

MEDIA FACADES FESTIVAL

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Foto: Thomas Fiedler

MEDIA FACADES EXHIBITION
DEUTSCHES ARCHITEKTUR ZENTRUM (DAZ)
GERMAN CENTRE FOR ARCHITECTURE

BERLIN, OCT 16 – DEC 12 2008



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IMPRINT

MEDIA FACADES EXHIBITION
BERLIN 2008
EXHIBITION COMPANION

Editor: Gernot Tscherteu
Research: Wolfgang Leeb
Design: Katrin Schoof / www.gabi-berlin.de

Berlin, 2008

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download at:
www.mediaarchitecture.org/files/compagnion08.pdf

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Media facades create utterly new connections between digital space on the one hand and architecture and urban space on the other hand. Never before was there an interface between the physical and the digital world, which was public to such an extent, that it appeals not only to individual users, as in the case of a personal computer, but also to whole groups or even to a whole urban population and that furthermore also allows to “reply”, i.e. to interact with a facade or to design its content. In this case, a powerful potential for design and effectivity is created, involving a range of chances and risks that are difficult to estimate and that require thorough discussion. The producers and the users of media facades equally face a range of challenges, and it will need time for fully differentiated opinions and positions to evolve from the discourse which is just taking shape.

Projects include the Galleria Store in Seoul by UN Studio and Arup Lighting, Centro de Creación Contemporánea de Córdoba by realities united and the Allianz Arena in Munich by Herzog & de Meuron. In most cases of outstanding media facades, technology is an integral part of the project and it is not possible to say where the art work ends and the technical design begins. Therefore visitor will experience the full impact of the projects through facade components, models, material samples and video presentations.

EXHIBITION CREDITS:

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Dr. Gernot Tscherteu, Media Architecture Group, Wien

Research and Planning:

Wolfgang Leeb, Media Architecture Group, Wien

Design: Katrin Schoof, gabi berlin design

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EXHIBITION MAIN SPONSOR:

ARUP

EXHIBITION SPONSORS:

LEDON



magic monkey



INFORMATION ON THE VENUE (DAZ)

Deutsches Architektur Zentrum
Köpenicker Straße 48/49
10179 Berlin
U 8 Bhf Heinrich Heine-Straße / Bus 140, 147

The DAZ was initiated by the Association of German Architects (BDA). The aim of the German Centre for Architecture is to contribute to a vivid construction culture on a regional, national, and international level. The DAZ presents current architectural positions and trends and wants to create room for discussion and promote a better understanding of architectural issues through exhibitions, side events and conferences. The centre's programme helps to build bridges between producers, users and clients of architecture

OPENING HOURS

Tuesday to Friday 12:00 to 19:00
Saturday and Sunday 14:00 to 19:00
Opening: Oct. 16, 2008 at 20.00.

WEBSITE

<http://www.mediaarchitecture.org/mediafacades2008>

MEDIA FACADES: FUNDAMENTAL TERMS AND CONCEPTS

Author: Dr. Gernot Tscherteu

Research: DI Wolfgang Leeb

Media facades create utterly new connections between digital space on the one hand and architecture and urban space on the other hand. Never before was there an interface between the physical and the digital world, which was public to such an extent, that it appeals not only to individual users, as in the case of a personal computer, but also to whole groups or even to a whole urban population and that furthermore also allows to “reply”, i.e. to interact with a facade or to design its content. In this case, a powerful potential for design and effectivity is created, involving a range of chances and risks that are difficult to estimate and that require thorough discussion. The producers and the users of media facades equally face a range of challenges, and it will need time for fully differentiated opinions and positions to evolve from the discourse which is just taking shape.

This exhibition has been conceived in a way that it supports this essential discourse by collecting relevant projects, looking behind the “facades”, and by making apparent their materiality and technical structure.

Certainly a more refined technical understanding will be helpful for developing a more differentiated attitude to media facades. One of the purposes of the following introductory text is to demonstrate the range of technical characteristics that have a substantial influence on the visual experience, but also on the interactivity and the “urban value” of media architecture. Media facades elude a classification into mutually exclusive categories and therefore it is more meaningful to discuss their most important characteristics (display technology, translucency, interaction, ...) and to demonstrate that the individual projects presented in the exhibition base themselves on quite similar elements of design, but interpret these very differently and thus vary from each other. Thus, in the diagram below, a media facade will not only be classified concerning only one element, but it will take a place in relation to every single one of these characteristics. The so-called media facades are simply good examples for the relevant characteristic, but naturally they also exhibit other characteristics and would eventually also serve as good examples in those places. It is not the point to rigidly classify media facades and media architecture, but to have a set of terms at hand in order to be in a better position to compare and discuss them.

Earlier attempts of classification and disambiguation that have partly found their way into my work are not to remain unmentioned and are cited in the sources.

Display technology

The handling of light serves as the best starting point for technological consideration: Does the facade actively emit light, or does it create images through mechanical movement at the surface of the building? Kinetic and even static media facades obviously also work with light – albeit in a passive way. They use sunlight or ambient light and modulate it in order to create surface effects and image information.

Examples for this are the projects Flare or Daisyworld.

There is a range of technologies for the production of light on media facades (LED, fluorescence, ...), and likewise there are different methods to move mechanic parts: from compressed air, to servodrives or the simple use of wind energy. A special case is demonstrated by projected facades): the do not generate light

by themselves. The surface of the building is used as projected area and the projection occurs from the outside onto the building surface, or alternatively from the inside onto translucent areas (windows in most cases), which are thereby converted to screens. In this exhibition we have disregarded projected facades – mainly because our topic is the smooth integration of the display into the architecture and this embraces projections only in exceptional cases. Of course this point of view is subjective and vulnerable.



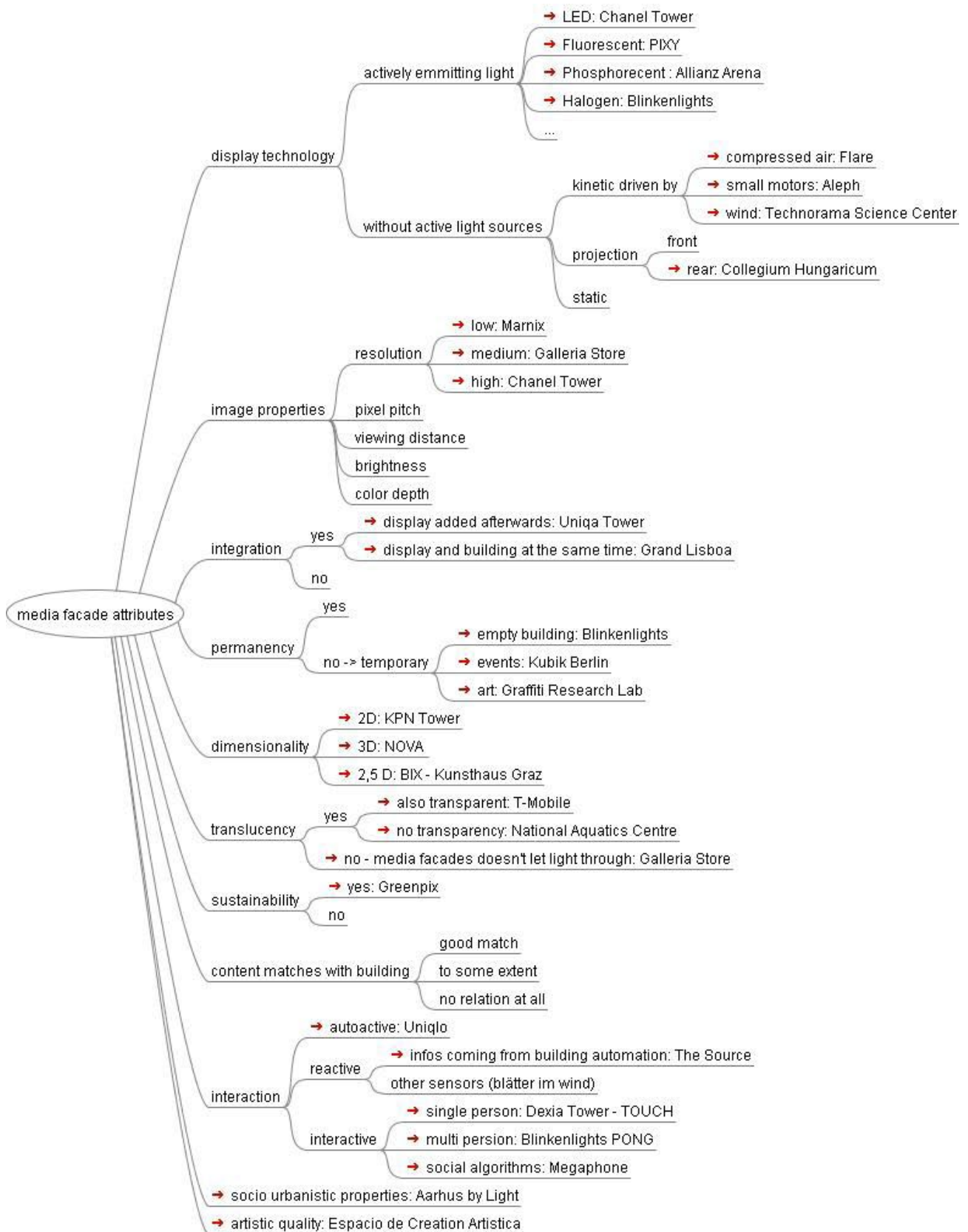


Image properties

What are the properties of the image created by the media facade?

Resolution Of how many pixels is the image composed? The spectrum is enormous - some examples: Blinkenlights 144 pixels, Uniqua about 160.000, Grand Lisboa over 1 Million pixels. A larger number of pixels does not necessarily improve the quality of the image – Blinkenlights shows how much is possible with very few pixels – but definitely a higher resolution allows for sharper and more detailed pictures, if needed.

Pixel pitch How big are the pixels and how far are they located apart from each other, taken from their center.

Diffusion The size of the individual pixels has a big effect on the observer. It is possible to turn light sources as small as a couple of millimetres (like LEDs) into pixels of the size of one meter through the use of diffusion surface – as in the case of Galleria Store in Seoul. The luminosity or light power of a lamp is dispersed into a larger area through the diffusion, but its luminance or light density is thereby reduced.

Distance from the observer There is a direct relation between this property and those of pixel pitch and diffusion, because the bigger the pixel pitch or the pixels, the farther away one has to be from the picture in order not only to see single dots, but to recognize a meaningful overall picture. Viewed from up close, interesting abstract light effects may result from this fact.

Brightness The techniques mentioned under the point „Display technology“ are highly variable in respect to brightness. Of all the active displays, only LED is bright enough to persist in direct sunlight. However, some kinetic facades (like Flare) skilfully take advantage of the sunlight. During the night, too much brightness may turn into a drawback, since it affects residents and traffic.

Colour depth / Tone Depending on the technology, more or less colours are at one's disposal. Reduction to fewer colours (like in the case of BIX, SPOTS, Blinken Lights or Chanel in Tokyo) may also be used as stylistic device. LED allows for a production of colour spaces with millions of colours.

Integration of the display into the building

Integration is a vital point for the assessment of media facades – a decisive characteristic („differentia specifica“) for the acknowledgement of something as media facade or not. Without integration, the display seems fitted and constitutes its own level of meaning, which seems detached from the building. If a display has been integrated well into the building or its facade, then these two merge into something new – what we refer to as media architecture.

In addition to the constructive integration, the content may also be customized with respect to the building and emphasize the unity of display and building. Since the integration of building and display is not simply a superficial characteristic that is restricted to the facade, I here find the term media architecture more suitable and more comprehensive. The following speaks in favor of the term media architecture:

1. The media concept can not only include the facade, but also the room lighting and thereby reaches from the surface into the depths of the building.
2. Spatial and medial structures overlap, so that communicative processes may evolve, which may not only occur on the surface of the building, but also inside, in the public sphere around the building and finally also - spatially unrestricted - in electronic media. The term “architecture” makes advances to this, since it is also open to non-spatial structures and processes - and exactly that is what many of the successful projects are about. In some cases, successful integration may also be accomplished when the building has already been constructed and the media facade is designed and installed only afterwards (UNIQA is a good example for this). As a general rule, successful media architectures emerge especially when all factors that have been regarded here are considered already in planning and are interwoven to a coherent concept.



