

Wilson Barbosa Neto (wilsonbarbosaneto@gmail.com)

UNICAMP - University of Campinas

Title: High-performance hybrid spaces: mass-customisation from furniture design to environmental comfort

Abstract

Technological innovations resulting from the emergence of the computer, in the second half of the 20th century, caused unprecedented changes in the means of production of consumer goods, in people's work routines, in the coexistence between individuals and in the culture in general. These digital technologies, which are widespread in society, such as the internet, personal computers (PCs and notebooks) and mobile devices such as tablets and smartphones, have helped to transform work dynamics and the way people interact between themselves and to the physical space. The layouts of 21st century work and learning environments demand adaptations to meet new professional practices and different teaching methods that emerge from the challenges imposed by technological developments in contemporary life. The furniture in these spaces can be more effective, incorporating different functions, technologies and materials to contribute to the performance, comfort and well-being of users during their daily activities. At the same time, the technological evolution of manufacturing processes in the furniture industries, notably due to the presence of robots and other computer numerical control (CNC) equipment in the furniture manufacturing and assembly lines, opens up opportunities for large-scale product customization. Today, thanks to the automation of manufacturing processes and the advances provided by Industry 4.0, it is possible to manufacture customized products, varying their dimensions, colors, shapes and materials, without making the production lines of elements unique in the industry unfeasible. However, flexible production in the furniture industry in Brazil is still a challenge even for companies that already have a highly equipped industrial park. In addition, the application of new materials in the manufacture of furniture for indoor environments has the potential to reduce electricity consumption, control the thermal inertia and noise of these spaces and favor environmental comfort and sustainability of buildings.



Wilson Barbosa Neto is an Architect and Urbanist, PhD student and Master in Architecture, Technology and City by Unicamp. He is a professor of Product Design and Computer-aided Architecture Design at the Pontifical University of Campinas. In 2019, he participated in the sandwich doctoral program at Technische Universität Kaiserslautern (Germany). His doctoral research investigates the personalization of work and learning environments (hybrid spaces) using new types of furniture, to suit different demands for comfort and functionality.