

# Changi Airport Terminal 3 – Clear and Natural

Singapore opened its new Terminal 3 on 9 January 2008, 17 years after its Terminal 2 opened and 27 years after Changi Airport started operations with its first terminal in 1981.

Poised to propel Changi further ahead as a premier global air hub and the world's best airport, Terminal 3 is set to deliver unsurpassed qualities of service, efficiency and safety, and promises a brand new experience for all air travelers who pass through its gates. The 380,000 square metres Terminal 3 is the fulfillment of the airport masterplan envisioned in the 1970s. A seven-storey building with three basements and four above ground levels, Terminal 3 costs S\$1.75 billion and brings the airport's total handling capacity to about 70 million passenger movements annually.

Terminal 3 is a showcase of inspirational architecture featuring the thoughtful integration of nature's wonders with state-of-the-art technology to create a relaxing and refined ambience of embracing comfort, topped with a myriad of enjoyable, enlivening and entertaining facilities to charm and revitalize travellers.

## Design Concept

The roof design of Terminal 3 is an innovation in itself, making use of natural lighting to create a unique ambience distinguishing it from any other airport terminal in the world.

### Natural Lighting

The unique roof architecture allows soft natural light into the building while keeping the tropical heat out. The first-of-its-kind roof design has 919 intelligent computer-controlled skylights with specially designed butterfly-shaped reflectors which automatically adjust themselves according to the outdoor sunlight intensity.



Each skylight comprises a roof opening sealed with a pure crystal-type glass that admits the full spectrum of colours from natural daylight into the terminal building. An intelligent control system adjusts a set of butterfly-shaped reflector panels installed above each skylight in response to the position of the sun and cloud cover conditions so that an optimal amount of natural daylight is directed through the

crystal-type glass into the building interiors. Parabolic aluminium reflectors “louvers”, spanning below the roof across the entire ceiling, shape the streams of daylight into uniform, glare-free, diffused lighting to present a refreshing natural light environment, enlivening the sense of space and comfort in the terminal.

At night, the skylights glow with artificial lighting delicately concealed below the reflector panels. The overall effect is a soothing ambience at all times of the day.

The introduction of abundance of natural light into the building in turn helped achieved two objectives. Firstly, for about five hours a day, there is no need for artificial lighting. Together with an air-conditioning system that throws cold air via binnacles rising from the ground, the result was a substantial reduction in energy consumption and savings in energy bills. Secondly, lush landscaping could be introduced into the building.

### Clarity

Changi Airport planners recognise that a key stress point for many travellers is wayfinding. Terminal 3 was hence designed to allow travellers to find their passage through the terminal with ease. This is possible as Terminal 3 adopts a see-through layout concept, making it easier for travellers to orientate themselves. Signages are upsized and multi-lingual to enhance wayfinding. In current times, where air terminals tend to be mega structures with high ceilings, it is important to ensure that font sizes of signages are not perceived to be small relative to the huge expanse of space.



### External Views

With full glass facades, passengers have extensive visual access to the external landscapes that surround them. This gives a sense of expansive space and openness, besides giving travellers views of take-offs and landings of airplanes.

### Going Back to Nature

Airport designs have evolved over the years, with newer airports and terminals developed with striking architecture and each trying to carve out their own identities. For Changi Airport, Terminal 3 is a reflection of Singapore’s Garden City image. Coming into Terminal 3, one will be awed by the five-storey

high vertical garden, called the “Green Wall”. Spanning 300 metres across the main building, it can be admired from both the Departure and Arrival Halls. The “Green Wall” is a tapestry of climbing plants, interspersed with four cascading waterfalls and a hand-carved sandstone art wall display. At the transit mall, travellers can relax amongst fig trees, koi ponds or visit the World’s First Butterfly Garden in an airport.

### **Single Shopping Street**

On the commercial front, more than 25,000 square metres of floor space has been set aside for more than 100 retail shops, over 30 food & beverage outlets and over 20 service concessions. To complement the see-through layout concept of Terminal 3, the Departure/Transit Mall is designed to provide a compact single shopping street layout that enhances the visibility of the retail outlets. The extensive use of glass in the terminal will allow passengers a vantage view of both the airside and landside shopping and dining zones.

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