Creativity in architecture and design with international projects from the fields of offices and communication, presentation and retail, education and science, art and culture

Topic:
MAKING USE OF IDEAS
What makes us creative? How are lighting solutions and products created which set new standards which break with conventional patterns of thinking and which can provide inspiration for new solutions over years to come? Creativity and innovation are central elements in today’s knowledge-based society. Both are closely linked, because creativity is an essential prerequisite for the innovative capacity of a company.

I see the management’s job as being to promote creativity and innovation. Creative energy cannot be measured or imparted by training. Our corporate structures allow a great deal of intellectual freedom and tolerance, which means that unconventional solution approaches can also be developed. We wish to encourage an atmosphere which allows the unusual, which is not subject to conventions. This even includes allowing mistakes, because new knowledge can be gained as a result of these. We achieved a creative and economic success more than 20 years ago with the development of the “Mellow Light” lighting concept, and since then, with our network, we’ve realised many developments which have set new standards.

Creativity has many aspects, in the way it relates to art and design, to science and even entrepreneurial skill. The common denominator is that creativity provides the basis for the successful implementation of innovative ideas in all areas. Our partnerships with investors, architects, planners, designers, artists and users allow this ideal dialogue, which ultimately enriches all involved. In creating free scope for creativity, in encouraging flat hierarchies which make it possible for each employee to question existing concepts, we ultimately increase our innovative capacities and thus also our competitiveness. The project solutions which we are presenting in this issue are good examples of this.

Incidentally, did you know that 2009 was the European year of Creativity and Innovation? I dare say this was overlooked due to the economic problems. We at Zumtobel make each year a high point in terms of creativity and innovation. At Light+Building in Frankfurt we are presenting solutions and products which demonstrate our creative capabilities.

We look forward to developing a creative exchange of ideas for the future with you.
# LIGHTLIFE 4

## Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
</table>
| 1    | Editorial: What makes us creative?  
by Martin Brandt  
CEO Zumtobel AG |
| 2    | Contents |
| 4    | COOPER UNION IN NEW YORK  
Meteorite in Manhattan  
by Amelie Znidaric |
| 10   | MUSEUM M IN LEUVEN  
Labyrinth of art  
by Sandra Hofmeister |
| 16   | PROJECTS IN BRIEF |
| 18   | LED – THE AGE OF DIGITAL LIGHTING  
Interview with Stefan Behnisch and  
Prof. Andreas Schulz |
| 23   | QUANTUM LEAP IN LIGHTING  
The Making of Mellow Light V –  
Interview with James Irvine |
| 28   | OFFICES IN  
HANNOVER UND MÜNSTER  
Atmospheric workplaces  
by Katja Reich |
| 34   | COMMENT  
Creative dreams  
by Max Keller |
| 36   | L’ECLAIREUR DESIGNER SHOP IN PARIS  
The scene is set  
by Hildegard Wänger |
| 40   | THE KHBO IN BRUGES  
Landmark  
by Kerstin Schitthelm |
| 46   | News & Stories |
| 49   | Imprint, Project team |
“To have imagination doesn’t mean to dream up something; it means to make something from what there is.”

Thomas Mann
The angular facade of the college building thrusts between its historic neighbours like a glowing meteor. In the design sketches by Morphosis Architects, the incisions into the body of the building become organically formed slots.

The new college building of the Cooper Union rises like a metallic monolith above New York’s East Village. Pritzker prize winner Thom Mayne’s spectacular architecture incorporates an equally exciting lighting design.
By day, the building is sheathed in metallic anthracite-grey convolutions (top). The central stairwell spirals skywards like a light sculpture and is lit from above by natural light (right). Section on a scale of 1:750 (bottom).

It’s as though a meteorite had landed in New York. Yet while a real asteroid of this size would have destroyed all of Manhattan on impact, this one stands peacefully between historical mansard-roofed buildings and the new buildings typical of this part of town. By day, depending on the weather, the monolith gleams white to metallic anthracite grey, its surface angular and convoluted. At night it glows gently from within. Two large slots, which can be interpreted as a cross or calligraphic symbol, provide a view of the inner structure – and of the students, for whom the building was designed.

Cooper Union houses the college for architecture, art and engineering which was founded 150 years ago. Pritzker prize winner Thom Mayne’s architectural meteorite, the new building, has come to earth opposite the main building of the college on Cooper Square. Although this caused no damage to neighbouring buildings, it did cause vibrations: the Californian architect’s design polarises New Yorkers - it breaks with accepted conventions and is ahead of its time, just like the college’s founder Peter Cooper, an inventor and railway magnate, who had a lift shaft installed in the main building back in the 19th century, even though the lift to fit it didn’t exist until the 1970s.
What was regarded as revolutionary in the past is today, transformed into its opposite, a symbol of provocation: in Thom Mayne’s new building the lift only stops on three of the nine floors. If they had not already been drawn there by its breathtaking architecture, this fact alone leads students and visitors to the stairwell. Like a gigantic vortex, the expansive spatial structure bores into the body of the comet. Accented by a giant sculptural lattice-work, the architecture is additionally dramatised through light and shade as well as by the milkily glowing balustrades on the upper floors. The spiral runs upwards to the ceiling where it opens to the sky. Natural lighting floods down to the ground floor level through a large window in the roof.

The interplay of light and shadow unfolds its dramatic effect in the stairwell. The gigantic vortex is further emphasised by the sculptural latticework. The spacious stairs are also a central meeting place for the Cooper Union students.
This mix of natural and electric lighting is characteristic of the building, says Teal Brogden, Senior Principal of the Los Angeles office of Horton Lees Brogden Lighting Design, and the lighting designer responsible for the project. “The wonderful thing about natural lighting is that it continually changes in colour and intensity, depending on the weather, the time of day and year. Electric lighting, on the other hand, tends to be constant and in the warmer end of the spectral range. This worked well for us to support the concept that as you approached the heart of the building, the light became warmer and more intense – like the center of a meteor.”

Thus, visitors in the stairwell experience varying moods: bluish natural lighting predominates on the upper storeys, whereas lower down this is mixed with increasingly warm electric lighting. The lighting designers were able to implement their striking concept using only one type of spotlight, the Vivo spotlight system.

Where there is light, there is also shadow: this dialectic has been quite deliberately dramatised in the architecture of the Cooper Union. The New York Times speculated on Tom Mayne’s architectural design in the following terms: “Like other radical architects of his age, he is more interested in the dark, hidden corners where people can loiter, get into mischief, escape from authority.” Teal Brogden laughs at this criticism of the new college building and explains: “In the atrium, we intentionally left a few corners, behind the stairs for example, somewhat darker. When we finished, the client asked whether we had forgotten something there. We explained that, in the entrance area in particular, we wanted to achieve a sense of drama. That’s why only parts of the space are brightly lit and illuminated like a stage. The rest is shadow.”
In other areas of the building, the freedom to play with light and shadow was limited by specific functional considerations. In the laboratories, around twice as many luminaires are used as in the classrooms, in order to allow fine differences in colour in liquids and other details to be recognised more easily. In the classrooms and also many of the laboratories, a different technical challenge had to be overcome: the lighting panels which are set into the ceilings had to be integrated into the heating and cooling elements, which are also recessed. A tricky task which was readily accepted in the interests of the general environmental compatibility of the building. Thom Mayne’s design is not just setting new standards aesthetically – the new Cooper Union building is on a trajectory to becoming one of the first LEED Platinum academic buildings in the United States. That would surely have pleased Peter Cooper too.

Lighting solution
Atrium and stairwell: spotlights VIVO, spotlights SPIRIT,
Classrooms, laboratories, artists’ studios, conference rooms: downlights (1 and 2-lamp, integrated into the heating and cooling panels in the ceiling),
Offices: SPHEROS, Laboratories: continuous row lighting system RTX,
WCs: special solution downlights, Art gallery: trackhead and track

The complex spatial structures are dramatised using individual spotlights. According to the concept of Horton Lees Brogden Lighting Design, art and natural lighting, warm and cool colour temperatures alternate to create varied lighting moods.
Old and new art, Medieval and modern: Belgian architect Stéphane Beel has developed an architectural concept which links the historical cabinets in Museum M in Leuven with the modern exhibition spaces of the new building. Differentiated lighting is used to bring out the qualities of the artworks in different ways.
Window on the city – with its large panoramic window, the new building provides views both from inside the building and from the outside (left-hand side). The glowing walls and wooden paneling of the magnificent historical cabinets stand in stark contrast to the new building. LED spotlights illuminate the exhibits in the showcases.
In the rooms of the old building, delicate Supersystem tracks are suspended from the ceiling on barely-visible wires. (right-hand side, top). Old and new come together around a shared inner courtyard. Floor plan scale 1:750

Well-known for its university, Leuven, situated around 20 km east of Brussels, has recently also acquired a reputation as an outstanding location for art: after five years of planning and construction, Museum M in the city centre opened in September 2009. With a collection including, in total, 46,000 objects of Medieval and contemporary art, the museum has become the central institution preserving the cultural heritage of the former Duchy of Brabant and also serves as a bridge between historical times and the present. “Centuries old yet bursting with life”, the motto of the capital of the province of Flemish Brabant also applies to the new museum: with several entrances, the extensive complex is integrated into the historical city centre and combines within itself different architectural styles and epochs, and provides a lively, multi-layered venue for art.