The relationship of the terms “media facade” and “media architecture” is not substantially different from the relationship of “facade” to “architecture”. Facade refers to surface and all of the functions that are part of a surface: protection, climatisation, representation, and so on. Architecture on the other hand is a substantially wider term and refers to the whole range and depth of spatial structures and functions. Moreover, this term is often used also in reference to non-spatial structures – see for example “software architecture”.

Permanent / temporary

Closely connected to the issue of integration is the question of the durability of a media facade installation. One should generally suppose that permanent installations should yield better results, because more planning and money is spent on these. In practice there are many exceptions to this assumption: the most convincing being Blinkenlights, and also many show facades of concerts and events are quite successful (Asian Games, for example). In this context, successful installations with artistic content (like Spots) are also not to be forgotten.

Dimensionality

Another aspect of “integration” is dimensionality. Since buildings usually are spacious and not simply flat structures, obviously media facades should also have a spatial effect. Only in uncommon and extraordinary cases will it be possible and meaningful for a display to take up the entire three-dimensional space of a building, since this could easily lead to problems with the occupants. There are already many concepts that include the room lighting of a building into the projection. As long as there are no occupants in the house, projection into the depth of the building is thus possible – but it is temporally restricted to a couple days every year and a few hours every day. More common, so far, are “2.5 D” projections. 2,5 D means that media facades are not restricted to only one surface, but flow around edges of buildings (Galleria Store), or extend to spherical surfaces (UNIQA and Grand Lisboa). In this way, all-around-projections and striking spatial effects are possible. A good example for a true three-dimensional display is the Nova installation inside the train station in Zürich.

Transmitted light / Phantom view (Transparency / Translucency)

There are various points in which media facades may come into conflict with other functions of the building. The most important ones concern light and energy (for energy see below, sustainability). With respect to light the issue at stake is that components of a media facade cover parts of the surface of the building. Sometimes there is not enough daylight reaching into the inside of the building, sometimes there is none at all, and so the use of the subjacent space as office space is no longer possible. For this reason, various approaches have been taken to reduce the light-emitting parts and to maximize their luminosity.

The properties of LEDs serve these goals well and thus they are increasingly integrated into facade components like cover caps and louvers for sun protection so that they subduct only a small amount of daylight. In other cases, occupants are completely unimpaired by the media facade. There certainly is a logical conflict between the performance of transmitted light and the resolution or the pixel pitch also in those cases, where the lighting socket is integrated into the facade. In order to attain higher resolution or to reduce pixel pitch between rows of pixels, the facade grid has to be adjusted accordingly, or alternatively louvers for sun protection or similar components need to be placed in front of the facade, which necessarily impairs the performance of daylight. Satisfying solutions are especially achieved through the use of forward-spaced components with integrated lighting



sockets, which equally feature a high quality image and high quality usage.

From the point of view of the occupant, it is not only important for him to receive enough daylight, but also that he enjoys an unobstructed view. A facade may be translucent, but not transparent, as in the case of the Chanel building in Tokyo, where building film was used as diffusion layer. Obviously, one of the designer's goals in this case was to dissolve the individual lighting sockets into lighting areas using Privalite-glass, and to thereby create image effects that strongly resemble fabric. The magnificent effect of the image in this case really is at the cost of the occupants, who cannot clearly see outside during operation. The diffusion layer furthermore has the effect that part of the light is reflected inside the building as scattered light. Therefore, a blind is lowered as soon as the display operates. This contributes to the further impairment of the room's quality. Blinds are also used in order to screen the room lighting from the outside, i.e. to separate those two levels of light – inside and on the media facade.

Energy consumption – sustainability

In time of increasing energy consumption, which not only leads to high costs but also to conflicts evolving around distribution, one cannot keep quiet about the fact that media facades consume energy – quite much in some cases. The consumption depends on the effectiveness of the illuminants, as well as on their number and luminosity. LEDs are very effective, but if they are used in high numbers (in some projects way beyond one million units), then their consumption levels accumulate or square. The brighter, the bigger the total area and the more densely packed the pixels are, the higher is the energy consumption. Acute cases involve competing with sunlight and operating displays during the day and under direct sunlight. We will not have to wait long for discussion to come up about the meaningfulness of such projections. Here, as in other cases, one will have to compare costs and benefit, and relevant in this case has to be what is justifiable to society, not simply what a big company can afford. Since the issue of energy seems to essentially involve problems of distribution, one can not categorically speak of what is justifiable and what is not. If enough energy is available on the spot, for example due to the utilization of sun power, argumentation will be facilitated, as in the case of Greenpix. Furthermore, one should clearly keep in mind that besides the operation, other phases of the lifecycle of a display also have to be included in an ecological balance sheet, like its production and disposal.

Media content and the building

This concerns the issue whether or not the projection of a facade takes into account the building as spatial structure or the local environment. This is another case which is closely related to the integration of the display into the building. Even if a smooth integration has been accomplished, the projection still may not establish a relation to the building. In my opinion, one can not speak of a relation even if the logo or the products of the building's proprietor are included in the projection. Such a relation in terms of content make sense in some cases, but it should not only regard the corporate identity of the company, but also take into account the shape of the building. In a successful master plan, all three components – identity, architecture and projection – should be balanced and considered in advance. It doesn't seem purposeful to me, if media facades refer to content that is in no relation to the building, its occupants and the place where it is located – a case often found in poor advertisements. If, on the other hand, the above mentioned components are equally balanced, not only successful media architecture may arise, but also a strong advertising effect.

In the process of design and evaluation of advertisement on buildings, it is often forgotten that the value is not only to be judged by the number of people witnessing the projection, but also by how it affects the people's perception of the building. Often there is more benefit for the proprietor, if attention is successfully



drawn to balanced media architecture, as in the case of the UNIQUA-building, than in cases of a permanent projection of his logo. The building thereby turns into a landmark, a part of everyday urban perception that one gets accustomed to and after some time does not want to miss. The benefit that a proprietor (or renter) may derive from a media facade consists less in short-term advertising effects and more in long-term relationships and identifications that may arise between pedestrians and the projected building. This value is not as easily quantifiable as that of advertising spots, but it is still there and highly estimated. Certainly every form of projection of media facades – be it for advertising purposes or a purely artistic projection – requires a lot of expertise and experience, because, as we have seen above, they differ so much from ordinary screen effects in many respects (like resolution, pixel pitch and brightness) and require much sensitivity for architecture and urban space.

Interaction

By far the biggest potential for the identification of occupants with media architecture consists in an interactive media concept. The projection of Blinkenlights in Berlin, for example, is well documented. Here, the “users” were given different possibilities to communicate with the building itself, or with other inhabitants of Berlin. On the one hand, clips containing simple animations or text messages of the user could be sent to the façade – love messages were very popular in this case. On the other hand, one could even play “Pong” via cell phone interfaces. During “normal operation”, Blinkenlights automatically performed a predefined playlist of user-generated animations. One could discontinue the programme via cellphone, in order to play Pong either alone or together, or to activate a previously uploaded love letter. Rendering could be temporally timed through the submission of an activation key via cell phone, so that the message would perfectly suit a romantic moment with one’s loved one. It is obvious that through very personal moments like these, where one self plays the leading part on the media facade, a particular intense form of identification is established. These are unique experiences, which stay in one’s memory and are closely associated with a particular place. What more could a proprietor expect, than for the residents and visitors of a city to feel personally connected to his building?

The website and public access to the software played an important part in the formation of a community around Blinkenlights. The users conceived of themselves as part of the medium and had tools at their disposal, with which they could create concrete and meaningful messages. They turned into active designers of media content and thus accepted Blinkenlights as THEIR medium.

Outlook

The enormous development of consumer generated media in Web 2.0, and within that the boom of social networks like Myspace and Facebook, allows for the assumption that there is an enormous potential for applications which create social networks around media architecture, and which thereby will lead to further penetration of physical and virtual space. Here, new media formats will be created, which will presuppose a high level of interdisciplinarity on the part of the designers and which have the possibility of producing very innovative urban experiences.

Certainly the projects of this exhibition can not be sufficiently described with the characteristics presented above. Especially the social and urban aspects of media architecture need further engagement and defy an all too technical description. We are aware that much work needs to be done in this domain. Possibly an exhibition may not even be as appropriate a format as a broadly based discourse of protagonists and experts and so we hope that the establishment of this discourse on a broad basis will be successful and that this exhibition has nevertheless provided qualified illustrative material and solid basic knowledge for this purpose.

English translation: Dennis Johnson



Sources

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EXHIBITION PROJECTS >>



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EXHIBITION PROJECTS [SHORT DESCRIPTION]



01

African Pavillon Expo08 - Zaragoza, 2008
Architect: Atelier Brückner, Stuttgart
Mediafacade: Atelier Brückner / Nüssli / LEDON
Foto: Ledon



02

Allianz Arena, Munich, 2005
Architects: Herzog & de Meuron
Mediafacade: Herzog & de Meuron / Siteco
Foto: Allianz Arena



03

Blinkenlights, Berlin, 2003
Architect: Hermann Henselmann (1961)
Mediafacade: Chaos Computer Club
Foto: Thomas Fiedler



04

Centro de Creación Contemporánea, Cordoba, 2008
Architect: Nieto Sobejano Arquitectos
Mediafacade: Nieto Sobejano Arquitectos / realities united
Visualisierung: realities united



05

Chanel Tower, Tokyo, 2004
Architect: Peter Marino
Mediafacade: Lighting Science
Foto: Lighting Science

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06

DAISY.WORLD, 2008

Design and Development: AAA.

Arts and Architectural Application, Thomas Nicolai

Visualisierung: Thomas Nicolai/Daisy.World.Project



07

Dexia Tower, Brussels, 2006

Architect: Philippe Samyn & Partners,

M & J.M. Jaspers - J. Eyers & Partners

Mediafacade: Barbara Hediger / Space Cannon

Display Content / Foto: LAb[au]



08

Galleria Store, Seoul, 2004

Architect: UN Studio

Mediafacade: UN Studio / Arup Lighting / Xilver

Foto: Christian Richters



09

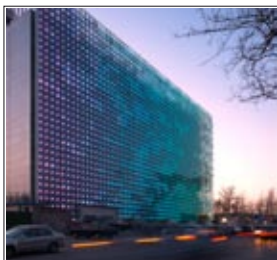
Grand Lisboa, Macao, 2007

Architect: DLN Dennis Lau & NG Chun Man

Mediafacade: Magic Monkey / Daktronics

Display Content: Keyframe

Foto: Magic Monkey



10

GreenPix - Zero Energy Media Wall, Beijing, 2008

Architect: Simone Giostra & Partners

Mediafacade: Simone Giostra & Partners / Arup

Display Content: (Curator): Luisa Gui

Foto: Simone Giostra

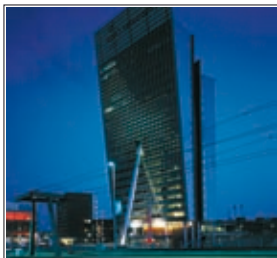
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11

FLARE – kinetic ambient reflection membrane, 2008
Design and Development: WHITEvoid interactive art & design
Visualisierung: WHITEvoid



12

KPN Tower, Rotterdam, 2000
Architect: Renzo Piano
Mediafacade: Renzo Piano / Corsmit Engineers / Osram
Display Content: Studio Dumbar, Pixelsex, Graffiti Research Lab
Foto: Michael Denancé



