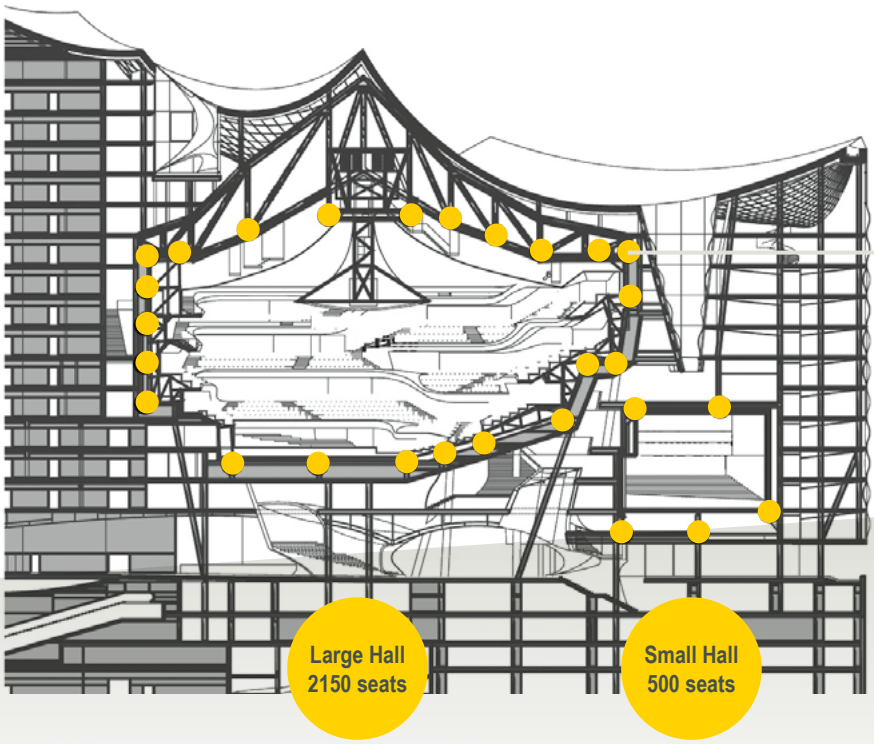
FLOATING FLOORS

GERB

FLOATING FLOORS AND ROOMS



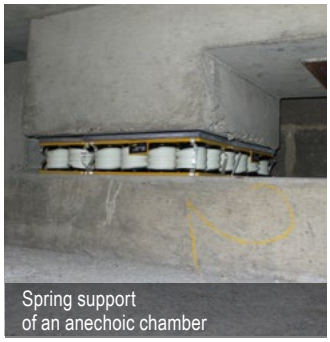
Elbphilharmony, Hamburg, Germany

Floating floor and room structures represent state-of-the-art technology to control vibration and structure-borne noise within buildings.

This technology is used to separate TV, broadcasting or recording studios, recital & rehearsal rooms as well as halls, theatres, discos, fitness studios, and HVAC areas dynamically and acoustically from the surrounding environment.

For more than 50 years GERB has been innovating and developing spring elements for floating floor and room structures based on the application of steel coil springs. This system guarantees highest attenuation values due to extremely low system natural frequencies.

Anechoic chamber



Spring support
of an anechoic chamber

At system natural frequencies ranging from 7 Hz down to 2.5 Hz, GERB steel spring elements provide the most efficient solutions in protecting highly sensitive areas from mechanical vibration and structure-borne noise.

Mitigation of structure-borne noise and vibration starts at frequencies as low as 4 Hz thus giving the GERB steel spring system an important technical advantage over elastic pad material.

Basic Spring Element Systems

GERB offers a variety of spring element systems for floating floors and rooms. In addition to a large number of steel springs of different elasticity and load capacity, there are several element systems available designed for a wide range of applications:

» SUPPORTING SPRING ELEMENTS

Supporting type spring elements arranged below the floating structure are designed to carry high and concentrated loads, and can easily be adjusted to the actual loads if required post installation.

» EMBEDDED “JACK-UP” SPRING ELEMENTS

Embedded in the concrete slab, jack-up type spring elements are a preferred choice in terms of simplified installation, high flexibility, re-adjustability and low system height.

All spring elements can be provided with additional damping thus further improving the system’s damping and attenuation performance.

