

# Greenheck Project Profile

## Software Technology Park

Lahore, Punjab, Pakistan

- **Engineering Consultant:**

National Engineering Services of  
Pakistan (NESPAK)  
Lahore, Punjab, Pakistan

- **Pakistan Contractor:**

China State Construction Engineering  
Corporation  
Islamabad

- **Greenheck Representative:**

Khan Brothers  
Head Office in Karachi, Pakistan



## The Challenge

- **Heat and cool the building 24 hours a day, seven days a week, in an environment where outside temperatures range from 41°F (5°C) to 106°F (41°C).**
- **Exhaust smoke, grease, and heated air from the kitchens in various restaurants and cafes.**
- **Remove heavy exhaust from the indoor parking area where cars and motorcycles are parked.**
- **Install fans that operate quietly, save energy, and**

**perform reliably without problems.**

- **Select fans that are easy to install to save time.**

Construction of a spectacular, new 17-story, 475,000 square foot office building in Lahore, Punjab, Pakistan, was completed in February, 2010. Lahore is the capital of the Punjab province and Pakistan's second largest city. This nationally acclaimed building project was designed to provide state-of-the-art office space for IT and other high

technology businesses. It is completely equipped with Fiber Optic, Wireless LAN/WAN, Wi Max and VSAT technologies – and a Global Data Center. The building contains numerous amenities such as restaurants, an auditorium, a gymnasium, a medical center, prayer halls and banking services. Indoor parking is also provided. A well-managed, 24-hour central cooling, heating, and ventilation system keeps tenants comfortable and equipment operating at top performance.

# Greenheck's Solution

- **(73) Vane Axial Medium Pressure Fans, Model AX**
- **(10) Tubular Centrifugal Fans, Model TCB**
- **(1) Sidewall Propeller Fan, Model SE2**

Seventy three Greenheck vane axial medium pressure fans, Model AX, were installed inline throughout the building ductwork for primary mechanical ventilation and to assist with kitchen exhaust. The fans feature cast aluminum airfoil blades that provide total efficiencies in excess of 70%, which helps reduce electrical expenses that can save owners money on long-term energy bills. In addition, all blades are manually adjustable to allow for field air balancing, ensuring optimum performance. All the vane axial fans were specified as direct drive to eliminate routine maintenance costs associated with belt drive models.

Ten Greenheck tubular centrifugal fans also were selected for this building project based on their ability to provide quiet, efficient, and high performance air movement. Because these fans can be mounted in any position from horizontal to vertical, they can easily accommodate a variety of supply and exhaust applications and can be installed in very small spaces if required. On this project, the tubular centrifugal fans were installed in the restaurant area to control smoke exhaust and in other areas, such as near the prayer halls and auditorium, where quiet operation is required.

A Greenheck sidewall propeller fan, Model SE, was installed to exhaust heat from a control room.



*Seventy three Greenheck vane axial medium pressure fans were installed for this high temperature application.*



All Greenheck fans specified for this project were AMCA Licensed and UL 705 and UL 762 approved ensuring reliable ventilation performance and adherence to internationally recognized safety standards.

## The Results

- The combination of Greenheck vane axial fans, tubular centrifugal fans, and sidewall propeller fans are able to move in excess of 595,000 CMH of air. Helison Huang, project manager of mechanical and electrical systems for China State Construction Engineering Corporation, said, "The fans used are very powerful with acceptable sound level and promised performance." Despite the use of very large fans up to 38,929 CMH with external pressures up to 641 Pa, sound levels in the ducted areas are only 72-84 dBa. Thanks to the

many accessories that were provided from the factory (such as isolators and brackets), the installation of the inline ducted fans was completed very efficiently and well within the project's installation schedules.

