Understanding Media Architecture (Better): One Space, Three Cases

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Abstract
Our group has worked within the field of interactive urban lighting design and media architecture since 2007. In this position paper we outline a presentation where we compare three installations that were created in the period 2008 to 2012 in the same central, public space in a city. By comparing and contrasting these three cases in the same space, we get a multi-faceted view on that particular context for media architecture. But we also get the opportunity to reflect on some more general concepts regarding the use of interactive urban lighting design.

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Media architecture, interventions, classification, context, urban computing

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction
Media Architecture [1] is an overarching concept that covers the design of physical spaces at architectural scale incorporating materials with dynamic properties that allow for dynamic, reactive or interactive behavior. These materials are often digital, but not always, and they allow architects and (interaction) designers to

create spatial contexts for situations using a variety of modalities.

Light is the most frequently used modality [1], so light-emitting materials and building elements are central to the majority of buildings and spaces that would be characterized as media architecture. "Media façades"—i.e., where the surface of a building can convey anything from a mood or corporate identity to specific information—are usually made with light.

City lighting, whether street lights or media facades, falls under the above definition of media architecture. It is city planners, city architects or designers using light sources (media-like materials) in an urban space with a purpose. If all you can do is turn the lights in an entire street on or off, it is a very simple example of media architecture. But in a very basic sense, the light creates the space, or at least contributes significantly to the qualities of it. E.g., if you ride a bike without strong lights, driving around dark empty streets would be dangerous. The ambience of a dark street is very different from a well-lit one. It is the fact that the light is dynamic, switchable, changing that separates it from other materials.

In our work, we have tried to understand how interactive city lighting can be designed for various purposes in many different places. So, often the constant has been the materials, modalities or purposes.

For the Interactive City Lighting Workshop, we would like to present three of our prominent cases that happen to relate to the same space, thus keeping that as a constant.

The purpose of comparing these three cases is two-fold: (1) To help working towards a useful set of key concepts or perspectives when talking about and analyzing media architecture in general, and interactive city lighting in particular, and (2) to give an example of how these three cases work as a triangulation of the potential of interactive city lighting in that particular space.

The rest of this position paper will briefly outline four core perspectives which we will then apply to each case. Conclusions and implications will be shared with the participants in order to get feedback on both the proposed concepts and on our analysis of the particular space.

One Space, Three Cases, Four Perspectives

The space is a central place in the city of Aarhus, Denmark (Fig. 1). It is two parks—City Hall Park and Concert Hall Park—divided by a street. The three cases are:

(1) Aarhus by Light (2008) [2],
(2) Climate on the Wall (2009) [3] and,
(3) City Bug Report (2012) [4].

To characterize these three cases and the space they are were in, we use the following four perspectives: *situation*, *content*, *materials & modalities*, *interactivity*. These categories are an adapted form of the general principles outlined in the Design Space Explorer method [5]. Another, much more detailed categorization is the one used in the Catalog of the Media Architecture Biennale 2012, both the theoretical one [6] and the technical [1].

Fig. 1. *The three cases of interactive urban lighting in central Aarhus: (1) Aarhus by Light, (2) Climate on the Wall and (3) City Bug Report.*

The cases themselves are hard to describe in adequate detail here to make them immediately understandable by the reader. Videos can be easily found online (links below). The presentation at the workshop will include short video clips.

Aarhus by Light[1]

Situation: The media façade accomodates many situations: during day/night, inside/outside, coming with a purpose/just passing by, interested/ignorant.

Content: Little creatures "living" on the façade, silhouttes of passers-by, stylized Aarhus skyline.

Materials & modalities: LED panels mounted inside the glass façade, visible from outside and inside (because of reflection), vision sensors (cameras), carpets. The modalities are visual and haptic (carpets).

Interactivity: The three carpets along the path to the concert hall were interaction zones; from there the passers-by could interact with the creatures (lift and push them) via their silhouettes that were proejcted live onto the façade.

Climate on the Wall[2]

Situation: Only on in the evening, projection on a wall with a sidewalk and bike lane alongside below.

Content: Words about climate change, like big fridge magnets. Can be combined to slogans.

Materials & modalities: Projection on a brick wall.

Interactivity: Passers-by may or may not casually pick up "word balloons" and playfully build a slogan.

City Bug Report[3]

Situation: On 24/7, located remotely on the façade of the city hall tower. Visible from far away during night.

Content: Red and blue balls in different sizes moving horizontally, each representing a case within the municipal citizen services, showing the relative efficiency with which it has been handled.

Materials & modalities: LED dots mounted outside.

Interactivity: Indirect interaction.

Conclusion

For some reason, we have found this urban space to be well suited for large interactive light installations. The

[1] http://www.digitalurbanliving.dk/projects/media-facades/aarhus-by-light.php

[2] http://www.digitalurbanliving.dk/climate-on-the-wall

[3] http://www.mediaarchitecture.org/city-hall-tower-aarhus/

three cases are very different, ranging from highly interactive, with specific interaction zones (1) to indirectly interactive (3). Content-wise, they range from abstract (3) to textual (2) with (3) in between. However, they all work in this space, which tells us at least something about it: It has the scale to accommodate them, people accept engaging and unusual media architecture there, it is a space with many opportunities to incorporate different visually dynamic materials. We would like to continue the discussion of the value in having simple general concepts to characterize inteactive city lighting from a perspective of media architecture.

Biographies

Martin Brynskov is associate professor in interaction technologies at Aarhus University, Participatory IT Centre (PIT) and Center for Advanced Visualization and Interaction (CAVI); director of the Digital Design Lab and co-founder of Smart Aarhus. General chair of Media Architecture Biennale 2012 <www.mag12.org>. Working closely together with municipalities, artists, journalists, media organizations, and industrial partners, he investigates the consequences of digitization and explores new forms of mediation within a variety of domains with special focus on the role of social interaction, materials and interfaces.

Peter Dalsgaard is Associate Professor in interaction design at Aarhus University, Denmark. In a range of projects in the research centres *Participatory IT* and the *Centre for Advanced Visualization and Interaction* (CAVI), he has explored the intersection between digital technologies and the physical environment with a particular focus on the design process, and he was recently Program Chair of the Media Architecture Biennale 2012.

Kim Halskov is professor in interaction design at Aarhus University, Denmark, director of *Centre for Advanced Visualization and Interaction* (CAVI), co-director of the *Centre for Participatory IT* (PIT). From a background in participatory design, his research areas include innovation processes, design processes, and mapping of design processes with a particular interest in the role of sources of inspiration and the emergence of ideas. Recent design projects have been conducted in an urban setting with a particular focus on media façades and addressed the challenges for interaction designers related to: Material, Form, Location, Situation, Content, Interaction, and Value.

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