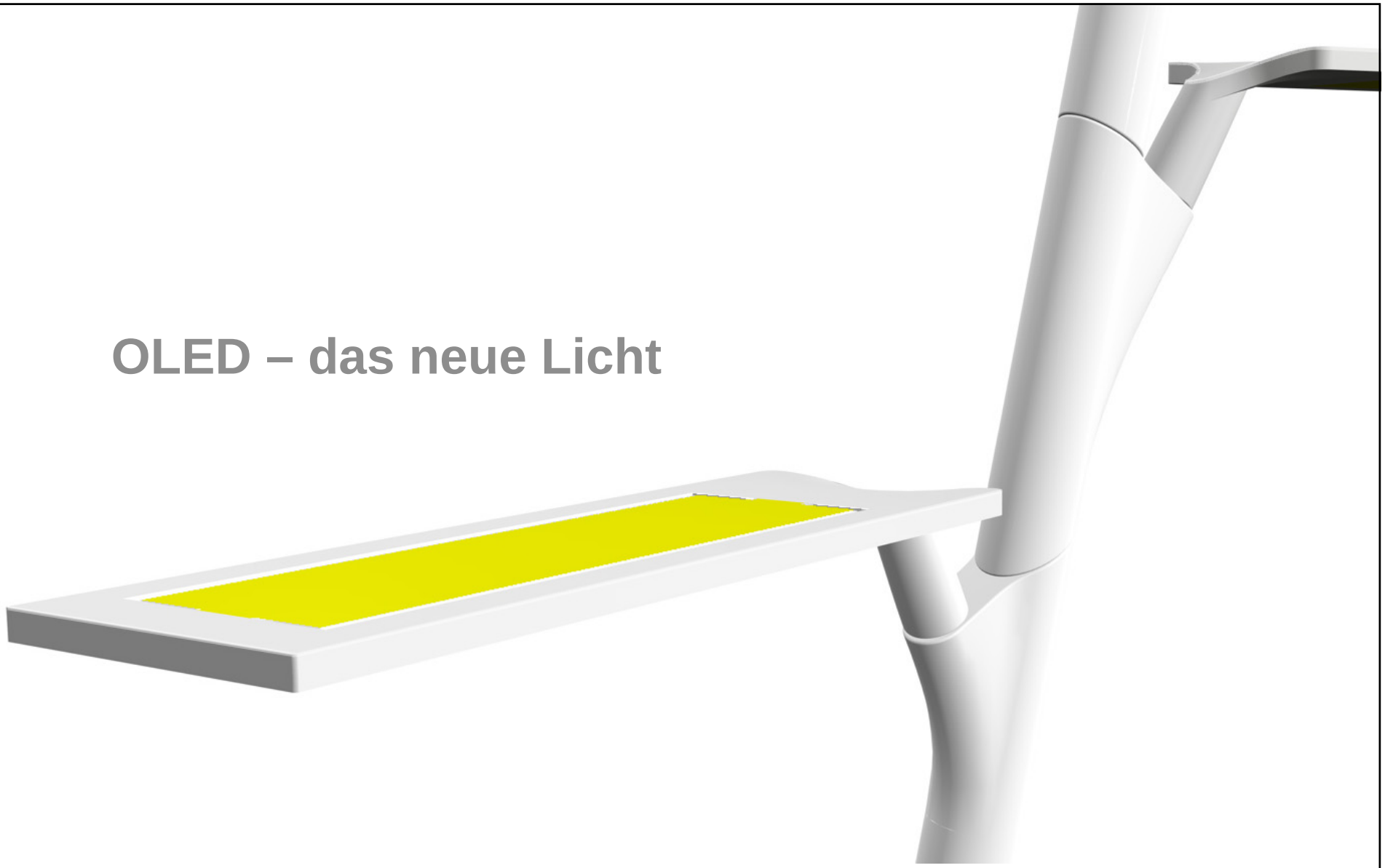
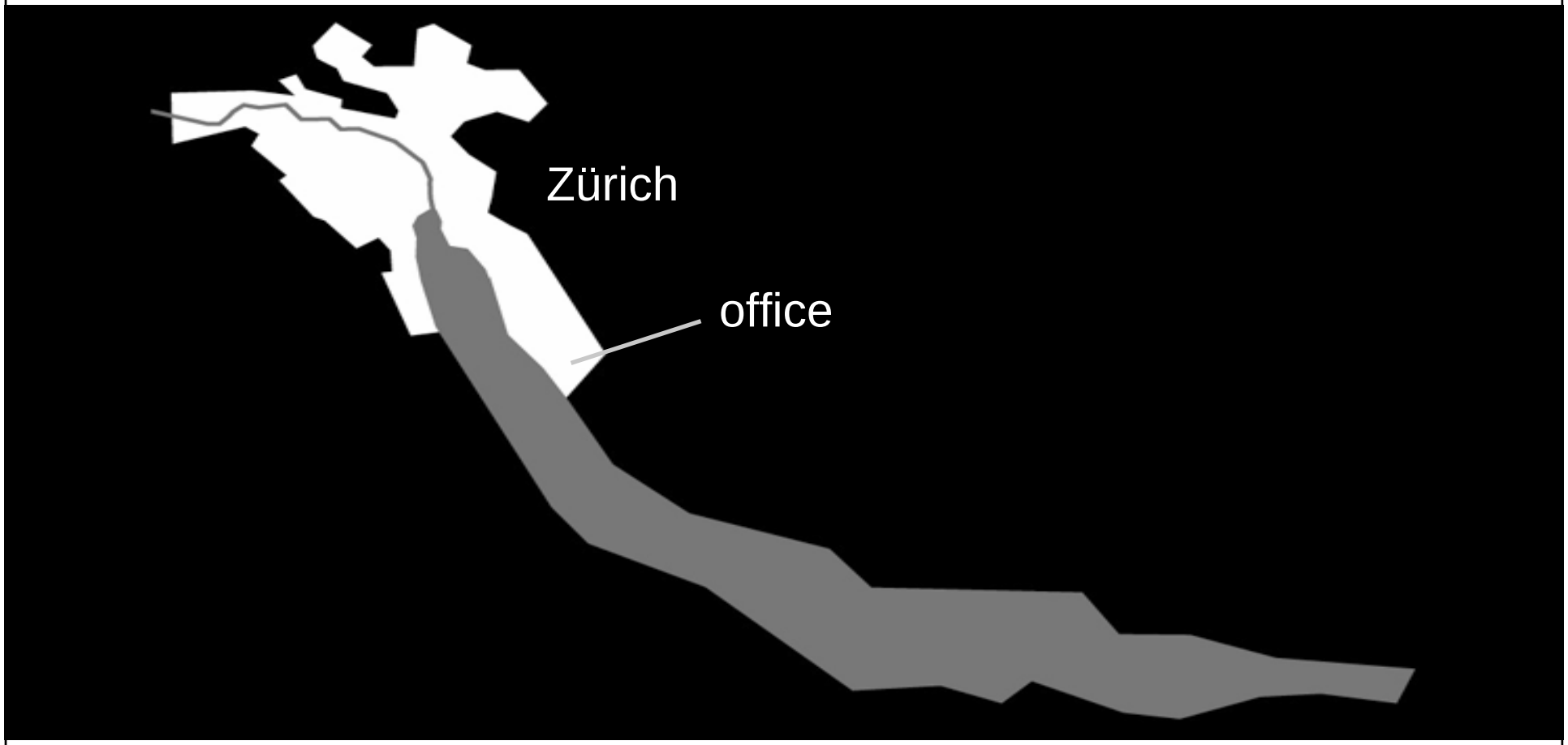
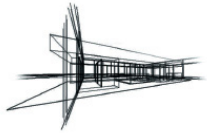
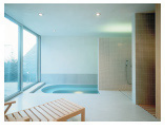
OLED – das neue Licht



