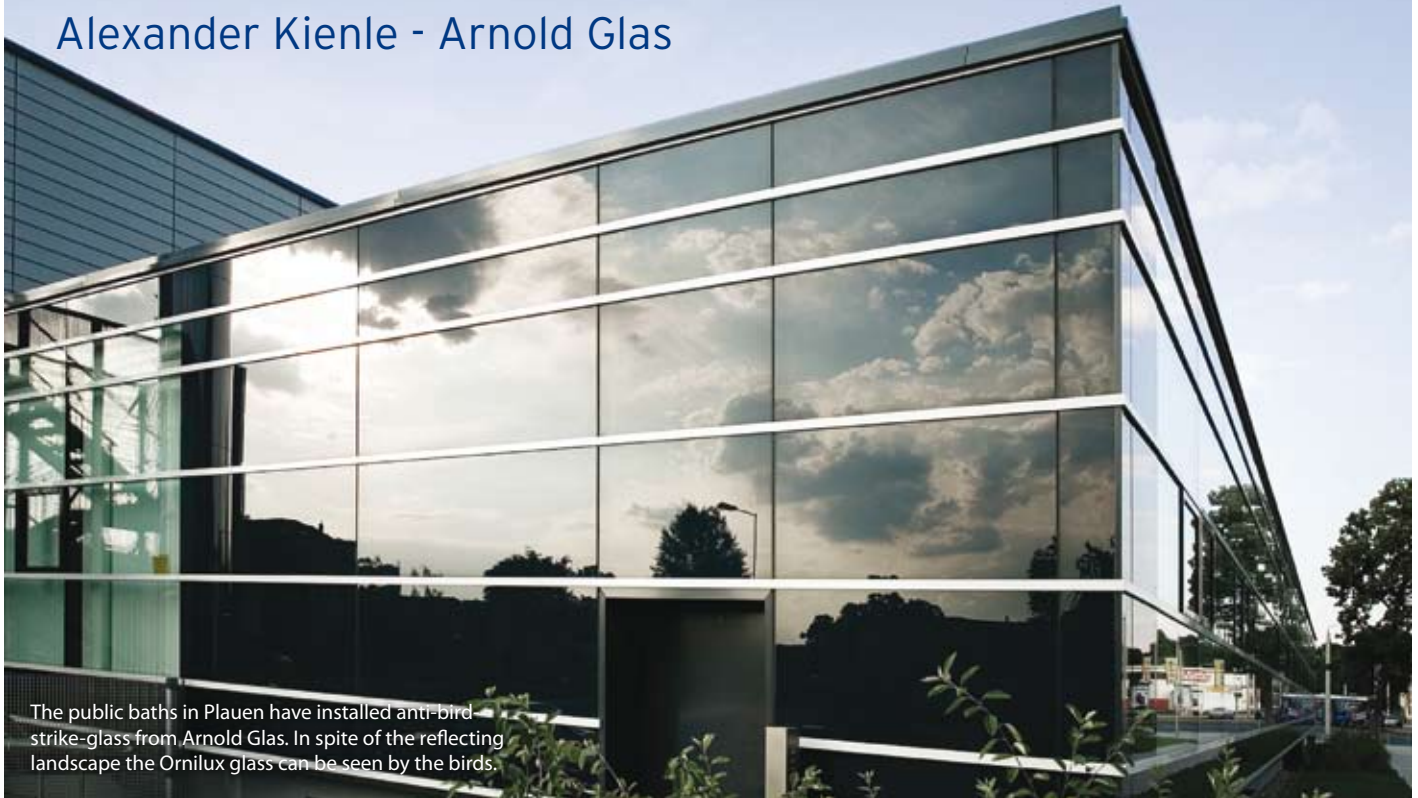




Strictly for the birds

Alexander Kienle - Arnold Glas



The public baths in Plauen have installed anti-bird strike-glass from Arnold Glas. In spite of the reflecting landscape the Ornilux glass can be seen by the birds.

