A10

new European architecture

#29
SEP/OCT 2009
€7.95
£5.50 / CHF 12.50 / DKK 65.00 / KRW 25,000 / SLOVAKIA: €7.50 (SKK 226)

Rotterdam's Red Apple

→page 44

→ Light art, Brussels (page 55)

Section

Analysing specific aspects of contemporary architecture

Light effect

The inherent changeability of natural light has inspired generations of artists and architects. The subtle changes in light over the course of a day and in different weather conditions prompted Claude Monet to paint Rouen Cathedral over and over again. Each of the nine paintings he made of the building between 1892 and 1894 reveals a completely different picture and different colours, varying from brown to lilac, blue and red. Architect Ben van Berkel of UNStudio was so impressed by the sight of the sun setting over the waters of the IJsselmeer that he attempted to capture this experience in the faceted, ton-sur-ton orange facades of the Agora Theatre in Lelystad.

As such, the introduction of artificial lighting, which was such a blessing for ordinary people, can be seen as actually quite restricting for designers. →

For while an architect could play around with materials, textures, colours and light fittings to create all kinds of spatial effects and ambiences that would have been inconceivable with daylight, the interior or building always looked the same. Change could be effected only by the on/off switch, or perhaps a dimmer light.

During the last ten years, however, the situation has changed dramatically and artificial light can now compete with daylight when it comes to changeability. It began with products like Philip's colour-changing mood lighting, albeit still manually operated. This was followed by coloured LEDs – compact, low-energy and long-lasting – which were soon being integrated into glass panels and other facade elements. Special computer software allowed them to be operated by remote control; it was now possible to program a a display and to project it automatically onto the facade of a building.

Catchword 'interactivity'

Then sensors were connected to the systems. There are now illuminated facades that react to passers-by, facades on which computer games are played and office building facades that act as colour-coded temperature gauges. The catchword is 'interactivity'. Architecture no longer provides only space, but also happenings. The building changes over the course of time in sync with the program, the surroundings or both. The result is an event, a live happening you keep going back to because it looks different every time (just as Monet kept finding a reason for a new painting of his view of the cathedral), creating a 'buzz' that leads to it being photographed and written about. Rem Koolhaas's shape-shifting Prada Transformer pavilion is an extreme example of this kind of architecture which is constantly reinventing itself. Interactive lighting systems are a simpler response to the same urge for innovation.

Which brings us to the question of whether such light concepts offer better energy efficiency and/or a meaningful experience. In many cases the lighting serves a commercial purpose. Just as the arrival of new fashion collections every season occasions a rush to the fashion store (despite an overcrowded wardrobe), so the brightly lit interiors and facades of department stores and entertainment centres are designed to tempt consumers to pop in more frequently or to stay longer. Like the loud, pulsating music played in some stores, flashing and/or coloured lighting is supposed to stimulate consumption. As the authors of the book *Nightscapes* (in the Land&ScapeSeries) conclude, 'it is the duty of artists, architects, landscape designers, urbanists and all urban protagonists not to allow the still flexible and beautiful dimension of cities to get lost in excesses of control or logics of profitability.'

Nightscapes invokes the authority of Alvar Aalto: 'At night the buildings must sleep'. The book's authors call the night, and the potential for nocturnal lighting, a moment to reflect and literally to see things in a different light. Which is where interactive lighting comes in. Architects and lighting designers are already experimenting with it, so that it is no longer just advertising messages that appear on media facades and in lighting installations. Take the 'Responsive system for landscaping' by Stig Skjelvik (who also designed the Dobpler light wall, see elsewhere in this feature) which aims to render the movement of wind in the landscape visible by way of small, wind-generated lampposts distributed over a large area. The installation, which is still looking for a location, would function as a PR device for sustainable energy, wind power and green technology.

Another interesting development is the integration of interactive lighting in public spaces. There are various examples of pedestrian tunnels where the walls are lined with LEDs and on which passers-by can see their own contours or movements. The lighting makes creepy places more attractive and engenders a reassuring feeling. After all, nothing is more desolate and more inviting for people who are up to no good than a quiet, dark place where nothing happens.