“Our aim was to make the museum a place in which art can flourish and where it can be enjoyed, instead of locking it away”, says Stéphane Beel, explaining his design. The architect and his Ghent firm are regarded as museum specialists who have already made a name for themselves with well-known projects such as the glass pavilion in front of the Rubens House in Antwerp or the extension of the Centraal Museum in Utrecht. In Leuven, Beel opted for the difficult strategy of bringing together old and new as independent spatial structures around a central inner courtyard. The earlier academy building and the Vander Kelen-Mertens palace – both buildings are integrated into the Museum M – were carefully restored in accordance with conservation rules and connected via a bridge with a modern new building. In total, 6,500 square metres of exhibition space are distributed between the historical and the modern rooms within the labyrinthine museum complex. Whereas in the existing buildings the colourful splendour of past ages is displayed in small cabinets with wooden ceilings and wall panelling, the new building has a sober and low-key appearance.
The differentiated lighting concept creates different lighting moods in each room. As one walks around, rooms with emphasised zones of light and shadow alternate with spacious evenly-lit galleries (bottom).
It was this clear contrast and opposition of old and new which Stéphane Beel wished to emphasise. In future, old masters will be exhibited in new gallery spaces and vice versa. A strict allocation of the exhibition spaces is not planned.

“The conservation and exhibition of art, as well as the art itself, do not demand a specific building type”, believes Stéphane Beel. Instead of monotonous, isolated rooms, he has created a varied and versatile museum complex with some spacious, high-ceilinged rooms, as well as smaller rooms with lower ceilings. The architects’ lighting concept reflects the character of the individual galleries and reacts sensitively to their specific spatial requirements. For example, the heritage-protected art cabinets of the existing buildings are illuminated using delicate Supersystem tracks suspended below the old wooden ceiling on barely-visible wires. Where needed, vertical wall washers provide flexible, expressive accent lighting of the exhibits. “The use of wallwashers and wide-field reflectors allows us to avoid stark contrasts between the exhibited works and the surrounding walls” says Jan Van den Bergh of RCR studiebureau, responsible for the electrical design. Three-phase tracks with spotlights are used for the general, compact and flexible lighting. In the significantly more spacious white-cube rooms of the new buildings, the Tecton track lighting is supplemented with Tempura LED spotlights, the colour temperature of which can be adjusted within the range from 2700 to 6500 K, depending on the requirements of the artworks. The LED lighting also prevents the art objects being damaged by thermal or UV radiation.

The unfocused track lighting on the ceilings of the rooms in the new building supports the neutral white cube concept. Individual art objects are additionally lit using LED spotlights with adjustable light temperature (top and right).

The medieval sculptures are displayed to particularly striking effect in the modern exhibition spaces. Their glowing colours contrast vividly with the low-key architecture (right-hand side).
The museum’s first special exhibition following the opening, which was attended by Princess Mathilde of Belgium and Princess Máxima of the Netherlands, is devoted to the living Belgian artist Jan Vercruysse and the old master Rogier van der Weyden. Around 100 masterpieces associated with the famous Dutch master have been brought together from European and American collections; many of the sensitive painted panels are being exhibited for the first time in Leuven – displaying a wealth of light and colour which allows Museum M to shine in the Flemish manner.

Lighting solution
Special solution with TC-L 36 W wallwasher, SUPERSYSTEM 3-phase track, TECTON with track module, LED emergency lighting RESCLITE, LED spotlight TEMPURA, recessed luminaires SLOTLIGHT II in IP 54, surface-mounted luminaire PERLUCE
WARM WELCOME IN LONDON
Zumtobel creates impressive foyer lighting at Ropemaker Place

Due to its dimensions alone, the 10.5 m high foyer in the new Ropemaker Place office tower on the edge of the City of London encourages visitors to enter, pause and look around. The visitor’s gaze is drawn irresistibly from the large windows to the comfortable seating areas and walnut-clad walls, and finally to the ceiling. Gently undulating like a wave, the ceiling forms an eye-catching structure. Distinctly pleasant in quality, the light floods from the ceiling into the spacious entrance foyer and beneath the canopy of the building.

The plastic waveform ceiling system was developed jointly by Zumtobel and Arup Associates. The illuminated wave-formed corrugations in the ceiling consist of white microperforated PPC steel sheeting with an embedded acoustic mat. Concealed beneath a transparent acrylic covering are individually-controllable fluorescent tubes which serve as direct/indirect light sources. In addition, the waveguide technology which is used guarantees very good protection against direct and reflected glare, producing balanced lighting with brilliant lighting quality.

Client: British Land, London/UK
Architecture: Arup Associates, London/UK
Lighting design: SAS International, Reading/UK, Stortford Interiors, Bishop’s Stortford/UK
Lighting solution: Waveform MPO ceiling panel system, 2LIGHT MINI and PANOS M downlights, MILDES LICHT IV recessed luminaire, floor- and wall-mounted ORILED luminaires, HELISSA wall-mounted luminaire, Safety lighting: ARTSIGN, PURESIGN, PROOFSIGN
(Photos: David Thrower/Redshift Photography)

TECHNOLOGY IN A NEW LIGHT
Technical Museum Vienna

The Technical Museum in Vienna is the only national museum in Austria which is dedicated to the history of technology and the natural sciences. The entire lighting of the Technical Museum has been optimised under the name “Light & Climate”. The renovation has led to a 70 % reduction in the connected load.

The new lighting concept involves a combination of direct and indirect lighting which is intended to improve the quality of the lighting in the museum. The indirect lighting, which is housed in architecturally sophisticated lighting channels, provides an illuminance of 40–50 lx directly on the exhibits. The lighting is dimmable. The additional accent lighting is realised using size 2 Arcos spotlights which are fitted with 20 or 35 W HIT bulbs. This led to an impressive energy saving in comparison with the existing lighting using 100 W halogen spotlights.

In total, 1,400 Arcos spotlights have been used in the Technical Museum, over three floors. A big advantage of the new lighting is the reduction in the amount of heat given off into the rooms, which significantly improves the climate conditions, especially in summer.

Client: Technical Museum, Vienna/A
Lighting solution: ARCOG spotlights, specially-designed indirect lighting profile
(Photo: Bruno Klomfar)
WELL-BEING AT THE TOUCH OF A BUTTON
Journey through light at the Grand Resort Bad Ragaz

With its new spa suites, the Swiss 5-star resort Bad Ragaz has created an oasis for the senses. Soft materials, harmonic colours, sparkling crystals and above all the light – at times brilliant, at times glowing softly, at times radiating colour – convey an unforgettable aura of security, a place where one can feel at ease. Guests are indulged with every convenience. This is also true of the lighting, as interior designer Carbone passionately explains. “For us, light is everything. Light brings out colours, which in turn awaken feelings.” For this reason, the designers and the client also chose to use the sophisticated lighting management system ZBOX: the lighting is bright and inviting as one enters, unobtrusive for watching television, focused for working and pleasantly subdued at night. Four control points at the entrance, desk, bed and in the bathroom create the desired lighting moods at the touch of a button.

Equal attention was paid to the spa equipment: positioned beneath precious Swarovski crystals, every session in the hot tub becomes a special indulgence: the LED downlights installed above the crystals create a sky above the foam bath which sparkles in red, green, yellow or blue, as desired. Consisting of Slotlight light lines as well as Micros and Panos downlights, the lighting can transform the bathroom quickly and simply, using the single Circle control point, into a real oasis of well-being for body and spirit.

Client: Grand Resort Bad Ragaz AG, Bad Ragaz/CH
Architecture Spa Tower: Hilmer, Sattler & Albrecht GmbH, Munich/D
General design: Burckhardt+Partner AG, Bern/CH
Interior architecture: Carbone Interior Design, Wolfhalden/CH
Lighting design: Carbone Interior Design, Wolfhalden/CH (hotel rooms);
Reflexion AG, Zurich/CH (Tamina Therme, kursaal and outdoor areas)
Electrical design: R + B engineering ag, Sargans/CH
Electrical installation: Alpic InTec Ost, Sargans/CH
Lighting solution: ZBOX lighting management system, MICROS LED-RGB downlight, PANOS Q downlight, SLOTLIGHT recessed luminaire, MILDES LICHT IV surface-mounted luminaire, TECTON continuous-row lighting system, RHAPSODY wall luminaire, HELISSA wall luminaire, LED light lines, LIGHT FIELDS lighting system
(Fotos: Jens Ellensohn)
LED –
THE AGE OF
DIGITAL LIGHTING

Where does LED technology go from here?
Questions and answers from the everyday practice
of an architect and a lighting designer

LED seems to be the new buzzword: no sooner do you say
these three letters than a controversial discussion of the
pros and cons of the new technology ensues. On the one
hand, people are enthusiastic about the unlimited creative
possibilities it offers, yet on the other hand designers and
users are concerned about the lack of planning reliability
associated with a rapidly developing technology and
increasing numbers of new market participants.

The fact is that, with LED, digital technology has ar
dived even in the lighting industry. And as with computer
technology, the leaps in performance are gigantic. Thus,
LED solutions are being presented at Light+Building 2010
which are far in advance of conventional technology in
terms of efficiency.