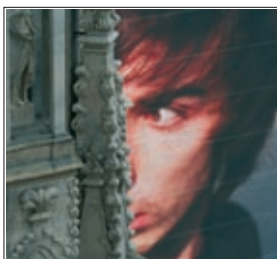
13

La Porte Shinsaibashi, Osaka, 2007
Architect: Plantec Architects
Mediafacade: Komaden Corporation
Foto: Komaden Corporation



14

Media Augmented Architectural Surfaces, Stuttgart, 2008
Design: Andrea Fackler, Melek Güler, Dominik Kommerell,
Angelika Renz, Ute Schweinle, HFT Stuttgart
Assistent Professor: Dr. Hank Häusler
Foto: HFT Stuttgart



15

Mediamesh®, Milan, 2007
A joint product by ag4 media facade GmbH, Köln und
GKD - Gebr. Kufferath AG, Düren.
Foto: ag4-Gkd

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16

MegaPhone, New York, 2007

Design and Development: Jury Hahn, Dan Albritton /
MegaPhone

[Game Presentation, only shown during opening and conference]

Foto: MegaPhone



17

National Library, Belarus, 2006

Architect: Architects Victor Kramarenko
Mediafacade: Walter Industries / GVA Lighting

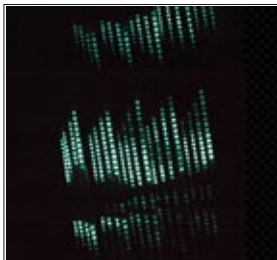
Foto: GVA Lighting



18

Pixel Cloud, London, 2007

Architect: Foster and Partners
Design and Development: Jason Bruges Studio / LEDON
Foto: Jason Bruges Studio



19

Pixy Volumic Video Display, 2008

Design and Development: Experientiae Electricae
Foto: Experientiae Electricae



20

Stadion Center, Vienna, 2007

Architect: Freimüller Söllinger Architektur ZT GmbH, Vienna,
Medien Facade: Philips Lighting

Photos: Rob Nelisse



21

Nova, Zürich, 2006

Design and Development: Horaro GmbH / ETH Zurich
Foto: Oliver Lang

AFRICAN PAVILLON EXPO 2008



Saragossa, Spain 2008

Architect ATELIER BRÜCKNER, Stuttgart/DE
 Facade Design ATELIER BRÜCKNER, Stuttgart/DE,
 Nüssli, Hüttwilen/ CH
 Director media content: TAMSCHICK MEDIA+ SPACE GmbH
 Graphic design facade: emde gestaltung
 LED lighting solution: ..LEDON Lustenau/AT
 photo credit:TAMSCHICK MEDIA+ SPACE GmbH

➤ “Water and sustainability” was the motto of the international world exhibition 2008 held in Zaragoza, Northern Spain. Approximately 100 nations presented solutions for the responsible use of the precious resource.

ATELIER BRÜCKNER and Nüssli designed and created the pavilion of the African countries. Ledon implemented the visionary illumination of the façade “Wall of Africa”, an impressive example of the variable use of light-emitting diodes.

Facade Typ and Geometry Facade Type and Geometry Semi-transparent plastic squares
 movably arranged on the façade with an area of 1,500 m²
 Kind of Light Creation over 220,000 LEDs
 Resolution and Transmitting Behaviour..... Each pixel can be individually addressed, realising a wide variety
 of light shows and videos with seamless transitions.
 Luminance daylight white (5600K) LEDs
 Urban Situation The facade works in different levels of perception. There is a
 new experience at every distance - from very far to close.
 Current Showreel..... A visual poem about Africa enlightens the surface of the pavilion
 and immerses the space with the density and vivacity of the
 African continent.



Light as a medium of communication

In compliance with the world exhibition's objective to promote and continuously develop innovative technologies on a sustainable basis, ATELIER BRÜCKNER created a media façade spanning more than 1,500 square metres. The builders Nüssli and architects from ATELIER BRÜCKNER devised a concept which incorporates more than 220,000 LEDs that visualize the theme of the EXPO2008 "water and sustainability".

The spectacular project in Zaragoza transforms light into a medium of communication with the observer. It also shows that there are no creative limits with LED technology. As each pixel can be individually addressed, a wide variety of light shows and videos with seamless transitions can be realised. The pavilion, created by the Stuttgart studio ATELIER BRÜCKNER, communicates itself through this dynamic membrane. The interior message of the pavilion is radiated to the exterior. During the day, a pixelated landscape collage of the 14 African countries presented in the pavilion is visible, printed on small, mirrored panels. The Zaragoza winds activate the swinging panels while the mirrored surface reflects the moving clouds of the sky above. An interaction with the human sensory perception begins.

With dusk, a true metamorphosis starts: The LED light display positioned behind the semi-translucent panels takes over the show. At 218-meter in length and six meters high, the savanne comes to life. A landscape rich in life and cultures, shaped by wind and water, unfolds. A visual poem about Africa, created by the media artist Marc Tamschick, enlightens the more than 220.000 monochrome white LED pixels. The emitted light becomes a kind of spirit that paints images on the surface of the pavilion. The seven minute film loop immerses the space with the density and vivacity of the African continent.

LEDON

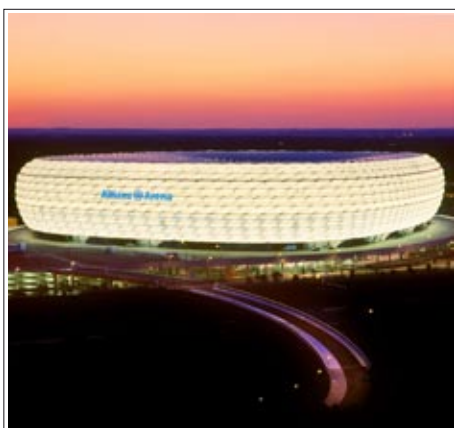
As an LED specialist for innovative light sources and sophisticated application solutions, Ledon has introduced a new dimension to light. Ledon is a competent partner driving innovation in the field of light emitting diodes. Relying on innovative LED technologies, Ledon focuses on the development, production and marketing of high-performance digital XED light sources as well as varied lighting solutions for individual applications.

LINKS

www.atelier-brueckner.de
www.ledonlighting.com/com/en/projects_f.htm
www.nussli.com
www.tamschick.com



ALLIANZ ARENA



Munich – Fröttmaning, Germany 2005

Owner Allianz Arena-München Stadion GmbH
 Architect Herzog & de Meuron
 Membrane Skin Covertex
 Light Design (exterior) .. Michael Schmidt Lichtplanung
 Light Hardware (skin).... Siteco Beleuchtungstechnik GmbH
 Photos on Poster Allianz Arena

➤ The most spectacular views of the Allianz Arena are at night when the outer enclosure radiates the colour of whichever club is hosting the evening's match. The eleven bottom rows of the inflated membrane cushions – 1,058 elements out of a total of 2,874 – are illuminated. In addition to monochrome lighting, alternating strips and a diamond-shaped pattern can be created in two colours.

Facade Typ and Geometry Pneumatic membrane skin made of 2874 diamond-shaped
 EFTE cushions (ca.65 000 M2).
 Kind of Light Creation Specially designed fluorescent lamps are being used.
 Each package contains three colours (blue, red and white).
 Resolution and Transmitting Behaviour..... 1058 of 2847 elements can be illuminated. Monochrome and
 alternating patterns are possible. The colour effect achieved
 through the illumination is visible externally and in part internally
 too. From the outside, the increasingly dense printing on the
 lower rows of inflated cushions obscures a direct view of the
 lamps and also disperses the light.
 Luminance..... Illumination is only being used in the evening.



ALLIANZ ARENA

The Allianz Arena has a delightfully surreal appearance. The exterior is covered in tufted, translucent material; viewed from afar, the stadium resembles a giant, quilted doughnut. At night, it becomes positively radiant: the facade is lit from within, which means that the entire arena glows. (The windows of 106 luxury boxes can be partially discerned behind the curved scrim.) At most evenings, the building emits a soft white light, reflecting the silvery tone of the synthetic skin. However, at nights when one of the two Munich soccer clubs has a home game and the teams share the stadium, the building changes its colour: red for Bayern Munich, blue for the Munich Lions.

The arena retains its allure during the day. The unusual material- ETFE, or ethylene tetra fluoro ethylene- gives the stadium a cushiony texture, as if it was an oversized, permanently moored blimp- you want to climb up and touch it. Its subtle white hue eerily duplicates the Munich sky on a cloudy winter afternoon and the stadium practically 'disappears'. In the sun, it brightens. The 2,760 tufts- made of two sheets of ETFE, each 0.2 mm thick, which are sewn together and filled with air- are arranged in a strict diamond pattern, giving the facade a subtle sleekness. (The New Yorker, 20 March 06)

LINKS

www.mediaarchitecture.org/allianz-arena-munich

www.covertex.de/projekte/

www.allianz-arena.de

www.emporis.com/ge/wm/bu/?id=allianzarena-munich-germany

www.siteco.at/de/referenzen.html

www.architekten24.de/projekt/allianz-arena-muenchen/uebersicht/index.html



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

BLINKEN LIGHTS



Berlin Alexanderplatz, Haus des Lehrers
Temporary Installation (2001/02 and 04)

Owner WBM
Architect Hermann Henselmann (1961)
Idea/Light Design/
Technical Layout Blinkenlights
Display Content Blinkenlights / People of Berlin
Photos on Poster Thomas Fiedler

➤ Celebrating its 20th anniversary the Chaos Computer Club has made a special present to itself and the city of Berlin. From September 12th, 2001 to February 23rd, 2002, the famous „Haus des Lehrers“ (Teachers’ House) office building at Berlin Alexanderplatz has been enhanced to become world’s biggest interactive computer display.

Facade Typ and Geometry Traditional window facade.
Kind of Light Creation Halogen lamps behind opaque painted window glass
Resolution and Transmitting Behaviour Low resolution. 8x18 = 144 Pixel. Big pixels work as a screen.
Luminance..... Low luminance. Operation during the night is only possible.
Urban Situation In the centre of Berlin. Big viewing distances are possible and
..... necessary.
Showreel..... The content has been created by the users through simple
..... interfaces that had been programmed by the Blinkenlights crew
..... (Play pong, Blinkenpaint, Loveletters).



BLINKENLIGHTS

Blinkenlights has been planned and build in record time. We had only four weeks from the first thought to the display of the first movie. So we managed to be ready on prime time: the 20th anniversary of the Chaos Computer Club making a present of huge dimensions to both the Club and the town of Berlin. Blinkenlights consists of 8 floors with 18 windows each. Behind every window there is a single lamp on a self-made tripod. Each lamp is connected to the power source via a relay. If the relay switches on, the windowpane becomes bright. In order to achieve the appropriate self-illuminated effect we have painted all windows white. The lamps have a capacity of 150W only. Each relay is connected to the eighth floor via a control cable. There, all the cables come together in a huge thread connecting to the Blinkenlights Chaos Control Center. An amplifier provides the cables with the necessary power to switch the relay. The control computer is capable of switching each relay independently. This is where Blinkenlights Movies become reality. Overall, we had laid out around 5000m of cable in the house. Three computers control the whole system. Although it would have been possible to put it all in one system, we decided to separate the modules (control, playback, telephone interactivity) in order to allow distributed development and operation. The modules communicate via network protocols.

LINKS

www.mediaarchitecture.org/6/

www.blinkenlights.de/index.en.html

www.hausdeslehrers.de/hdl/cms/de/index.html



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

CENTRO DE CREACIÓN CONTEMPORÁNEA DE CÓRDOBA



Cordoba, Spain 2008/09

Owner Junta de Andalucía
Architect Nieto Sobejano Arquitectos, Madrid
Facade Design Nieto Sobejano Arquitectos, Madrid
..... in collaboration with
..... realities:united, Berlin
Light Design/
Technical Layout realities:united, Berlin
Visualisation on Poster .. realities:united, Berlin

➤ The Disk project is currently the one most far removed from the concept of uniform dots of light (pixels) and structured layout.

