

durlum

ARCHITECTURE FOR AIRPORTS



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durlum is an internationally active manufacturer of innovative metal ceilings, lighting and daylight systems. For more than 40 years we have been a successful partner for architects, planners, drywall companies and general contractors. Realizing ceiling and lighting solutions for airports is one of our core competencies. Our aim is to work with our project partners on solutions that create a perfect synthesis between function and design. Solutions that make you feel at home.





YEREVAN, ARMENIA ZVARTNOTS INT. AIRPORT

Great diversity in design is characteristic for the new terminal of Zvarnots International Airport. To make the terminal as comfortable and pleasing for the passengers as possible, the Argentinian architects Lucas Monsalvo, Marcelo Minoliti und Karina Luna selectively used different metal ceiling and lighting solutions from durlum to highlight particular airport zones.

The specially designed extra-large raft ceilings, the POLYLAM® baffles with and w/o wood-print as well as the TOMEO® ceiling and LUMEO® illuminated surfaces had to meet the high design expectations whilst also fulfilling the acoustic requirements of an airport. In addition, they had to be specially secured due to the location of the airport in a region known for its earthquakes.

DURLUM PRODUCTS

POLYLAM® vertical baffle system printed with a special dur-GRAPHICS wooden veneer optic, dur-SOLO® perforated raft ceiling partly curved, LUMEO®-R built-in luminaires, TOMEO®-R ceiling elements with LUMEO®-R illuminated surfaces





MUNICH, GERMANY FRANZ JOSEF STRAUSS AIRPORT

Terminal 2 of Munich airport was completed in 2003. Its brightly lit central hall designed by K+P architects is a highlight in airport construction, characterized by transparency and optimum climate and acoustic conditions. The custom-built, raft-like steel ceiling elements from durlum installed high above the check-in counters add to the feeling of openness in the terminal. In addition, durlum supplied metal tiles for various areas of the terminal.

DURLUM PRODUCTS

2003 | 17,000 m² of metal ceilings: metal tile ceiling as well as custom-built raft like steel ceiling with wind bracing
2000 | 30,000 m² of custom metal and aluminium shaped ceiling,
1992 | 45,000 m² of metal ceiling, 4,000 light fittings





SINGAPORE CHANGI INT. AIRPORT SINGAPORE

The worldwide unique design of Terminal 3 of Changi Airport in Singapore allows complete daylight lighting. For optimum lighting of the 52,000 m² terminal a sophisticated roof construction with specially developed skylights and shade systems from durlum has been installed.

Depending on the position of the sun and the brightness, the shade systems on the roof align automatically and regulate the incident amount of daylight and energy input. When required, artificial lighting systems installed outside on the roof switch on additionally. Overall, this special design allows easy maintenance and saves 2,400 tonnes of $\rm CO_2$ annually.

DURLUM PRODUCTS

919 skylights consisting of parabolic panels and butterfly panels made of anodized aluminium being electronically controlled using a BUS system; custom made lighting systems incl. 90 spotlights, 128 pieces of indirect lighting and 300 pieces of reflective spotlights for the access ramp





MUMBAI, INDIA CHHATRAPATI SHIVAJI INT. AIRPORT

The newly built terminal 2 of Mumbai airport opened up in 2014. Its interior design from SOM architects articulates emotion in many ways, integrating regional patterns and textures subtly into the architecture.

More than 12,000m² of perforated metal ceiling with a particular dur-GRAPHICS wood-print texture, installed in different areas of the airport, emphasize the emotional approach whilst still providing all the advantages of a metal ceiling. In addition, customized linear metal ceilings in a bronze color were deployed.

DURLUM PRODUCTS

S4 linear metal ceiling in dur-GRAPHICS wood optic with L08 perforation [12,000 m²], customized linear metal ceiling perforated in L08 [33,000 m²]





MOSCOW, RUSSIA SHEREMETYEVO INT. AIRPORT

Sheremetyevo International Airport is one of the three major airports that serve Moscow. In 2009, durlum supplied more than 90,000m² of customized metal ceilings and various lighting solutions incl. linear lighting systems, spotlights and circular luminaries for the new terminal.