Light that reacts to movement also invites people to play with it. An illuminated facade, for example, can turn into a stage where artists or passers-by display their performances. Interactive use of light is already almost 'standard' in the latest generation of theatres and concert halls. The facades of both the brand new Mumuth concert hall in Graz (UNStudio) and the Danish Radio Concert Hall in Copenhagen (Jean Nouvel) display colours and images related to the music being played inside at that moment. Interaction can go even further: for the Aarhus by Light festival (Feb/March 2008), Archauz and CAVI turned the front of the concert hall in Aarhus into a movement-sensitive media facade. The highlight was Running Sculpture, a dance performance in which the dancers were tracked by three cameras and then integrated live by a VJ into an interactive video performance, backed by a hefty beat.

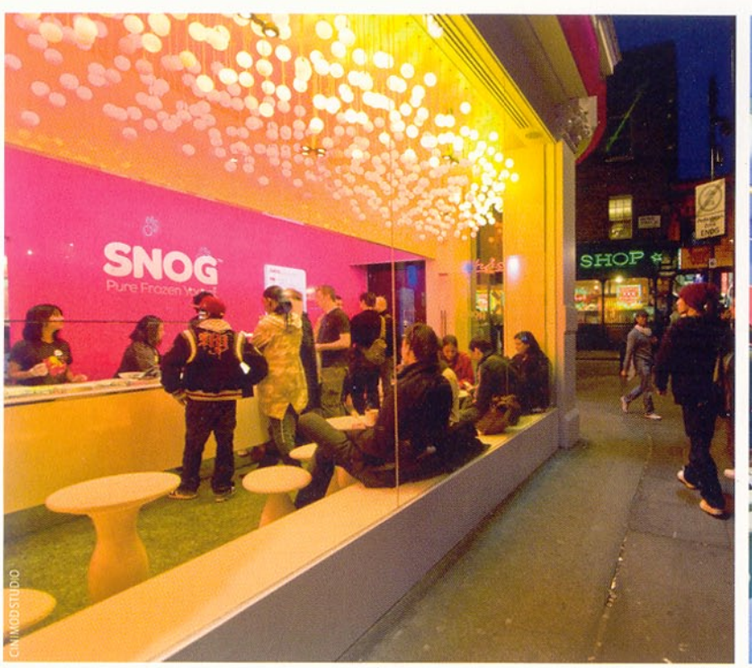
Finally there is interactive lighting of offices – not the facades this time, but the interior. So-called biodynamic lighting adapts in colour and intensity to weather conditions and human biorhythms. Research has shown that light also has an effect on the centre of the brain where the human biological clock is located and from where hormonal levels and other bodily functions are regulated. Gloomy, poorly lit surroundings can have a negative effect on mood, reduce concentration and generate a sense of unease. Biodynamic lighting offers solutions for spaces where little daylight penetrates (like prisons), for shift workers and general mood enhancement. This concept, first applied in the Westraven office building in the Netherlands (Cepezed, 2007), is a promise of things to come. (KIRSTEN HANNEMA)

Fancy a snog?

LONDON (UK) — When Snog, a frozen yoghurt retailer, ventured to London it knew it would have to come up with a bold **store design** in order to get noticed. To do this it turned to Cinimod Studio, a cross-discipline design practice headed up by Dominic Harris. Harris's way with light has led to some interesting creations, including a UFO flying over Rio De Janeiro, LED illuminated table settings and interactive furniture. For Snog's Kensington store Harris has created perpetual summer. Walls of painted flowers and a printed grass floor are presided over by an ever-changing summer sky.

This sky is achieved using over 3000 RGB LEDs set into arrays of 16 on 250 mm² video tiles. Hidden behind a translucent Barrisol stretched plastic ceiling, the programmable LEDs shine through, to create a blue sky across which scud fluffy white clouds. 'We have tried to create an idyllic summer environment,' says Harris, 'and how better than to literally recreate a summer sky.' The LEDs, controlled using a DMX protocol, can be programmed to change according to the time of day, season, or any special event.

