

# RESPONSIVE ENVIRONMENTS

## ARCHITECTURE, ART AND DESIGN



**LUCY  
BULLIVANT**  
V&A  
CONTEMPORARY

Body Movies: Relational Architecture    Projection: Rafael Lozano-Hemmer    Schouwburgplein, Rotterdam, The Netherlands



## RESPONSIVE ARTWORKS

WITH TECHNOLOGIES  
WEAVING THEIR WAY  
INTO EVERYTHING,  
ARTISTIC PROJECTS  
THAT EXPLORE THE  
DOMAINS OF MIND AND  
BODY ADJUSTING TO  
ACCOMMODATE SUCH  
PHENOMENA ARE  
VITALLY RELEVANT.

### **BODY MOVIES: RELATIONAL ARCHITECTURE 6**

Projection

Rafael Lozano-Hemmer

2002

Commissioned by V2 and staged at the Schouwburgplein, Rotterdam, the Netherlands, 2002; during Cultural Capital of Europe, Rotterdam; Sapphire 02, Lisbon, Portugal; Ars Electronica, 2002, Linz, Austria; Liverpool Biennial 2002, UK; and Duisburg Akzente, 2003, as well as in Seoul, Sao Paulo and Singapore



### CAMERA MUSIC/KINETIC SHADOWS

Installation

Christian Moeller

Sound: Hubert Machnik

Commissioned by Spiral Gallery/Wacoal Art Center (architect Fumihiko Maki), Tokyo, and exhibited at Sound Garden, at Spiral 1997



Rafael Lozano-Hemmer is a media artist whose ground-breaking project 'Relational Architecture', a series of large-scale interventions in public spaces initiated in 1997, used custom-made technologies to transform urban space. Situated between architecture and the performing arts, his usually temporary projects explore relationships between a site and the public, creating a range of collective social experiences. Working with photographers, programmers, architects, linguists, writers, composers, actors and other specialists, he identifies two common forms of collective interactivity. The first involves one or two sensors, and people take turns using them; the rest are spectators. In the second, input is computed according to averages. The challenge is to avoid either of these modes. Lozano-Hemmer feels his work '**BODY MOVIES: RELATIONAL ARCHITECTURE 6**', shown at the Schouwburgplein in Rotterdam in 2002, did this. He prefers to call 'the act of seeing the act of inventing'. The work involved projecting the shadows of passers-by, which were then detected by a single camera tracker. People knew the moving shadow projected onto buildings was clearly their own, and they played roles to further lend the piece imaginative force. Patterns emerged when groups were present and chose to interact with each other in different ways.

Instead of creating clichéd special effects, the piece used shadows to generate reflection on the idea of embodiment, disembodiment and what spectacular representation might be. It also worked with the idea of distance between bodies in public space, reinterpreting the 'daily urban performance' in a way that allowed opportunities for self-representation. 'Body Movies' was shown in many different cities, including Linz, Liverpool, Seoul, Sao Paulo and Singapore, giving Lozano-Hemmer the chance to cross-reference the variety of behaviours emerging in different settings.

Relational architecture, according to Lozano-Hemmer, means transforming the representational narratives of buildings by adding and subtracting audio-visual elements which autonomously demonumentalize their identity in urban contexts. His most recent projects are also about exchange. 'Subtitled Public', presented at El Cubo, in the Sala de Arte Publico Siqueiros in Mexico City in 2005, consisted of an empty exhibition space where visitors were tracked with a computerized infrared surveillance system. As people entered the installation, texts were projected onto their bodies, 'subtitles' with thousands of verbs conjugated in the third person that followed the individual everywhere they went. The only way to get rid of a subtitle was to touch someone else: the words were then exchanged between them. This piece is a good comment on surveillance systems that typecast and try to detect different ethnic groups, and more widely on the implications of technological personalization that literally 'themes' or 'brands' an individual a consumer.



