

# Plug-and-Play Hotels

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**03/09/2019** In the future, turnkey buildings will come as modules from factories.

Construction costs have been rising for years now, and 2019 is no exception. According to a study by the German Institute for Economic Research (DIW), this trend is fueled primarily by the ongoing high demand for new buildings. Major cities and recreational areas have an especially great need for new housing, and also for hotels and hospitals. When construction booms, its costs skyrocket and its time frames lengthen. Can a modular construction method help make buildings more quickly, more economically, and with better quality? A Finnish company is convinced it can.

The hotel business in Germany has posted ten consecutive years of growth. In 2018 the German Tourism Federation (BTW) counted a good 477 million overnight stays, a four-percent increase over the year before. It also reported a 71.9-percent room occupancy rate. New hotels are being built everywhere in the world, not only between the North Sea and the Alps. In the USA, for example, around 3,500 hotels have been built over the past seven years, bringing the total number in the country to

around 55,900 or 5.3 million beds. According to the study Hotel Investment Outlook 2019 from Jones Lang Lasalle, last year's total transaction volume in the hotel investment market was nearly 68 billion US dollars. The highest growth was found on the US market, with an increase of around 30 percent to 36.5 billion dollars. The authors of the study anticipate a similarly high rate of growth for 2019.

Investors are concerned about the cost of construction, which has risen at an extraordinary rate in recent years. The costs for building a hotel or hospital depend on developments in the property, construction material, and labor markets. For the latter two markets, companies have spent years searching for innovative concepts and new solutions.

They have found what they have been looking for in the Finnish city of Turku, home to the headquarters of Admares. This company has built a strong reputation as a maker of floating villas and artificial wellness islands. By 2022 at the latest, it expects to start up the world's first factory that makes ready-to-use modules for entire hotels and hospitals. "Automated production of modular building complexes is the only way to reduce construction costs in the real estate sector while also improving quality," says Admares CEO Mikael Hedberg in explaining his company's idea. "We want to manufacture buildings the same way cars are made at factories." Experts from Porsche Consulting are supporting the Finnish company in designing its products, processes, and organization, and in implementing its smart factory. "We are helping to put Admares' brilliant idea into practice," says Matthias Möhrke, associate partner at Porsche Consulting.

Admares' approach renders conventional construction processes obsolete. "The factory generates 80 to 95 percent of the value," says Möhrke. "That lets us achieve enormous levels of efficiency, quality, and speed, which would not be possible if the work were done at the construction site." Only the final minor steps are done at the actual site, such as connecting the building's core elements and room modules. That accounts at most for 2 to 10 percent of the overall construction process. The result is "plug and play."

The degree of preliminary construction depends to a great extent on how much individuality the client envisions for the facade and interior design. The production process for the building's units is broken down into small steps, and all of the skilled manual work is planned in advance. The modules are completed and equipped with all lines for water and power, for example. Tiles, if desired, are installed at the factory, as are items such as television mounts. Even furnishings are added at the factory.

## Steps to the perfect smart factory

A module will pass through multiple stations on its way to completion. "Our approach is not only modular but also scalable," says Möhrke. "Depending on the requirements and the region, our goal is to perform the requisite value-adding processes at the factory. At the moment, this includes shells, logistics, and preliminary component assembly as well as the production of the main modules." This approach also has consequences for the personnel. Production line workers do not need experience in the construction sector and can switch between different stations. Tasks that would normally require

many years of experience, such as laying tiles or installing drywall, are done by robots.

Roland Sitzberger, the partner at Porsche Consulting responsible for the construction sector, emphasizes the importance of the modular product approach that enables individualization without forfeiting the advantages of series production. “At full capacity a module is completed approximately every 30 minutes,” he explains. What does that mean for overall construction time? “It is shortened by as much as 70 percent compared to conventional methods.” But that is not all. “The modular approach can reduce hotel or hospital construction costs by an average of 30 percent,” says Sitzberger, but makes clear that this depends on a number of factors, such as variance.

The final step to the perfect smart factory is planned as follows: clients enter the details of their orders into Admares' online configurator, and the data flows automatically to the production line—a unique method of customized production. As Sitzberger explains, “Even when clients have individual requests, the modular approach lowers costs and shortens completion times.” He is convinced that there is enormous potential for modular construction and preassembled solutions in the hotel and hospital market, in part because the need for these types of buildings is “very high.” Admares intends to launch on the US market, then expand to European, Arab, and African countries. “This business model can certainly be adapted to other types of real estate and other industries,” observes Sitzberger. His final comment: “Admares' factory of the future is nothing less than a revolution in the construction business.”

## Info

Photo: Admares

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