The Kensington store was completed in May 2008 and Snog was so impressed that it immediately commissioned Harris for its Soho store, too. Here, a more ambitious volumetric concept sees 700 etched glass globes hanging from the 16 m² ceiling. Dubbed 'effervescent' by visitors, the ceiling bubbles and changes hue as clusters of six LEDs inside each 80 mm diameter globe change colour. 'This lighting installation was also initially based upon the sky idea,' says Harris, 'but considering the colourful neighbourhood that the store is in, we decided to program in party modes of saturated colours, too.'



The effect at both stores instantly gets people smiling. While the Kensington store's ceiling is slightly more subtle, both add a sense of playfulness and, yes, summer to surroundings that include mushroom shaped stools and vibrant pink backdrops. Next up is a Snog Kiosk pitted with sparkling LED dimples, for London's new Westfield shopping complex. Fancy a Snog anyone? (WILL JONES)

SNOG SOHO, MARCH 2009

Architecture and lighting design: Cinimod Studio. Branding and graphics: ICO Design. Main contractor: Vivid Interiors. Supplier: Delta Light. Address: 9 Brewer Street, London

SNOG SOUTH KENSINGTON, MAY 2008

Architecture & lighting: Cinimod Studio with StudioUribe. Branding and graphic design: ICO Design. Supplier: Delta Light. Video tiles: Traxon Techniques. LEDs: Michia. DMX control: E:Que. Address: 32 Thurloe Place, London. Info: www.cinimodstudio.com, www.ifancyasnog.com

Light as a medium

BRUSSELS (BE) — The **facade lighting** of the 145-metre-high Dexia office tower in Brussels (2005) is more than just a corporate promotional stunt and more than just a backdrop for pre-programmed films and light shows. The tower, whose 4200 windows can be individually washed with coloured light by means of RGB-LED bars, is the setting for an interactive light art series that explores and exhibits the medium of light itself.

The Belgian digital design studio Lab[au] set the ball rolling in 2006 with the urban installation 'Touch'. From a pavilion at the bottom of the tower people were able to interact in real-time with the illuminated building via a multi-touch screen, either individually or collectively. Both static (touch) and dynamic (gesture) inputs were recognized in generating an elementary graphical language of points, lines and surfaces, using a monochromatic colour palette (background) combined with black and white (graphical elements). Once the composition was created, the user could take a snapshot of the tower and send it as an electronic greeting card.

In August – October 2007 they followed this up with 'Who's afraid of Red, Green and Blue'. For two months, the time was graphically displayed using a light-colour code: Red = hours, G = minutes, B = seconds. At midnight, the tower was a blaze of white light signalling the start of a new day.

During the next two months, Lab[au] turned the tower into a weather station, displaying the next day's temperature, cloud cover, precipitation and wind conditions using colour and geometrical patterns to visualize/transcribe real-time data provided by the Royal Metereological Institute of Belgium.

Finally, the Jason Bruges Studio (UK) designed an interactive light art work for the Brussels light festival, SolstiS 2008. In 'Would you like that gift-wrapped?', the tower was enveloped in the colours worn by the people of Brussels. The light ramp, a trompe l'oeil extension of the Dexia building facade, 'pulled' colours from individuals passing in front of it, wrapping them around itself and up the tower. (KIRSTEN HANNEMA)

LIGHT ART, 2006 –

Tower architects: Samyn and Partners, Michel Jaspers & Partners.
Lighting engineer: Barbara Hediger. Lighting system: space canon.
Light designs Touch/ Who's afraid of Red, Green and Blue: Lab[au].
Light design Would you like that gift-wrapped?: Jason Bruges Studio

Light shadow

SANDNES (NO) — Oslo-based nullohm, founded by Stig Skjelvik and Rasmus Hildonen, is a design company that creates interactive systems focusing on human interaction, in particular with light. Their goal is 'to create fusions between architecture, design and art as innovative and inspiring systems for human surroundings and objects'. The Dobpler **interactive LED system** is a good example of this ambition. It is a modular system that can be integrated (in customized form) into buildings and urban spaces where it reacts to the movements, speed and number of passers-by, gradually increasing or decreasing the number of active lights. The LEDs are integrated in either opal hardened safety glass or polycarbonate, in modules of 430 x 180 mm.

