

C. DALTON, J.D. HARRISON. *MyRoom: A model for an intelligent salutogenic room prototype for an elderly user. Gerontechnology 2010;9(2):206; doi:10.4017/gt.2010.09.02.239.00* **Purpose** Evidence Based Design (EBD) as a tool in designing built environments has gained considerable credence, particularly in the healthcare sector. Existing research demonstrates that the built environment and ambient characteristics of an individual's surroundings impact profoundly on health outcomes<sup>1,2</sup>. A poorly-designed environment may in itself contribute to patient stress. The current global trend in healthcare design towards single-room accommodation supports the development of an idealised prototypical single-space environment. The research forms part of the NEMBES<sup>3</sup> project, an inter-institutional, multi-disciplinary research program investigating a 'whole system' approach to the design of networked embedded systems. This model draws on current research into EBD, particularly regarding therapeutic benefit of light, image (primarily fractal<sup>4</sup> and natural images<sup>5</sup>) and colour<sup>6,7</sup>. Here, these are regarded as key environmental factors, which, among others, can be varied to create a 'salutogenic' environment<sup>8</sup>. Integration of sensing and wireless networks is an essential component of the prototype, allowing physiological data indicative of the patient's well-being to be continuously collected and relayed to wireless networks. Data obtained is interpreted to alter the room environment on a continual basis, creating a personally-optimised healing environment<sup>9</sup>. Control interfaces also facilitate direct inputs by users and carers. The proposal synthesises and expands on existing research and technologies, extending use of sensor networks from simple monitoring into active therapy. The project involves collaborative research in design of software applications, middleware and prototypical hardware, including non-invasive sensing. **Method** The model builds on published literature and technologies, interviews with end-users, carers, service-providers, and simulations. These inform the design research, culminating in both digital modelling and a full-scale physical prototype, where room adaptiveness is enabled through significant liaison with the NEMBES project. **Results & Discussion** The design prototype allows real-time observation of user reactions to variations in the room environment, ultimately facilitating contributions to the knowledge-base of EBD based on objective measurement.

## References

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**Address:** CCAE, Cork, Ireland; E: [cathydalton2306@gmail.com](mailto:cathydalton2306@gmail.com)