

DESIGN ON SITE :

Portable, Measurable, Adjustable Design Media

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1. Introduction

Space designers usually look for information on site before proceeding design. They image any possibilities of design, while they are on site. Restricted to traditional design media, if they want to develop their ideas further, they have to go back to desks. This kind of design process can capture only part of information of the site. Why not do some developments directly when designers are on the site? That is the starting point of this paper. The whole situation of site is very complicated, so it is very difficult discussing all the possibilities. In order to understand how to design on site, reducing the variations is needed. Tsai and Chang (2005) proposed a prototype about design on site, which focuses on land forming. So I chose interior as the site to reduce the variation and have more controllable factors. Still there are many factors effecting design on site, scale is very unique and very important factor of them. Beginners are difficult to really feel how long it is on the plan drawing, and even most advanced VR equipment still can't fully present the rich information on the site. To experience the site through body, the main idea is how to propose a portable device that can support space designer to do design on site directly, with intuitional body movement and precise scale, and get feedback immediately.

2. Implementation

Virtual data has the advantage of quick changing and costless, and it plays the supportive part of role. Virtual data adds more information to the physical situation. Design behavior of Design On Site can be divided into three parts: 1) Display virtual data 2) Designer's design intention 3) Designer's Reaction

Behavior. In the part of implementation, mainly equipments are a projector, a web cam as the sensor, and ER1 Robert supports projector (fig.1). By typing in the distance between the projector and the projected surface, director coding will transfer the data into some ratio. This ratio will tell computer how much pixel will be the right scale. At this moment; pixel can be translated into measurable distance, and be projected on the site immediately. As designer see the result, he can intuitively change the digital data with his body movement. Web cam as a sensor captures the designer's movement, and then affects the image directly. When designer moves outside the projected image, ER1 will follow the designer, and tell the projected image how many pixels should move, in order to looks like stay at original location. By this design media, designer can sees his design ideas displays on the site, and give more reaction to adjust the design.

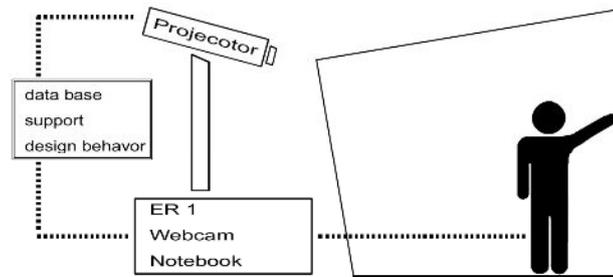


Figure 1. Figure Projector casts plan and elevation on the vertical surface. ER1 and web cam detect designer's movement, and give feedback immediately.

Acknowledgements

Especially thanks to my supervisor Dr. Chang Teng Wen. He inspired me and helped me a lot. And thanks to my friends in NCTU.

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