Facade Typ and Geometry Complex 3-dimensional topography made of glass fibre reinforced concrete panels.
..... Total surface area: approx. 1,300 m2.
Kind of Light Creation 1513 Compact fluorescent light tubes assembled into the facade's panels.
Resolution and Transmitting Behaviour..... 1314 bowls varying in size and density.
Luminance..... Indirect lighting, use at night only.
Urban Situation Highly visible from the historic city centre.



CENTRE OF CONTEMPORARY ART

With regard to realities:united's BIX project Nieto Sobejano architects proposed a light- and media-facade on the C4 building surface facing the Río Guadalquivir. Realities:united was commissioned to further develop the conception and the design for this media skin. The facade made from pre-cast glass fibre reinforced concrete panels has been transformed into a 3-dimensional relief with indented "bowls", which are an abstract derivate of the interior structure of the building. The indirectly lit "bowls" are arranged in patterns of varying density and respectively element size. They result into a screen with a varying image resolution similar to the retina of the human eye. The grey scale system based on fluorescent light will allow the display of moving images at a rate of 20 frames per second.

realities united

The office realities:united develops and supports architectural solutions, which incorporate new media and information technologies. Realities:united delivers consulting, planning, research and communication. One major focus is the outward communicative capacity of architecture. Another one is the quality of the user's experience inside spaces, which are - both in function and appearance- essentially augmented and changed by additional layers carrying information, media content and communication.

LINKS

www.mediaarchitecture.org/espacio-de-creacion-artistica-cordoba

www.realities-united.de/#PROJECT,77,1

www.nietosobejano.com



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

CHANEL TOWER



Corner Marronnier / Chou Street, Ginza 2004
Tokyo, Japan

Owner Chanel
Architect Peter Marino Architect
Light Design /
Technical Layout L.E.D Effects
Display Content by Chanel
LED Hardware L.E.D Effects (Now: Lightning Science)
Photos on Poster Lighting Science

➤ The architect insisted that the LED system be integrated into the curtain-wall of the building. He did not want the LED tubes to be bolted to the structure as if they were an afterthought. That created some unique challenges. How do the office workers see out during the day? How does one provide a black backdrop for the LED tubes at night? How does one clean the glass? Could this be cost-effective?

Facade Typ and Geometry Double layered, straight glass facade with "Privalite" state
..... changing glass (transparent / opaque) and computer controlled
..... canvas roller blinds to protect the workers in the evening from
..... diffused light.
Kind of Light Creation LED tubes (B&W /grey scales are possible), vertically mounted,
..... positioned behind the first glass layer
Resolution and Transmitting Behaviour..... The pixel-grid has a very high density (ca.700 000 Pixel) and
..... works nearly as a screen. Privalite Glass works as a diffusion
..... layer when then LED facade is turned on.
Luminance..... Very bright - although it seems like the facade is only being used
..... at dawn.
Urban Situation The building is located in the heart of Ginza, the richest part of
..... Tokyo. It can be only seen from short distances and sharp angles.
Current Showreel..... The facade shows excellent Chanel Promo Clips and naturally,
..... the Chanel's logo.



CHANEL TOWER

With a ten-floor palace of glass in one of the richest places in Tokyo, Chanel launched its biggest boutique in the world. Designed by American architect Peter Marino, the 56-meter high building is set to dominate the elite Chuo-dori Avenue. It has a massive curtain-wall of glass that encapsulates a nest-shaped block of aluminium in Chanel handbags' signature tweed pattern.

The glass facade will light up Ginza every day, from dusk to dawn with 700,000 embedded white light emitting diodes. The Chanel Tower in the Ginza district of Tokyo is a true architectural integration of LED technology into a curtain-wall. From inside and outside the LED technology appears transparent, allowing the office workers a clear, unobstructed view of the world during the day. The street view presents the world's largest black and white video wall at night.

LINKS

www.mediaarchitecture.org/chanel-tower

www.chanel-ginza.com/facade/index.html

www.lsgc.com/showcase/architectural-exterior

www.archrecord.construction.com/projects/lighting/archives/0511chanel.asp

www.petermarinoarchitect.com

http://www.iht.com/articles/2004/12/07/fchanel_ed3_.php



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

DAISY.WORLD



Space-capturing kinetic Mediasystem
with pneumatic actuators

Concept and Design AAA. ARTS AND ARCHITECTURAL
..... APPLICATIONS

➤ DAISY.WORLD is a colourful performance in public space, a dynamic movement of artificial landscapes growing over the surface of a building, wandering fields of flowers in the city sky.

Basic type of mediafacade	Kinetic: Spatial-changing, physical mediasystem (unlike conventional 2-dimensional, disembodied image)
Technology	Illuminating pneumatic actuator system (new development)
Actuators	Coloured illuminating flower heads size and shape specifically controllable by air pressure optionally colour control
Constructive features	robustness of the construction (avoiding fragile details) reliability by changing weather conditions outdoor and height suitability
Building applications	Facade system: large network of actuators covering a building facade far distance visibility effect interior design and illuminating elements: small groups/patterns of flower fields short distance visibility effect
Appearance	wandering fields of flowers wavy organic structures corals, micro-organic structures



DAISY.WORLD – artistic concept

DAISY.WORLD is the simulation of an artificial self-monitoring ecosystem placed on an urban structure. Comparable to the rules in nature the computer simulation calculates the dynamic growth behaviour of two artificial flower populations. Both species and the outer conditions are interlinked in feedback loops to a complex network of interaction - a permanent DRIFT, a spreading and a retreat, an incessant self-balancing to adapt to every outer change and finally, the idea of assertiveness and will power without supreme intervention. LIFE.

In symbolic way nature conquers the habitat of men, and man becomes again a part of it.

DAISY.WORLD evokes a sensibility for the fragile balance and the coherence of all aspects of our living world.

The concept is related to a classic scientific experiment, a computer simulation by James Lovelock, the father of the GAIA-theory.

About AAA.

AAA. ARTS AND ARCHITECTURAL APPLICATIONS is an art-architectural-engineering office founded and running by the German artist Thomas Nicolai as an interdisciplinary platform for his science inspired research projects.

Due to the conception of the AAA. art is a secondary scientific experimental option: translating abstract models into spatial pictographic coherency, becoming able to comprehend and to experience the hidden inner mechanics of natural structures and processes.

Since 1999 the increasing interest in natural scientific phenomena directed AAA. investigations to the development of BIOTIC SCULPTURES (artificial creatures with specific similarities to biological or physical structures/ interaction with the environment).

The AAA. focuses architecture as an aspect of artificial building and creation from the perspective of evolutionary drafts and strategies. Architecture follows evolution. AAA. Projects are machines of visionary poetry reflecting a wider philosophical context.

Acknowledgment:

By courtesy of Dipl.-Ing. Frank Sonnabend/gusmedia, Erfurt

Special thanks to Dr. Frank Warzok/Gotha, Christian Geyer/Erfurt, Katja Hebenstreit / Erfurt

LINKS

www.daisyworldproject.de

www.erfurt-web.de/NicolaiThomas



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

DEXIA TOWER



11, Place Rogier B-1210 Brussels 2006

Owner: Dexia S.A.

Architect: Philippe Samyn & Partners,
M & J.M. Jaspers - J. Eyers & Partners

Lightning engineer: Barbara Hediger

Display Content: Touch by LAb[au]

LED Hardware: Space Cannon

Photos on Poster: LAb[au]

➤ The interaction is constituted by both static and dynamic inputs, taking into account certain parameters such as width (finger, hand, arm, ..), direction (horizontal, vertical, diagonal), duration (introducing growth), speed (introducing velocity and weight); in order to establish a dynamic, abstract play of graphical elements deduced from the architecture. Each of the inputs defines the colour of the background, which the archi-

Facade Typ and Geometry	Straight glass facade.
Kind of Light Creation	12 (LED) light bulbs are horizontally mounted behind the first glass layer on the bottom line of the windows. Computer controlled blinds are being used as a diffusion layer. When the illumination system is working, all the sun-blinds close automatically.
Resolution and Transmitting Behaviour.....	Low resolution -The whole building has 6000 windows – 4200 of them works as a pixel with a fading characteristics.
Luminance	The facade is being operated at dawn. It is not bright enough for daylight.
Urban Situation	In the middle of the Rogier Square this splendid building shines like a beacon over the town. The Tower is visible from several major traffic arteries in the capital and is situated precisely in the middle of the Mint Square – North Station axis.
Current Showreel.....	Different artists have been working with the Dexia Tower until its inauguration. Touch, Who's afraid of Red, Green and Blue and spectr;a;um have been created by LAb[au]



DEXIA TOWER

The recent lighting projects of the Dexia Tower in Brussels, shows LAb[au]'s approach towards 'media-architecture' as being a spatial and temporal programming of light which can create an interactive relationship between the user, the building and the city, entirely transforming the concept of media facade as generic content displays towards new vectors of thinking the architecture, art and public space.

In the recent project 'Touch' the design aesthetics are directly deduced from abstract art such as Mondrian's 'elementarism' and Kandinsky's 'point and line to plane' as the skyscrapers architecture. There, points = pixels = windows, lines and diagonals = levels and edges of the building and surfaces = facades, thus focusing on the relational qualities expressed by an elementary language, and exploiting interactivity not as being a control system but rather as a catalyst for these relational / representational parameters.

For the permanent lighting, the project 'Who's afraid of Red, Green and Blue' draws reference to the Barnett Newman's philosophy, researching a symbolic value in abstract art by using colour and time.

The major challenge of LAb[au] within this context is the establishment of a philosophy proper to the urban context, the artistic discourse and the client. A series of projects have been conceived, among which specific interactive installations, a permanent artistic lighting, and a series of live audiovisual events. The aim of these lighting projects is the design of participation and identification; the creation of a new urban sign. Therefore, the set-up of entire communication chains allows an exchange between the individual and the public space, by exploiting IC technologies, their processes and logics, in order to create a new and contemporary language of urban artefacts.

LAB[au] - laboratory for architecture and urbanism

LAB[au] developed a transdisciplinary and collaborative approach based on different artistic, scientific and theoretic methods, examining the transformation of architecture and spatio-temporal structures in accordance to the technological progress within a practice entitled 'MetaDeSIGN'. Metadesign [meta = information about information] displays the theme of space-constructs relative to information processes: architecture as a code. It concerns the transposition of inFORMational processes in n-dimensional form.

Founded in 1997 and based in Brussels, LAB[au] mainly creates interactive audiovisual installations. Manuel Abendroth, Jerome Decock, Alexandre Plennevaux and Els Vermang, also run since 2003 an electronic arts gallery, 'MediaRuimte', in the centre of Brussels.

LINKS

www.mediaarchitecture.org/dexia-tower-brussels/

www.hediger.be/uk/index.php

www.dexia-towers.com/

www.spacecannon.it

www.lab-au.com/

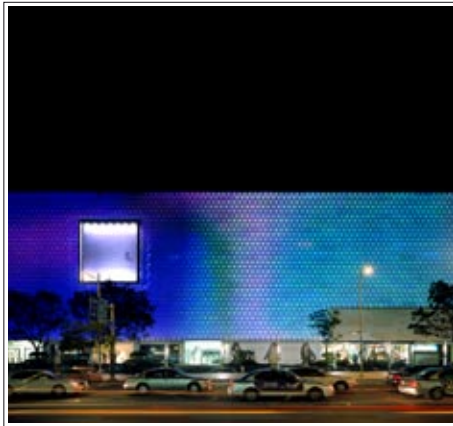
www.emporis.com/ge/wm/bu/?id=dexiatower-brussels-belgium



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

GALLERIA STORE



Seoul, West, South Korea 2004

Owner Hanwha Stores Co
Architect UNStudio
Lighting Design UNStudio and Arup Lighting
LED Hardware Xilver Dynamic LED Lighting
Lighting control software
and hardware e:cue
Photos on Poster Christian Richters

➤ People stop in the street speechless, take photographs and take videos of the facade, all of them utterly amazed. The design's subtle colour changes and abstract images perfectly fit the contemporary image of the building. The Galleria Fashion Mall is back in the heart of the city.