Tobias Adami, Büro Hannes Wettstein Zürich, Schweiz


Zürich
office

architecture / privat and office space

furniture and light



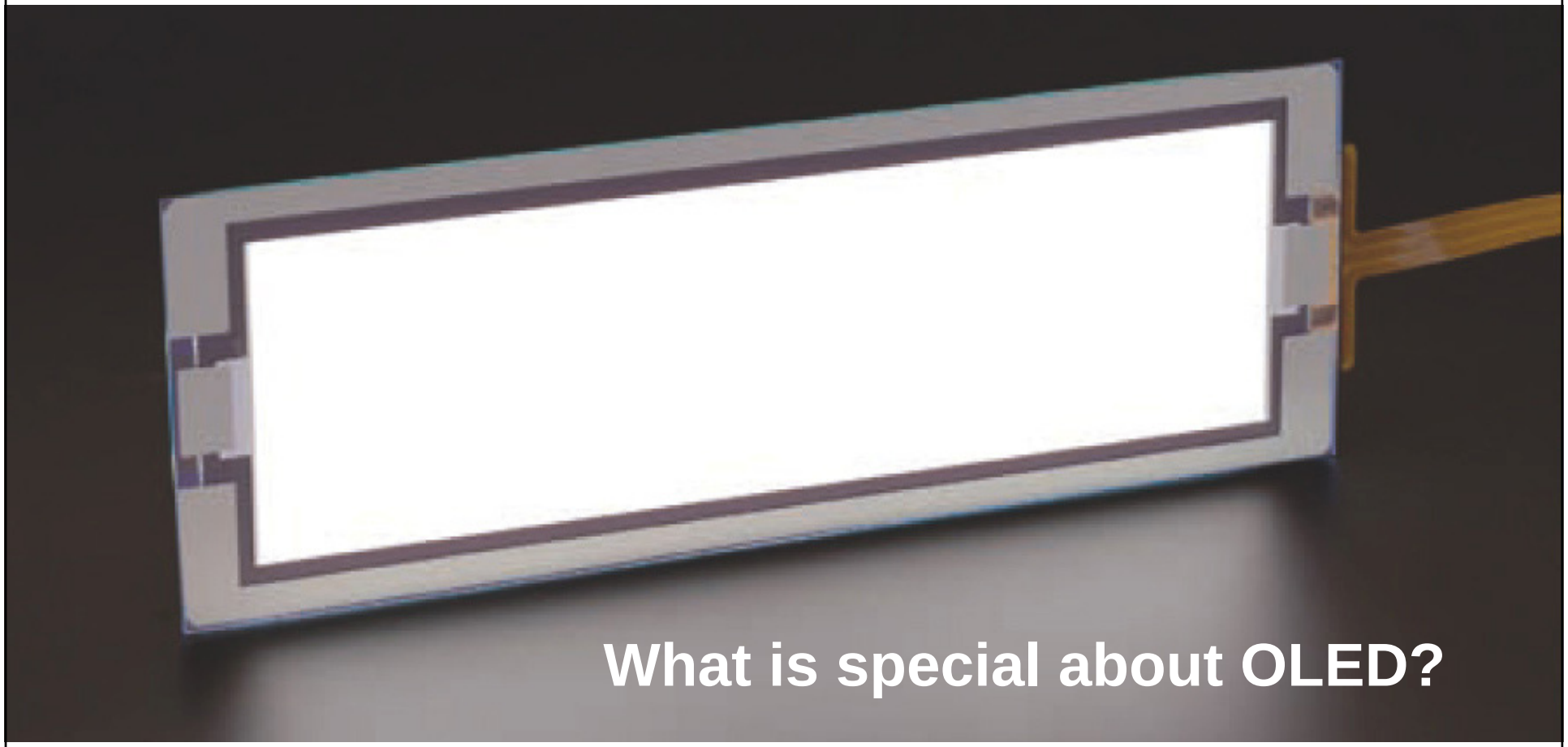


work fields

product







What is special about OLED?

> new type of design.

> extra flat which causes a invisibility by horizontal view.

> absolute homogeneous light emission over a large surface which is today not reached by other light sources on the market because they all are spotlights.