Stefan Behnisch, who, with his future-oriented designs,
was the first architect to create buildings with 100%
LED-based lighting, is convinced that the new technol-
ogy could long since have become much more well-
established. “More courage to embrace new ideas” is
his motto. Andreas Schulz, CEO of LichtKunstLicht AG,
Bonn/Berlin takes a rather more cautious view of the LED
euphoria: “What we need from the industry is comparable
data and planning reliability”. Lightlife caught up with the
two free-thinkers to talk about the possibilities and limita-
tions of the new technology.

Is LED, for you, the revolution that everybody is
talking about?
Stefan Behnisch: Yes, I believe that LED marks a new era in
lighting, and that it deserves more attention. I’ve always
been baffled at the industry’s cautious attitude towards LED.
But I believe, for various reasons, that LED technology is a
technology of the future. Probably not the only one, but there
have never been simple truths, there’s never been just one
technology. The history of technology shows that there is no
definitive technical truth. We had the light bulb, the energy-
saving bulb, there was the fluorescent tube, and before the
fluorescent tube there was the neon tube.
Andreas Schulz: For me, the development of the LED is a true
revolution. However, it’s still in the early stages, in terms of
changing our lives, but it is in fact revolutionary, because it
makes a lot of things possible which we as lighting designers
have always wanted but which were difficult to achieve with
conventional light sources.

“I believe that LED marks a new era in lighting, and that it deserves more attention.”
Stefan Behnisch
What are, for you, the most important properties, the most important advantages of LED, as it is available today?
Andreas Schulz: LED is already available in good quality, it’s just that it’s still very expensive in comparison with other light sources. Advantages certainly include controllability, the ability to change the colour temperature and of course the compact dimensions of the light source, which make new luminaire designs possible.
Stefan Behnisch: The most important advantage of the LED is its long service life. Also, there is less toxic waste and they require less maintenance. The great benefit of the development of LED is that we need less material, less plastic, less chrome, less copper, and the LED has the advantage that it can be very flat, that is to say it doesn’t necessarily require a reflector.

So how far along is your customer, the developer, the investor, when it comes to LED technology? Are they already well-informed, do they appreciate the advantages or do they still see it as an experiment?
Stefan Behnisch: It’s not really an experiment any longer. In my opinion the lighting industry has failed to get this across adequately. But you have mentioned one keyword: the investor. Unfortunately, that’s a problem. The investor has very little interest in the initial additional costs, because after all they are not responsible for the maintenance of the building. Convincing self-users is no problem at all. People who build for themselves see the advantages immediately. Certainly that’s been our experience with the two projects where we have only used LEDs.

Do the technical possibilities of the LED mean you are involved more as a luminaire designer?
Andreas Schulz: We see ourselves more as luminaire developers or design engineers. When we develop an LED illuminated ceiling with which we want to create lighting suitable for a museum, in a certain sense we are also luminaire designers, but it is actually a technical application. Potentially, we can also work creatively, and there are a few really big projects where we use designed luminaires. However, we are primarily concerned with offering technical solutions which perhaps may not be industrially available, but which are necessary for our uses. Particularly in museums and very large commercial projects, special applications are often required. Because of our technical know-how and our contacts within the industry, we can come up with an application which is not yet available on the market, but which is certainly state-of-the-art.
Stefan Behnisch: I’m not a designer, I’m an architect. I don’t even think that I can design particularly well, but one of the reasons why I find LED so exciting is that the technical prerequisites are very simple, and this means that I can use a relatively functional design. This is where I get my creative motivation. LED is a new concept, and in my view there are two ways to go in lighting design: there is the lighting fixture as an object, as sculpture. And then there’s this illuminating “nothing” – that’s an approach which I find very exciting

What support you expect from the industry?
Andreas Schulz: We are waiting quite impatiently for a certain modularisation and also standardisation of this light source. With every technical specification which we receive from the manufacturer, we don’t know whether it is comparable with others. In terms of efficiency, service life, heat emissions and so forth, we need reliable data which help us designers to arrive at objective estimates. Since our projects run for a very long time, planning reliability is extremely important to us. If, one and half years ago, we had been thinking about the type of LEDs which we have today, we would have had to have been looking far into the future; such advances in performance could not have been foreseen at that time.

Stefan Behnisch: The rapid development, I have to say, presents a special challenge. We are talking about a light source the big advantage of which is long life; but we find at the same time that this light source is currently undergoing rapid development, a bit like the computer in the 1990s - each year the price halves and performance doubles. Naturally, this somewhat counters the advantage of long life. Another point is the luminaire manufacturers, who should really now also be making use of the technical opportunities to come up with a revolutionary new luminaire design. We all need to rethink our approach, even though people are reluctant to depart from tried and tested technologies in order to embrace completely new concepts. That’s always a risk.

What makes LED so popular?
Stefan Behnisch: In discussions, we frequently find that not only does the LED luminaire have technical advantages, at the moment it also has a big image advantage, in terms of innovation, environmental technology and so on. The debate about the prohibition of light bulbs has also had a positive influence on the image of LED. It is in fact the right direction to take when it comes to reducing material use and construction volumes.
Andreas Schulz: Yes, it’s got a lot to do with image. We’re currently working on a project for a big steelmaking group. In the headquarters, we are using big LED lighting solutions for the conference rooms in the management areas. They are more expensive, but of course in this way the company is demonstrating its progressive attitude and the energy-saving potential represents sustainability in practice. The LED is clearly very suitable for this purpose.

What do you see as being the advantages of the OLED and how do you see it developing?

Andreas Schulz: The OLED is an LED light source which can generate a diffuse, flat light, which the individual LED light source is not able to do. When I imagine that in future we will have OLED light sources which we can, for example, use like diffuse, large panel lighting, that will be a big step forward, because suddenly we no longer need installation depth. It’s a tempting idea that at some point we will be able to install a light source directly on the ceiling, or turn a window into a luminaire. However, I believe it will be many years yet before the technology is that far advanced.

Stefan Behnisch: Essentially, the OLED achieves what I’ve always tried to accomplish with the LED. The “nothing” which illuminates, the surface which illuminates. I believe that the LED was a minor revolution. But it still works with the illuminating point, and not the illuminating surface. The OLED is clearly the next step. I’m assuming that at some point it will also become sustainable in terms of price.

“For me, the development of the LED is a true revolution. However, it’s still in the early stages, in terms of changing our lives, but it is in fact revolutionary.”

Andreas Schulz
HIGHLIGHTS '10

New products and additions to existing ranges

Spring 2010
Highlights Spring 2010

MELLOW LIGHT V
DISCUS
PANOS INFINITY
ELEEA

Offices and communication
5. CAPA
6. OPURA
7. LITENET graphics
8. CIRIA
9. CRAYON

Art and culture
10. ARCOS LED
11. ARCOS Wallwasher
12. ARCOS size 2
13. SUPERSYSTEM 3-phase LED lighting system
14. SUPERSYSTEM LED downlight, 1-spot, 4-spot module
15. SUPERSYSTEM LED pendant luminaire
16. LEDLINE

Presentation and retail
17. ONDARIA
18. TECTON Shop reflector
19. TECTON LED
20. VIVO LED R

Hospitality and wellness
21. LQ Chandelier
22. ALVA
23. CARICA
24. MICROS D LED
25. PASO II

Industry and engineering
26. TUBILUX LED
27. VALUEA

Health and care
28. VE-F
29. CONBOARD NP

Façades
30. HILIO
31. HEDERA
32. CAPIX

Initiatives
33. eco*
34. ecoCALC
35. dim²save
36. 5-year guarantee
With the new MELLOW LIGHT V luminaire range, the well-known product characteristics have been extended and a quantum leap in efficiency has been achieved. Its light output ratio of up to 87% exceeds even today’s superior efficiency requirements. To achieve this goal, Zumtobel has developed innovative technologies to help MELLOW LIGHT V achieve optimum light output ratios. High-performance reflectors, thermal management and glare-free lighting chambers make the luminaire the unchallenged number one in its class. The luminaire is available both as an LED version with stable white light (4,000 K) and with conventional fluorescent lamp technology. Two optics, the brightness optic for utmost efficiency and the micro-vane optic, provide maximum lighting comfort for all applications.

Design: James Irvine
www.zumtobel.com/ml
DISCUS
LED spotlight system

Form follows LED – thanks to its flat, low-profile design, the DISCUS spotlight, which was especially designed for LED technology, blends perfectly into all kinds of architecture. The innovative design concept ensures purely passive cooling of the 30 W LED module, in combination with very compact dimensions. Spotlight versions for miniaturised HIT lamps, combined with Zumtobel’s tried-and-tested reflector technology, were added to complement the portfolio. The track-mounted and ceiling-recessed versions of DISCUS allow integral lighting solutions and efficient lighting for retail spaces using state-of-the-art light sources. The spotlights are made of die-cast aluminium and are available in black, silver and white. The newly developed track-box adapter platform features a compact, unobtrusive design, emphasising the minimalist spotlight concept.