Facade Typ and Geometry Black box building covered with glass disks with LED back lighting.
Kind of Light Creation Custom made full colour LED fittings behind glass disks with a diameter of 830 mm. The glass disks consist out of a sand blasted glass sheet, an acid etched glass sheet, and 3M dichroic film in between.
Resolution and Transmitting Behaviour..... Low Resolution - 4500 LED fittings cover mainly two sides of the building. At daytime, due to the 3M dichroic film, the building has an extraordinary appearance while the facade is not lit.
Luminance..... Medium: the operation of the facade starts at twilight.
Urban Situation Because the building is situated at a street corner, only two of its facades can be seen. They can be viewed from a long distance.



GALLERIA DEPARTMENT STORE

The Galleria Department Store is in fact a refurbishment project. Originally, the Galleria Building was a drab concrete box. Its owner, Hanwha Stores Co, had the desire to turn it into a landmark building that reflects the innovation and style of the area, manifesting its own identity for quality, in the same way as the exclusive boutiques within its walls are doing. Architects UNStudio were asked to recreate the mall's exterior. They introduced Arup Lighting as the project's lighting designers. Together they developed a chameleon-like facade that reflects the subtleties of natural light on opalescent, dichroic glass disks during the day. At night, the disks are individually backlit and controlled by video software, in order to create brilliant and unique colour schemes all over the building. Each disk is acting like a big pixel on a giant screen. 4.330 disks, each 850mm in diameter, make up the entire mall's facade. „The subtle daytime looks of the building change to something expressive and outgoing during the night“, says the lighting designer Rogier van der Heide.

ARUP

In our business, people make a difference. The Amsterdam office of Arup is populated by a diverse group of individuals, with backgrounds ranging from structural engineering to fine arts. Nevertheless we share many values. It is the teamwork that we are all excited about, and our attitude is to drive each other forward to the benefit of our clients. We want to be self-critical and have the ambition to deliver solutions that are based on the synergy between our disciplines. Rogier van der Heide is architectural lighting designer and Arup's director. Rogier is the Global Leader of Arup Lighting, and has been responsible for innovative, creative and well-executed projects worldwide.

UNStudio

UNStudio is an international architectural practice, situated in Amsterdam since 1988, with extensive experience in the fields of urbanism, infrastructure, public, private and utility buildings . At the basis of UNStudio are a number of long-term goals, which are intended to define and guide the quality of our performance in the architecture field. We strive to make a significant contribution to the discipline of architecture, to continue developing our qualities with respect to design, technology, knowledge and management and to be specialists in the public network projects.

LINKS

www.mediaarchitecture.org/galleria-department-store/
www.xilver.nl/projects.php
www.ecue.de/references/architecture/galleria-seoul.html
www.unstudio.com/projects/year/2004/1/141
www.arup.com/netherlands/project.cfm?pageid=6675



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

GRAND LISBOA



Macau, China 2007

Owner Dr Stanley Ho
Architect Dennis Lau & Ng Chun Man Architects
..... Engineers
Facade Design R.A. Heintges & Associates
Light Design /
Technical Layout Magic Monkey
Display Content Content guidelines by Magic Monkey
Current content by Keyframe
LED Hardware PXC-73 LED Cluster by Daktronics
Photos on Poster Magic Monkey

Magic Monkey was hired in January 2005 by the prestigious Hong Kong architectural firm DLN to conceive, design and specify the technical requirements for a monumental communication solution for Dr Ho's new flagship casino, the Grand Lisboa in Macau, PRC. MM was neither responsible for the final technical equipment selection nor for the installation. Magic Monkey's design integrated the architecture of the Lotus flower inspired building with thousands of individually controlled RGB LED pixels and kilometers of RGB LED lines to create a gigantic video and a light display. As the geometry of the glass facades evolved over the course of the 2 years of design, so did the position of the pixels and the light lines. The flexibility of the concept allowed for total compliance in regards to evolving architectural design issues and client budgets.

magic monkey
experts in monumental communication since 1995

Magic Monkey, founded in 1995, is a global innovator in urban communication and operates on a worldwide basis. The company specialises in translating architecture and environments into monumental communication platforms. Magic Monkey projects are often interactive, inviting the public-at-large to participate, and generate true emotional exchanges between brands, architecture and people. Emotion is Magic Monkey's mission. With a focus on creating truly innovative designs and meticulous implementations, Magic Monkey has successfully collaborated with famous architectural firms and prestigious brands. Magic Monkey was the recipient of the Suez Innovation Award in 2006.

LINKS

www.mediaarchitecture.org/grand-lisboa-macao
www.magicmonkey.net/en/projects/grandlisboa
www.dln.com.hk
www.heintges.com
www.daktronics.com



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

GREENPIX



Xicui Road, Beijing, China 2008

Owner Jingya Corporation
 Architect Simone Giostra & Partners Architects
 Facade Design Arup
 Light Design/
 Technical Layout Arup
 Solar Technologie Schüco International KG, Sunways AG
 LED Hardware Thorn
 Photos on Poster Simone Giostra + Arup

➤ *“It’s not easy to be green.”* Greenpix behaves like an organic system, absorbing solar energy during the day and generating light from the same power in the evening . The project promotes the uncompromising integration of sustainable technology in new Chinese architecture, responding to the aggressive and unregulated economic development currently undertaken by the industry, often at the expense of the environment.

Facade Typ and Geometry Curtain-wall glass facade (ca.2200 M2)
 Kind of Light Creation Led fixtures behind translucent glass facade
 Transmitting Behaviour..... 2292 Led Fixtures powered by polycrystalline photovoltaic cells laminated within the translucent glass of the curtain-wall and placed with changing density on the entire building’s skin. The glass works also as a diffuser.
 Luminance..... Medium. The facade works after dark due to the fact that the energy is harvested during daylight by photovoltaic cells.
 Urban Situation The building can be seen from different angels from short to medium distances.
 Current Showreel A compelling program of videos, installations and performances organised by a diverse team of independent curators, art institutions, galleries, media schools, corporations, collectors and benefactors, all lead by curator and producer Luisa Gui.



GREENPIX

GreenPix - Zero Energy Media Wall - is a ground-breaking project applying sustainable and digital media technology to the curtain-wall of Xicui entertainment complex in Beijing, near the site of the 2008 Olympics. Featuring the first photovoltaic system integrated into a glass curtain-wall in China, the building performs as a self-sufficient organic system, harvesting solar energy by day and using it to illuminate the screen after dark, mirroring a day's climatic cycle. The Media Wall will provide the city of Beijing with its first venue dedicated to digital media art, while offering the most radical example of sustainable technology applied to an entire building's envelope to date. The building was open to the public in May 2008, with a specially commissioned program of video installations and live performances by artists from China, Europe and the USA. The project was designed and implemented by Simone Giostra & Partners, a New York-based office with a solid reputation for its innovative curtain-walls in Europe and the USA, with lighting design and facade engineering by Arup in London and Beijing. Content manager Luisa Gui coordinated the opening program with software development by New York-based media artist Jeremy Rotsztain. "It's not easy to be green". Greenpix behaves like an organic system, absorbing solar energy during the day and generating light from the same power in the evening . The project promotes the uncompromising integration of sustainable technology in new Chinese architecture, responding to the aggressive and unregulated economic development currently undertaken by the industry, often at the expense of the environment.

With the support of leading German manufacturers Schueco and SunWays, the architect Simone Giostra with Arup developed a new technology for laminating photovoltaic cells in a glass curtain- wall and oversaw the production of the first glass solar panels by Chinese manufacturer SunTech. The polycrystalline photovoltaic cells are laminated within the glass of the curtain-wall and placed with changing density on the entire building's skin. The density pattern increases the building's performance, allowing natural light when required by interior program, while reducing heat gain and transforming excessive solar radiation into energy for the media wall.

Content architecture: a new medium.

GreenPix is a large-scale display comprising of 2,292 colour (RGB) LED's light points comparable to a 24,000 sq. ft. (2.200 m2) monitor screen for dynamic content display. The very large scale and the characteristic low resolution of the screen enhances the abstract visual qualities of the medium, providing an art-specific communication form in contrast to commercial applications of high resolution screens in conventional media facades.

LINKS

www.mediaarchitecture.org/greenpix-zero-energy-media-wall-beijing/

www.greenpix.org/

www.arup.com/

www.sgp-architects.com/



FLARE FACADE



kinetic ambient reflection membrane

Concept and Design WHITEvoid
..... interactive art & design Berlin, Germany

➤ FLARE is a modular system to create a dynamic hull for facades or any building or wall surface. Acting like a living skin, it allows a building to express, communicate and interact with its environment.

Basic type of mediafacade.....	kinetic, shape-shifting, physical media system
.....	daylight-suitable, 3-dimensional, physical display
Technology	metal elements moved by pneumatic pistons
Elements.....	..... specially designed reflecting shapes
.....	..... pixels formed by reflection of ambient light
.....	..... brightness of reflection controlled by position
Constructive features	simple construction for high robustness and low maintenance
.....	..... independent of weather conditions
.....	..... independent of time of day
.....	..... outdoor and indoor suitability
Applications.....	infinite, custom array of elements covering any surface
.....	..... Building facades/ Outdoor:
.....	..... far distance visibility effect
.....	..... working day and night
.....	..... Interior:
.....	..... small-scaled elements, various materials
.....	..... (coloured) lighting & back illumination
.....	..... projection onto elements/ surface possible
Appearance	dynamic building or wall surface
.....	..... organic structures
.....	..... 3-dimensional manipulation/ animation of surface



The FLARE system

FLARE is a modular system to create a dynamic hull for facades or any building or wall surface. Acting like a living skin, it allows a building to express, communicate and interact with its environment.

FLARE units

The FLARE system consists of a number of tiltable metal flake bodies supplemented by individually controllable pneumatic cylinders. Due to the developed pattern, an infinite array of flakes can be mounted on any building or wall surface in a modular system of multiplied FLARE units.

The visual effect

Each metal flake reflects the bright sky or sunlight when in vertical standby position. When the flake is tilted downwards by a computer controlled pneumatic piston, its face is shaded from the sky light and this way appears as a dark pixel.

By reflecting ambient or direct sunlight, the individual flakes of the FLARE system act like pixels formed by natural light.

The system is controlled by a computer to form any kind of surface animation. Sensor systems inside and outside the building communicate the buildings activity directly to the FLARE system which acts as the buildings lateral line.

FLARE turns the building facade into a penetrable kinetic membrane, breaking with all conventions of the building surface as a static skin.

About WHITEvoid: WHITEvoid interactive art & design

Studio WHITEvoid operates at the interface of art, design and technology.

Studio WHITEvoid is comprised of specialists in interaction design, media design, product design, interior architecture and electronic engineering.

Studio WHITEvoid creates interactive installations and products for museums, exhibitions, trade fairs, festivals, events, concerts and clubs.

Acknowledgment:

By courtesy of WHITEvoid interactive art & design, Kastanienallee 89, D-10435 Berlin

Designed & developed by Christopher Bauder, Christian Perstl

LINKS

<http://www.flare-facade.com>

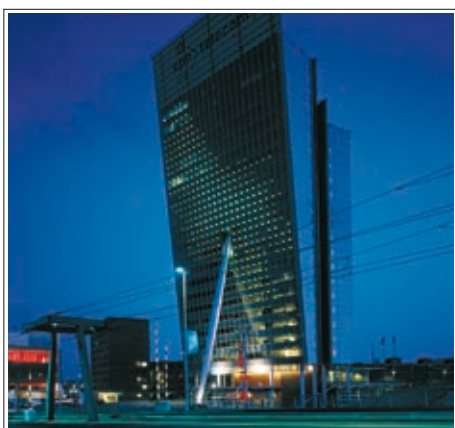
<http://www.whitevoid.com>



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

KPN TOWER 2000



Wilhelminakade 123, 3072 AP, Rotterdam

OwnerKPN Telekom
Architect Renzo Piano
Facade Design Corsmit Engineers
Display Content Studio Dumbar,Pixelsex,
..... Graffiti Research Lab
LED Hardware Osram Planon
Photos on Poster Micheal Denancé

➤ “I think it is enormously important to work with the intangible elements of space. Light, transparency, vibration, structure and colour are those elements that interact with the shape of the space, rather than emphasise its function. The language of Architecture is changing. New technologies can bring together peoples and cultures in a way that is unique in the History of mankind. I firmly believe in the value of these options.”

