Chapter 18
Making Design Review Interactive

Rojin S. Vishkaie
University of Calgary, Canada

Richard M. Levy
University of Calgary, Canada

ABSTRACT

As a synthesis, this paper offers the opportunity to rethink the status of current technologies within the design review process. It suggests the potential for transforming the complex participatory, communicative, and technical nuances of the design review process to coexist with the affordances of the new genre of digital media. Thus, this paper presents the final stage of an ongoing study that focuses on the design and evaluation of an interactive communication medium, called SketchBoard, for the design review process. Findings reveal that SketchBoard that embodies intelligent and intelligible behavior could potentially remedy the vagueness of visualization. This could further provide an insight into improving participatory communication and visualization around technical activities within the design review process using mobile interactive surfaces.

INTRODUCTION

This study seeks to explore the subject of the design review process and its engagement in digital media, with a primary focus on mobile interactive surfaces. Although a growing body of academic research on the topic is increasing, there is a gap in envisioning how aspects of the design review process can optimally engage with digital media. To bridge this gap, this study focused on an approach that borrowed from a combination of disciplines, including urban planning and communication theories and socio-economic-politics and ethics. This study provides an overview of underlying contributors to the design review process including the interaction between the urban planning stakeholders and tools and technologies. The main contributions of this study combine both empirical and conceptual design components to support the design and evaluation of SketchBoard, a proposed new interactive communication medium that uses interactive surfaces to engage with different aspects of the design review process.

An array of computer aided planning technologies support urban planning workflows, however, their less then satisfactory performance is the result of inadequate technological features for urban planning stakeholders. Also, urban planning stakeholders generally have limited technical skills, yet, computer aided planning requires extensive technical knowledge of Computer Aided Design (CAD) and Geographic Information System (GIS). Moreover, paper and text-based documents used in traditional zoning ordinances' processes suffer from a lack of comprehensibility. Therefore, an effort was made to address this shortcoming by integrating more illustrations and diagrams to paper and text-based documents in the manual zoning ordinance's process. However, interpreting zoning ordinance documents still lacks optimal communication and visualization tools (Kaufman, 1963; Norman, 1993; Brail & Klosterman, 2001; Tufte & Mefalopulos, 2009; Norman, 2010). Furthermore, the divide between academics and practitioners of urban planning is an oft-recognized phenomenon. On one hand, differing opinions reflect that urban planning practitioners focus on the realities of everyday urban planning practice. On the other hand, urban planning academics focus on foundational knowledge and methods, as well as providing professional practices for urban planning practitioners. This then necessitates maintaining participatory relationships between the perspectives of urban planning academics and practitioners (Hall, 2002; Edwards & Bates, 2011). Therefore, the goal of this study is to create and evaluate SketchBoard in order to identify the possibilities and design directions needed to support urban planning stakeholders in understanding the participatory communication and technical complexities of the visualization of the zoning ordinances' process. In particular, this study explores how technology can be used to support communication, participation, visualization, and analysis throughout the design review process. Visualizing the impact of a city's zoning ordinance and calculating Floor Area Ratio (FAR) - FAR refers to the ratio of a building's total floor area compared to the size of a building's parcel - are often important considerations in the design review process. However, current methods of visualizing the zoning ordinance and calculating the FAR can be cumbersome and time-consuming (Kaufman, 1963; Forester, 1987; Forester, 1989; Brail & Klosterman, 2001). As part of the user-centered design process, the primary goal of this study is to create a minimal interface and interaction design for SketchBoard that will allow urban planners with limited computer skills to take part in a co-design process with other urban planners and the researcher. In the absence of such an interactive communication medium, a digital paper prototype was created to help test its potential use within the design review process. The interface and interaction design of SketchBoard were designed using a storyboard technique for an iPad. In this study, the primary data collection techniques rely on semi-structured interviews and structured surveys together with demonstrations of the digital paper prototype.

SCOPE OF THE STUDY

This study had the following objectives:

1. To investigate how SketchBoard could potentially be adopted by urban planners for communicative and technical activities within the design review process.
2. To evaluate how urban planners think about, interact with and integrate with SketchBoard and estimate whether SketchBoard can be successfully used in real world settings.
3. To investigate the adaptability and compatibility of SketchBoard on interactive surfaces compared to those on desktops.

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