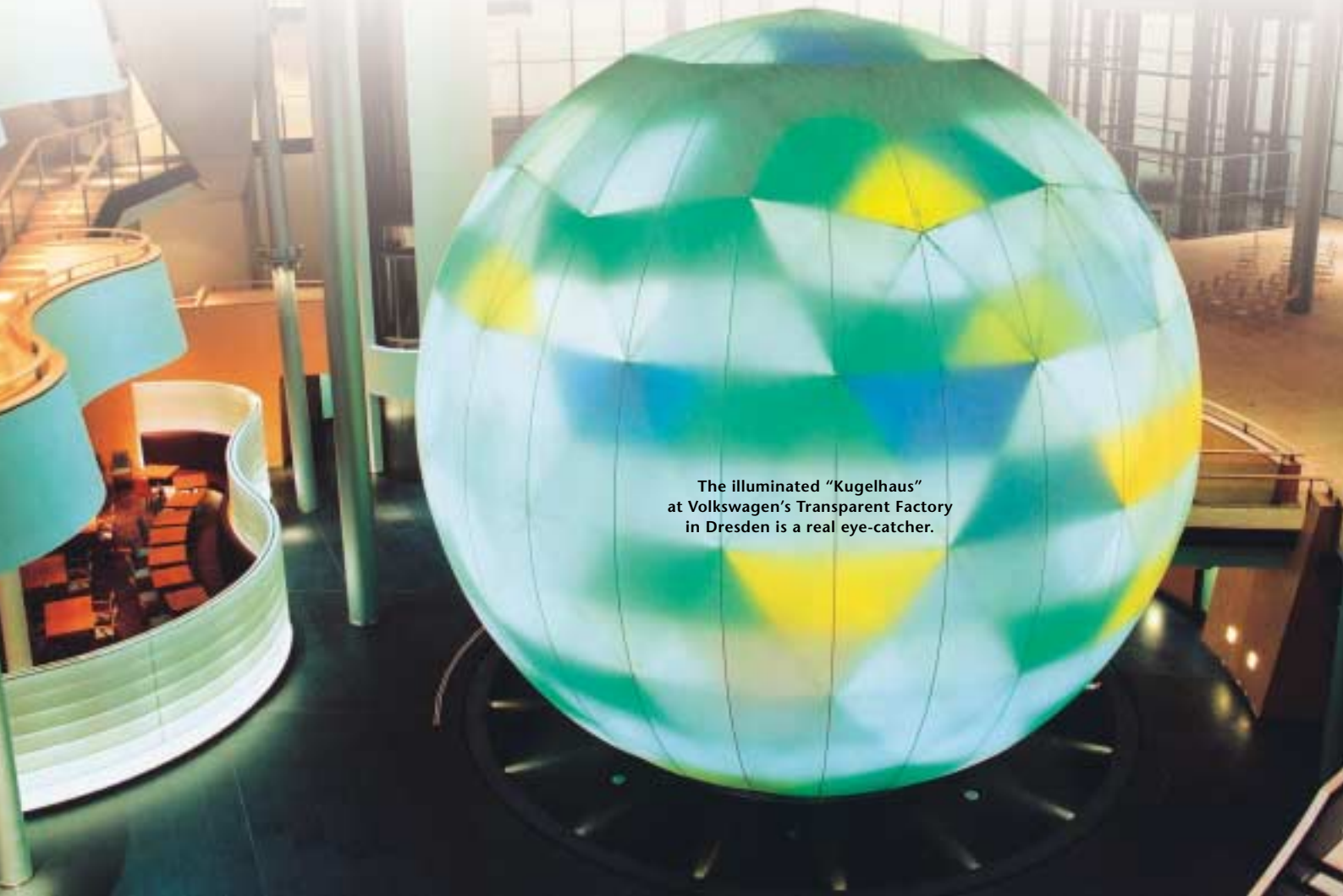


Ralf Daute
Kleve

A Shining Beacon

A unique building at Volkswagen AG's Transparent Factory in Dresden never fails to fascinate visitors: a gigantic globe that shines in constantly changing colors – with the help of fiber optics from Schott.



The illuminated "Kugelhaus" at Volkswagen's Transparent Factory in Dresden is a real eye-catcher.

