# Streetlife at Rotterdam Museum Night 2011: Prototyping for Public Engagement

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**ABSTRACT**
The public space is the city's medium for communication with its citizens. Recent invasions of interactive media in the cityscape, however, are to a large extent commercial broadcasting systems that do not stimulate communication among citizens. The current work, therefore, elaborates on prototyping for public engagement. An interactive concept has been developed and implemented in public space. We describe the prototyping process of an interactive art installation and report how people react on the installation while experiencing their Rotterdam Museum Night.

**Keywords**
Art installation, public engagement, interactive media, prototyping, public space.

**INTRODUCTION**
The contemporary cityscape is increasingly filled with emerging media. Many of these media are inherently personal in nature; people carry mobile and wireless devices and stay connected wherever they go. At the same time, public displays pop up like daisies and are changing the cityscape as well.

The city is a big space where people live together and find meaning in their lives. Most cities are designed to achieve comfort and happiness while maintaining people's basic needs. Although technology plays a huge role in people's daily life and in their daily routines, the changing city scenery leaves limited room for participation and interaction. Still too often commercial parties dominate the cityscape with their narrowcasting devices or other forms of broadcasting. This is not trivial; the public space is the city's medium for communication with its citizens.

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**RELATED WORK**
A good example of interactive landscapes in the city is the work of Daan Roosgaarde: Dune [1]. In Dune citizens become part of the interactive landscapes made out of led plastic tubes. These tubes form a bush or a dune of light. Consequently, these lights react on the presence of the citizen, but also play with the citizen. Earlier research on video mapping also showed how a light sculpture build inside a display window could trigger (spontaneous) interaction in the street. See [2] for details how people in the street reacted towards the prototype.

**VISION**
By definition working with video onto sculptures is interactive [3]. Dan Saffer [3] distinguishes three ways of interaction. Making use of motion trough moving images is one. The second is creating context by use a place or space. Let it happen over time is the third. Images only shift in shape by moving over time. Therefore, video projection onto sculptures can be seen as a form of interaction.

Another – more challenging – form of interaction is the one between people. From a city perspective, this is probably the most valuable form of interaction. This public engagement is the kind of interactivity referred to in the current work, in which we also design for that kind of interaction. In this, citizens do not always have to be (aware of) interacting with the emerging media to have interactivity.

In sum, in the current work, we emphasize that these emerging media can be interactive and used to enrich people's lives in a meaningful way. Aiming to stimulate more participation in the city and interaction among its inhabitants we developed an interactive art installation. In this, we prototyped for public engagement by enhancing the physical world with the benefits of emerging media.

## CONCEPT

Creating space for interactivity in the public space starts out with prototyping concepts and interactive installations. The goal of these installations is to find the trigger that makes people interact with their environment. For this project we aimed to create an experience by envisioning the future. Mundane technology was used to create futuristic experience. How would the future look like? Differently put, our goal was to prototype for public engagement and evaluate on how the current art installation affected the public domain. How would citizens and visitors of Rotterdam Museum Night interact with such an interactive art installation, what did they experience and does it work in the real-life setting, the public space?

## TECHNICAL DESIGN

As a prototype we created an interactive augmented sculpture. Projection mapping techniques were used to augment video onto the sculpture. Sober Industries [4] made their signature style sculpture of a rhino and an owl (Figure 2).

**Figure 1. The wooden sculpture: an rhino.**

**Figure 2. The wooden sculpture: an owl.**

Using a wooden frame construction, the sculptures were composed of several parts. These parts could be detached separately, which gave freedom in transporting the sculptures. It can be placed anywhere in the public space.

With a beamer elevator the video projection could be positioned to our liking and be adjusted that the projection mapping fits the sculpture.

In search of a novel and more expressive interaction techniques a custom made controller was developed. This magic cube could adjust and transform all video mappings. The cube can be seen in Figure 3.

**Figure 3. The magic cube as interaction technique.**

The controller contained a wii-mote, which gave their sensory data to out video projection software VDMX. We could use every signal to control the video playback. To make it even more exciting we used slot machine buttons to replace the normal wii-mote buttons and placed this into a cube. So the technical part was concealed from the audience.

## USABILITY TEST

Before we put the installation in to the public domain, we tested the effect on people in our studio building. We invited other people from to experience the installation and let them play with the controller. This way we could also test if the animations were done right and if the cube would respond correctly.

We asked three people to play around with the cube. Just to see what happened. As soon as they knew what each button did, the users started to trigger different projections onto the sculptures and changed the color of the projections. The user test proved that the projections responded to the right triggers and users could easily use the cube to reveal more projections onto the sculptures.

## INTERACTIVE ART INSTALLATION

After the usabilty test the current interactive art installation was piloted in a real life context during the Rotterdam Museum Night, a well-known cultural event that has distinguished itself for 10 years with an attractive outdoor program called Streetlife [5]. During this anniversary the audience was pampered with 10 + 1 spectacular creations and exciting performances by the hands of Rotterdam artists when going en route to the next museum or gallery. The current installations were placed on the corner of the Witte de With street in Rotterdam. About 15.000 people visited the event.

### Data Collection

For the current pilot study observations were conducted. Moreover, all audience interactions with the art installation were recorded and photos were taken to capture experiences and impressions of the public engagement

during Museum Night [6]. With Witte de With street at the heart of the event our installation gained a lot of attention, which ease to do observations.

**Insights**

Figure 4 shows some impressions: many people looking wondered, kids being amazed. This picture also showed that people interact before using the controller. Questions were raised when using the controller. During the Museum Night the controller broke down, by heavy use of a participant in the audience.

**Figure 4. Impressions of the interactive art installation during the Rotterdam Museum Night 2011.**

## DISCUSSION AND CONCLUSIONS

Interestingly, people were impressed and amazed by the video projection onto the sculptures itself. In terms of user experience, this can be seen as an example of immersion; the interactive art installation was exciting and fascinating the audience. In other words, people were 'in the experience, and consequently, people might not have been aware of the fact that they could interact with the sculpture. The amount of stimuli was enough to let the public undergo an experience worth remembering.

Although the controller was used for a short period of time, most of the time people found it hard to understand what really happened. Maybe this was due to sensory overload by the sculpture and video. Another explanation could be that people did not feel at ease to interact with an installation in a public space. In our future activities we will study interactions in public and semi-public environments in more detail, paying attention to both audience that has social relationships as well as audience that is not familiar with each other.

In keeping with Arjen Mulder [7] who states in 'From Image to Interaction', that the audience has to make a contribution so the artwork can open itself, like the artwork Soundpiece from Robert Rauschenberg. In Soundpiece people had to make sound to light up the work, in order to let the artwork reveal itself. In the current interactive art installation audience involvement was crucial to achieve public engagement. The installation needs to invite people to interact more explicitly. The controller lacked stability for heavy use. In order to make it work it has to be more solid. This is something to take notice when designing and prototyping the next controller.

Furthermore, the connectivity between the video and controller has to be more explicit towards the audience. Developing an interface, which can be understood by the audience, has to be more simple. This can be done by making icons onto the controller.

Also the audiovisual experience was already enough to impress the audience. The part on interactivity is maybe a bit to futuristic for most audiences.


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