: thanks to its dry and modular design, the entire system was installed within one week, meeting the project's tight refurbishment schedule and significantly reducing downtime on site.
- Reliable and proven performance: Chosen based on in-situ testing and acoustic assessments, offering confidence in its effectiveness under real-world conditions.

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SOLUTION

To address the acoustic challenges of this CLT building, particularly the transmission of low-frequency vibrations from the gym to the office spaces above, an in-situ impact test was carried out by acoustic consultant. Using a 30 kg (66.14 lbs) dumbbell dropped from thigh height on a Stravigym XP-D45-M60-dB system with a 20 mm (0.79 inches) finishing tile, the test showed that emergence levels remained within the admissible limits across the frequency spectrum, in compliance with French Decree No. 2006-1099, as well as the stricter limits set by the acoustician for lower frequency ranges - exceeding regulatory requirements.

Based on these results, the Stravigym XP system, combined with Stravigym GympactLayer-45 and dBooster® technology, was selected and installed across the 412 m^2 (4,435 ft^2) free weight zone.

This lightweight, high-performance floating floor was ideally suited to the nature of the CLT construction, offering effective isolation of heavy impacts without adding significant mass to the structure.

In addition to its proven acoustic performance, the system helps protect the CLT slab from structural damage due to repeated shocks and dynamic loading. Its modular, dry-installation design allowed for quick installation - completed in under one week - helping the project stay on schedule.

The result is a high-quality gym space that meets the rigorous acoustic demands of CLT buildings, ensuring comfort and quiet in the offices above.

412 m^2 (4,435 ft^2)
Stravigym XP with Gympact-Layer-45