

Architecture and Recovery: Understanding the role of domestic residential spaces in assisting and enhancing stroke recovery

ASSOCIATE PROFESSOR MICHAEL CHAPMAN
School of Architecture and Built Environment, University of Newcastle, Australia

PROFESSOR MICHAEL NILSSON¹, DR. WARREN REILLY², CHRIS TUCKER³, ASSOCIATE PROFESSOR FREDERICK ROHAN WALKER⁴, PROFESSOR SUE ANNE WARE⁵
¹Director of HRMI, Faculty of Health and Medicine, University of Newcastle Australia
²Program Convenor (Industrial Design) School of Architecture and Built Environment, University of Newcastle Australia
³Head of Discipline (Architecture), School of Architecture and Built Environment, University of Newcastle Australia
⁴Senior Research Fellow, School of Biomedical Sciences and Pharmacy, University of Newcastle Australia
⁵Head of School, School of Architecture and Built Environment, University of Newcastle Australia

I. ABSTRACT

One person every 10 minutes suffers from stroke in Australia. Occurring without warning stroke involves blood vessels within the brain becoming blocked causing significant death of brain tissue. As a result patients that have suffered from stroke are often left with significant disability and their relationship to the built environment becomes radically altered. This project recognises that patients recovering from stroke need to be stimulated, enriched, and challenged by their spatial environment and that there is an absence of current research into how architecture and design-related fields can better contribute to this, outside of traditional institutional health settings. This paper brings together a team of neuroscientists, architects, landscape architects and designers in order to better understand the role of architecture and the built environment in assisting and facilitating stroke recovery. There is already an emerging field of architectural research into the positive relationship between architecture and neuroscience (Cohen, 2000; Ednie Brown, 2012; Robinson, 2015), but this has, to date, not directly addressed the potential of design to play a leading role in recovery. General themes that have emerged from research within the field of neuroscience have demonstrated that view (Ulrich, 1984), the proximity to a garden (Cooper Marcus, 1995), access to light, colour (Holzman, 2010) and also organisational layout (Ulrich, 2004; Ellison, 2004) can all have a significant and tangible impact on patient recovery times, pain reduction and general well-being. This research has, for the most part, however, focused on design within an institutional context, and rarely, if at all, considered the broader role of domestic or everyday residential or urban environments on health care and recovery.

The current paper addresses this important role of domestic residential, landscape and urban environments in enhancing patient recovery after the acute and sub-acute periods. The research will bring together key themes from the existing studies in the field of neuroscience, to better understand the role that architecture can play as an active, rather than passive component of recovery. Currently, nearly all of the recovery process for survivors of stroke occurs within the residential environment. This, however, is problematic as these environments have been designed around able-bodied individuals with a completely different need set compared to stroke survivors. The vast amount of research that has been undertaken in this field has focussed on the architecture of institutional environments, and this project will explore how aspects of care and recovery can be extended to urban environments outside of a hospital setting, or the immediate residential environment. This is critical because only a small proportion of the recovery period from a stroke can take place within an institutional environment, and the broader social and cultural aspects of recovery have not been addressed in the current scholarship.

Using a design research methodology, supported by empirical and theoretical knowledge of sub-acute stroke recovery, the project will identify existing urban and social environments where criteria essential to stroke recovery can be enhanced and stimulated, and provide a coherent strategy for implementation. Expanding the domain of research to include non-institutional environments, and the broader social space of the city has the potential to dramatically reshape the current knowledge in this field. Drawing from a detailed spatial analysis of the cultural and social conditions of existing residential recovery environments, and accessing a broad-range of statistical data, the paper will summarise the key criteria for residential spaces of recovery, before framing the brief for a cross-disciplinary design research project which aims to actively engage architecture, technology and neuroscience to enhance the recovery process. Central to this multi-disciplinary approach is the role of integrated technology in the development of "smart" houses, which track activity and behaviour as a way of monitoring recovery and well-being.

2. REFERENCES

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