Facade Typ and Geometry Single layered, overhanging glass facade (ca.3000 M2)Kind of
Light Creation Osram Planon flat panel lamps
Resolution and Transmitting Behaviour..... Low Resolution – 900 Planon lamps have been used
Luminance..... Relatively bright - use during daytime is possible
Urban Situation The building can be seen from one side from very long distances
Current Showreel..... Graffiti Research Lab



KPN TOWER

A wall of light measuring 3,000 square metres has turned the new headquarters of the largest Dutch telecommunications company KPN in Rotterdam into a spectacular attraction. The stunning building, designed by Renzo Piano, was officially opened in September 2000. Located on an island by the New Maas it can be seen from miles. The 100-metre-high and 40-metre-wide sloping north facade is equipped with around 900 PLANON® flat-panel lamps. Because they can be controlled individually with electronic control gear, they form the pixels of a gigantic monochrome display on which still and moving images can be created.

LINKS

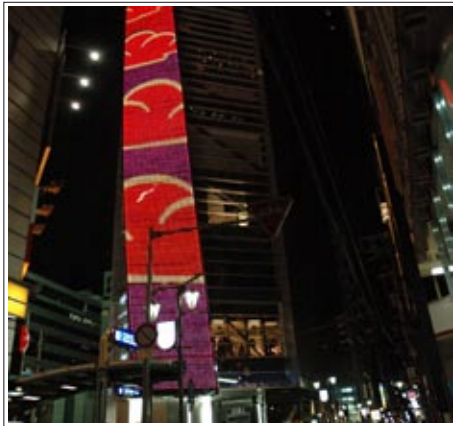
www.mediaarchitecture.org/graffiti-research-lab-on-kpn-tower-rotterdam/
www.osram.de/osram_de/Professionals/Allgemeinbeleuchtung/Flachstrahler/
www.studiodumbar.com/main.php
www.pixelsex.org/
www.graffitiresearchlab.com/
<http://www.rpbw.com/>



MEDIA FACADES FESTIVAL

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LA PORTE SHINSAIBASHI



Osaka - Shinsaibashi Area, Japan 2007

Architect Plantec Architects Inc.
LED Technical Layout .. Komaden Corporation
LED Hardware Komaden Corporation
Photos on Poster Komaden Corporation

➤ It displays memorable messages for passers-by by showing elaborated images making good use of the vertically long shape, expressing each season in the midst of the urban area and displaying impressive statements and poems.

Facade Typ and Geometry Helical / Twisted Surface 54 m high and 4.8m width
Kind of Light Creation Komaden Kapas III The LEDs are implanted into clusters,
..... mounted on a flexible plastic net behind a glass layer
Resolution and Transmitting Behaviour..... The pixel-grid has a medium pixel pitch of 15 cm using
..... 12 240 pixels and is designed for higher viewing distances.
Luminance..... Bright. Use during daytime is possible due to the Cluster Design
..... (1 Cluster = 9 Leds of different colour)
Urban Situation The building can be seen mainly out of one position and a
..... higher distance.
Current Showreel..... The façade shows the changing of seasons, some
..... advertisement and building information.



LA PORTE SHINSAIBASHI

“La Porte” means “gate” in French as shown by the facility’s location at the entrance of Shinsaibashi area. The external appearance is designed from the image of a beautifully shining women, and the whole building shines in emerald green at night, reflecting its presence as an entry gate. In addition, the west wall has a large LED display, one of the highest displays in Japan, colouring the city with messages and images. The façade geometry is half-spiral. In other words: it is a helical or twisted surface, as if the women’s curvy body was expressed. Before it has never been possible to correspond to a three dimensional architecture with a standard LED video screen. Due to the unique abilities of the Kapas display’s flexibility, durability and lightweight, Komaden was enabled to make the client’s concept become real. The flexibility of Kapas could achieve it! The resolution is not high, but good enough to display CG, graphics, advertisement with commercial messages and some short films. The display is working during daytime, but the most beautiful moment is from evening to night. In order to reduce the costs, but nevertheless keeping the image of the beautiful women, Komaden provided the custom- made LED pitch150mm.



“Beyond imagination!” is the key concept for all Komaden’s works.

Since its foundation in 1962, Komaden is a professional entertainment design company that conveys dreams and inspiration through the creation of dynamic entertainment spaces. Komaden incorporates innovative concepts and a unique body of knowledge into cutting-edge technologies in the pursuit of trend-setting entertainment solutions. Komaden is the pioneer in the Creative LED industry. The headquarters, warehouse and factory are located in Japan. Komaden USA showroom is opened at Los Angeles since June 2008. Komaden also has distributors in Europe.

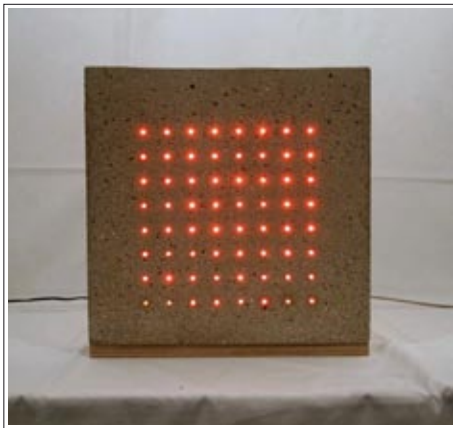
LINKS

www.mediaarchitecture.org/la-porte-osaka/

www.komaden.co.jp/english/index.html



MEDIA AUGMENTED ARCHITECTURAL SURFACES



Student research prototype 2008

Architect MA students at HfT, Stuttgart
Concept and Design MA students at HfT, Stuttgart
LED Hardware various companies

➤ The 'Medien und Raum' Studio is a MA course subject taught by Dr. Haeusler at HfT, Stuttgart, Hochschule für Technik. The Studio is part of a new research focus on media architecture and interactive architecture. 'Medien und Raum' focused on the architectural integration of the art media technology's state. The two projects presented- 'Concrete LED Facade' by Angela Renz and Dominik Kommerell and 'Lochblech LED Facade' by Ute Schweinle, Melek Güler and Andrea Fackler- are prototypes resulting from this studio. Both projects were conducted as scientific research projects where conditions and materials were tested and documented.

The 'Medien und Raum' Studio acknowledge the support of the research and exhibition by HfT, Stuttgart and MEVACO GmbH.

Facade Typ and Geometry Two prototypes where media technology is embedded into architectural surfaces.
Kind of Light Creation 64 individually controllable LEDs via Phidget hardware.
Resolution and Transmitting Behaviour At present, monochrome LEDs in further development stages as RGB LED with a pixel pitch of 3 cm.
Current Showreel In theory usable as any other LED based screen where video or other data could be displayed. Final function depending on controlling hardware.



Media augmented architectural surfaces

Working towards an integration of media technology into architectural surfaces.

Can a deactivated media facade transform back to an architectural surface? Or, to ask the question the other way around, can an architectural surface temporarily become a media facade? Both presented projects offer a possible answer to the question. The architectural surface is, when activated, a media facade that can display media content without having a persistent urge for new media contents. This urge is the result of media technology that exists as an added element onto architectural surfaces that when deactivating the technology unmasks the assembling of parts. Through an amalgam of architectural surface and technology one can create a media augmented element that is able to transform either to a space-defining element or a message-delivering vehicle. This is the interest of the ‚Medien und Raum‘ research, designing systems where media technology is an integrated component of architecture and not an added one.

About ‚Medien und Raum‘ Studio MA class at HfT, Stuttgart

Dr. M. Hank Haeusler studied architecture in Stuttgart, Tokyo and Delft before finishing his PhD at SIAL/RMIT University, Melbourne on 3D media facades and their implication for architecture. Since Spring 2008 he is a lecturer at HfT Stuttgart and from October 2008 he will be employed as a post-doctoral fellow at University of Technology, Sydney. Andrea Fackler, Melek Güler, Dominik Kommerell, Angelika Renz and Ute Schweinle are MA students at HfT, Stuttgart and the designers and developers of the exhibited prototypes.

LINKS

www.hft-stuttgart.de

www.medienundraum.wikispaces.com



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

MEDIAMESH® MILANO



Milan, Italy 2007

Facade Design Urban Screen S.r.l.

Light Design/

Technical Layout/

LED Hardware A joint product by ag4 media facade

..... GmbH, Köln and GKD -

..... Gebr. Kufferath AG, Düren.

Photos on Poster ag4-GKD

➤ In Milan history, there is a long tradition of decorative architectural structures, temporarily built for special occasions that turn the Città into a backdrop, the Piazza into a stage, and the inhabitants into actors, spectators and critics. Now, as a design-oriented media portal, Milan's MEDIAMESH® facade opens up new horizons, blending historical significance with state-of-the-art technology.

Facade Typ and Geometry Straight curtain-wall facade (480 M2)

Kind of Light Creation Mediamesh® systems are based on optically translucent carrier
..... systems constructed of stainless steel wire mesh with integrated
..... light-emitting diodes or LEDs

Resolution and Transmitting Behaviour..... The facade consists of 194 000 Pixels with a Pixel Grid
..... of 50 mm

Luminance..... Bright use during daytime is possible

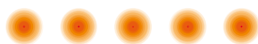
Urban Situation The Installation is situated in the heart of Milan opposite to the
..... famous cathedral



MEDIAMESH® MILANO

After just five months of planning and production, at the end of December 2007, ag4 and GKD set up what is currently the Europe's biggest media facade into operation. This was installed on the upper half of the scaffolding's north facade. The media facade, spectacular not just because of its sheer size but also because of its high image resolution and live video capability, consists of about 480 square meters of MEDIAMESH®. First of all, carrier sleeves are woven into the GKD mesh type „Tigris“. Then, after the weaving process, special round profiles open towards the front are inserted into the sleeves. These profiles, containing the LEDs sealed in with waterproof resin, are then cabled together so that they can be connected via control units with a central server inside the building. The size of the Milan media facade (consisting of eight panels of MEDIAMESH® each measuring 16.54 m x 3.64 m with vertical and horizontal intervals between the LEDs of just 5 cm) provides a grand total of 194,000 pixels. In combination with the viewing distance that onlookers automatically take because of the sheer size of the installation in Milan, this huge number of pixels ensures an absolutely brilliant display of graphics, video sequences and even live transmissions. The metal mesh was attached to a flexible steel substructure which was added to reinforce the scaffolding. This substructure withstands the enormous tension of the MEDIAMESH® installation and allows exact adjustment of the individual panels and LED profiles – an absolute requirement to guarantee permanently distortion-free display of images, even under heavy wind load.

Mediamesh® has set completely new standards to both daytime and night-time medialisation of large facade surfaces. High-quality and high-luminosity LED profiles in optically translucent stainless steel wire mesh create a transparent system for maximum image quality. Even for large glass facades, the system's transparent open aesthetic is preserved, remaining in constant harmony with the innovative medial skin and the decorative translucent veil. Specifically designed for the use in architecture, it allows for a free choice of customised image formats and LED resolutions, independent from the common standards, such as 4:3 or 16:9. Optionally, a video or a live input media display is possible. High-luminosity LEDs ensure the display of brilliant images also in daylight, constantly creating exciting and inspiring moments. Specifically designed for the use at trade fairs and events, Mediamesh Indoor® offers a special system variation with SMDs. With its double-sided aesthetic, Mediamesh Indoor® provides an easy to integrate design element that enhances any interior design, from a foyer to a trade fair.



ag4 | media facade GmbH

ag4 media facade GmbH, an owner-managed company, bundles the expertise of its own architects and media specialists in the discipline of ‚mediatecture‘, a discipline invented by ag4 itself. In collaboration with experts in multimedia, urban planning and communications, ag4 develops integrated solutions for media facades. Renowned reference projects speak for the company's integrated competence.

