

## Palaisquartier Frankfurt, Germany

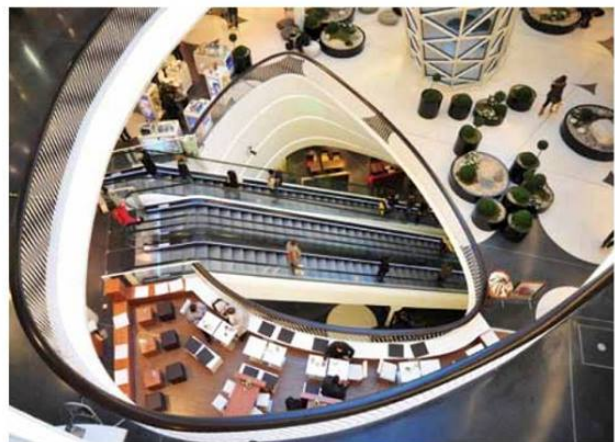
While the NEXTOWER with a height of 135 m is only 17th in the list of Frankfurt's high-rise buildings, the new landmark in the Palaisquartier still takes a special place in the city's skyline. Here on the Zeil, one of Europe's busiest streets, a building complex has been constructed to combine working, shopping, relaxing and enjoying.

On this inner-city site that up to 2004 was the location for the central post office built in the 1950s, the architect Massimiliano Fuksas (MyZeil) and the firm KSP Jürgen Engel Architekten (reconstruction of the Thurn and Taxis Palace, Hotel Jumeirah, NEXTOWER) planned four buildings offering a range of different possible uses and distinctive architecture. The project also included the largest car park in Frankfurt city centre offering space for 1,396 cars under the 1.6 hectare premises.

The new MyZeil shopping centre is one of Germany's largest shopping and leisure worlds with over 47,000 m<sup>2</sup> in sales floor space and more than 100 shops on eight floors. The building's architectural highlights include the organically shaped glazed roof with glass trunk-line structures to channel rainwater and Germany's longest self-supporting inside escalator measuring 46 m in length.

The Thurn and Taxis Palace, restored in baroque style after being destroyed in the Second World War, offers visitors retail shops, upmarket eateries, offices and an event location. The second tower of the Palaisquartier accommodates the 5-star Hotel Jumeirah Frankfurt with 218 luxurious rooms and suites on 24 floors, together with conference rooms, a ballroom and a starred restaurant. The 135 m high NEXTOWER office building offers state-of-the-art business premises on 32 floors, housed in pioneering architecture. Among others, the innovative design and technology of the building received the Gold Certificate from the DGNB (German Society for Sustainable Construction).

In executing the project, the planners focused not only on implementing the developed energy efficiency concept but also on the usage quality of the office suites. Thermal comfort and a healthy indoor environment is generated by combined cooling and heat radiating ceilings, together with windows that open in every room and an integrated sunshading system. Half of the heating and cooling energy comes from ground heat, and another 30% from waste heat (heat recovery) from the shopping centre and underground car park. The air-conditioning and ventilation equipment is located in the basement, on a service floor at a height of 80 m and on the roof of the building. One special challenge in planning the central technical facilities was to minimise the effect on the building structure as a whole of the vibrations generated by what in some cases are very large machines and appliances.



When ventilation systems are installed on reinforced concrete floors for example, special requirements must be met in terms of airborne and structure-borne noise insulation. To fulfil these requirements in NEXTOWER, the surfaces on which the air-conditioning and ventilation machines stand had to be decoupled from the building structure. BWM engineers helped to draw up individual calculations of the bearings needed to erect the machinery in order to rule out any detrimental impact on the usage quality on all floors of the building. Using the results, BSW then elaborated vibration technology solutions consisting of elastic decoupling to extensively prevent any transfer of the airborne noise generated by operation of the machines. **Regupol® BA** insulation mats made of PU-bonded rubber fibres have been placed under the machine foundations and standing surfaces to act as active insulation, thus minimising any transfer of structure-borne noise to the reinforced concrete floors.



Planners, builders and operators appreciate the positive properties of **Regupol® BA** insulation material which permits structure-borne noise insulation of up to 93% when fitted in triple layers with 12 Hz bearing frequency. The elastomer mats also offer outstanding processing possibilities and can be used for both full-surface insulation under machine foundations and for point bearings under the standing surfaces of machines, coping with rolling loads of up to 5,000 kg/m<sup>2</sup>. **Regupol® BA** also proves its worth in outside use, for example on the roof of the NEXTOWER office building. The insulation mats are resistant to moisture and ozone and can be used at temperatures between -20 °C and +80 °C.



#### Information at a glance

Building: Palaisquartier, Frankfurt  
 Builders: MAB Development Group B.V., The Hague / Meyer Bergman Ltd., London  
 Architects: Massimiliano Fuksas, Rome (MyZeil)  
 KSP Jürgen Engel Architekten, Frankfurt/Main (reconstruction of the Thurn and Taxis Palace, Hotel Jumeirah, NEXTOWER)

BSW products:

**Regupol® BA** screed insulation mats

Additional references are listed on our website.

[www.bsw-vibration-technology.com](http://www.bsw-vibration-technology.com)

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