Keynote: Smart-BIM (Building Information Modelling)

B. DE VRIES, E. ALLAMEH, M. HEIDARI JOZAM. ***Smart-BIM (Building Information Modelling).*** *Gerontechnology 2012;11(2):64;* doi:10.4017/gt.2012.11.02.044.00 **Purpose** After a long period of international research and development, BIM is now mature. Many tools support, or claim to support, the BIM process[1]. BIM not only offers opportunities for the Architectural Engineering and Construction industry, but also for the client. In this paper we focus not on the professional client, but on the end-user of a building assignment. Involvement of the end user in the design process has been advocated by many scholars and designers, but has so far only marginally been adopted in practice. The importance of user participation is demonstrated by the lack of success of smart technologies in new housing or in renovation projects. Particularly elderly people resist these technologies in their home environment, although they could provide benefits in improved comfort and health care. As a result of poor understanding of these new technologies by both designers and end users, researchers observe that there is a mismatch between user demands and smart technology usability[2]. This paper attempts to improve the role of users in the design process in two ways: firstly, by adding the missing components of smart technology to current BIM model libraries; secondly, by developing a virtual model in which users can interact with the smart technologies and configure their preferred layout. The final results are interesting not only for technology developers but also for housing designers who aim to improve the quality of life and housing for an aging society. **Method** For a better understanding of BIM, a historical perspective is taken. The initiatives from different research institutes are discussed and how they affected each other. The uptake by the software industry is highlighted as well as their delicate relationship with science. In today's design process BIM systems support spatial design that is accommodate by smart technology. Usually this smart technology is added after the spatial design by the installations expert in the final design stage. In our research we want to turn this process around so that the smart technologies are accommodated by spatial design. Therefore we develop a design system with a library of smart components such as a smart wall, a smart kitchen and smart furniture. The difference between smart technologies and standard building components is that smart technologies interact with the building users. BIM allows for realistic visualization of designs in an early stage. In our prototype system, clients are presented a virtual space with a wide range of smart technologies. After being introduced to these technologies, the client expresses how these will fit within his/her activities. Following, he/she can experience in the virtual model how smart technologies react when activities are executed. **Results & Discussion** A prototype system is presented that allows end-users such as the elderly to experience smart technologies. In contrast to traditional design it does not start from the spatial layout but from the activities that should be accommodated supported by smart technologies. We expect a fundamentally different layout to emerge from this approach. Although no experimental data are available yet, some first experiences will be discussed.

References

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Keywords: BIM, smart technology, client support

Affiliation: Eindhoven University of Technology, Eindhoven, Netherlands; *E:* B.d.Vries@tue.nl

Full paper: doi:10.4017/gt.2012.11.02.044.605