LINKS

www.mediafacade.com

www.gkd.de



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

NATIONAL LIBRARY



Minsk, Belarus 2006

Owner Public Building
Architect Victor Karmaenko
Light Design,
Technical Layout and
LED Hardware Walter Industries (GVA Lighting, Inc)
Photos on Poster GVA Lighting

➤ „Water and sustainability” was the motto of the international world exhibition 2008 held in Saragossa, Northern Spain. In 140 pavilions, approximately 100 nations presented solutions for the responsible use of the precious resource. Ledon’s contribution was the visionary illuminated facade „Wall of Africa”, an impressive example of the variable use of light-emitting diodes.

Facade Typ and Geometry Diamond shaped glass facade (ca.7000 M2).
Kind of Light Creation STAR Led Fixtures built of 3x1Watt Luxeon LEDs.
Resolution and Transmitting Behaviour Low Resolution - 4646 LED Fixtures mounted behind a glass
..... layer.
Luminance Medium brightness – the facade is only being used at dawn
Urban Situation The building can be seen from different angels and from a long
..... distance.



NATIONAL LIBRARY

In 2006, Minsk received a new architectural symbol – a brand new building to house the National Library of Belarus. The twenty-three storey library is designed in the form of a rhombicuboctahedron (diamond) and symbolizes the enormous value of knowledge that mankind has stored in books. Glass panels cover the building and during the day all the 24 sides sparkle as a real diamond. Architects Victor Kramarenko and Michael Vinogradov, the authors of the building's idea, wanted to preserve and convey this vision at night.

Professor Viktor Kramarenko describes the challenge: "In the evening, the sparkling effect vanishes. External flood type illumination of the building is not effective, since glass panels reflect light into space."

The authors suggested hiding the light sources behind the glass "to create an illusion of a giant colour display", continues Kramarenko. A total of 4646 colour-changing LED fixtures were installed all around the building, effectively creating a monitor with 25x25 meter sides and 62 meters in diameter. "As a result, spectators are able to observe a fantastic show with incredible dynamic plots from hundreds of meters away. It is an extraordinary creative venue for lighting designers".

The entire colour-changing system was designed and produced by Walter Industries (Minsk, Belarus), a 100% subsidiary of the Canadian lighting manufacturer GVA Lighting, Inc. The system consists of 4646 custom-made RGB light fixtures (STAR), 1349 controllers, 54 splitters, one channel splitter RS485-1/8, one converter USB/RS485-1 and one personal computer. Protocol RS485 was chosen for maximal reliability of the system.

Every STAR fixture is equipped with three 1W Luxeons (red, green, blue) mounted on a metal-core PCB. The STAR fixture is IP54-rated and suitable for ambient temperatures varying from -30°C to +50°C. It is housed in an aluminium body with a glass cover and has a cap to comply with the Dark Sky principles.

One controller manages up to four STAR fixtures and consists of LED drivers, brightness control, diagnostics, and communication modules. The entire network of dynamically addressed LED light fixtures is controlled through custom-designed software operating on a standard PC. The lighting designer is presented with a flexible interface for easy control and creation of lighting shows and specific lighting effects. The designer is able to create, modify and schedule custom lighting scenarios. During operation, all effects are displayed in real-time on the computer monitor.

Impressive troubleshooting functionality of the control system drastically reduces maintenance time. In diagnostics mode, the software is able to check the operation of all LED fixtures, controllers and splitters. In case of deviation from operational parameters, detailed information about the faulty component, along with its exact location, is displayed to the operator. Queries for thermal status of the splitters are also supported in this mode.

LINKS

www.mediaarchitecture.org/?s=national+library

www.gvalighting.com/gallery.php

www.walterindustries.com/walterindustries/

www.kramarenko.com/

www.opac.bas-net.by/NBB/index.php



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

NOVA



Train Station Zurich 2006

(and other locations)

Owner ETH Zurich
Concept and Design horao GmbH
Hardware Development Supercomputing Systems AG
Software Development ETH Zurich
LED Hardware Production .. Industrial Micro Systems AG
Photos on Poster Oliver Lang

The Concept behind NOVA at the Zurich-Train-Station

NOVA blurs the boundaries between science, art and technology offering a universal experience accessible to everyone referring to “third culture”, a term first coined by C.P. Snow in his famous book “The Two Cultures” published in 1964 promoting a streetwise science culture, where working scientists communicate directly with lay people. In reference to this context NOVA's mission is to make science more tangible to the public by revealing the perfection and beauty of mathematical formula, to awake the fascination for science and to create a dialogue with society.



The complex hardware and software were developed by Supercomputing Systems AG and ETH Zurich respectively for the specific purpose of real 3D imaging – in this case dedicated to visualizing scientific data dynamically in three dimensions. The NOVA prototype is suspended 9 meters above ground from the ceiling of the main hall of Zurich's main train station where 340'000 people pass by each day. It measures 5 x 5 x 1 meters and consists of 25'000 voxels (volumetric pixels). The audience is invited to immerse itself in a universe of 16 million colours and to enjoy a moment of rest and amazement in a very hectic environment. Visitors can explore NOVA interacting with a touch screen at a local terminal which allows browsing, altering and creating content in real time. In the near future sound will be incorporated to increase the immersive experience: Visuals will be generating sound and sound will be generating visuals.



The Technology of the NOVA System

The LED voxels measuring 40mm in diameter can be addressed individually and work at a refresh rate of 1/25 of a second, i.e. the equivalent of 25 pictures per second. The “real 3D” LED object can be animated by a variety of 2D and 3D contents (videos, photographs, logos, 3D objects, 2D and 3D animations, procedural content and real-time streams) which can be presented in a physical 3D structure creating a totally new perception of space and viewed from an angle of 360°. From different viewer’s positions the content either appears as concrete interpretable or abstract imaginative content. The representation of content in three dimensions is made possible by technically demanding and unique software, developed at ETH Zurich. The modularity of the NOVA system allows to arrange the voxels in any kind of structure using different pitches horizontally or vertically, thus offering the opportunity to create an infinite amount of user-defined objects which in combination with an unlimited variety of content options invite the creative community in architecture, interior design and communications to explore the visual properties and possibilities of this new medium.



Technical Specifications

Features:

Structure..... modular, free form, Real 3D

Horizontal and vertical

viewing angle 360°

Basic Module Dimensions..... Baseplate, 500mm x 500mm (WxD)

LED strings variable length

Voxel: Sphere minimal diameter 40mm

Pitch variable in x-, y-, z-achses

Refresh Rate 25 Hz, each voxel can be addressed individually

Color Depth 16 million colors

System:

Control..... Playlist, Art-Net/DMX 512; OSCD and MIDI upon request

Source Compatibility NOVA content file (.3dd) or Framegrabber (e.g. HD/SDI real-time stream)

Software NOVA Studio (Content Creation), NOVA Player (System software), both proprietary

System Requirements Dual Core, 2GB RAM, Windows XP, NVIDIA Graphics Card with two DVI ports,
..... Framegrabber (optional)

horoa GmbH

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p +41 43 321 38 58, f +41 43 321 38 41

www.nova.ethz.ch

www.horoa.biz

www.youtube.com/horoaclips



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

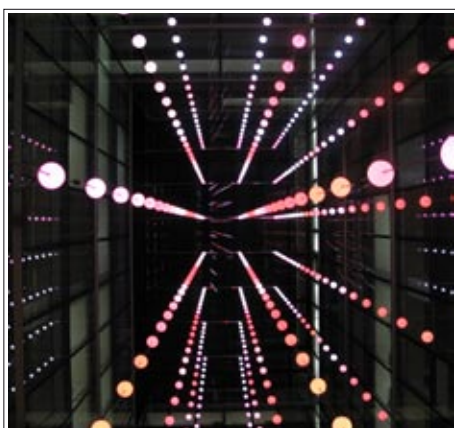


designed and engineered in Switzerland, patent pending, © horoa GmbH and ETH Zurich, Swiss Federal Institute of Technology, 10/2008

photographs by © horoa GmbH - all rights reserved



PIXEL CLOUD



Bishops Square, London, GB 2007

Owner Allen & Overy
Architect Fosters and Partner
Concept and Design Jason Bruges Studio
LED lighting solution ... LEDON. Lustenau/AT
Photos on Poster Jason Bruges Studio

➤ A three-dimensional matrix of 624 globes, each fitted with 24 LEDs, provides a compelling lighting scenario in the atrium of law firm Allen & Overy's office building in Bishops Square, which was designed by Foster and Partners. The concept and design of the "Pixel Cloud" was developed and produced by the Jason Bruges Studio in London and Ledon.

Facade Typ and Geometry Indoor Installation – 10 storey high atrium
Kind of Light Creation 24 LEDs fitted on globes that are individually controllable
Resolution and Transmitting Behaviour..... The three-dimensional matrix consists of 624 carbon white
..... globes, each with a diameter of 120 mm.
Current Showreel..... The content is generated of animations and images captured by
..... the weather camera on the roof of the building



PIXEL CLOUD

This spectacular lighting installation is lighting poetry in motion

The LED light sculpture is suspended from the ceiling of the 10-storey atrium in the office building of the prestigious law firm like an oversized chandelier, its intermittently controlled dynamic changes in colour and light invoking the international reach of Allen & Overy's world-wide network. The Pixel Cloud extends over eight floors and, with its impressive design, conjures up a striking lighting scene.

624 carbon white globes, each with a diameter of 120 mm, combine to form a three-dimensional network. Each of eight parallel high-gloss polished stainless steel sections supports three arms which each carries 26 globes. The globes are fitted with 24 LEDs and are individually controllable. Inside the globe, a dodecahedron-shaped flexible circuit board ensures that each globe is uniformly illuminated. 8-bit resolution in the primary colours red, green and blue opens up an immense colour spectrum of 16 million colours.

Every globe is individually controllable thanks to specially developed software. Real-time colour and light updates perpetually change the three-dimensional LED lighting installation's appearance, which lends it an amazingly live effect. The server generates an extremely wide variety of modes. A sky-watching camera installed on the roof is used to transfer images of passing clouds onto the Pixel Cloud. This diverse, ever-changing LED application includes films or sequences of prepared individual images and even supports interactive involvement of web communities. Colourful animations and playback of local weather phenomena provide constantly evolving spectacular simulations in the atrium space. Jason Bruges Studio has adjusted the spacing of the Ledon globe matrix so that it matches the grid of the facade designed by Foster and Partners. The internal glass facade is transformed by changes in colour and light. One bar at a time lights up, bringing the outdoor lighting mood indoors, from top to bottom, sharing it with those working in the offices.

LEDON

As an LED specialist for innovative light sources and sophisticated application solutions, Ledon has introduced a new dimension to light. Ledon is a competent partner driving innovation in the field of light emitting diodes. Relying on innovative LED technologies, Ledon focuses on the development, production and marketing of high-performance digital XED light sources as well as varied lighting solutions for individual applications.

