

# Can sustainable office buildings increase workers' productivity?

February 11 2016, by Constanze Böttcher

---

Green buildings can both protect the environment and benefit the people using them. But to do so, users should be involved in the planning from the very beginning.

Efforts to make buildings environmentally sustainable often focus on the technical aspects, such as energy efficiency. But there is more to sustainability than just energy efficiency.

Sustainability is also about the people using the [building](#). Awareness of non-environmental benefits of [green buildings](#) is growing. A recent working paper by the European Joint Research Centre identifies "healthy and comfortable spaces" as one of the key factors necessary to judge the environmental performance of a building.

According to a report published in 2014 by the World Green Building Council, there is great potential for green office buildings to provide comfortable and healthy workspaces for their users.

"There is some evidence suggesting that people are happier in these buildings," says Andrew Smith, senior lecturer in facilities management and the built environment at the University of Central Lancashire, U.K. This is often attributed to factors like the amount of daylight or natural material used within the building, according to Smith. Workplace well-being might in turn increase workers' productivity and eventually customer satisfaction, he points out.

Energy efficient office buildings do not automatically provide better workplaces than conventional buildings, according to a study of [office buildings](#) in Switzerland by Lukas Windlinger Inversini, professor for workplace management at the Zurich University of Applied Science, and colleagues. This is because a building's envelop is not the only factor contributing to user comfort; interior design also plays an important role, he explains.

But how could this be addressed? Users should be involved in the planning of a building right from the start, even though this may be difficult in practice, Windlinger holds.

This is what the planners of the recently completed NuOffice in Munich, Germany, tried to achieve. The building was awarded an international Platinum LEED certificate in Green Building in 2013. "We consulted the tenants extensively and asked about their needs prior [to the construction of the building]," says Oliver Vietgen. The architect works for a company called Facit GmbH & Co. KG, which coordinated the planning and construction of the building.

The NuOffice has now been in use for more than three years and is one of the case studies in the project DIRECTION, which aims demonstrates how technologies can help achieve very low energy buildings. The energy efficiency concept includes a low-temperature heating system, a ventilation system with heat recovery and an external shading system. As part of this project, a user survey was conducted to assess whether the energy efficiency measures actually benefitted the people working in the building.

Although not representative, the survey results indicate that "users are generally quite satisfied with the building," says Jan Kaiser, research associate at the Fraunhofer Institute for Building Physics IBP in Kassel, Germany. Kaiser has been involved in developing and implementing the

energy efficiency concept. Users are particularly satisfied with the indoor air quality and the temperature, he adds.

But there are also some lessons learned. For example, "users have problems with the automatic shading. They prefer to regulate it individually," Vietgen says. Moreover, to minimise energy use, the ventilation system was supposed to run during winter and summer, not during spring and autumn, Kaiser explains. Now, "it is actually used throughout the year," he says. This is because users do not open the windows to actually get fresh air.

Indeed, whether people feel well within a certain building "greatly depends on the way they use it," Windlinger points out. This is why it is so important "to find a compromise between [energy efficiency](#) and user requirements from the beginning," Vietgen remarks.

But the difficulty remains that even a company's management and staff may have different requirements and behaviour, Vietgen says. For future projects, tenants should therefore be responsible for the interior design themselves and ideally "the staff should participate in this process," Windlinger concludes.

Provided by Youris.com

Citation: Can sustainable office buildings increase workers' productivity? (2016, February 11) retrieved 4 June 2024 from

<https://phys.org/news/2016-02-sustainable-office-workers-productivity.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.