



Case study

Satellite Terminal, Munich Airport, Germany

Products:

HOLORIB® HR 51/150, galvanised steel,
mainly 0.88 mm, partly 0.75 and 1.00 mm

Owner:

Flughafen München GmbH and Deutsche
Lufthansa AG, represented by Terminal 2
Gesellschaft mbH & Co oHG

Architects and general planner:

Koch+ Partner Architekten und Stadtplaner
GmbH, Koch · Voigt · Zschornack, Munich

Further planners:

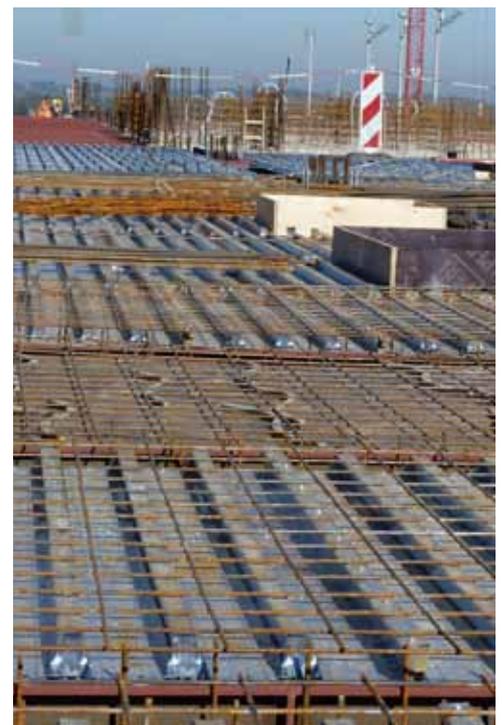
C-I-P GmbH Ingenieure, Munich
for planning the HOLORIB® ceilings
H+P Höhler+Partner Architekten und
Ingenieure

Realisation:

May 2012 to summer 2015

Construction costs:

About 650 million euros



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Steel composite floor decks for the new Satellite Terminal 2 in Munich Terminal 2 at Munich Airport is being given a satellite building, which will considerably increase the capacity of the airport by a further 52 gates this year. HOLORIB® composite profiles from Montana Bausysteme AG were used on 56,000 m² for the new modern building.

Every year almost 40 million passengers use Munich Airport, which is one of the largest aviation hubs in Europe. The number of travellers is constantly increasing. For that reason Deutsche Lufthansa AG decided in 2010 to add a storey to the existing baggage sorting hall and to extend it by a satellite terminal. The functional building was to be flexibly usable and also permit future extensions. A multi-stage international competition was held in order to find an economical and architecturally aesthetic solution.

The team of architects from Koch+Partner won the competition with their proposal to only extend Terminal 2 both functionally and operatively instead of constructing a new building. The affiliation to Terminal 2 was clearly defined and the recognition value was the top design principle. As illustrated on their website, their idea also contains a "multitude of measures to reduce CO₂ emissions by around 40 % compared to Terminal 1 and Terminal 2."

The use of modern technologies and materials was therefore called for. During the planning phase the architects and manufacturers, including the building contractors, looked

together for an optimum solution for the special satellite building. The choice for the ceiling structure fell on the HOLORIB® HR 51/150 galvanised steel composite profile in the material thickness 0.88 mm, partly also 0.75 and 1.00 mm. The HOLORIB® composite profiles are patented worldwide in various countries, in addition to which they are now the most widely used composite floor decks.

Different surface finishes are possible depending on corrosion protection requirements. "The composite floor decks system meets all the requirements with regard to fire protection, beam connection, dynamic load and sound insulation. The composite profiles arrive prefabricated at the building site and are then quickly installed", says Christoph Schlosser from Montana Bausysteme field service.

This extremely economic building method in comparison with conventional ceiling manufacture has already proven itself in other projects of a similar size, including the construction of Zurich Airport, the BMW Welt in Munich or the Commerzbank in Frankfurt am Main.

The new satellite terminal is being built above the existing baggage sorting hall. In the opinion of the architects this is only possible through the use of the relatively small-sized HOLORIB® profile sheets instead of the otherwise usual large-sized precast concrete elements for the ceiling structure. What counted for the architects and structural engineers was that the conventional reinforcements were omitted. Instead, the composite profiles were credited as field reinforcements, which made slender ceilings possible and thus resulted in a considerable reduction in weight compared to solid slabs.

The composite profiles saved the use of erection braces and ensured fast building processes as well as short building schedules. They were simply laid on the support structure and the ceilings were then concreted. In all of this, a big challenge is represented by the building logistics and construction during ongoing operations while maintaining strict observance of the airport safety regulations.

The short assembly and construction times resulting from the order-related industrial prefabrication nevertheless enable punctual building processes.

The static proof demanded by the client was provided by a calculation program, which was developed by Montana Bausysteme AG together with M. Mensinger GmbH from Dintikon and is available free of charge for each construction measure.

Montana Bausysteme AG offers owners, planners and architects innovative solutions for sophisticated and special building projects. Its construction systems and calculation programs enable architects to combine visual creativity and technical requirements. This promotes a future-oriented, new and constructive partnership between architects, planners, industry and building contractors.



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