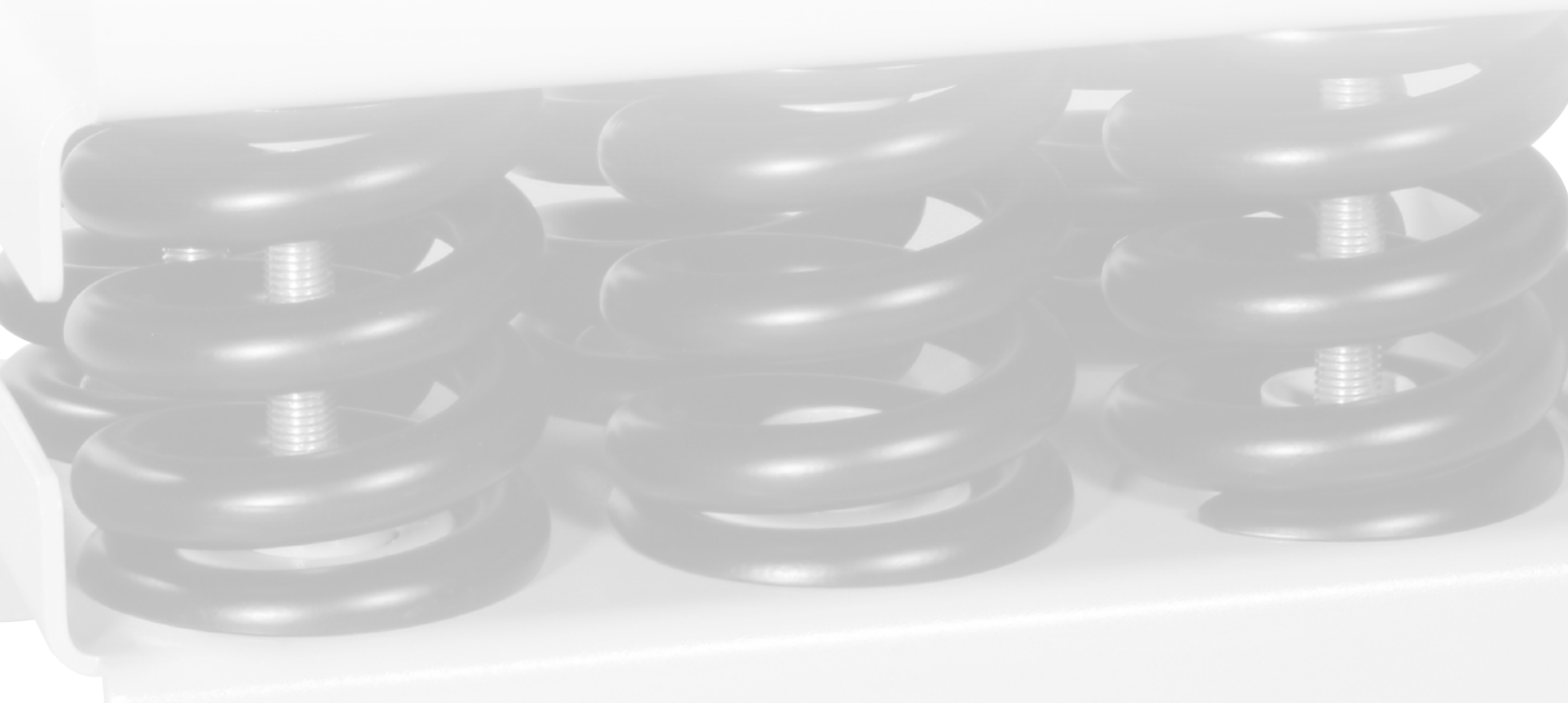
SUPPORTING SPRING ELEMENTS

Supporting spring elements are simply arranged between the isolated and the non-isolated structure.

For supporting spring elements, a broad range of different types of springs is available to provide system natural frequencies as low as 2.5 to 7 Hz resulting in excellent vibration and structure borne noise mitigation performance.

Museum Fondation Louis Vuittton with floating floors, Paris, France

Dance floor



EMBEDDED “JACK-UP” SPRING ELEMENTS

This floating floor spring element system* offers the following design features:

Eastern Art Center with floating floors, Shanghai, China

Constructing a floating floor

A range of different types of springs is available to provide system natural frequencies as low as 2.5 Hz up to 7 Hz.

One of the major benefits of this GERB spring system is its accessibility from above which allows for subsequent levelling of the floating slab as well as spring replacement with springs of differing capacities.

In order to achieve uniform spring deflections, elements of different type and load capacity can be combined in a system layout to allow for different slab loadings.

Slab construction and the installation of the springs are very simple. Apart from a bond-breaking plastic layer, there is no need for any bottom formwork. The slab is lifted directly from the substructure after the concrete has achieved its design strength.

The jack-up and adjustment facilities are an integral part of every element.

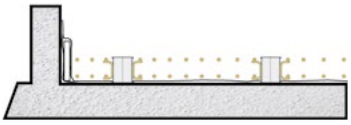
The elements can be equipped with a damping system in order to stabilise the floating slab and to further improve attenuation capacity at higher frequency levels.