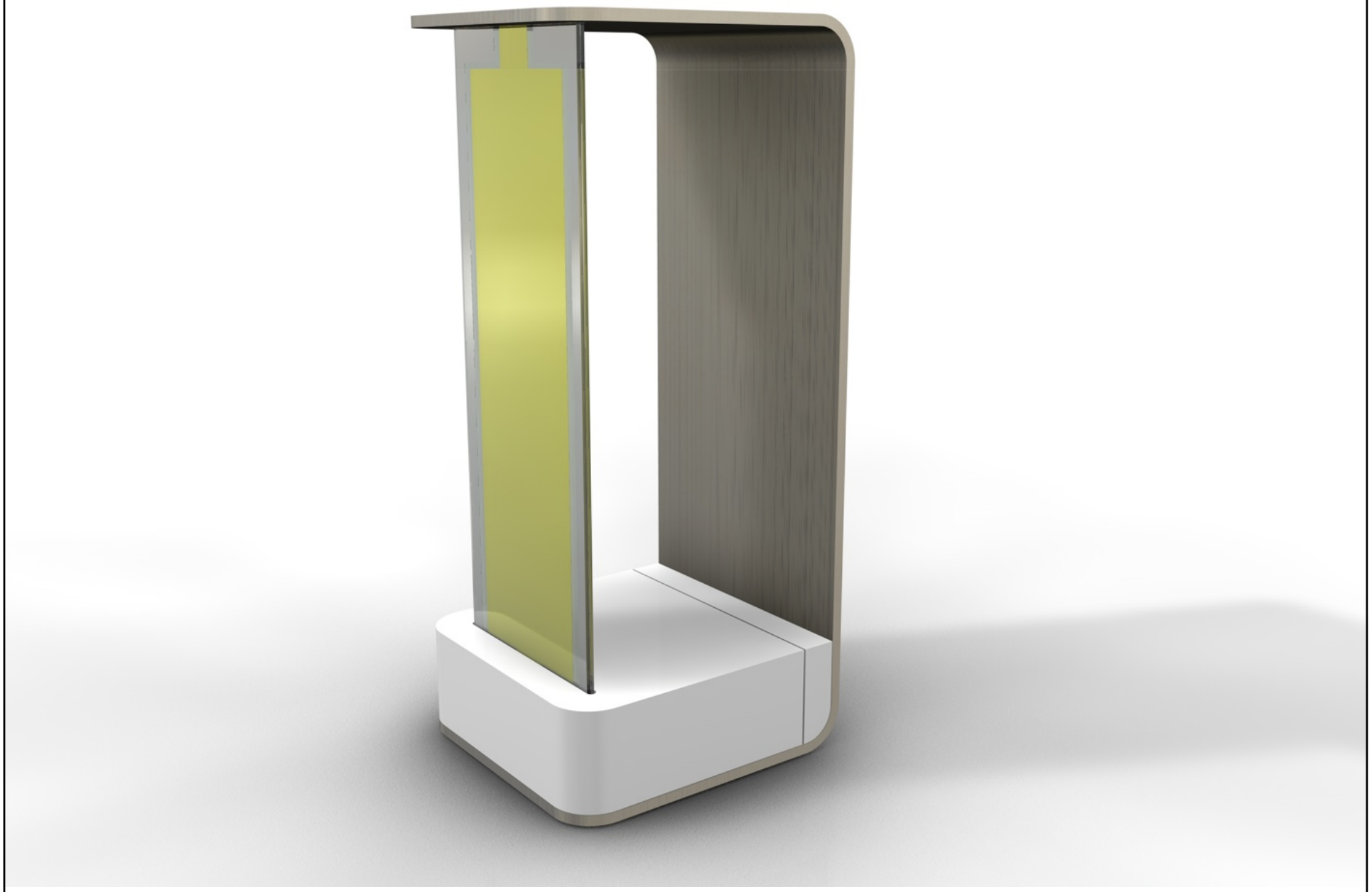
> it is a glare-free Light source by itself.

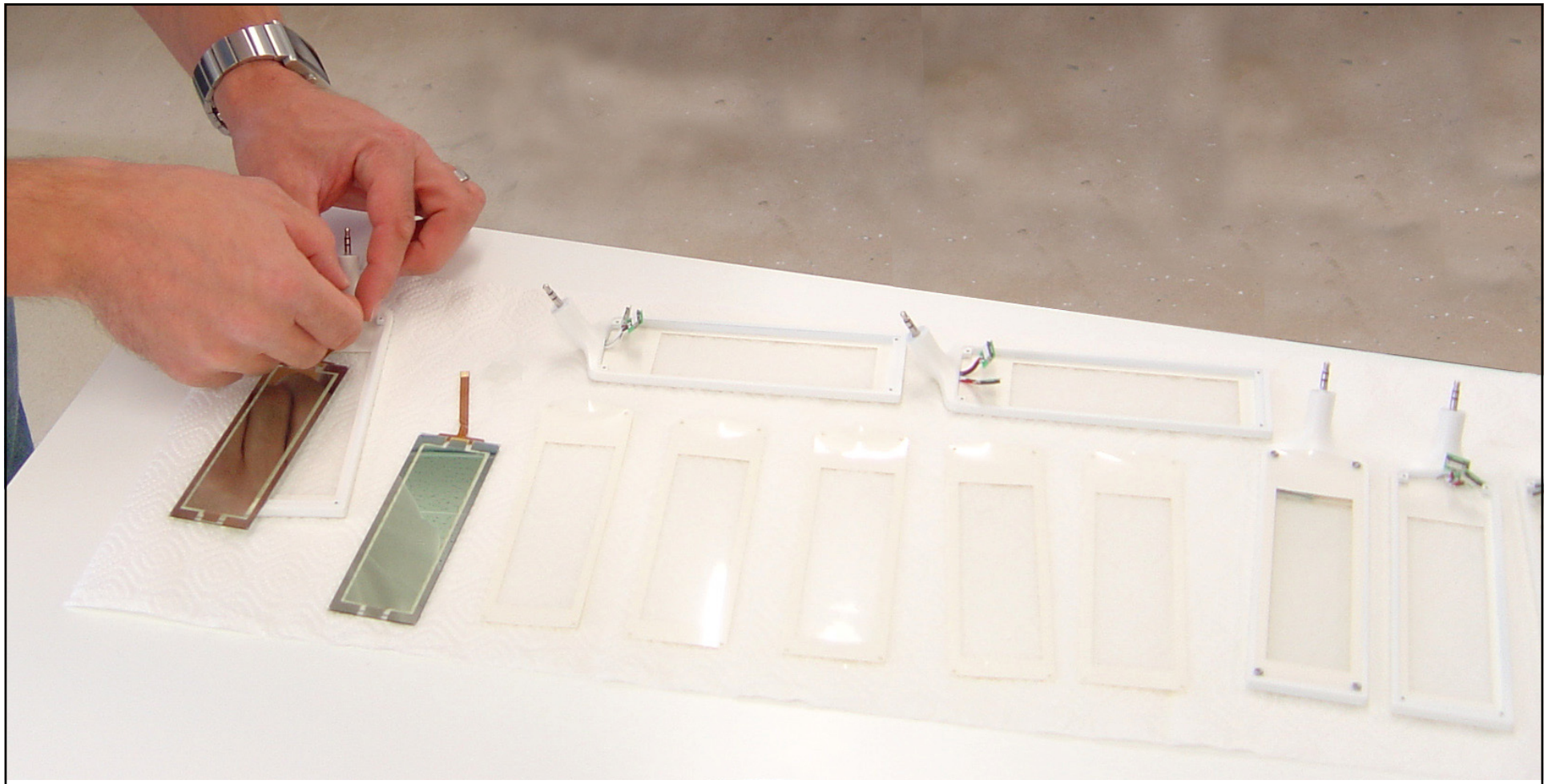
> it also can be used as display (new possibilities in graphics and typography).

