

# THE INTEGRATION OF BEHAVIORS MAPPING AND CONNECTIVITY MEASURES: A NEW METHOD FOR INTERPRETING HEALTHCARE ENVIRONMENTS

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## 1 ABSTRACT

*The current extended lifespan of people makes healthcare a fertile topic in the field of the built environment (Glanz, 2015). Most previous studies regarding the healthcare environment has been conducted using traditional methods such as interviews, focus groups, and on-site observations. However, those traditional methods rarely integrated with network connectivity measures which has been widely used in transportation planning, urban design and indoor circulation simulation. This research aims to develop a new method for interpreting the importance of various spaces in healthcare environment using behavior mapping and network connectivity calculation.*

*A senior center designed for Chinese immigrants in the United States was selected for this study. Using 42 points selected in this center as observation points, two well-trained observers conducted behavior mapping hourly from 9 am to 1 pm following the same route but starting from different directions. Based on these maps, a value was assigned to each point indicating its importance of the users' daily activities. The connectivity significance of each point weighted with its corresponding value was then calculated based on the Graph theory using customized parametric tools. The results inform the relationships between differently spaces and usage; future research can use these relationships to develop appropriate design principles. The resulting method can potentially inform the future research and design regarding healthcare environments, for example, for retirement communities, hospitals and children daycares.*

### 1.1 Keywords

Behavior Mapping, Connectivity Measure, Healthcare