Design: EOOS
www.zumtobel.com/discus
Thanks to minimalist design and a system efficiency of up to 77 lumens per watt, high-quality LED technology has by now outcompeted the traditional compact fluorescent lamps in terms of efficiency and lighting quality. Thanks to Christopher Redfern’s design, the successful PANOS downlight range has been updated to meet modern requirements. The luminaires’ luminous flux of more than 1,800 lumens is achieved with a power consumption of only 27 W; for 2,400 lumens, the PANOS INFINITY downlight requires a system output of only 36 W. This makes the LED downlight up to 70% more efficient than downlights fitted with conventional compact fluorescent lamps. With its excellent colour rendition index of Ra > 90 and stable colour temperatures over the entire service life of 50,000 hours, the downlight is first in class.

Design: Christopher Redfern
www.zumtobel.com/panosinfinity
ELEEA
Direct/indirect luminaire

Thanks to a light output ratio of over 90% and a low installed load, the ELEEA direct/indirect luminaire is especially efficient. ELEEA is available as a single or double-length luminaire or as continuous-row system and can be used as a surface-mounted or pendant luminaire. The luminaires are optionally available with louvre optic or LRO optic or, upon request, even as a hybrid luminaire, with LEDs providing the indirect light component. For use as a continuous-row system, straight and L connectors are available.

Design: Ingenhoven Architects
www.zumtobel.com/eleea
CAPA
Free-standing luminaire

The CAPA free-standing luminaire boasts maximum efficiency thanks to a reduction of the installed load by 50%. The high direct light component and the luminance reducing optic create optimum conditions in the task area without any annoying reflections. Rounded edges and a slim stand give the free-standing luminaire an unobtrusive appearance. Energy consumption is further reduced by the SensControl II control unit featuring integrated constant light control and reliable presence detectors.

Design: Titus Bernhard Architekten
www.zumtobel.com/capa

OPURA
Free-standing luminaire

OPURA provides perfect lighting for desks and is optionally available with compact fluorescent lamps or as LED hybrid solution: the free-standing luminaire is the first to allow separate control of the indirect and direct components. High-quality MPO+ technology prevents annoying reflections on the screen. OPURA also impresses with its particularly soft design language without any visible transitions between materials. The newly developed SensControl II control unit allows maximum energy savings. Clearly identifiable symbols displayed on the ergonomic surface facilitate operation.

Design: Peter Andres & ON Industriedesign
www.zumtobel.com/opura
7

LITENET graphics
Software

With LITENET graphics, a milestone in the graphic visualisation of buildings has been established. Matched to the requirements of facility management, the software provides unique opportunities of navigating, monitoring and operating lighting systems. User-optimised display options include continuous zoom, integration of pictures and CAD plans, layers to be displayed or hidden, and buttons to be freely defined.

www.zumtobel.com/litenet

8

CIRIA
LUXMATE control point

The LUXMATE CIRIA control point can be used for optimum control not only of the lighting system, but also of all other building services within a room. CIRIA impressively combines an intuitive and easy-to-use operating menu, linear design and an easy-to-clean glass panel, either in black or white. Thanks to its compact design, the control point can be installed in one single wiring box complying with European standards.

Design: Matteo Thun
www.zumtobel.com/ciria

9

CRAYON
LED downlight

The CRAYON LED downlight relies upon utmost functionality in practical applications. Thanks to its excellent colour rendition, two available light colours and its high colour stability, CRAYON – as surface-mounted or recessed luminaire – is particularly suitable to provide ambient lighting for public spaces and circulation areas. In addition to 650 lm, CRAYON is now also available with a luminous flux of 1,000 lm.

www.zumtobel.com/crayon

10

ARCOS LED
Spotlight system

The reliable ARCOS spotlight system is rounded off by three new LED versions: The RGB LED module allows lighting solutions in dynamic colours and variably adjustable colour temperatures ranging from 2,700 to 6,500 K. The ARCOS models with stable white light and adjustable colour temperatures ranging from 2,700 to 4,200 K (tunable white) boast a high colour rendition index, providing gentle and efficient accent lighting.

Design: David Chipperfield
www.zumtobel.com/arcos

11

ARCOS Wallwasher
Spotlight system

The ARCOS wallwasher provides uniform vertical light distribution to illuminate surfaces and larger objects homogeneously. The wallwasher also impresses with its slim and reduced design and its clear lines. The T16, HIT-DE or QT-DE lamps to be fitted can be replaced completely without tools.

Design: David Chipperfield
www.zumtobel.com/arcos
12
ARCOS size 2
Spotlight system
The compact ARCOS spotlight in size 2 features reduced dimensions to illuminate smaller rooms at shorter distances. Optimised for compact light sources such as LED, halogen or HIT lamps, the spotlight perfectly blends into every room ambience. The new adapter concept impresses with intuitive control and easy handling. The reduced stylistic idiom matches the modern design concept of the ARCOS range.
Design: David Chipperfield
www.zumtobel.com/arcos

13
SUPERSYSTEM
3-phase LED lighting system
The SUPERSYSTEM 3-phase LED lighting system can be mounted onto all established Zumtobel 3-phase tracks. The elegant spots are available for 2.5 W or 4.5 W lamps and yield a luminous flux of up to 260 lm despite their minimal dimensions. Hence, SUPERSYSTEM can be used even where it is not possible to install the well-known H or S profiles, or where tracks have already been installed.
Design: Supersymetrics
www.zumtobel.com/supersystem

14
SUPERSYSTEM
LED downlight, single and 4-spot module
As single spot or as 4-spot module, the SUPERSYSTEM range appears at its best: High-precision lighting requires a power consumption of only 2.5 or 4.5 W. The compact lighting heads, which can be swivelled in/out and rotated, with a luminous flux of up to 260 lm per spot, allow for a focused and energy-saving illumination of objects, while hardly interfering with the appearance of the ceiling.
Design: Supersymetrics
www.zumtobel.com/supersystem

15
SUPERSYSTEM
LED pendant luminaire
With its highly efficient LED spots that can be flexibly aligned, SUPERSYSTEM’s pendant version provides high-precision accent lighting. At the same time, the built-in T16 lighting module directed downwards creates soft ambient lighting. Optionally, warm white or intermediate white fluorescent lamps can be fitted. Thus, prestigious areas or contemporary-style domestic areas, in particular, can be provided with high-quality illumination.
Design: Supersymetrics
www.zumtobel.com/supersystem
16

LEDLINE
LED pendant luminaire

LEDLINE combines sophisticated design and high-quality materials with state-of-the-art lighting technology. Thanks to its extremely slender dimensions (only 31 mm wide and 66 mm high), LEDLINE boasts an elegant look that blends easily into any type of architecture. The pendant luminaire is available in lengths of one, two or four metres. Its high-quality surface is made of specular aluminium.

Design: Sauerbruch Hutton
www.zumtobel.com/ledline

17

ONDARIA
Opal circular luminaire

ONDARIA’s calm design is characterized by a homogeneous round silhouette and soft contours. The surface-mounted, opal circular luminaire is available in the sizes 440, 640 and 940 mm and can easily be suspended using a separate cord suspension. For mounting into the ceiling, a separate mounting frame is provided. Through backlighting of the opal diffuser and a discreet indirect light component, a harmonious room atmosphere is created.

Design: Stefan Ambrozus
www.zumtobel.com/ondaria

18

TECTON
Shop reflector

The TECTON shop reflector is an economically efficient alternative to present goods in shops and supermarkets in an attractive light using direct/indirect light control. Thus, the shop reflector easily achieves the required vertical and horizontal illuminance levels. The sophisticated perforation of the reflector ensures a balanced direction of light. In combination with TECTON standard products, a perfectly aligned high-quality continuous-row lighting system is created.

www.zumtobel.com/tecton

19

TECTON LED
Continuous-row lighting system

The LED luminaire requires the same installation procedure as the standard luminaire – absolutely flexible without any tools. Hence, a switch to the new technology can easily be implemented, even within existing TECTON projects. The LED’s long service life is ensured by optimum thermal management within the entire system.

Design: Billings Jackson Design
www.zumtobel.com/tecton

20

VIVO LED R
LED spotlight and LED pendant luminaire

The unique optic system in Q111 design conceals an invisible LED light source with perfect glare control. Incorporating state-of-the-art technology, it provides a high-precision beam pattern of < 20° and excellent colour rendition of >90, especially in the red spectrum. Moreover, the VIVO LED R spotlight achieves an efficiency of 50 lm/W. A decisive factor in this respect is the innovative cooling system integrated into the housing, which ensures a maintenance-free service life of 50,000 hours. The new track-box adapter platform emphasises the design concept of the VIVO LED R spotlight even further.

Design: EOOS
www.zumtobel.com/vivo
21

**LQ Chandelier**
LED pendant luminaire

The LQ Chandelier, designed by Hani Rashid, is the New York architect’s playful homage to Louis Quatorze (LQ) – the Sun King. Exciting visual effects and a complex set of relations between form and light are created solely by using specific geometrical principles, bundling minimal surfaces into a multifaceted reflector and precisely arranging innovative LED light sources. The basic unit consists of four LED lighting modules, each fitted with three LEDs of 1.2 W each. A highly distinctive design feature is the downwardly opening tulip-like shape of the chrome-plated components which emphasises the chandelier’s avant-garde look.