Anti-bird-strike glass minimizes window-related bird deaths

Glass-plated office buildings, winter-gardens, transparent noise barriers and even shelters at bus stops can become deadly traps for flying birds. Then unlike humans, birds cannot easily see the transparent or reflective glass surfaces which are so popular in modern architecture and therefore they crash into them head-on at high-speed. As a result, everyday in Europe 250,000 birds are killed and in the USA over 270,000 birds die daily.

Each year in the USA alone, an estimated one billion birds are involved in unreported bird-strike incidents. And given today's global building boom in developing countries these statistics are now taking on a shocking dimension. If these bird-strike statistics represented people – each year our planet's entire population would die – through collisions with glass windows. If humans faced this same danger, we'd be completely exterminated. Clearly, that's a good reason to

give our feathered friends far more effective protection from a pitiful death. In fact, many birds don't even die immediately: often they vegetate with painful head injuries or only die slowly from internal injuries and bleeding after hours or even days.

Crime scene - living room windows: annually, the number of birds killed by glass windows equals mankind's worldwide population

Seeing the use of glass has become indispensable in many sectors, Arnold Glas has developed and successfully tested a special type of insulated glass to combat bird-strikes – named Ornilux. Here, their solution is inconspicuous and uses a largely transparent design which makes ultraviolet (UV) light visible to birds. Then, the scientific assumption is that birds are able to see UV light although humans cannot. Ornilux glass sheeting therefore uses a special coating which makes glass visible to birds as an obvious obstacle.

Bird-strikes threaten entire species

Ornilux anti-bird-strike glass has already received many awards from wildlife conservationists as well as designers. And the LBV in Bavaria, one of the major bird conservation organizations in southern Germany, has even started an exclusive partnership with the Arnold Glas company. "In Germany alone, entire species are endangered. And for a long time, we've been searching for a solution from the glass-making industry," explains the LBV wildlife conservation expert, Andreas von Lindeiner. "Thanks to the introduction of anti-bird-strike glass, known as Ornilux, there is finally an effective special glass on the market."

As part of the exclusive cooperative agreement between the bird conservation organization and Arnold Glas, this innovative product is now being presented on the Internet, in the LBV magazine and in a brochure which is available from building



Hellabrunn Zoo in Munich, Germany, was concerned for the wild bird population in their surrounding park areas. Ornilux Mikado glass was used at the polar bear exhibit and at the pelican house.



authorities. Plus, LBV employees and members are now promoting the advantages of this special glass to government officials, architects and private individuals. And at LBV centers, Arnold Glas experts are even conducting seminars on the glass' technological aspects. Additional contacts with other European environmental associations are also being planned.

Ornilux glass for the New York Zoo

For a zoo, wildlife protection is the highest priority, and Ornilux Mikado is the optimal solution. At Munich's Hellabrunn Zoo this special anti-bird-strike glass from Arnold

Glas has now been installed, as well as in the New York Zoo. At Munich's zoo, these new large-format glass panels represent a far more attractive alternative than ugly metal gratings or protective moats. Particularly in the polar bear enclosure, which is designed to reflect an arctic environment, a natural setting can be retained without using glass sheeting that can turn into a deadly trap for birds. Now birds can see that the glass as an obstacle, while polar bear and visitors can enjoy a clear view of the surroundings.

Munich: one of the world's most modern polar bear enclosures

In Munich's Hellabrunn Zoo, it only took 287 days to create one of the world's largest as well as most modern polar bear enclosures. And for the experts from Arnold Glas, this Hellabrunn project also represented a special challenge: All of these large format glass panels, weighing up to 750 kg each, needed to be delivered within extremely tight deadlines.

According to Arnold Glas' Managing Director, Hans-Joachim Arnold: "The special coating used in Ornilux glass requires a far more complicated production effort. And individual composite glass panels need to be completed within just two days." In the end, Arnold Glas produced 34 glass panels without coatings (covering 243 m²) and 37 Ornilux glass panels with special coatings (covering 236 m²) – within only a few weeks. And in Munich, their customers clearly appreciated this special effort – then thanks largely to the precision of the glass manufacturer's work, the zoo's new enclosure was completed on schedule and was opened punctually to the public.

