Research Method Statement

This study recorded structured observations from a series of care homes in order to identify environmental factors having an effect on the everyday life of the users (including residents, visitors and staff). We aimed to build insight into the demands on care home spaces and how meeting those demands might contribute to residents activity and wellbeing. The coding of the data set identifies qualities of the built environment which affect its ability to enable and disable the everyday activities of residents. The impact of other cultural environmental factors, such as the provision of care, were not explored.

This research was reviewed by the ethics committee at Computing, School of Science and Engineering, University of Dundee. Reference SoCEC 15-005a.

Method Development

The collection method was initially trialled in other, less sensitive, settings before a pilot study was carried out in a care home. This suggested improvements in data collection method and allowed for researcher skill development. An initial analysis of the pilot data set allowed for further focus and refinement in data collection.

Sample

We carried out the observation study within a purposeful sample of five care homes capturing 236 recorded observations. The sample was selected for variation across care type (residential or nursing), building type (purpose built and retrofit) and home typology (single-unit and multi-unit).

This is an illustrative data set offering a breadth of insight. Observation samples were selected opportunistically, with the emphasis on variety of activity across space types and times of the day. Negotiated on a home-by-home basis, researcher time was timetabled across available times and spaces. On 7 occasions a researcher was scheduled to observe a space that was currently uninhabited, in that situation the lack of use of the space was recorded and the researcher would continue to observe across nearby spaces. Each observation records a set of interrelated interactions and as such they vary in length and detail and the level of insight gathered.

Data Collection method

The researchers were a visible presence in the home and the care home population knew that the researcher was carrying out observation activities. This was advertised through posters, and information badges and staff. Observations were recorded as snippets of an interrelated series of interactions. User activities,the interactions between users and the built environment, and the functional attributes of the environment were recorded. To structure recordings the AEIOU heuristic was adopted and adapted. Observations were documented under 5 mutually exclusive and collectively exhaustive elements of Activity, Environment, Interaction, Object, and User. It is a common heuristic in the field of Design Ethnography and we built on the version described by Bella and Hanington in 'Universal Methods of Design' (2012). Two elements were added to the AEIOU observation framework : Well-Being and Spatial Relationships. A coding based on the 'Ways to Wellbeing', taken

from Gov. office for Science's Foresight project "Mental Capital and Wellbeing' was added to our framework, and we defined space-codes to identify the space the observation was happening in and used sketched floor plans to capture details of the spatial interrelations.

Grounded Theory Data Analysis method

Based on the paradigm of Grounded Theory, our aim was to develop concepts/theories that developed inductively from the observation data. In order to draw out concepts and theories, the data goes through a process of coding. To assist with coding we employed the method of Affinity Mapping.

Created in the 1960's by Jiro Kawakita, an anthropologist, Affinity Mapping is a process used to organise data into affinities (or groups) based on their relationships to one another. Adopted within design ethnography, this is a useful inductive process for constructing understanding out of relatively extensive sets of data. There are 4 basic elements to Affinity Mapping:

·   1 - Generate ideas – Extract Concepts
·   2 - Shuffle and Display ideas
·   3 - Sort ideas into groups
·   4 - Create header cards – Top level descriptions of Concepts

In reviewing our observation data, we extracted concepts from each of the headings of the data collection framework and wrote them on post-it-notes. These notes were shuffled and concurrently we began to group similar post-it-notes together. This was carried out over several days for each of the topics. Then we talked though the shape of the map, looking at patterns, moving notes to different areas and discussing the themes arising. We used different colours to label the groups.

We used these group headings to form a code book to use for a coded analysis of all of our captured data. This process identifies where particular issues are present within the data and gives us a confidence that particular theme is significant within the data set.

To improve on the reliability of using these codes as a way of representing the data we carried out a series of inter-rater tests. Borrowed from quantitative approaches to data coding, Inter-rater reliability is the degree of agreement among raters. Two researchers identified which codes were present in a series of excerpts of the data and the interrater agreement gives a score of how much consensus there is in these simultaneous codings. This helps us to judge where there is misinterpretation possible from the code definitions and how reliable the application of those codes are to the data. By reiterating this process we were able to address areas of concern.

The combination of affinity mapping with an interrater-supported coding approach helped us produce a refined theme set grounded in the data and a structured dataset in support of those themes.

The data is presented here along with codes applied to it during the process of analysis.