

CUSTOMER SUCCESS STORY

VESDA PROTECTS THE LARGEST AIRPORT TERMINAL IN THE WORLD



PROJECT: Airport

END USER/LOCATION: Beijing Daxing International Airport (PKX)

INDUSTRY: Transportation

SOLUTION: VESDA VLP-400, VESDA VLC-505, VESDA VLS-600

ABOUT END USER: Beijing Daxing International Airport (PKX) is the largest airport in the world. The airport's design is pioneering while its location on Daxing District (the southern suburbs of Beijing) is ideal for serving the Chinese capital and the neighboring areas of Hebei and Tianjin. The new mega-airport hub is expected to handle up to 45 million passengers per year by 2021 and reach an outstanding 100 million in the future. The airport officially opened September 25, 2019.



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WITH DECADES OF PROVEN PERFORMANCE AND RELIABILITY, VESDA WILL ENSURE PASSENGERS SAFETY AND SMOOTH OPERATION OF THE AIRPORT.

The Challenge

Visually spectacular, inside and out, and nicknamed the "starfish," the terminal building is the largest single-structure airport terminal in the world, with an area of approximately 700,000 m² (7,500,000 ft²).

The central atrium, with curves like a rolling landscape, is supported by eight giant C-shaped columns, each with a 106 m (350 ft) wide skylight at the top while accompanying the departure lounges are five traditional Chinese courtyards. The terminal roof incorporates fresh air intakes and return air ducts. Tempered air is supplied at low level to cool the people not the space, minimising energy use and increasing comfort. These large open spaces provided a difficult challenge for early warning fire detection.



The Solution

The only acceptable smoke & fire prevention solution for the most technically advanced airport in the world

is VESDA, from Xtralis, with over 360 VESDA detectors installed throughout the facility. With decades of proven performance and reliability, VESDA will ensure BDI's passengers safety and smooth operation of the airport.

VESDA has a very wide sensitivity range of 0.005 to 20% obs/m (0.0016-6.25% obs/ft). VESDA VLP & VLS support four configurable alarm levels (Alert, Action, Fire 1 and Fire 2) and protect areas up to 2,000 m² (21,520 ft²). VLS also allows for addressability to 4 zones. VLC has the same sensitivity range with 3 configurable alarm levels and coverage up to 800 m² (8,610 ft²).

Why VESDA

As an architectural masterpiece and technological marvel, only the very best fire protection would suit Beijing Daxing International Airport. With aspirating smoke detection mandated by local codes for smoke detection in high ceiling applications; not only could VESDA handle the large open spaces (LOS) requirement in the sprawling terminal, but it also was the best answer for the complicated and innovative beam structures of the roof.

With decades of proven service, VESDA's record of reliable and stable performance give Beijing Institute of Architectural Design (BIAD) the assurance that the passengers and facility will always be protected, and false alarms would not interrupt the busy operation of the airport.

Other factors included:

- VESDA's superior sensitivity & performance
- Long term reliability of VESDA
- Stability of the VESDA detection platform
- Centralized test and maintenance
- Xtralis system design assistance
- Total cost of operational (TCO)
- Ease of commissioning and maintenance
- User-friendliness of the system



Designing the System

Xtralis worked closely with its local distributors to ensure the project proceeded on time and to budget. They also assisted the architects and engineers from BIAD who were key in delivering the detailed design and delivery of the building's architecture.

The team from BIAD benefited from great flexibilities of VESDA system from designing to installation of the pipe networks.

Beijing Institute of Architectural Design

Beijing Institute of Architectural Design (Group) Co., Ltd is a large-scale state-owned architectural design and consulting institute established in 1949, the same year the PRC founded. Beijing Municipal People's government funded and established this wholly state-owned company in accordance with Company Law, it is also a first grade enterprise under supervision and management of the State-owned Assets Supervision and Administration Commission of People's Government of Beijing Municipality.



Protecting the passenger terminals requires very early warning capabilities, and BIAD selected 336 VESDA VLP-400, 18 VLC-505, and 8 VLS-600 smoke detectors for the project.



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