



## Case Study



### Property Owner

's-Hertogenbosch City Council



### Main Contractor

Mertens Bouwbedrijf BV



### Architect

NOAHH



### Acoustic Consultant

Peutz



### Contractor

Van De Laar



### Installer

Vilton

## Stravifloor Jackup-R

- Jack-up floating floor system with reinforced steel boxes cast into concrete
- Once dry, the isolated slab is raised off the structure to the required void depth

## OVERVIEW

Premium acoustics are a quintessential part of any modern-day theater or performance space. Noise coming in from other rooms or even from outside can disturb live performances.

In 's-Hertogenbosch, the Netherlands, construction of the new performing arts theater is well underway. Planned to open in the second half of 2023, 'Theater aan de Parade' will house 2 multifunctional halls, each with its own atmosphere and programming. The different spaces are all connected by spacious foyers, with plenty of natural light and views of the Parade, the main town square.

The new theater is designed to invite passersby to come in, enjoy one of the many performances or simply hang out and relax.

**543 m<sup>2</sup>**

Stravifloor  
Jackup-R



## SOLUTION

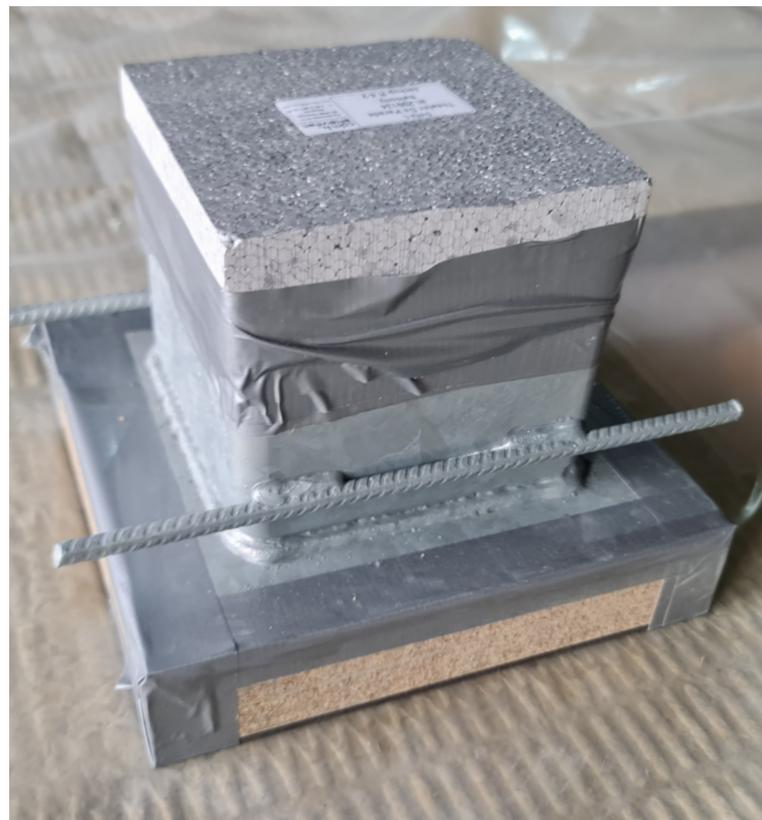
The solution selected to acoustically decouple the multifunctional hall, one of the 2 main halls of the building, from the rest of the theater, was a complete box-in-box construction, using a Stravifloor Jackup-R floating floor system.

The total hall surface area is about 543 m<sup>2</sup>, divided over three zones. An impressive 272 boxes were installed.

Boxes were installed with 2 different types of springs combined in three different configurations. The overall span between the boxes in this project is around 1,4 to 2 m.

The added value of a jack-up system in this specific project was that despite the loads not being homogeneously distributed across the entire surface, it is possible to create a stiff concrete slab with a homogeneous thickness before to place it on springs. A jack-up system allows for better control of the slab level across all construction phases, concrete slab thickness, and the final deflection of each bearing, different in number, type and tributary area.

The entire installation process was spread across two phases, the installation of the boxes together with the insulation material and PE-foil which took less than one week, and the second phase in which we were jacking up the boxes until the entire floor was raised to the desired level. This last step took 4 days, including cleaning and preparing the area for the next intervening parties.



## AT A GLANCE

### CHALLENGES

- Need to acoustically decouple the multifunctional hall from the rest of the building
- Need to cope with high and non-homogeneously distributed ponctual loads

### BENEFITS

- Possible to install insulation material in the air cavity to avoid a standing wave which may cause noise breakthrough at high frequencies
- Guaranteed decoupling from the subfloor
- Solution without formwork; isolators are incorporated in the floating floor. No need to take into account the bending stiffness of lost formwork panels, only the reinforced floating slab and the maximum load capacity of the boxes and the spacing, resulting in few contact points
- Possibility to incorporate a heating floor system in the floating slab of the acoustical floor solution