Interactive Lightshow

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This poster paper describes a configurable interactive lightshow, designed for projection onto building exteriors.

There has recently been a flurry of building projection installations. Typically, artists and designers construct images that map to a building's exterior from a carefully positioned projector. This, however, is a difficult and time consuming process, prohibitive for our client who needs a more flexible system: one that can be easily configured for any building where the opportunity for night-time marketing arises, and quickly set up on site. This calls for a solution set that is based upon dynamic building mapping and algorithmic interaction.

Building projection can be considered along two dimensions of complexity: the nature of the interaction; and how the surface is treated (Figure 1). At one end of the surface continuum, the building is treated as if it is a flat surface (like a movie screen) and the viewer is forced to ignore the confusion caused by the non-flat and mixed medium surface. At the other end, the building shapes are used to *generate* interaction – the lava flows down the columns; the balls bounce on the window frames, and so on. (A third dimension, that of design elements, is not considered here).

The Interactive LightShow is implemented in the Processing language. There are two major components - a dynamic mapper, and the lightshow application system.

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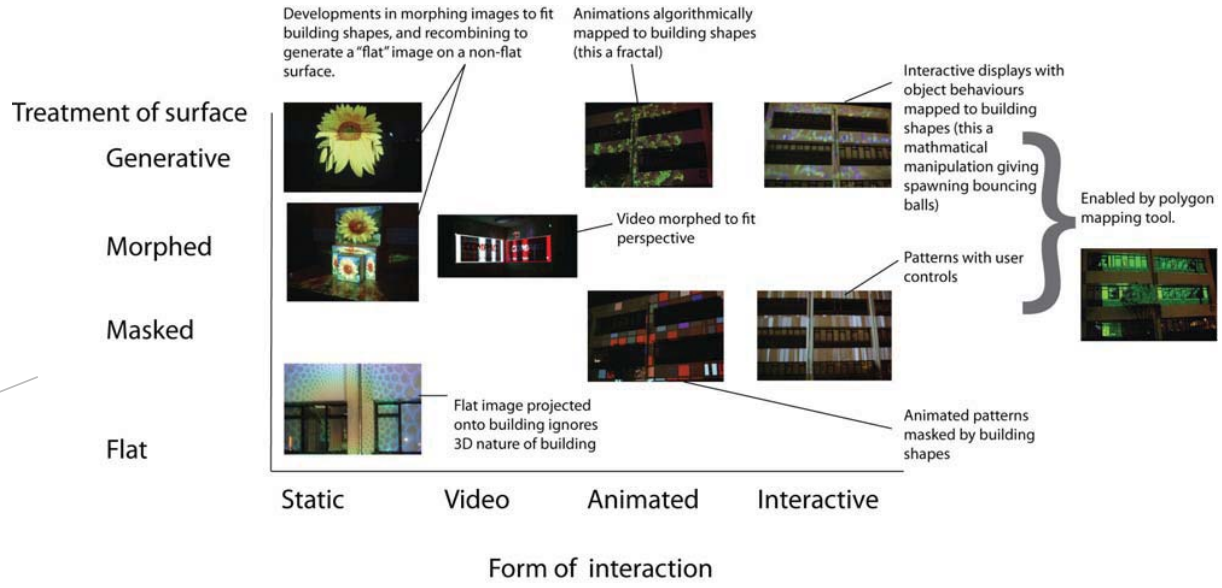

Figure 1: Interaction and surface dimensions of building projection. Images are those developed for this project.

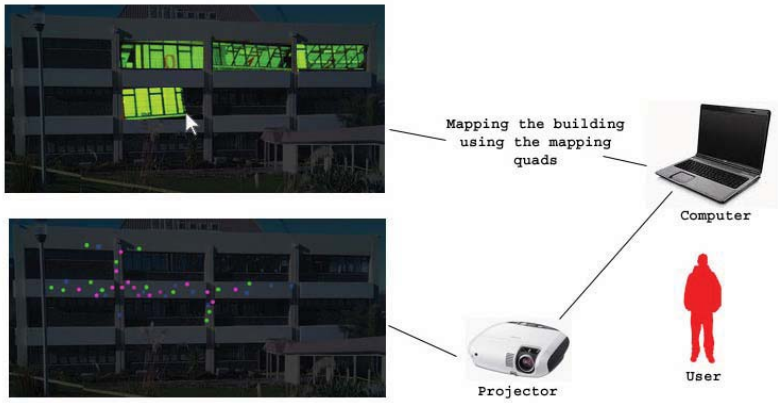

Figure 2: System diagram showing building mapping software which dynamically generates constraint maps for the display software. Here, coloured balls are bouncing along the building horizontals.