Light tunnel shows its true colours

The Raiffeisenlandesbank Innsbruck goes for effect lighting

Fig. 1. Mini-branch of the Raiffeisenlandesbank in Innsbruck's Rathausgalerie

Rathausgalerie out to attract customers

Building owner RLB Innsbruck wanted to integrate a shopping arcade in the freshly renovated inner courtyard of Innsbruck's old Town Hall – known as the Rathausgalerie.

Also in the arcade is a small branch of the Raiffeisenlandesbank Innsbruck with banking machines in the lobby. The bank counters are open during normal business hours, while the lobby with the machines is accessible until the arcade is closed for the night.

This mini-branch serves as a pilot scheme and a test for further customer areas of this kind.

Striking design

The architect's goal when designing the premises was to lend a distinctive flair to the area visible from the arcade and to give the bank branch an unmistakeable "Corporate Identity".

This goal was realised by designing the machine area as a bridge in the form of a tunnel of light of varying colour between the arcade and the banking hall. Small recesses with seats separate the banking hall from the machines in the lobby. From there, the customer has a view of a gigantic video display located on the rear wall behind the bank clerk's desk.

Glass and light

The 4 metre tunnel of light consists of 1 metre wide, vertical panels made of matt, special toughened glass. The edges of the room were designed as concave glass mouldings.

The small distance between wall and glass made it particularly difficult to meet the request for uniform illumination of the tunnel. On the walls and the ceiling, 20 cm are sufficient to achieve the required uniformity. However, only 2 cm were available in the floor area. A diffuser film was inserted between the layers of glass in order to obtain homogeneous distribution of the numerous shades of coloured light.

Light emitting diodes demonstrate their strength

The architect chose light emitting diodes as the light source for backlighting, since their small dimensions in combination with an extremely long service life and rich colours made them ideal for this kind of closed installation. The LINEARLightFlex modules from OSRAM with upward emitting PowerTOPLEDs are particularly suitable for light modelling the shape of the concave glass mouldings.

To be able to generate any desired colour, 680 metres each of red, green and blue OS-LM10A LINEARLightFlex modules were installed parallel to each other, edge to edge. Finned aluminium heatsink panels proved to be the ideal substrate for bonding the modules.

The Flexlight modules were installed vertically on the walls and ceiling, in order to reduce the amount of wiring. The spacing between the red strips, for example, is 10 cm.

As tests on glass samples showed, the panels in the floor elements had to be laid edge-to-edge in order to obtain a homogeneous luminance within these elements. This resulted in a spacing of just 3 cm for the red modules.

Fig. 2. A friendly (lighting) atmosphere in changing colours receives bank customers

Fig. 3. In the tunnel of light, changing colours attract customers

The controller does the trick

The structurally induced differences in luminance in the individual areas – i.e. floor, walls and ceiling – were taken into account when programming the controller. An individual dimming function compensates for differences in the distance between the light emitting diodes and the glass cover.

To control the LINEARLightFlex modules, PROLICHT, the Innsbruck based company commissioned with implementing the project, installed a total of 208 OPTOTRONIC OT DIM dimming units from OSRAM. To minimise the number of these units, and also that of the associated supply leads, similar areas were grouped together up to the performance limit of the OT DIM.

The electrically reversible overload and overheating safety cut-outs made separate protection of the LED modules unnecessary.

All the OT DIM units were combined in a single distribution board outside the light tunnel.

The control element used is a PC controller, which controls the OT DIM units via 1…10 V plug-in cards. All settings are pre-programmed.

Choice of colour

At the control panel – a very user-friendly input medium – the user can individually select between five mixed colours and five colour transitions.

In addition, a timer programme automatically controls various transition sequences throughout the day from the opening of the branch.

A special feature of this product in Innsbruck's Rathausgalerie is that the colour is controllable, whereas it is usually the luminance that is varied. The variation of the light as a function of time or usage is another interesting aspect.

Since all the colour changes brought about by the effect lighting in the light tunnel can easily be seen from the shopping arcade, the word will probably spread fast that the bank "blushes" when a customer walks in.

The LINEARLightFlex modules and the OT DIM dimming units from OSRAM were certainly up to the task of meeting all the architect's requirements. The building owner was equally happy with the new look of its pilot branch.

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