Design: Hani Rashid
www.zumtobel.com/lq

22

**ALVA**
Table luminaire

Owing to its design and functionality, ALVA creates new accents. The luminaire designed by Professor Andreas Ostwald combines sophisticated product features with innovative lighting technology. Thanks to an intelligent night light function, its energy efficiency resulting from the creative use of LEDs, and the low surface temperature, ALVA is also the perfect night-table luminaire. Using milling technology, the luminaire body is shaped from an extruded aluminium section. The luminaire ring serves as both anti-glare ring and also cooling attachment for the LEDs. The surface is available in black anodised, silver polished or white finish.

Design: Prof. Andreas Ostwald
www.zumtobel.com/alva

23

**CARICA**
Free-standing and table luminaire

The CARICA range of luminaires cannot fail to impress with its innovative design and functional concept. The table and free-standing luminaires are made of aluminium, with all components being fully mobile. The result is an impressive lightness and sculptural quality of the shapes. The table luminaires CARICA Table are available in two sizes and optionally in chromium-plated aluminium or matt black with transparent black luminaire body. The Paralume model – available as table luminaire or free-standing luminaire – with a translucent textile-covered lamp shade provides for pleasant light distribution.

Design: Carlo Forcolini, Giancarlo Fassina
www.zumtobel.com/carica

24

**MICROS D LED**
LED downlight

The new MICROS LED downlights with installed loads of 3.6 and 7.2 W replace conventional downlights with 20 W and 35 W LV halogen lamps. The switchable and dimmable ballasts are simply linked via connector plugs. MICROS LED downlights are available with warm white (3000 K) and intermediate white (4000 K) light colours at radiation angles of 15° and 35°.

www.zumtobel.com/micros

25

**PASO II**
Downlight/Uplight system

The PASO II product range was completely redesigned and extended by efficient LED down-/uplights in all sizes. An optimised selection of light colours and colour temperatures allows excellent guidance and accent lighting of indoor and outdoor areas. All PASO II recessed floor luminaires comply with the applicable EN 60598-2-13 standard.

www.zumtobel.com/paso2
**27**

**VALUEA**
High-bay reflector luminaire

The new VALUEA high-bay reflector luminaire is fitted with a high-performance reflector optimised for fluorescent lamps. The result is a high-quality lighting solution that is basically characterised by a very good colour rendition index and an efficient optic. Thus, VALUEA offers huge potential savings of up to 70% in industrial bays and trade-fair halls, but also in sports and multi-purpose halls when compared to conventional lighting systems.

www.zumtobel.com/valuea

**26**

**TUBILUX LED**
Tubular luminaire

The new TUBILUX LED model achieves very constant luminous flux levels even at temperatures of up to -25°C. Benefits such as efficient thermal management, low maintenance costs and a protection type of IP 68 encourage the luminaire's use under harsh and cold environmental conditions. TUBILUX LED is available in the light colour intermediate white (4000 K) and complies with International Food Standards requirements.

www.zumtobel.com/tubilux

**28**

**VE-F**
Medical supply unit

The VE-F medical supply unit combines high functionality with sophisticated design. The VE-F is characterised in particular by the option to install electrical components either from the bottom or from the front at the same position of the supply unit. The good price/performance ratio makes the supply unit an interesting alternative also in economic terms.

www.zumtobel.com/elgaduct

**29**

**CONBOARD NP**
Medical supply unit

The CONBOARD medical supply system has been integrated into a high-quality cabinet system. The attractive sliding door optic of CONBOARD NP skilfully conceals the connections for mains power, medical gases and communication systems.

Design: Nickl & Partner

www.zumtobel.com/elgaduct
HILIO
LED light line

The HILIO LED light line is an excellent design option for emphasising building and room peripheries. Thanks to its aesthetically appealing slim design and three variable optics, the LED light line can be integrated into every corner without any problems. Owing to a smart radial wiring arrangement, the pixel distance remains constant, which results in a consistent light line. The LEDs are controlled via DMX – either per luminaire or per segment.

www.zumtobel.com/hilio

HEDERA
Linear LED lighting module

Fitted with High-Power LEDs, the HEDERA LED luminaire achieves an excellent illumination of indoor and outdoor areas. HEDERA consists of a compact, robust aluminium frame with a 4 mm glass cover. Thanks to a choice of different lengths and colours, the LED luminaire is an interesting option for a variety of applications requiring dynamic, multi-coloured or monochrome lighting effects.

www.zumtobel.com/hedera

CAPIX
LED chain

The CAPIX LED chain provides effective illumination of façades using multi-media effects. Allowing flexible pixel distances and chain lengths, CAPIX can be adapted to any building structure. Each pixel incorporates three RGB LEDs, so that CAPIX provides brilliant brightness even over wide distances. Combined with an intelligent video control system, the LED chain not only provides design options with respect to colours, but can also run complete video sequences.

www.zumtobel.com/capix
33

eco+
The consumption oriented product label

What is so special about the eco+ evaluation is the integral approach including all system components as well as the lighting quality of a luminaire. The eco+ evaluation criteria are even more demanding than existing national energy directives. Thus, eco+ certified luminaires undercut the efficiency requirements of existing directives by 20%. Architects, designers and electricians can now identify particularly resource-saving products at a glance, even within a product range, since the eco+ label is assigned to individual articles.

www.zumtobel.com/eco

34

ecoCALC
Calculation programme

The new ecoCALC calculation programme allows to determine all the costs incurred by a lighting solution throughout its service life. In the process, ecoCALC not only calculates the investment cost but also takes the financial aspects of a resource-saving lighting system into account. These include, among others: CO₂ emission, energy consumption, maintenance costs or waste disposal.

www.zumtobel.com/ecocalc

35

dim²save
A win-win approach

Everybody benefits from Zumtobel’s energy-saving initiative: both the environment and the users. The new dim²save luminaires provide an affordable first step into the world of active lighting management. Luminaires fitted with dim²save components are easy to install and, thanks to standard momentary-action switches or a Dimlite lighting management system, are real Scrooges when it comes to energy consumption. More than 900 dim²save luminaires are available to promote the use of dimmable – and therefore energy-efficient – lighting solutions in all application areas.

www.zumtobel.com/dim2save
As world-wide leading luminaire manufacturer, Zumtobel provides a five-year guarantee for its complete product range with effect from 1 April 2010. With this step, Zumtobel lives up to its reputation as a pioneer in terms of innovation, design and quality. The voluntarily extended five-year guarantee comprises Zumtobel’s entire luminaire portfolio including ballasts or control gear. Only wearing parts such as conventional light sources or emergency lighting batteries are exempt from the guarantee extension. In the case of LED luminaires, the guarantee also extends to the LEDs.

www.zumtobel.com/guarantee
The concept of a visually attractive luminaire which provides bright illumination without glare – that is “Mellow Light”. Few luminaires have had such a lasting influence on the history of lighting as the concept of Mellow Light. The luminaire, which was developed at the end of the 1980s from the result of an earlier project, has led to a re-evaluation of the subject of lighting.
Until then, office lighting had primarily been based on recessed raster luminaires, which provided bright illumination on the work surface but completely neglected the room ambience. The first luminaire to use this revolutionarily different lighting concept was developed in 1988 by Zumtobel lighting technicians. It was as if the market had been just waiting for such a form of lighting. This was the start of an unprecedented success story. The indirect illumination of the ceiling and walls made a new form of interior design with light possible. That this was achieved at the cost of lamp efficiency was readily accepted. “A piece of heaven” was the description which fit this new lighting concept perfectly, and was a central theme in the advertising for many years.

Today, a good 20 years later, this concept has become so well-established in the market that the brand name “Mellow Light” by Zumtobel has become a byword and is even used by other suppliers for this form of lighting.

With the orientation towards resource-saving lighting options, it was clear to Zumtobel that the outstanding concept of Mellow Light was also due for a rejuvenation in terms of the technical values and at the same time should switch over to LED technology. “Design for efficiency” was the brief specified in a design competition. As the winner, Milan-based designer James Irvine took on the task of reinterpretation. With a keen awareness of the history and aspirations of the highly successful family of luminaires, the designer set about the formal and technical revision of the product. With success – the Mellow Light V generation stands out through its impressive technical values and sophisticated design. An operating efficiency of 86% represents an increase of 30% in comparison with the preceding model. And the new softer design reflects the current architectural trend towards flowing, harmonic forms. The Mellow Light V is available as an LED variant with constant white light and, as from the autumn, also with the possibility of adapting the colour temperature within the range from 2,700 to 6,500 K.

The characteristic design of Mellow Light V was adapted to the requirements of modern architecture. It now offers flexibility in the choice of light source – LED or fluorescent tube.
James Irvine was born in London. He moved to Milan in 1984, after graduating from the Royal College of Art in London. Until 1992 he worked there as a design consultant at Olivetti, designing industrial products under the direction of Michele de Lucchi and Ettore Sottsass. After a year at the Toshiba Design Centre in Tokyo, where he carried out design studies for various industrial products, he opened up his own design studio in Milan in 1988. From 1993 until 1997, in addition to his work in his own studio he was also a partner at Sottsass Associati in Milan, where he was responsible for the industrial design department. At present he is a professor in industrial design in Karlsruhe. His design studio in Milan works together with various internationally-known companies.