today not more than a glow - but tomorrow?

Two years ago we started a cooperation with Merck KGaA to tell a story about state of the art development and to visualize, to which direction further developments could lead. Together we share the vision that the OLED will be a light source for technical lights on the market and light solutions for architectural applications.

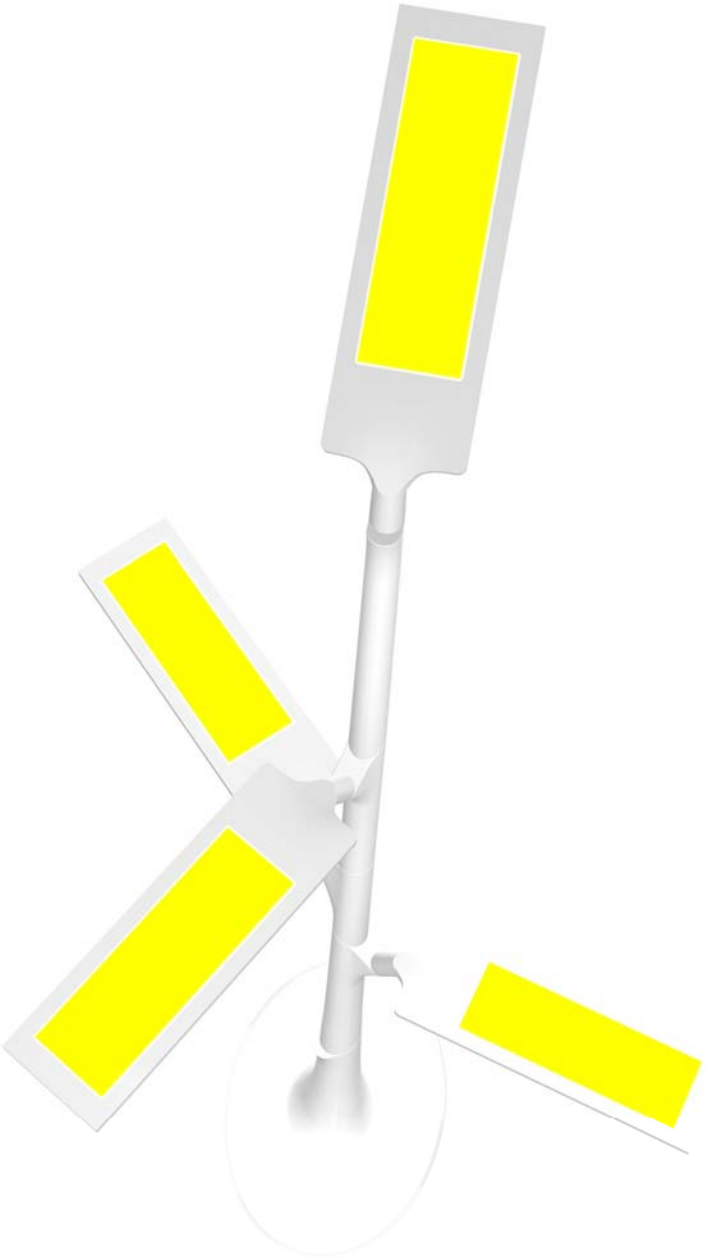
The "Candle Project" as a first study was the trial to incorporate OLED into a representative object, accounting for its momentary luminance. In this case the source of inspiration was the OLED itself with its actual performance. We started to tell a product story by using strong pictures to underline the chosen shape.