In the USA, anti-bird-strike glass from Arnold Glas is in high demand

Special glass sheeting from Germany is also in high demand in the USA: in the New York Zoo for example, Ornilux now protects the administration building against bird-strikes. And thanks to its sales partner for the US market, Arnold Glas intends to fulfil this growing interest. In fact, recently the "New York Times" even ran a special five column story on the subject in its "Novelties" section, titled: "Warning to Birds: All-Glass Buildings Ahead."

In addition to the media's interest, Ornilux glass has also received many industrial awards: such as the "Innovation Prize in Architecture and Construction" as well as the "Industrial Innovation Prize 2007" in the category of environmental technology at mid-sized companies. Following Ornilux's nomination for Germany's National Design Prize, it was also honored by the wildlife conservation organization, PeTa. Since 2009, an enhanced version of this special glass has also become available, known as "Ornilux Mikado" which has an even more subdued appearance to the human eye than the first generation of Ornilux. And in 2010, the latest version of Ornilux Mikado was nominated for the prestigious "Red Dot: Best of the Best" design prize – taking top honors against a field of 1,600 other competitors.



Natural heritage information centre in Karwendel mountains, Austria, equipped with the anti-bird-strike glass Ornilux.



In the meantime, the Arnold Glas company with its Ornilux glass has also become well-known across Germany by participating in the national innovation competition for future-oriented projects, known as "365 Locations in the Land of Ideas 2011." Here, the level of competition in terms of quality and numbers of projects was very high, but Arnold Glas' Managing Director, Hans-Joachim Arnold was proud to say: "Our R&D investment in anti-bird-strike glass, as well as our joint efforts with scientists and wildlife environmentalists – have definitely paid-off."

Anti-bird-strike glass at 2,244 meters

The Nature Information Center in Karwendel is unique, worldwide – being built in the shape of huge telescope which is 34 meters long, 7 meters high and almost 9 meters wide - right next to the Mittenwald Gondola Station. Aside from its outstanding panoramas from almost 2,300 meters, this EU-financed building also offers an exhibition area of 200 m² describing the Alp's natural wonders. The center itself can be reached through a spiral staircase built into the building's foundation. The building's outer facade is panelled

with larch wood, covering concrete walls. Seeing this wood is untreated, after a short time it takes on a natural grey tone due to weathering which is similar to the dolomite rock around Karwendel, which thereby blends in very well with its surroundings. The building's large panorama window, on an overhang which is 7 meters above the cliff's edge – is an excellent example of how architecture and conservation can work hand-in-hand. But even at 2,000 meters, bird-strike is still an issue, such as for snow grouse – which are frequent guests who have learned to use the 34 meter telescope and the terrace of the gondola station as a protective wind barrier. That's also why it's important for them to see the new center's panoramic windows when in-flight. Here, the regional bird protection society provided important advice during the building's initial planning.

A new rating: bird-friendly construction

Snow grouse are a common sight in Karwendel, but they're certainly not the only birds that fly by: for example on Germany's highest mountain, the Zugspitze, at 3,000 meters a kingfisher was found dead following a collision with a window. Here too, the conservation group Friends of the Earth Germany e.V. (NABU) now recommends the use of lifesaving glass. In addition, they have also awarded a special building rating to a new administration building, a 2.5 million euro project, for the Hamburg Residential Building Cooperative in the Wandsbek residential park. For the first time in northern Germany, the NABU awarded this unique project a special rating for "Bird-Friendly Construction."

The Hamburg residential park in Wandsbek also fulfilled all of the requirements from the municipal planning board for "Green Living." The residential park is located in a broad natural setting, using rural architecture with gardens and it offers a wide diversity of plants and wildlife: such as blackbirds, titmice, wrens and sparrows etc.

That's also why wildlife protection played an important role during the planning of the cooperative's new office building – without compromising the desire for modern, attractive architecture. Here, both demands were successfully combined in the building's new 325 m² glass façade which provides optimal sunlight and transparency for every floor of this four story complex.