

# RESEARCH NEWS

---

**RESEARCH NEWS**June 3, 2019 || Page 1 | 4

---

## The future of hospitality

### A haven of peace for business travelers

**Business travel can be stressful. With so little time to relax between one meeting and the next, the travelers expect hotels to offer more than just a place to sleep. Together with hoteliers and industrial partners researchers at the Fraunhofer Institute for Industrial Engineering IAO created the FutureHotel network, in which they aim to make the hotel experience as comfortable and pleasant as possible. They are focusing their research not only on the bedrooms but also on public areas such as the lobby and reception.**

A study by the German Travel Association (DRV) revealed that 53 percent of business travelers find this aspect of their work particularly stressful. Long hours on the road, bad connections between flights, being separated from family and friends – these are just some of the negative factors that enter into the equation. Even having to stay in a hotel is often seen as a source of stress. This was the starting point of research in the project work of FutureHotel led by Vanessa Borkmann, a researcher at Fraunhofer IAO. As a professional architect, she gathered together partners from industry and the hospitality sector to study concepts and solutions in which hotels could be better designed. The FutureHotel project includes research on topics like interior design, personal services, mobile check-in and check-out processes, public spaces and leisure facilities, all with a view to creating that essential feel-good factor and a calming environment. The results of this specific research are published in her doctoral thesis with the title “A model to determine psychological stress levels based on the experience of business travelers when staying in a hotel,” which can be ordered from bookstores under ISBN 978-3-8396-1418-1.

As Borkmann says, “Especially in times of increased travel and high pressure of performance, it is crucial for business travelers to find a relaxing atmosphere during their stay in the hotel.” This isn’t always the case, as surveys of hotel guests conducted as part of the project revealed. The most frequent complaints included poor hygiene – for example, disagreeable smells in hotel rooms or insufficient cleanliness – and poor or non-existent acoustics that lets in noise from the street below or the room next door. Other negative factors mentioned were having to grapple with the intricate controls of lighting systems and showers, and long waiting times at the checkout desk.

#### Hotel rooms with a feel-good factor

So, which shifters provide more relaxation and comfort? How can hotel managers ensure that guests enjoy their stay and will come back again? How can mood lighting,

---

#### Editorial Notes

**Janis Eitner** | Fraunhofer-Gesellschaft, München | Communications | Phone +49 89 1205-1333 | [presse@zv.fraunhofer.de](mailto:presse@zv.fraunhofer.de)

**Juliane Segedi** | Fraunhofer Institute for Industrial Engineering IAO | Phone +49 711 970-2343 |

Nobelstrasse 12 | 70569 Stuttgart | [www.iao.fraunhofer.de](http://www.iao.fraunhofer.de) | [juliane.segedi@iao.fraunhofer.de](mailto:juliane.segedi@iao.fraunhofer.de)

heating levels and background music be used to create a stress-free ambiance? The one most important requirement for a good night's rest is the quality of the bed, according to the results of the research project. There are smart hotel beds available that are equipped with a massage function and temperature-regulating mattresses of different firmnesses, which can be adjusted according to the individual guest's preference. Another important aspect is the cleanliness of the hotel room and the availability of modern services: at a minimum, guests expect reliable, high-speed Internet access and sufficient power outlets. New technologies will enable hotel guests to connect numerous mobile and wearable devices to room management systems. In this way, the environment in the room can be adapted to the guest's vital parameters such as blood pressure or body temperature. Sensor systems could be used to adapt lighting levels and other factors that influence the ambience of the room to the business travelers' needs. "Light temperatures could be varied from warm (calming) to cool (stimulating), depending on whether the occupant wishes to relax or work," says the researcher, describing possible digital solutions.

---

**RESEARCH NEWS**June 3, 2019 || Page 2 | 4

---

Even bathrooms can be designed to enhance the feel-good factor – starting with plenty of shelf space for toiletries and well-lit mirrors. In the future, digitization will be increasingly used, according to the authors of the FutureHotel study. Augmented Reality techniques will enable guests to imagine themselves bathing in the dappled light of a woodland pool. "Environmental psychologists have proven that a view of trees can reduce stress levels within as little as 15 minutes," explains Borkmann.

**Customized design**

A hotel's public spaces play an equally important role. Being able to socialize with other hotel guests in pleasant surroundings is an added stress-relief factor, according to the results of the research project. "In the future, hotels catering to the business-travel market will have to customize their services in order to stay ahead of the competition," says Borkmann. This means offering price deals, services and products tailored to this specific market, which will enable them to stand out from the crowd and establish an image as business pioneers. Borkmann sees great potential for business hotels in concepts that differentiate between different categories of guests: "The demands vary depending on whether someone is away from home for two nights or two weeks, whether that person is traveling alone or as part of a group, and what kind of accommodation and level of service they expect. These and other considerations can be taken into account in the hotel owner's or operator's business strategy."

On request, the Fraunhofer IAO researcher organizes innovation workshops for hotel managers to inform them about new concepts they can use to offer business travelers an opportunity to switch off and forget about their stressful job for a while. "Peoples' thoughts and mood tend to change in different surroundings. We want to make hotel managers aware of these issues and work with them to implement appropriate solutions," says the research scientist, who has meanwhile initiated further projects. "Digitalization also gives rise to the question of how the hospitality business sees itself as an

---

employer. What impact will digitalization have on traditional job descriptions and work situations? Our next step will be to design innovative job profiles for workers in the hospitality sector.”

More information: [www.futurehotel.de](http://www.futurehotel.de)

---

**RESEARCH NEWS**

June 3, 2019 || Page 3 | 4

---



**Picture 1: The bathroom as a private wellness oasis, exhibited in the FutureHotel showcase at the Fraunhofer inHaus Center in Duisburg.**

© gee-ly Zurich and Fraunhofer IAO Design: LAVA



**Picture 2 : The FutureHotel showcase at the Fraunhofer inHaus Center in Duisburg.**

© gee-ly Zurich and Fraunhofer IAO Design: LAVA

---

**RESEARCH NEWS**

June 3, 2019 || Page 4 | 4

---



**Picture 3: Prototype hotel room demonstrated in the Urban Living Lab at Fraunhofer IAO.**

© gee-ly Zurich and Fraunhofer IAO Design: LAVA