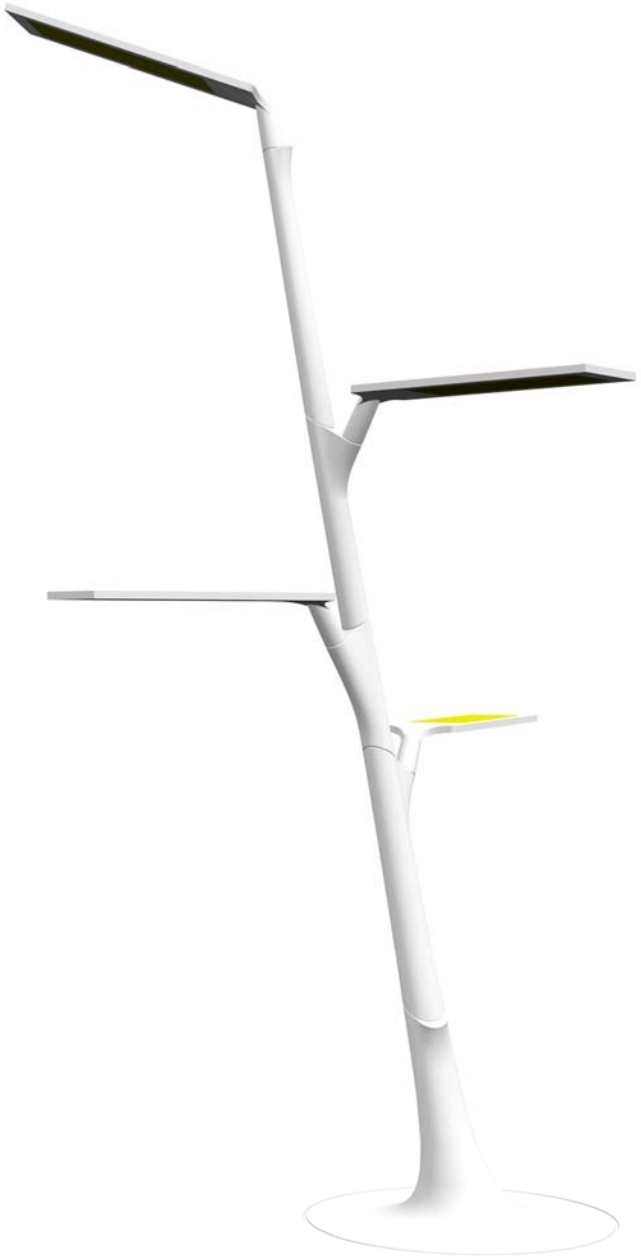




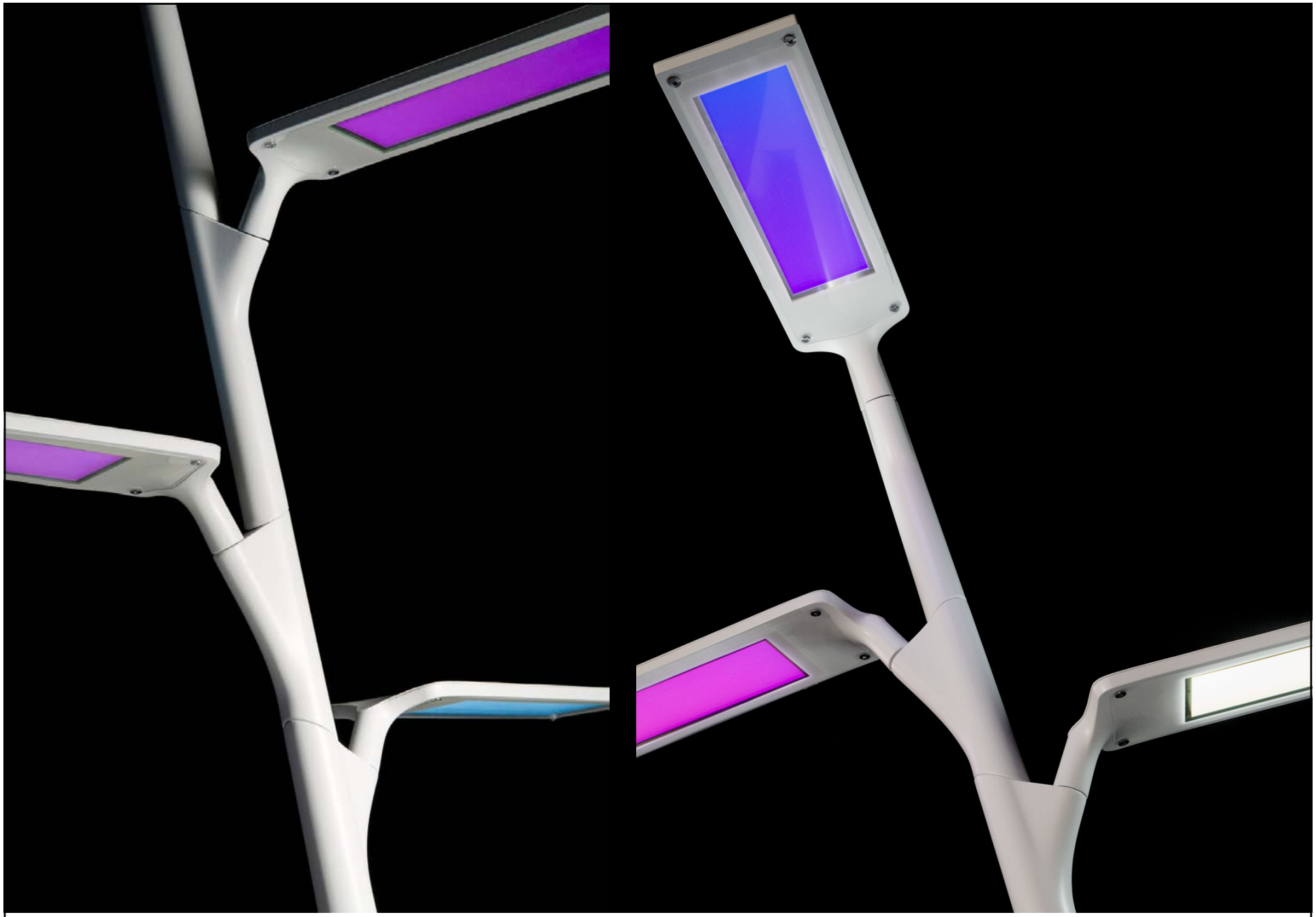
Why are designers enthousiastic about OLED technology?

The dimensions and technical set up of conventional light sources restrict design concepts in many ways which do not count for OLED technology. One can say, that OLED technology pave the way for innovative design concepts. On the other hand it is a great challenge for designers to work with an almost “dematerialized” light source.