LINKS

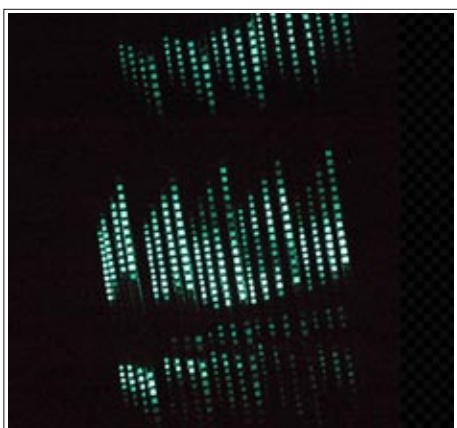
www.mediaarchitecture.org/?s=pixel+cloud

www.jasonbruges.com

www.ledonlighting.com/com/en/projects_f.htm



PIXY VOLUMIC VIDEO DISPLAY



Experientiae Electricae, Fr/Qc

Produced Arcadi (Fr) Videographe (Qc)
Partner Nanolight Technologies (Fr)
Hardware Experientiae Electricae with Nanolight
..... Paper.

➤ “ Pixy as developed by Experientiae Electricae is a three-dimensional matrix of 640 flat low consumption Nanolight sheets of paper, Lighting in 250 grey tones assembling in a volume display for low resolution video as an immersing proposition in architectural space”

Facade Typ and Geometry Indoor/outdoor Installation- immersing, open to participants
..... Can be fitted according to architectural space
Kind of Light Creation Square pieces Nanolight paper individually controllable in 256
..... grey tones fitted on standard casing
Resolution and Transmitting Behaviour..... The 3D matrix consists out of 640 pieces
..... 1"side displays video distributed in 3D in 256 grey tones.
Current Showreel..... The video would display strong experiences, Images of life and
..... sudden events in time according suddenly changing the smooth
..... perception of the flux of video as a transformation in the system.



Pixy

Pixy displays a low-resolution image that one can manipulate and physically distort; each pixel of the image is an autonomous physical element made out of electroluminescent paper. It can be moved. It can be placed on a volume. Pixy overcomes the immateriality of video image by materialising each pixel in an object a piece of light, Nanolight paper disposable in space. Each pixel can be independently manipulated in space. Pixy is conceived to be installed in 3D the image distributed in volume We conceived the Pixy as an experiment that puts in question the place of visual media in at architectural scales. Pixy lets us manipulate space to the benefit of images, physical space disappearing to be replaced by chosen videos. In an immersing process it transforms the room in a moving video object in direct relation both to the architecture of the space and to the viewer's perception.

All electronics is custom made by EE's engineer, Michael Roy, it is independent from the pixels, allowing installing them in any type of arrangement according to their low weight flat nature. Pixy is Values grey tones aesthetics and ecological low consumption.

About EE

Experientiae electricae deals with physical interaction, involving one or several users in a fixed or distributed space. EE interfaces image at urban scale with Pixy, a volumetric physical large-scale media display.

EE brings together artist Natasha Roussel and designer Michel Panouillot with electronic engineer Michael Roy. Each of us is driven by the desire to overcome his own medium, letting us produce complimentary development in our respective fields. We tend to deal with multiple discreet elements focusing on their connective possibilities to conceive a larger environment at city scale. Our environmental realisations are Pixy low-resolution volumic video display interrogating image in 3D space either connecting to architectural space or distributed in urban space.

Pixy is developed in partnership with Nanolight technologies (Paris) it is co-produced by Arcadi (FR), Videograph (QC). Developments have been undergone at Banff new media (CA); it was presented in 2008 at Subtle technology (CA) designer's day's Paris (FR) 100% Design (London). Currently, we are developing wearable in multiples in order to interfere our physicality them in an ephemera mobile network at city scale. EE is also in residency at LeCube/Art 300, working on a visualisation project of an artificial system: Symbiosis.

LINKS

www.mediaarchitecture.org/pixy-by-experientiae-electrica/

www.pixy.ca

www.experientiae-electricae.org

www.nanolight.fr



MEDIA FACADES FESTIVAL

WWW.MEDIAARCHITECTURE.ORG

STADION CENTRE, VIENNA



Olympiaplatz 2, Vienna, Austria; 2007

Owner BA-CA Real Invest GmbH & IG
..... Immobilien-Unternehmensgruppe
Architect Freimüller Söllinger Architektur
..... ZT GmbH, Vienna, Austria
..... (Regina Freimüller- Söllinger,
..... Clemens Kraigher, Markus Stöger)
Technical LED facade design
..... Philips Lighting
Display Content Internal content manager
LED Hardware Philips Lighting
Electrical installation ... Alexander WeckmerLicht und
..... Mediensysteme GmbH, Koningsbron,
..... Germany
Photos on Poster Rob Nelisse

➤ The CCS is a central communication spot for different groups of population. Sport is the central topic of design for the square surface and the mall and will be made visible through the media facade over long distances.

Freimüller Söllinger Architektur ZtgmbH“

Facade Typ and Geometry The application is designed to directly look into the LED video
..... Facade from multiple sites. The local traffic plan has been
..... modified for a save and pleasurable “drive by”. The LED facade
..... is curved around a large part of exterior of the Stadion Center
..... fitting in nicely with the shapes of the surrounding buildings.
Kind of Light Creation Strings of Philips CK Flex SLX LED strings positioned at a
..... custom 140mm pixel pitch and controlled by a Philips
..... VSM-PRO DVI Video system manager. The individual pixels have
..... a flat clear lens.
Position of light element Strings of LED's are mounted in a special diamond shaped
..... configuration on the lightweight steel frame allowing for
..... 85% transparency.
Integration into house automation The facade is controllable from special media system managed
..... by a dedicated content manager.
Current Showreel The facade shows scenes of the African continent such as land-
..... scapes, climatic events, and people of the country.

Urban Situation	The building and facade can be viewed from hundreds of meters away from many sites due to the curved shape of the facade
Current Show Reel	The facade is being operated only during night time, showing patterns and sometimes the UNIQA logo. The facade has been designed to portrait creative and commercial messages durin dusk and dawn
Current show reel	The LED screen is used for season dependent animations (Christmas, fireworks, etc) and advertisements of the shops inside the mall. All artistic and commercial content is managed by a special "Content Manager" Mag. Katharina Kammerer.

STADION CENTER

Stadion Center is a 21.000m² shopping mall, located just next door to the Ernst Happel football arena, which was used as one of the major arena's during the 2008 UEFA European Football Championship. The Stadion Center was constructed in 2007.

The main objective for the project was to create an inviting and attractive facade able to display artistic and commercial messages like animations, advertisement, logo's and ambient color effects.

The original idea of architect Regina Freimüller was to mount LED pixels on every cross section of a flexible steel net (part of the building is covered by such a net). Philips Vidiwall evaluated this concept and proposed a solution based on laser cut steel panels with 85% transparency. The pattern in the steel panels is diamond shaped.

The Facade transforms the round shape of the building during dusk and nighttime oven more because of the curved shaped creative LED display is different from the shape of the building. The 80m width and 8m height display (640m²) contains 37.620 individually controllable full color LED pixels. The system is connected to a dedicated media server "orchestrating" the digital experience

PHILIPS

As the world's leader in Lighting, Philips is driving the switch to energy-efficient solutions. With worldwide electrical lighting using 19 per cent of all electricity, the use of energy-efficient lighting will significantly reduce energy consumption around the world and thereby cut harmful CO₂ emissions. Philips provides advanced energy-efficient solutions for all segments: road lighting, office & industrial, hospitality and home. Philips is also a leader in shaping the future with exciting new lighting applications and technologies such as LED technology, which, besides energy efficiency, provides attractive benefits and endless new 'never-before-possible' lighting solutions.

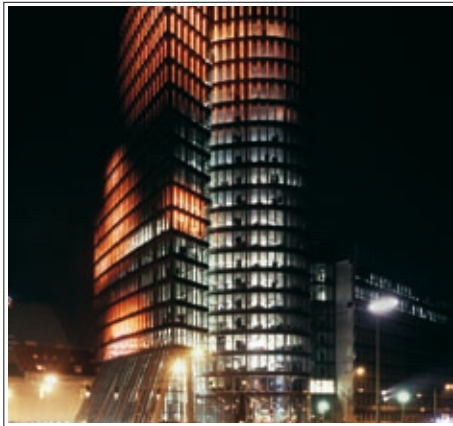
Some product highlights: Xenon car lighting, CosmoPolis street lighting, Living Colors ambience lighting

LINKS

www.stadioncenter.at
www.stadioncenter.at/webcam.html
www.ig-immobilien.com
<http://www.lichtundmediensysteme.de/>
www.freimueller-soellinger.at
www.realinvest.at
www.lighting.philips.com/vidiwall



UNIQA TOWER



Untere Donaustrasse 21, 1020 Vienna - Austria

Owner UNIQA Versicherungen AG
Architect Neumann und Partner
Facade Design Erich Mosbacher
Light Design Licht Kunst Licht AG, Stefan Hofmann
Display Content Mader|Stublic|Wiermann
LED Hardware Barco Belgium

➤ “I recently spent a week on my honeymoon in Vienna. Our hotel room balcony had a great view of the UNIQA Tower. It is fascinating and remarkable! My wife and I would just sit on the balcony with a glass of wine and watch in amazement at the building.”

Facade Typ and Geometry Double layered, curved glass facade with storey high intersections (ca. 7 000 M2)
Kind of Light Creation LEDs in aluminium housings, vertically mounted, positioned behind the first glass layer
Resolution and Transmitting Behaviour..... The pixel grid has a medium resolution (approximately 180 000 pixel) and is designed for higher viewing distances. Display and building structures are congruent which is fine regarding transparency issues.
Luminance..... Relatively bright - Use during daytime is not probably possible.
Urban Situation The building can be seen out of different angels from a higher distance
Current Showreel..... The facade is being operated only during night time, showing a timeless and abstract content/patterns and sometimes the UNIQA logo.



UNIQA TOWER

Opened in mid-2004, the UNIQA Tower next to the Danube channel is presented in a favourable light thanks to its unique LED installation. The 20-storey glass façade of the head office designed by architect Heinz Neumann thereby becomes a vivid surface of moving pictures. For this, a matrix of more than 180,000 individual pixels was integrated into the 7,000 m² structure of the façade. All pixel modules were installed on the ceiling-high profiles of the window façade in the façade gaps between storeys. The system allows the displaying of images in the quality of a digital video signal onto the UNIQA Tower. All necessary components have been thoroughly integrated into the existing façade structure. The display of images absorbs the architecture and lives off its dimension as well as its discreet integration into the building. The adaptable world of pictures based on abstract and representational motives gives additional life to the exterior shell of the UNIQA Tower.



Lichtkunstlicht

The company was founded in 1991 by Andreas Schulz in Bonn and Berlin, Germany simultaneously. The office has participated in over 180 projects in Germany and various foreign countries. The scope of projects encompasses office buildings, administrative buildings, museums and cultural buildings, entertainment and gastronomic projects, buildings of traffic and transport, representative and governmental buildings as well as private residences.

Any lighting solution starts out with a vision.

It is our aim to use lighting design and its means to materialize the spatial qualities of architecture. We believe, lighting design is not mainly lighting fixture design. Hence, we try to realize our projects with the fewest possible elements and to keep lighting fixtures out of sight wherever possible.



Uniq

Across 20 markets, one theme takes centre stage: human beings

Developed as recently as 1999, UNIQA Group Austria has not only established itself brilliantly on the domestic market, but has also become one of the leading insurance groups in Central Europe. Its success is based on 2 cornerstones: its target-oriented policy of expansion and its innovative range of products. By this means, UNIQA is already active on 20 markets while serving approximately 6 million customers in Austria and throughout Central and Eastern Europe. A total of 17,500 staff members see to it that 13 million contracts are serviced best. Being the insurance company of a new generation, UNIQA focuses on the dialogue of cultures and people directly at each specific location. The UNIQA Tower in Vienna, the headquarters of the group, is the architectural expression of the UNIQA label, which will celebrate its decennial market presence in November 2009.

LINKS

www.mediaarchitecture.org/uniqa-tower-media-facade

www.mosbacher-plan.com

www.lichtkunstlicht.com

www.emporis.com/ge/wm/bu/?id=102034

www.tower.uniq.at

www.architekten24.de/projekt/uniqa-tower-wien/uebersicht/index.html



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