

Glass Prisms as Light Sources

The "Conturax" profile rods made by Schott Rohrglas offer architects and planners the opportunity to utilize sunlight creatively and functionally.



This installation at the glasstec shows a concept from Schott Rohrglas for guiding daylight using "Conturax" profile rods in an office space.

rigidly on top of each other. The steep angle of the summer sun is stopped with total reflection, while all other lower sun angles are guided to the interior space, both by light refraction and total reflection.

The new façade concept presented at the glasstec should not only give architects and planners an understanding of the aesthetic effect that the products have, but should also demonstrate their functionality. As proven by the overwhelmingly positive response seen at the fair, the experts have already adopted this innovative concept ■

In the last few years, the glasstec in Düsseldorf has become the glass industry's most important trade fair worldwide. A special exhibition at the 2000 fair was dedicated to the topic "glass technology live in building". Within this framework, the high tech exhibition area devoted a space to the presentation of a façade model assembled with "Conturax" profile rods made by Schott Rohrglas. The model vividly showed how glass prisms in the skylight area are used to guide daylight into the depths of the inner space below. In addition, it was shown how an arrangement of Schott vacuum tube collectors in the parapet area makes possible the active utilization of available solar energy.

Also, visitors saw a full-scale cutaway model of a typical office. In order to simulate sunlight streaming into the room, a narrow-beamed light source was mounted at a distance of about 5 meters above the skylight area at a 45° angle of irradiation. Using the glass prisms installed in the cutaway office

ceiling, it was possible to clearly represent all the reflected, incoming light. The glass prisms in the skylight area have a dual function. They can be used either as transparent sun protection or for guiding the sunlight to the space below.

60° prisms guide the light

So the incoming sunlight can be guided, the glass prisms are adjusted to the sun's angle, thereby actively functioning as a tracking system. The distance between the profile rods is determined by the 30° angle of irradiation. In all the examined angles of elevation, direct light is refracted very effectively into the interior space below owing to total reflection.

With the correct geometric arrangement of the "Conturax" profiles, the system provides angle-selective sun protection. Even for this application, Schott's 60° prisms are arranged perpendicularly, yet

