

A Tata Steel Enterprise

### **Case Study** Paracelsus Bad & Kurhaus in Salzburg, Austria

**Products:** 

3'800 m<sup>2</sup> SUPERHOLORIB SHR 51/600

#### **Building owner:**

Stadtgemeinde Salzburg, KKTB Kongress, Kurhaus & Tourismusbetriebe der Stadt Salzburg, Austria

#### Architect:

BERGER + PARKKINEN Ziviltechniker GmbH, Wien, Austria

#### **Building contractors:**

Unger Stahlbau Ges.m.b.H., Oberwart, Österreich / Ing. Hans Bodner Baugesellschaft mbH & Co KG, Niederlassung Wals Hochbau, Wals, Austria

**Realisation:** 2018 / 2019



# Hard as steel but flexible

## Looking shiny and new again after 60 years: opening of the rebuilt traditional Paracelsus Bad & Kurhaus in Salzburg



Since 1956 the Austrian city of Salzburg has been offering its citizens relaxation away from the stress of daily life in the Paracelsus Bad & Kurhaus. Apart from an indoor swimming pool and sauna suite, the facility specialises in outpatient therapeutic treatments. For example, massages and mud baths are offered as well as contemporary physiotherapy. So as to be able to adequately guarantee this wide range of offerings in future, the baths were closed for modernisation in 2016 after 60 years of operation. After a construction time of around three years, the spacious and highly modern new hall has now reopened. It is a real eye-catcher with its elaborate architecture. Curved lines and lots of glass perfectly convey the purpose of the building. However, this appearance demanded an ambitious choice of building materials: the basis had to be flexible, yet capable of bearing loads. These requirements were precisely met by the high-quality SUPERHOLORIB<sup>®</sup> steel composite profiles from Montana Building Systems Ltd. of Villmergen, Switzerland.

Located directly adjacent to Salzburg's Kurgarten, the reconstruction of the Paracelsus Bad & Kurhaus was planned as a walk-in extension to the park. The Viennese architect's office "BERGER + PARKKINEN" was responsible for the design. The reference to the former city fortification as well as to the still existent Salzburg "Water Bastion" was to be emphasised with the new building. Since its opening in October 2019, the modernised Bad & Kurhaus offers a wide range of ways to relax and recuperate – and both of these aspects were considered during the planning and design of the new building.

#### Light, air and curved lines

The three building areas of the Paracelsus Bad & Kurhaus – spa, swimming pool and gastronomy – are already easily recognisable from the outside. The spa is located on the bottom two floors and is completely surrounded by sight screens and sun protection blinds. It was important to the architects to let as much natural daylight into the interior as possible. At the same time, the exterior blinds guarantee sufficient privacy during treatments. The modern spa specialises in physical medicine and general rehabilitation. Above the spa, on the third floor of the Paracelsus building, is the indoor swimming pool. The desired connection between Kurhaus and Kurgarten is particularly clear here : the entire bathing level is glazed all round and offers an unimpaired view over the tree tops of the park. The openly designed space enables a 360-degree view. Seen from the outside, the glazed level almost looks as if it were cut out. The wave-shaped lines above the windows contribute to this and also visually reflect the purpose of the baths. Thanks to the complete glazing with its curved form, the top floor appears to float above the rest of the building. Up here – over the rooftops of Salzburg as it were – is the third wing of the building, which houses the gastronomy and the sauna complex.

#### **Making it float**

A very special combination of steel and concrete was required in order to implement the unusual appearance with a great deal of verve and lightness. This combination was found in the SUPERHOLORIB® steel composite floor decks from Montana Building Systems Ltd. The system not only combines the properties of steel and concrete in a perfect can be cut to size simply and with no great effort on site. The partially nested and domed roof surfaces of the new Paracelsus building were implementable exactly as planned. Apart from the appearance, the performance of the building material was naturally also important.

In steel composite construction, the steel profiles and steel reinforced concrete elements are connected by dovetail profile shapes. The strengths of steel and concrete can be combined in this way: the steel absorbs the so-called tensile forces, while the concrete dissipates the compressive forces. This allows the reliable implementation of complex ceiling shapes and large spans such as those in Salzburg. The flexible use of the SUPERHOLORIB® profiles with shaped components as well as their lightweight design and direct-on-site adaptability also ensured a smooth process on the building site during the construction of the new Salzburg Kurhaus. The property was thus completed on time and within the budget.



#### Safety on all levels

However, not only the unusual shape of the building, but also its function as a swimming pool placed particularly high demands on the building materials used.



Above all, the moisture and the use of chlorine in the water bears the risk of corrosion damage to structural elements and the building structure. In order to avoid such damage from the outset, the SUPERHOLORIB® profiles used are provided with special corrosion protection. "In Salzburg, the Prisma® KRONOS coating was used with a coating thickness of 65 µm", explains Luuk Rademaker, responsible sales manager export at Montana. "This coating was specially developed for use in highly sensitive areas such as swimming pools. It fulfils the highest corrosion protection class RC5 according to EN 10169 and also offers maximum corrosion protection on cut edges."

Structural fire protection is also the highest priority in such a highly frequented building. Here, too, suitable measures were taken to permanently guarantee safety. For the use of HOLORIB composite floor decks from Montana this means the implementation of safetyrelevant fire protection connections. Multilayer



ceiling connections with a newly developed fire protection solution were used for this. This entails the filling of the open dovetails with a fast and easy to install firestop flute filler from Hilti, which also fulfils the noise insulation requirements. With this structure the corresponding ceiling connections attain fire resistance class El 90. This means that they can resist fire for at least 90 minutes – sufficient time for visitors and employees to escape and for the rescue services to get to work.

#### Award-worthy result

The new Paracelsus Bad & Kurhaus in Salzburg opened punctually in October 2019. Around 240 treatment days per year are now planned again. With around 120 patients who are treated here every day, the Kurhaus thus carries out around 105'000 treatments annually. However, not only the capacity of the new building is award-worthy – the special architecture has already met with a great response. The building, with its sophisticated layout as well as its airy, daylight-filled design and unusual embedment in the Kurpark, has already been nominated for the Austrian Steel Construction Award 2019: an award-worthy project all-round.



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