► Suddenly it looms ahead, this imposing, but not at all threatening sphere, which is twelve meters high. The structure looks more like a round giant constantly transmitting friendly signals. Its colors change at regular intervals, moving from top to bottom over the surface. But this illuminated globe is not a piece of scenery from a science fiction film. It stands proudly in the middle of the bustling industrial site of Volkswagen's Transparent Factory in Dresden. In the new factory in the capital of the German State of Saxony-Anhalt, where Volkswagen produces its luxury limousine called "Phaeton," visitors are offered not

only an unusual car, but are also a special ambiance. The company has created an event hall, which, in addition to a driving simulator, virtual production and a technology center, includes the unique "Kugelhaus," which means globe-shaped building in German.

Precision is crucial

This structure dominates the entrance area of Volkswagen's visitors' center. From the outside, it looks like a shining beacon, but in fact, the building houses a modern multimedia center with information about the

newest trends in art and culture and the latest news about business and the stock market. "Kugelhaus" is part of our concept to turn the Transparent Factory into an interactive information center and meeting place," says a spokesperson from Volkswagen.

A concept that Schott Glas was able to help realize with its special technology. After all, the interior workings of the "Kugelhaus" are indeed highly intricate. The assembly required precision work, in which every tenth of a millimeter counts. The engineers left only two centimeters around the surface elements for the lighting technology, and on-

ly four for the light guides. "The crucial question was, what is the best way to illuminate the globe's individual elements made of acrylic glass," explains Ekkehard Gaydoul, a physicist in Schott's Fiber Optics Division. There were several requirements:

- The 340 square meter surface should be evenly illuminated, but not glaring.
- The individual panels covering the surface should be able to shine independently in different colors.
- The illuminated surfaces should not emit any heat.
- And the light panels have to be maintenance free because after completion of the construction they would no longer be accessible. A balloon shield protects the outer side of the "Kugelhaus," while the inner side has an aluminum construction.

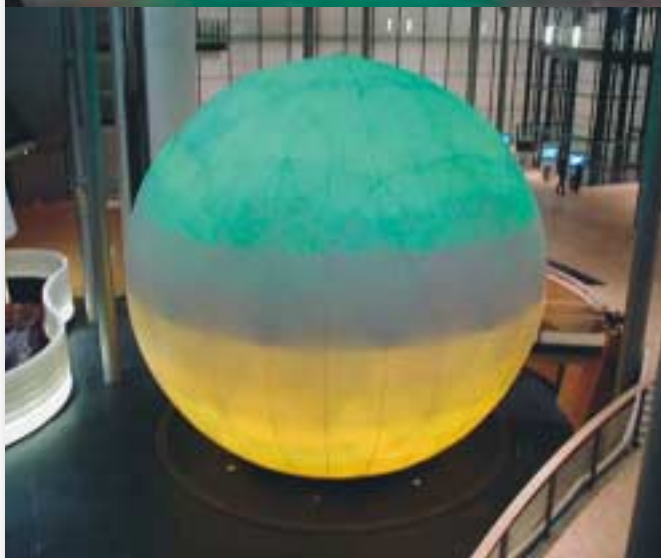
Some 20 kilometers of fiber optics

The planning of the lighting concept as well as the development and production of the light panels were the responsibility of planistar Lichttechnik in Himmelstadt. For the illumination of the 640 light panels, the experts chose a glass fiber system from Schott in combination with 220 light projectors. This system was the technology of choice because it offers problem-free maintenance. The light sources are kept in an easily accessible room located at the base of the building. From here, a computer directs the light sources and the color wheels. The light is conveyed through the aluminum structure via some 19.5 kilometers of light conducting cables to the individual light panels. Up to four cables consisting of some 4,500 individual glass fibers are hooked up to each of the triangular acrylic glass panels. Due to the special construction of the panels, the light is evenly distributed over the surface of each element.

The longest glass fiber cable in the construction measures 16.4 meters – a length that might normally result in a high loss of brilliance. This is why Schott's engineers chose special optical glasses with a particularly low absorption factor as the carrier medium for the light. Each cable is 7.3 millimeters thick. Ekkehard Gaydoul: "It was thus possible to guarantee the desired light and color intensity." Since its opening, Volkswagen's "Kugelhaus" has been a popular attraction for thousands of visitors. ◀



Intricate inner workings: the individual light panels of the illuminated "Kugelhaus" are supplied with light from 20 kilometers of light conducting cables.



The light fields of the "Kugelhaus" constantly transmit color signals under the outer covering, known as a balloon shield.