There are three noteworthy aspects to this lighting system. Firstly, it saves energy by using LEDs and by providing light 'on demand'. Secondly, it is an artistic experience in public space, playful and fun.

And finally, because of its interactivity, it is a project that enhances a feeling of social security in a much more friendly way than a real security system would do. It 'keeps an eye on the public like a grandma watching from the window', as the designers put it.

The first Dobpler wall, installed in a pedestrian railway underpass in Sandnes in 2007, has already proved to be an adequate lighting-and-CCTV-in-one solution.

But there are many more ways architects could use Dobpler walls. By reversing the LEDs at the production stage, movements inside the building can be revealed to the outside or vice versa. (KIRSTEN HANNEMA)

DOBPLER LIGHTING SYSTEM, 2007

Design: nullohm. Info: www.nullohm.com

Waves of light

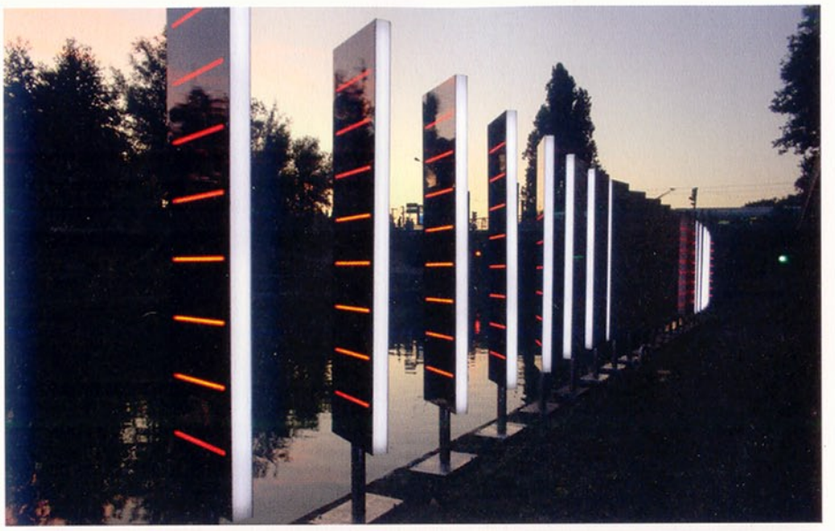
PARIS (FR) — fLux, Binary Waves is a temporary **kinetic-light sculpture**, designed by LAb[au] for the Biennale Art Grandeur Nature 2008 in Paris. The urban installation was located near the Saint Denis station in northern Paris, in-between the train and bus stations, traffic and pedestrian bridges and alongside the Saint Denis canal. The design concept was to visualize or 'translate' the streams of information, traffic and people in public space into a cybernetic game, inspired by the movements of waves in water.