Centerpiece of the entrance area is a large metal wall-cladding system that resembles a Russian sledge. The construction with a length of 40m consists of specially designed, slightly curved metal panels with different radiuses.

DURLUM PRODUCTS

 $82,000\,m^2$ of metal ceiling S4 hook-on system in special design, $11,000\,m^2$ of open-cell ceiling STARLAM®,

integrated OMEGA lighting channels, spot and mirror systems

Photos: MM Video-Photowerbung

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HAMBURG, GERMANY HAMBURG AIRPORT

Terminal 1 of Hamburg airport opened in 2005. The sweeping form of the building designed by gmp architects takes reference from the wing of an airplane. It continues inside of the airport were expanded metal ceilings from durlum were deployed.

In the arrival hall the expanded metal panels in various shapes follow the curved walkway of the passengers. In the baggage claim area the architects opted for a vaulted ceiling. The convex and concave elements in expanded metal not only create a sense of openness, they also allow easy maintenance as they can be slid and lowered.

DURLUM PRODUCTS

6,000 m² of metal and fire proof ceiling, 2,000 m² of DOMUS[®] curved expanded metal ceiling, 3,000 m² of expanded metal tiles





NEW DELHI, INDIA INDIRA GANDHI INT. AIRPORT

The Delhi Indira Gandhi International Airport is one of the largest airports in the world. For the national and international piers of Terminal 3, which opened in 2010, durlum supplied 135,000 m² of various types of customized linear metal ceilings with and without perforation in less than six months.

< DURLUM PRODUCTS

135,000 m² of S4 hook-on system, special design ceiling system

MORE REFERENCES [SELECTION]

SALALAH, OMAN | Salalah Int. Airport In progress 50,000 m² of metal ceilings also with wood laminate; stainless steel woven mesh MANILA, PHILIPPINES | Ninoy Aquino Int. Airport In progress 10,000 m² of linear metal ceilings, 5,000 m² of "Honeycomb" ceilings PALU, INDONESIA | Mutiara Airport 2012 10,000 m² of linear metal ceilings and clip-in ceilings INDORE, INDIA | Devi Ahilvabai Holkar Airport 2010 Different lighting systemes: TALILUX®-E, JUNIOR downlights, wall mounted luminaire, light deflection system, LUMEO®-D HONG KONG | Hong Kong Int. Airport 2008 Special light fittings and 3,000 m² of high end polished aluminium ceilina ABU DHABI, UAE | Abu Dhabi Int. Airport 2007/08 16,000 m² of metal ceiling system S8 drop and slide; high end aluminium profile with expanded metal ALOR STAR, MALAYSIA | Sultan Abdul Halim Airport 2005 10,000 m² of metal ceiling [curved, triangular, standard]

IZMIR, TURKEY Adnan Menderes Airport 12,000 m² of tartan grid cross box system \$5.2 with mega panel module 1,500 mm	2006
BIRMINGHAM, UNITED KINGDOM Birmingham Airport 3,000 m ² of different open cell ceilings	2006
CHICAGO, USA O'Hare Int. Airport Hingeable open cell ceiling in anodized aluminium 1.5 mm gauge	2002
FRANKFURT, GERMANY Frankfurt Airport 40,000 m² of Y-STARLIGHT® metal ceiling	1999
HONG KONG Hong Kong Int. Airport 45,000 m² of special design metal ceiling	1998
FRANKFURT, GERMANY Frankfurt Airport 70,000 m² of metal ceiling and expanded metal ceilings	1994
NUREMBERG, GERMANY Airport Nürnberg 4,000 m ² of custom made aluminium ceiling	1991
ABUJE, NIGERIA Nnamdi Azikiwe Int. Airport Custom made open cell ceiling	1990



Closed metal ceilings Open metal ceilings Functional ceilings Raft ceilings and acoustics Design ceilings



Project lighting Interior and exterior lighting Lighting management



Daylight tubes Redirection systems Shading systems

DECKE LICHT **RAUM**

CEILING LIGHTING AMBIENCE

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