**European Patent*

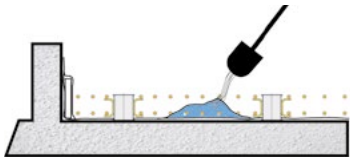
Installation procedure for embedded “jack-up” spring elements

Phase 1: Placing of a plastic sheet on the supporting floor

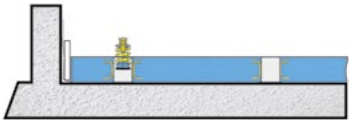
Phase 2: Placing of housings



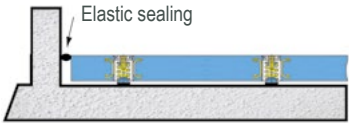
Phase 3: Fixing of reinforcement



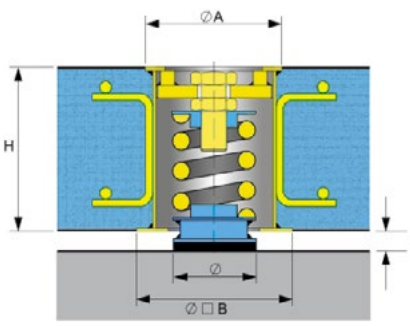
Phase 4: Pouring of concrete



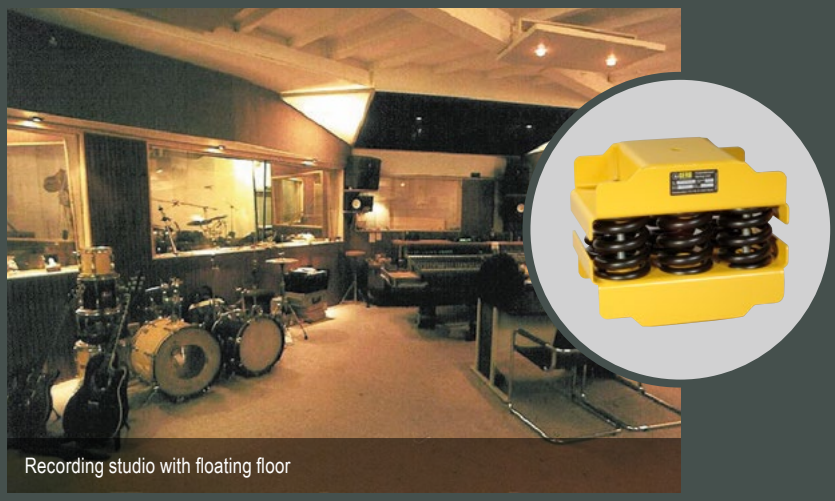
Phase 5: Installation of springs from top



Phase 5: Lifting of the slab and height adjustment



Final arrangement



Recording studio with floating floor

Spring support of a TV production room

Discotheque

Fitness studio (Source:TVS)

Reference List (Excerpt)

Floating Floors and Rooms

Country	City	Project
Australia	Sydney	Rehearsal Rooms
Austria	Vienna	Acoustical Measurement Room
	Wels	Fitness Centre
China	Shanghai	Oriental Art Centre
	Shanghai	Concert Hall-Auditorium
	Shanghai	National Theatre
Egypt	Cairo	Roller Coaster in a Hotel
France	Paris	Citée de la Musique
	Paris	Bibliotheque de France
	Paris	Philharmonic Hall
	Lyon	Acoustic Room
	Nantes	Helipad
	Paris	Fondation Louis Vuitton
Germany	Berlin	3-story Discotheque
	Berlin	Hotel Pool
	Dortmund	Conference Room
	Hamburg	TV Studios
	Hannover	Helipad
	Mainz	Broadcasting Studio
	Munich	TV Studio
	Munich	Discotheque
Great Britain	London	Auditorium
	London	Anechoic Chamber
	London	Fitness Centre
Greece	Athens	Concert Hall
	Thessaloniki	Measurement Rooms
Hungary	Budapest	Computer Centre
India	Noida	Hotel Rooms
Netherlands	Amsterdam	Offices at Shiphol Airport
	Den Haag	Discotheque
	Enschede	Music Rooms
Russia	St. Petersburg	Photo-Laboratory
Saudi Arabia	Jeddah	Sound and TV Studios
	Dammam	TV Studios
South Africa	Bophuthaswana	Control & Spound Rooms
USA	Nashville/Tennessee	Recording Studio

Spring supported helipad

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For preparation of a design proposal please provide the following information:

- » Purpose/Function of the structure
- » Performance requirements
- » Outline and other dimensional specifications, drawing
- » Loads
- » Description of the substructure, load capacity, constraints
- » Other determinant items

Certified to: ISO 9001 ISO 14001 DIN EN 1090 BS OHSAS 18001

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