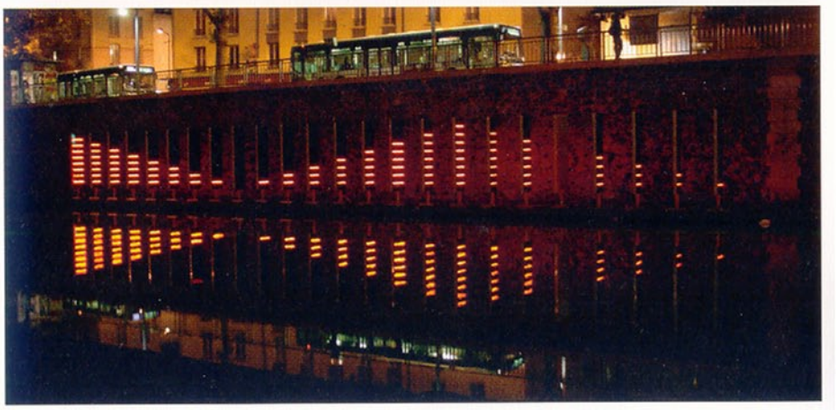
The installation consisted of 32 panels (3 m x 60 cm), positioned three metres apart, which rotated around their vertical axis. Their rotation was controlled by microprocessors, while their networking made it possible to synchronize the movement of the panels. The microprocessors were connected to sensors that captured the surrounding infrastructural flows, which in turn determined the frequency and amplitude of the rotation. In accordance with this set-up, each impulse was transmitted from one panel to the next, generating visual waves running from one end of the installation to the other, then bouncing back again while progressively losing oscillation.

The panels were illuminated by two different colours: eight horizontal lines of red lights on one side of the panel represented electromagnetic fields (e.g. mobile phones) in the area, whereas the white light along the edges of the panels, reflected the frequency of passing pedestrians and cars. In addition, each captured signal was related to a sound. Movement, light, colour and sound combined to form an abstract play of city flows. (KIRSTEN HANNEMA)

FLUX, BINARY WAVES, 2008

Design: Lab[au]
Production: Synthesie
Info: www.lab-au.com, www.synthesie.com





In the mood for a walk

AMSTERDAM (NL) — It is not so very long ago that the Bijlmer had an unenviable reputation for sinister places. The modernist separation of the functions of traffic, living and working, in combination with a one-sided demographic, had led to the gradual degeneration of many parts of this 1960s Amsterdam satellite. In the early 1990s, therefore, the city council embarked on a plan to restructure the whole district. Many of the famous and infamous honeycomb apartment blocks have since been demolished and the vast expanses of public greenspace have been filled with terraced houses with gardens. The Amsterdamse Poort shopping centre has developed into a genuine community hub. It is adjacent to the ArenA boulevard and to the stylish new station designed by Grimshaw and Arcadis (see A10 #28).

Besides these large-scale projects, there are also numerous smaller initiatives that are at least as important for the revitalization of the Bijlmer. In 2004, Urban Alliance (Cube Architects, Studio Klink and Illuminate) won an ideas competition for an **interactive installation** to improve a socially unsafe public area. In February this year, a modified form of the competition design was installed in a pedestrian tunnel in the Bijlmer. 'Moodwall' is a 24-metre-long wall of semi-transparent, corrugated panels behind which 2500 LEDs are mounted. The standard set-up is a multi-coloured cloud that reacts to the presence, distance and movement of tunnel users. But there are other options, too. For example, depending on the programmed 'reaction', pale blue pixels may shoot back and forth along the wall, like a swarm of excited bees. The corrugations of the polyester panels create a perspectival effect, so that when the wall is viewed from an angle, the light surface appears to stretch. The corrugations also make the wall less attractive for graffiti artists, who tend to prefer flat surfaces.

Now, several months after its inauguration, the wall is still free of any form of vandalism. The installation itself has been very well received; the fluctuating light patterns induce children of all ages to run back and forth, the wall has already served as the backdrop for a music clip, and the design is a popular topic of discussion in blogs. The Moodwall is a small but important gesture towards local residents who are seeing their district change dramatically. It is a design that everyone can make their own, simply by walking past it and realizing that this passageway is light years away from the dark and dingy tunnel they have been used to. (HANNAH SCHUBERT)

MOODWALL, 2004 – 2009

Design: Studio Klink. Construction and development: Cube Architecten. Content production: Illuminate in collaboration with Matthias Oostrik. Client: Projectbureau Vernieuwing Bijlmermeer. Address: Okkermansviaduct, Amsterdam South-East. Info: www.urbanalliance.nl, www.studioklink.com, www.cubearchitects.nl