CLIM: An Interactive Tabletop for Landscape Modeling

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Abstract. In this paper we describe our development of an interactive touch tabletop user interface for a landscape design tool. The user interface provides a view of the data, which combines the affordances of a multi-touch tabletop display with a vertical screen for real-time feedback. While the table metaphor fits well with the concepts of a top down view of land-scape, approachable from any direction, the board metaphor provides a clear, shared orientation for reading output charts. We also present a data model for landscape projects, which provides a knowledge-based approach to design decision making. We discuss the sourcing of the datasets that drive our landscape model.

Keywords: Interactive Tabletop, Landscape Design, Knowledge-based Design, Touch User Interface, Campus Information Modeling.

1   Introduction

Decision-making for campus landscape planning may take several months, as it requires a negotiation among various professionals, converging on a wide range of knowledge, ideas and goals into one concise plan. Within the scope of an intermediate landscape planning scale, we propose a landscape design tool that provides relevant information and real-time feedback during collaborative design-decision-making sessions. Our goals are to 1) to facilitate collaboration among experts by providing a tool that includes the professional knowledge of landscape design and real-time evaluations and 2) to document the decision-making processes allowing storage and retrieval of alternative design proposals. This paper is focused on describing how the landscape knowledge embedded into the model becomes activated by the user interface (UI) design. 'Campus Landscape Information Modeling' (CLIM) facilitates collaboration and rapid design development by addressing important quantitative and qualitative questions to evaluate design proposals and save alternative scenarios (sequence of projects) to compare over time. CLIM visually presents raster-based land use and vector-based landscape elements. Visual information is rendered into a large table to display, representing an aerial view of campus, and a vertical dashboard display networked with informative charts that update in real-time (Figure1a). Multi touch interaction facilitates collaborative user interaction with the visual model [1] providing access to elements' attributes (e.g. tree age, canopy radius) and information about