Within the scope of a design study we designed a light object which does not primarily focus on the technological options. Instead, the subtle dealing with the mystically shimmering light is the primary intention. A figurative language derived from the plant world and is combined with the technical character of the OLED. The fascinating contrast of nature vs. technology leaves space for visions, inspiration and imaginations. The initial concept was the idea of a reverse photosynthesis. Analogue to the image of a budding plant, it unfolds a leaf of light which exudes an atmospheric light.



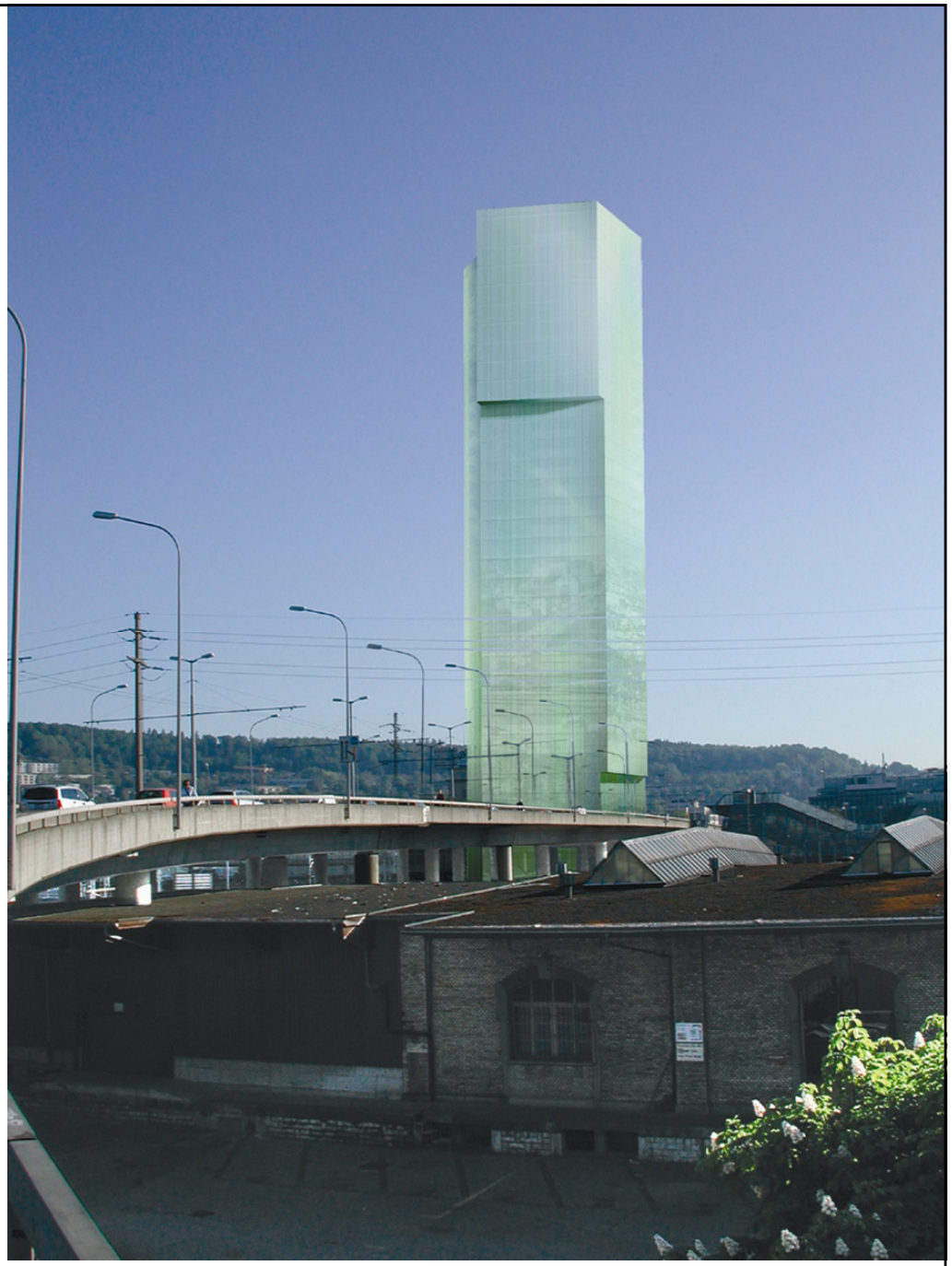
OLED technology offers an interesting alternative for optimized office lighting solutions.

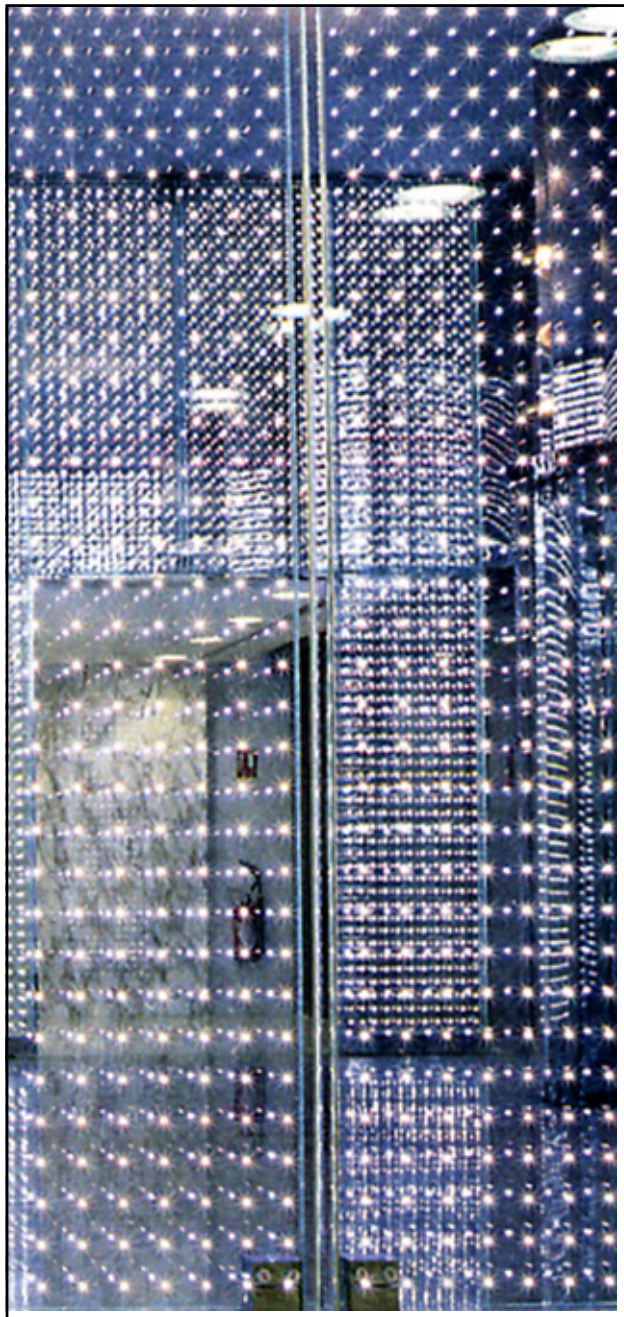
A light source which is almost invisible from a horizontal perspective.