**How difficult was it for you to take on the most successful model in Zumtobel’s history?**

James Irvine: Mellow Light is a product line which has a long history at Zumtobel, and it is also one of the most successful in the product range. Mellow Light is an extremely important product for office applications, for public buildings – that is to say in an area in which Zumtobel has always been a leader.

With Zumtobel’s idea of holding a design competition, it was clear that they did not wish to limit themselves to one designer but wished to explore different possibilities. The history of the Mellow Light range is highly interesting, because over the course of time it has had to develop further, and of course each successor product has to represent an improvement in one respect or another within the same product typology.
What formal aspirations is ML V intended to fulfil?

James Irvine: With the new technologies which are available today for the manufacture of products, we are moving away from the situation in which products were simply formed through mechanical processes. We are entering a more virtual era in which, when you look at something, you don't necessarily understand how it was manufactured. However, it would be inappropriate to use too flowing a form for a product like Mellow Light V: when you enter a room, you see hundreds of these luminaires in rows on the ceiling, a continuous repetition of the same product. Here, you need to find a language which is also pleasing in repetition and doesn't continually stimulate each time. In any case, this idea of the polarity between the mechanical and virtual product is interesting, and can perhaps be compared with the following: when I was still a partner at Sottsass, Ettore Sottsass once said to me that, when we're driving a car and we change to a different gear, we don't think about how it actually functions.
What were the biggest technical challenges?
James Irvine: In the case of Mellow Light V it was clear that, in view of the current efficiency debate, in which the aim is to reduce the amount of energy which a product consumes, parameters had to be defined which would further improve the functional performance of the product. The prime goal was to increase the efficiency of the product. Compared with the preceding product Mellow Light IV, from 60% to over 80%. This is a quantum leap in terms of energy consumption, and the new product is in fact more than 20% more efficient, which means that, with the same amount of light, your electricity bill might be a bit smaller. However, this caused a few headaches during the design process.

How was it possible to achieve this?
James Irvine: Essentially, in that we have made the product more transparent, so that more light can be emitted. I wanted to try to soften the contrast between this very powerful light field which you see when you look at it directly from below and the ceiling surface. In the past, all of these products were basically a white box recessed into the ceiling, with a very hard edge, and this kind of contrast is actually a glare factor. When you look at the illuminated object, then your eyes perceive the line where the light stops and the unlit surface begins as a hard contrast. This softening of the contrast was therefore one way of reducing the glare which is actually perceived.

Are you happy with the results?
James Irvine: Yes, we have taken a successful product forward into the new era, making use of all the available technical possibilities. The product consists of highly complex plastic components which disperse the light – the cut-off angle is reduced when you look obliquely at the luminaire. Thank to all these factors, we were able to increase the efficiency of the product, because that was an absolutely key parameter. But, through our modifications, we have integrated the product into the architectural space; for me, that is the modern, more virtual and less mechanical approach. That was the goal of our project, and I hope we have achieved it.

Energy efficiency and outstanding lighting quality were the focus of the most recent modification. The lighting technology, thermal management and optical systems were fundamentally re-designed.
Elegant light lines accent the architectural network of vertical and horizontal lines (left-hand side). Transverse conference boxes connect the reception area with the auditorium for special events (top).

Resource-saving architecture which sets new standards and a stimulating environment which allows efficient working in interdisciplinary teams – clients who have recognised the importance of these aspects are investing in the future of their company. Factors such as light, climate, ergonomics, design, communication and concentration all play a decisive role here.
Example 1: VHV, Hannover/D

The glass facade printed with a digital structure extends into the interior of the building. The stairs are pleasantly illuminated with Slotlight II light lines – in the surface-mounted and suspended variants.
The workplace of the future is already a reality in Hannover. As soon as one enters the imposing entrance hall of the new headquarters of the VHV group, it is like finding one’s self on the set of a science fiction film. The enormous building complex, which can accommodate up to 1500 workplaces, has been cleverly divided into three blocks which are connected via the almost ethereal atrium, which is completely finished in white and grey. Discreetly decorated with printed glass, the facade extends from the outside into the interior of the building, merging together the outside and the interior space.

Walkways and stairs with transparent balustrades connect the individual floors and sections of the building. "Seamless, elegant light lines on the underside accent the network of vertical and horizontal lines and emphasise the circulation layout", says Wolfram Bliefert of Lumen³, describing the lighting concept developed with the architects BKSP. The designers achieved the effect of uninterrupted lines through the use of Linaria batten luminaires together with the new innovative Seamless light line. However, the eye-catching centrepieces are two massive lift towers, enclosed by backlit textile envelopes reminiscent of Japanese lanterns in XXL format. “This distinctive feature, which can be recognised from far away, clearly identifies the new building as the new headquarters. In addition, the diffuse, soft light creates a pleasant, communicative atmosphere”, adds Bliefert. In addition to its highly prestigious character, the building demonstrates a team-oriented and transparent office structure which extends beyond the atrium into the individual departments.

The combined energy and facade concept is also future-oriented. Through the use of triple glazing and highly thermally-insulating facade elements, the overall energy requirements are significantly reduced and are covered by geothermal probes, heat pumps and (supplementary) district heating. The lighting and the exterior blinds with light guidance function can be controlled centrally and in an energy-saving way via the Luxmate Litenet Flexis lighting management system developed by Zumtobel, without restricting comfort for individual employees. Basic lighting for the team offices is provided by the Tecton continuous-row lighting system with the new decorative Slimline design. In addition to the natural lighting, the workplaces by the windows are illuminated using Light Fields direct/indirect free-standing luminaires, which allow comfortable glare-free working. Both luminaires are switched on by the employee when starting work using the main switch next to the door. This brings the free-standing luminaire up to a basic level of 300 lx. The intelligent luminaire uses a presence detector to recognise when the employee sits at their workplace and adjusts the lighting output to 500 lx. When the employee leaves their workplace again, the luminaire reacts accordingly. This means that optimal illumination is always provided at the workplaces, which makes working less tiring and at the same time helps to save energy.

In the offices, Light Fields direct/indirect free-standing luminaires ensure pleasant glare-free workplaces. The intelligent control system saves energy without restricting the employees’ comfort.
“Light only becomes exciting if one feels comfortable. That is why in this project we have designed all the lighting to be controllable”, says Klaus Nordhorn of Ingenieurbüro Nordhorn, summarising the design goals for LVM Versicherungen’s new headquarters in Münster. Simple, precise and highly flexible, Luxmate Litenet’s intelligent software guarantees the control of all the lighting fixtures and blinds within the building. The combination of natural lighting and blind control allows energy savings of up to 60% – while providing optimal lighting quality.

The new building, with its almost 8,000 m² of office space, integrates harmoniously with its surroundings and is divided into several wings which are connected by glazed and roofed interior courtyards. With their luxuriant greenery, they provide the employees with restful oases. Due to their outstanding lighting technology, the Copa pendant luminaires installed here provide elegant accents, creating a pleasant atmosphere for visitors. Complementing the filigree structure of the building, the Freeline direct/indirect luminaire with its clear lines and low-key design integrates smoothly into the architecture. “However, we have modified the luminaire in order to be able to react flexibly to changes”, says the electrical designer from Ingenieurbüro Nordhorn. The pendant luminaire is equipped with a multi-watt ballast. This means that more powerful 80W lamps can be used for the indirect lighting instead of 49W fluorescent lamps. Installed directly above the workplaces, the luminaire concentrates the light optimally on the working area in question with its specific visual tasks, providing balanced illumination without any glare.

The use of standard products or their use-oriented modification is perfectly consistent with the cost-saving and sustainable design of the whole building, without necessitating any compromises in terms of design.
With its energy-saving construction as well as the highly functional and design-oriented lighting solutions, both insurance buildings set new standards and were therefore awarded, respectively, the Nordrhein-Westphalia Regional Prize for Architecture, Housing and Urban Development in the category “Energy-efficient Building for the Future” (LVM) and the BDA Prize for Lower Saxony 2009 (VHV).

Lighting solution Hannover
Atrium: batten luminaires LINARIA, office lighting: lighting management system LUXMATE LITENET FLEXIS, continuous-row lighting system TECTON, direct/indirect free-standing luminaires LIGHT FIELDS, public areas: recessed luminaires SLOTLIGHT in a special design, white with border, downlight PANOS, underground car park: FT moisture-proof luminaire, exterior lighting: recessed luminaires PHAOS

Lighting solution Münster
Office lighting: modified pendant luminaire FREELINE, lighting management system LUXMATE LITENET, interior courtyards: high-bay reflector luminaire COPA, cafeteria: downlight PANOS, moisture-proof luminaire CHIARO, closed luminaire PERLUCE

Example 2: LVM, Münster/D

The eye-catching architectural feature of the LVM building are the small, brightly-coloured areas in the glass facade. They consist of foils in different colours applied to the highly-insulating windows (top).

The modified Freeline direct/indirect luminaire provides flexibility and freedom from glare in the offices. With its clear lines and low-key design, it integrates smoothly into the architecture (left).
Picasso paints with light. This unusual series of photos by Gjon Mili was created in 1949 with the aid of a small flash light in a dark room. The artworks disappeared as soon as they had been created.
Creative Dreams

Brush and paint, light and shadow:
Basel-born lighting designer Max Keller imagines an encounter with a painter and compares his canvas with the theatre stage.