## SUBTITLED PUBLIC

Installation

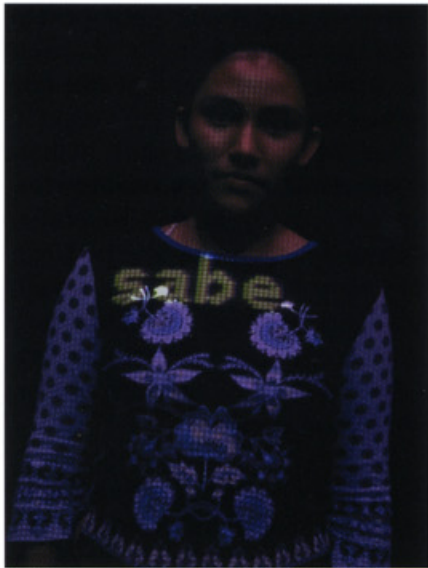
Rafael Lozano-Hemmer

Presented in the Dataspace exhibition,  
Conde Duque Art Center, Madrid, 2005;

El Cubo, in the Sala de Arte Publico Siqueiros,  
Mexico City, 2005; and Cultural Capital of Europe,  
Luxembourg, 2007

Produced by BBVA-Bancomer Foundation, Mexico City

Photo: Alex Dorfsman



Lozano-Hemmer has also designed a pioneering responsive environment – ‘**SURFACE TENSION**’ (1991–4) – which has now been acquired by museums and collectors in Mexico, London, Miami and Zurich. Intended to illuminate the boundary between the virtual and the real, it employs custom-made technology led by an ultrasonic wand input device, interactive animation and music, both triggered by dance. For each of the three acts of the performance, which is carried out by dancers and then by the audience, there is an electronic environment. The first is about surveillance. A huge eye observes the person on stage. The dancers, who wear the ultrasonic wand, can control its blinking and expressions. Then a virtual 3-D map lets the wand trigger and control words and sentences in sampled sound and in an enormous animated mouth, so the dancers can actually create speech. Thirdly, the index finger of a very large fist follows the person on stage, gesturing ‘not you!’ or ‘you’re OK’. The wand gives very precise computer data about the dancer’s position, velocity and acceleration around the stage, responding to even minute movements, generating music and affecting computer animation in real time. The dancer becomes the mouse for a network of computers. Lozano-Hemmer explains that we are accustomed to a media interface being superficial, in the form of a screen, but here, by visualizing the interface and providing the means to literally grab it with a wand, he hopes ‘to cause a disturbance in the way we understand cyberspace’.

LOZANO-HEMMER  
‘HOPES TO CAUSE  
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UNDERSTAND  
CYBERSPACE.’

While Moeller, an émigré, is now one of the US's best-known interactive artists, Lozano-Hemmer is active in Canada and Mexico (his country of birth), as well as internationally. The American continent has been fertile territory for responsive environments, fostered both within academia and on the art scene.

The Rockefeller new media fellowship is one of a tiny handful supporting this type of work. The new-media organization Eyebeam, in New York, which operates on the atelier model with studios and workspaces, wants to create new premises in the near future.<sup>29</sup> Practitioners have created many of the contemporary interactive spatial installations by Americans shown in recent years with roots in the performing arts or film. Jim Campbell's cinematic inspired works, and Grahame Weinbren's early film interactive design from the 1980s, have influenced younger practitioners. Paul Kaiser, an artist who works with large projections, often uses dancers and makes live performances.

#### **SURFACE TENSION**

Installation

Collaboration with Transition State Theory  
with the assistance of Bruce Ramsay and  
Tara DeSimone

Rafael Lozano-Hemmer

1991–4

Exhibited at 2M, Madrid, Spain, 1993,  
SIGGRAPH, Anaheim, USA, 1993; Akademie  
der Bildenden Künste, Nürnberg, Germany, [...]  
1993; and OMR Gallery, Mexico, 2004

Photo: Celina Roig