In the future OLED technology could be used within the field of architecture for facade design (buildings), e.g. to light glass facades and other cladding systems or broad or punctual (not in the meaning of spot light) illumination of interior space. Also working stations could be illuminated by delicate canvas OLED-systems, which are close to be invisible by horizontal view, caused by its thin construction.


direction signs ?


Transparent walls combined with graphic design or typography.






Ausfahrt


Lift 4
Geschoss
1

indoor

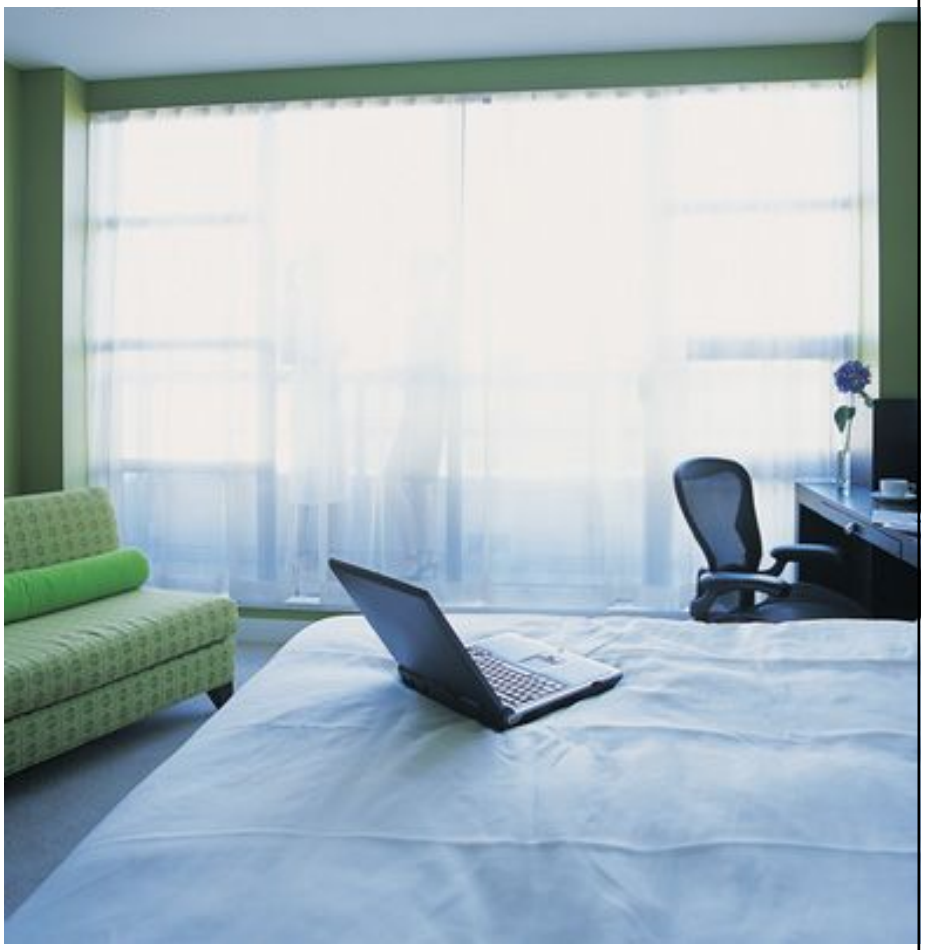
outdoor

… new possibilities in showroom lighting, where special light quality is needed?

e.g. food (dairy products,vegetables, fish & meat)

e.g. jewelers


JEAN RICHARD
JEAN RICHARD



Light walls and artificial windows


Artificial daylight (homogeneous light)

Light ceilings


There is a remarkable effort and speed in the development ...