Good morning Mister Painter, already at work this early?

Well, it depends what you mean by work. I use the clear morning light to find new inspiration for my painting. Do you really call that work?

Oh, you know, I always used to think that addressing an artistic challenge wasn’t work. It’s simply a different class of work, not physical work, but a creative process which you have to go through. Don’t you agree?

Well, I know about the beauty of my work. Before I set brush to canvas, I carry the ideas around in my head for a long time, I keep rejecting ideas until I come up with something new. Nothing satisfies me, but then when I do find my artistic path, I’m happy about my free creativity… Yes, you’re right. What do you do?

With me, it’s not so straightforward, unfortunately. But we do have one thing in common: we approach our subjects subjectively, we think in pictures which nobody else can see, and only when our ideas come up to our own standards do we implement these as a creative process. You paint pictures and I create images with light and shadow, but unfortunately I am not as free as you when it comes to implementing my ideas.

Free? I can’t always give free rein to my creativity either, because otherwise my paintings won’t sell. I’m very happy. But what do you mean by straightforward? One thing is clear: we both create products from our visual imagination which could only come into being through our own individual creativity. I paint the pictures in my head on a canvas using a brush. It’s much the same with you, isn’t it?

Not quite. In the theatre, there are always several people working on a creative process as a team. You can imagine the result. The more people there are involved in an artistic process, the more difficult it is to bring the different creative ideas together. Because let’s be honest, the intellectual egoism and naked ambition of each individual often stand in the way of collective success. Too many components are involved here. For a long time, I failed to grasp the significance of egoism and the associated yearning to be a creative person. I didn’t understand what this had to do with individual creativity.

I can’t tell whether my painter friend is paying attention to me. He has withdrawn into himself, his glistening eyes squint narrowly as they follow his light, easy brushstrokes. With the pressure of the brush, he sometimes gives the colour blue a deep tone, sometimes an almost pastel-like lightness, a delicate hint of blue. He composes a furious arrangement of colours without actually painting anything representational. I watch how, with a steady hand, brushstroke by brushstroke, sometime slowly, then more quickly, he expresses his innermost feelings with his choice of colours. He is painting – it cannot be otherwise – a dream, his dream. I know that he’s content now. He’s happy in his work. He opens himself up to philosophical and psychological highs, and derives satisfaction from the creative process, a profound encounter with his innermost self. He wants to achieve the highest degree of perfection. He doesn’t want randomness in his art. His knowledge, his skill and his understanding lead him to an awareness of experiencing light internally, in the living world, in the present. Because without light one can neither see nor perceive colour. It is the gentle impact of this complexity which lends him his brilliant creativity. In his dream pictures, he peels away the different factors individually, he transilluminates his soul. It is his own inner conflict expressed in the form of a productive dialogue with his dream. He repeatedly explores and discovers himself in his work, in his continually reiterated determination to be a worker. Work is not just labour, attrition and sweat.

His senses work. Watching him, I forget myself. To see how, in the personal trance of his creativity, he experiences a real form, is an experience. I lose track of time and realise that the sun has moved and the light has changed. His painted blue tones now look different, but they are still his blue. I feel his inner contentment, which fuels his creative power. I would like to be like him.

Max Keller, born in Basel, lighting designer
1970 – 78 Lighting inspector at the Staatliche Schauspielbühnen in Berlin
1978 – 10 Head of lighting department at Munich Kammerspiele, various teaching posts, lectures and seminars at home and abroad
1985 Author of the book “Stage Lighting”
1990 – 10 Guest professor for Lighting Design at Mozarteum in Salzburg
1995 Resident professor for Lighting Design at Mozarteum in Salzburg
2010 4th edition of “Light Fantastic” – the book was revised and expanded several times, as well as being translated into several languages.

Photo: Gjon Mili
L’ÉCLAIREUR
DESIGNER SHOP
IN PARIS

THE SCENE
IS SET
Arne Quinze has used over 2 tonnes of wooden planks in the new L’Eclaireur, most of them formed into a huge organic sculpture. This is intended to be a place for people to meet, look around and meet up again.

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He loves ordered chaos and can’t get enough of beautiful designs: together with his wife Martine, Armand Hadida opened his sixth showroom in Paris in October 2009. Whether selected designer fashions or the coveted Microsoft Surface Table, everything has its place in L’Eclaireur – except boredom.

“It’s not a shop, it’s an experience”, says Arne Quinze, describing the new branch of L’Eclaireur in the rue de Sévigné in Paris. With its aspirations of being more than just a retail space, Armand and Martine Hadida’s new showroom fits in perfectly with L’Eclaireur’s chain of existing outlets. The collections of top designers from around the world are displayed over a floor space of 450 m². But not to everyone. Only the staff control who gets to see the coveted designer items, and from whom the closable clothes racks remain concealed.

SAQ loves provocation, the departure from the familiar. In L'Eclaireur it is the combination of the latest high-end technology with recycled materials which creates a fascinating visual conflict. Two tonnes of untreated wooden planks, old printing plates and boards sprayed with paint form a striking contrast to the 147 animated video screens showing the eyes of Arne Quinze’s wife, Barbara Becker. Between these are arranged some of Armand and Martine Hadida’s favourite and “found” objects and, of course, the designer collections. Everything appears haphazard, yet it is all perfectly staged.
The collections of top designers from around the world are displayed over a floor space of 450 m$^2$. But not all the time, and not to everyone. The staff decide spontaneously for which customers the sliding walls are opened or closed.

The interplay of light and shade is controlled in a masterly way. This is the work of lighting designer Aysil Sari. Together with Zumtobel, she developed the Supersystem lighting system, which even allows focused illumination from a great height. The track-mounted 2.5 W LED spotlights produce a light free of UV and IR radiation which doesn’t generate heat – all properties which are very important when displaying clothes. The raised areas and clothing racks are illuminated individually using a further development of the Supersystem, a rectangular 4-spot light module. “Anyone who has such an extraordinary shop concept isn’t looking for a lighting solution from the catalogue, they want a futuristic solution. With Zumtobel it was possible to develop and implement this”, explains the lighting designer.

Armand and Martine Hadida have always wanted something out of the ordinary. The visionary couple, who opened their first designer clothing shop in Paris 30 years ago, introducing to France labels like Prada, Helmut Lang, Timberland and Tod's, are renowned for their exclusive shops. The showroom which they opened in the rue Hérold in 2001 caused quite a sensation; it is not visible from outside and can only be accessed using a PIN code. Martine Hadida is convinced that it is only possible to grow through fascinating encounters with people. For her this includes confronting customers with the unexpected, stimulating their curiosity and above all presenting the collections in a dramatic setting, rather than simply displaying them. The concept seems to be a successful one. One blogger on the internet describes with fascination the installation and the spatial experience of the new Paris showroom, but mentions incidentally that in his enthusiasm he had quite overlooked the fashions. Well, then he’s sure to pay a return visit.

Lighting solution
SUPERSYSTEM H tracks with 2.5 Watt LED, SUPERSYSTEM as 4-spot module
The Catholic University College of Bruges makes an architectural statement full of contradictions with its new building – compact on the side facing the street, with only a single window opening located in the study area, but open and multifaceted on the campus side.
Many universities have come to recognise that an inspiring studying environment has a positive effect on performance and motivation. Ultimately, students will only be successful if they enjoy going into the university building, and if they find a positive atmosphere there. At the same time, colleges and universities realise how important self-marketing is if they are to establish a profile within the highly competitive market of academic institutions. In this respect, the Catholic University College of Bruges-Ostend (KHBO) has created a landmark with its new campus building.
All the classrooms and lecture rooms are accessed via the massive stairs in the atrium (right-hand side). In the corridors, specially designed indirect track lighting provides pleasant glare-free light (top).

The Miros projector-mirror system almost seems a part of the structure of the building. The warm, indirect light produced by the mirror creates a striking contrast to the rather cool concrete/glass architecture (left).

The new campus in Bruges is an autonomous architectural unit which resists any form of integration. It fulfills contemporary needs in terms of compactness, optimum internal mobility and flexibility. On the side facing the street, the building presents a closed facade, with a single window opening located in the study area. In contrast, the campus side is extremely open, with a multifaceted design – an architecture of contradictions. The combination of steel, glass, concrete and wood creates striking contrasts in the interiors of the KHBO building. At the same time, the modular approach offers the possibility of adapting to changing learning requirements in the future.

On entering the open atrium, flooded with light, the main functional areas and entrances are immediately identifiable, the students are directed in a logical way to the internal circulation routes. The building consists of an area containing auditoria and a cafeteria, a zone with three imposing identical wings housing classrooms and offices, and an impressive block which comprises the study area. The atrium is designed as a three-dimensional meeting place with broad steps and open galleries as well as seating corners and learning islands. The architects wanted to use predominantly indirect lighting throughout the building. Here, the Miros projector-mirror system offers an architecturally sophisticated and technically optimal lighting solution which allows the rooms, some of them 10 metres high, to be illuminated evenly and without glare.
The Miros projector-mirror system was also used in the auditoria, which can be transformed into a large hall seating 650 persons by opening the acoustically insulated partition walls.