LED

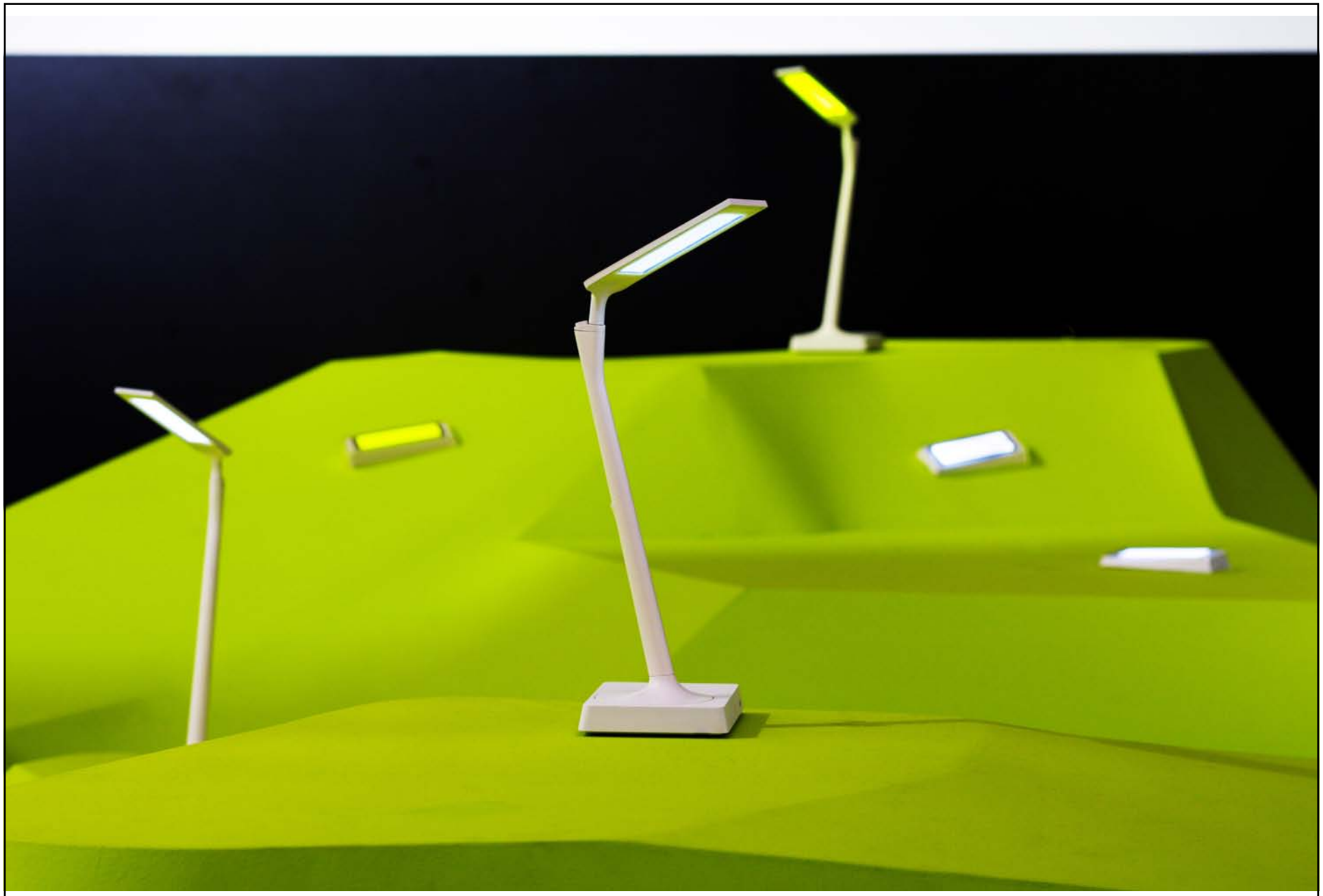
Die Erfolgsgeschichte begann 1962, als der Amerikaner Nick Holonyak die Leuchtdiode (Light Emitting Diode) erfand. Aber erst nachdem es gelang, Lichtausbeute und Farbspektrum zu erweitern, kamen LED bei Statusanzeigen von elektrischen Geräten, Laufschriftanzeigen, Auto- und Fahrradbeleuchtung, Taschenlampen und Großbildschirmen zum Einsatz. Die Vorteile der Leuchtdioden sind mannigfaltig: Je nach Stärke und Bauart haben sie eine Lebensdauer von 50 000 bis 100 000 Betriebsstunden, und sie verbrauchen weniger Strom als herkömmliche Lampen; weder häufiges An- und Ausschalten noch Erschütterungen können dem Leuchtmittel etwas anhaben, und nach dem Einschalten bringen LED sofort die volle Lichtleistung. Heute arbeiten die LED-Hersteller vor allem an der Erhöhung des Wirkungsgrades.
Ein anderer Forschungsbereich widmet sich der organischen Leuchtdiode (OLED), die mit extrem dünnfilmigen Halbleitermaterialien arbeitet. OLED eignen sich für Bildschirme und großflächige Beleuchtungen. Ihre Verwendung für biegsame Displays und E-Paper ist wahrscheinlich nur noch eine Frage der Zeit.

Für den Pharma- und Chemiekonzern Merck entwarf der Schweizer Designer Hannes Wettstein einen der ersten experimentellen Prototypen mit den so genannten OLED (organischen Leuchtdioden). Die nur 1,5 Millimeter starken und ca. 12 Zentimeter langen OLED von Merck leuchten absolut gleichmäßig und bilden stilisierte, zierliche Blätter an einem porzellanartigen Lichtbäumchen.

WÄNDE, DIE IN ZUKUNFT LEUCHTEN WERDEN

Wir fotografierten unter dem Bauch des Phæno in Wolfsburg. Das von Zaha Hadid entworfene Wissenschaftsmuseum wurde Ende 2005 eröffnet. www.phaeno.de

And it is just a question of time, that fiction will become reality.



OLED twig

After the prototypes of a „light tree“ (2006), two new OLED-light objects originated: a “light-twig” and a small ashlar, similar to a gold bar (2007).
The “light-twig” is a mobile light-object produced in white plastic. Referring to the old fashioned idea of the night candle – the modern version can be dislodged out of its base and carried around the space. Within the scope of a design study Hannes Wettstein designed a light object which does not primarily focus on the technological options. Instead, the subtle dealing with the mystically shimmering light is the primary intention.
A figurative language derived from the plant world is combined with the technical character of the OLED. The object represents a symbolic reversal of the photosynthesis. As the plant generates via photosynthesis cellular growth, the bio morph light-twig has gone one step further in evolution – emitting light.
All objects are to be seen as steps (prototypes) in product development towards a first realistic functional product on the market.

E27 ?

OLED technology does not restrict design applications in many ways. For my personal view, I expect the OLED technology to find an even use than today's LED.

There is a wide open field waiting to be conquered by us designers and engineers.

to be continued...

Thank you very much for your interest.


In Switzerland we say: „aufwiederluaga “