Two auditoria, which can be transformed into a large hall seating 650 persons by opening the acoustically insulated partition walls, provide space for a variety of events. Beneath the auditoria there is a brightly-lit cafeteria for 350 students which offers a view of the south-facing patio through its impressive curtain facade. The patio leads onto a grassed sun terrace. The open architecture, often up to 10 metres high, makes deliberate use of the Miros projector-mirror system, which appears to be part of the structure of the building. The indirect, warm lighting produced by the mirrors creates a striking contrast to the rather cool concrete/glass architecture. This contrast of cool concrete and warm light is achieved throughout using indirect-lighting luminaires. Koen de Klerck summarises: “Using lighting, both functional and atmospheric, we have endeavoured to enhance even further the architecture and surroundings of the entire building, taking into account both flexibility and the maintenance aspect.”
The three blocks containing classrooms and the study area lead into the impressive atrium. Short walkways connect the different functional areas. All the classrooms and lecture rooms are grouped in these blocks, each three storeys high. The rooms are accessed via the massive stairs in the atrium or via lifts. The blocks are designed flexibly: they are divided into individual fire protection zones separate from the rest of the complex and are acoustically isolated. The classrooms are brightly lit with recessed Mirel ceiling-mounted luminaires. Specially designed indirect track lighting provides pleasant glare-free lighting in the circulation zones.

The “Silent Room” forms a visual termination at the highest point of the atrium. This art installation project, with its distinctive design and colouring, was created by artist Christine Deboosere.

Johan Bosschem: “The KHBO wanted the building to be a symbol, visible from afar. We complied with this wish, while taking into consideration the various restrictions. Throughout the whole process, it’s essential to keep in mind the aspect of flexibility. It must always be possible to adapt to the needs of the client, which change over the course of time, because that is always what’s needed.”

Lighting solution
projector-mirror system MIROS, recessed luminaires MIREL, specially-designed indirect lighting profile
ROYAL LIGHT!
NEW LED LIGHTING AT
SCHLOSS NEUSCHWANSTEIN

King Ludwig II would have been delighted! The monarch, who was always very open to technical innovations, implemented numerous technical sensations when building Schloss Neuschwanstein in the 19th century. The palace, and especially the elegant artistic furnishings of the state rooms, are now efficiently and above all protectively accentuated using LED lighting by Zumtobel. For example, the magnificent throne room is now illuminated using the Supersystem LED lighting system and Tempura LED spotlights. The plan this year is to successively equip almost all the areas accessible to visitors with individual LED lighting solutions by Zumtobel. In doing so, the Bavarian Administration of State Palaces, Gardens and Lakes has by-passed several stages of development in the field of lighting technology and opted directly for the most innovative form of lighting, the LED.

In particular, it was the reduced dimensions and the UV-free light which convinced those responsible. Heiko Oehme from the Administration’s buildings department: “The LED luminaires are outstandingly suitable for our historic rooms with their highly sensitive furniture, textiles and paintings. They don’t cause our valuable exhibits to fade, and allow the rooms to be accented perfectly with their brilliant light. The details can be revealed to their best advantage by selecting a colour temperature between warm-white light with 3,000 K and cold-white 6,500 Kelvin light.”

The choice of Zumtobel’s Supersystem was an easy one, since this lighting system is both architecturally discreet and at the same time creates attractive accents, even from greater distances, in a highly effective way. The LED spots with only 2.5 W can be adapted to distribute the light in different ways through the use of different optical attachments. The colour temperature of the Tempura LED spotlight, which now dramatically highlights the resplendent colours in the cupola of the throne room, can be varied within the range 2,700 to 6,500 K at the touch of a button. This means that the curators can adjust them at any time.

With the new LED lighting system, Schloss Neuschwanstein is taking a step into the 21st century. From a conservation and aesthetic viewpoint, this is the right decision in terms of protecting and emphasising the precious and unique interiors.

The Tempura LED spotlight and the Supersystem illuminate the details in the throne room in a versatile and protective way. Thanks to their outstanding lighting quality and the variable adjustment of the colour temperature, they enhance the expressive qualities of the wonderful ceilings and murals (Photos: Jens Ellensohn).

The world-famous Schloss Neuschwanstein near Füssen in Germany is being equipped with a new LED lighting by Zumtobel (left, Photo: Getty Images).
STARBRICK – A MAGNET FOR VISITORS AT ART BASEL IN MIAMI BEACH

From 3 to 6 December 2009, Zumtobel presented Starbrick, a masterpiece created in collaboration with the internationally-known artist Olafur Eliasson, in the Art Collectors Lounge at the 8th Art Basel in Miami Beach.

Art Basel Miami Beach is one of the most important art exhibitions in America, attended this year by over 40,000 art lovers. More than 250 selected galleries from more than 30 countries exhibited paintings, drawings, sculptures, photographs, installations and videos. This is the fourth time that Zumtobel has presented innovative lighting solutions and exclusive masterpieces in these exclusive surroundings.

The stand, based on a design by Olafur Eliasson, featured an installation consisting of 16 Starbrick modules which found an admirer during the exhibition and was reinstalled in the breathtaking home of design lover Al Eiber only a day after the exhibition closed. Al Eiber: “I am a design collector, not an art collector. All the works should also have a function. I’m delighted to have an installation representing a collaboration between Olafur Eliasson and Zumtobel in my collection now.”

What does it mean to you to own a Starbrick installation?
Al Eiber: We are delighted to own the first available Starbrick module which was the result of a collaboration between Olafur Eliasson and Zumtobel. When a magnificent design is combined with a high degree of functionality, this sets trends for the future. A world-class artist and a world-class lighting manufacturer guarantee unlimited possibilities.

Do you have a particular connection with the artistic work of Olafur Eliasson?
Al Eiber: No, we came across Art Basel and were drawn to the fantastic exhibition like moths to a flame.

You call yourself a design collector – in what way does that differ from being an art collector?
Al Eiber: As design collectors, we like three-dimensional works, some with functionality, others with more of a visual appeal, with a background functionality. Most art collectors concentrate on two-dimensional works without an additional function.

You bought the installation directly at the exhibition. Are you always so spontaneous?
Al Eiber: It just seems that way - after all, we studied the installation intensely for three days.

The piece was installed at your house immediately after the exhibition – does it have a special place?
Al Eiber: Yes, it stands in the living area, where we can admire it during the day and enjoy the light in the evening.

Do the light effects and the different switching possibilities live up to your expectations?
Al Eiber: Yes, it’s wonderful – the different lighting moods in particular mean we can adjust the lighting precisely to create the desired atmosphere.

www.starbrick.info
www.zumtobel.com/starbrick

Design lover Al Eiber was so enthusiastic about the installation consisting of 16 Starbrick modules at Art Basel in Miami Beach that he bought the artwork after three days (bottom, photo: Zumtobel). It now stands in the design collector’s living room (top, photo: Al Eiber).
BURJ KHALIFA – BATHED IN LIGHT
The world’s highest building was opened with great ceremony at the beginning of January 2010 with a light show using spotlights by spacecannon.

With the illumination of the Burj Khalifa, spacecannon has realised the biggest installation in the company’s history. Managing Director Peter Roos: “This mega-illumination demonstrates that we are the competent partners for spectacular event and architectural lighting, using both conventional lighting equipment and modern LED technology.”

spacecannon, based in Fubine in Italy, specialises in high-quality architectural lighting effects and interactive media facades. With the individually designed lighting solutions and controls developed by spacecannon, Zumtobel has expanded its high-quality lighting portfolio to include innovative outdoor lighting fixtures, for the most part based on LED technology.

MARTE.MARTE AT DORNBIRN LIGHT FORUM – CONCRETE WORKS
“Concrete Works”, an exhibition of the work of the Austrian architects’ studio Marte.Marte, was held at the Zumtobel Light Forum in Dornbirn until 12 April 2010. The exciting exhibition featured works and concepts by these avant-garde architects from Vorarlberg. At the exhibition opening on 4 March 2010, more than 200 visitors were able to admire the creative versatility of this remarkable firm of architects.

The title “Concrete Works” is ambiguous: on the one hand, it stands for the highly concrete presentation of the implemented projects and concepts; on the other, it refers to concrete as a building material, a fascinating key element in the projects created by this unusual architects’ studio. Integral and energy-optimised buildings featuring sophisticated lighting and orientation concepts play a major role in their work. The first monographic exhibition of their works puts these Austrian architects’ designs in the spotlight. The projects are characterised above all by clear structures, consistent concepts and sculptural presence. Many of their buildings fit into the surrounding historical context amazingly well, echoing existing structures with great self-awareness, reflecting both local traditions and modern creative design.

The exhibition provides a representative insight into the complex work of Marte.Marte Architekten, presenting not only concepts, ideas, materials, interiors and exteriors, but also the people behind the projects.

The exhibition will go on to feature in further Zumtobel light forums and centres.

Ambitious architecture combined with sensitive building design: Marte.Marte at Dornbirn Light Forum. (top and left, Photos: Andrea Flak)

At the exhibition opening more than 200 visitors were able to admire the creative versatility of this remarkable firm of architects.

(bottom, Photo: Zumtobel)
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Art.-No. 04923959 | LIGHTLIFE 4 | 2010 | EN