

## CASE STUDY 19

### LEEDing the way...

**Who:** Boston Logan International Airport

**Where:** United States

**What:** Developing new terminal projects based on LEED principles

**When:** 2005

**Why:** An holistic approach to sustainable development of new infrastructure

#### Project

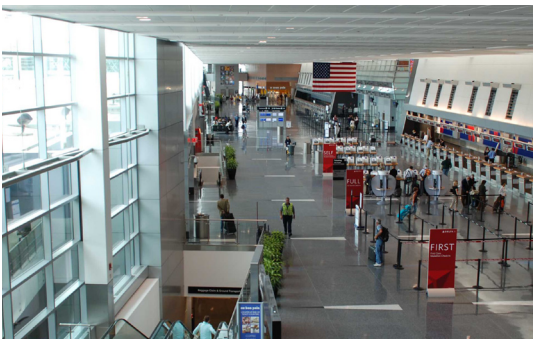
The airport's new \$390 million Terminal A was developed and built using Leadership in Energy and Environmental Design (LEED) principles. It was the first airport terminal in the USA to be LEED certified. The project included elements of sustainable design such as alternative transportation options, priority curb locations for high occupancy vehicles, storm water filtration, a heat island membrane, mechanisms to reduce water use, day lighting for energy efficiency, use of sustainable materials, and measures to enhance indoor air quality.

#### Result

Using LEED design principles, the airport has realised 12% energy savings, equating to almost \$US300,000 annually, and 36% water savings (or 1.7 million gallons per year).

#### What is LEED?

The Leadership in Energy and Environmental Design Green Building rating system is the US benchmark for the design, construction, and operation of high performance 'green' buildings. LEED promotes a whole-building approach to sustainability by recognising performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. The programme is administered by the US Green Building Council: [www.usgbc.org](http://www.usgbc.org)



#### The wider Boston Logan environmental picture

As a result of Massport's many environmental programmes, Boston Logan's effect on the surrounding environment has been dramatically reduced over the past two decades:

- A key element of the strategy is the reduction of trips using single occupancy vehicles (SOV). The long range goal is to increase passenger use of high occupancy vehicles (HOV) to 35.2% by the time the airport handles 37.5 million passengers (it currently handles around 28 million). A 1999 study indicated over 30% of passengers access Logan via HOV modes. A 2003 update showed 32% HOV use.
- Boston Logan's effect on the noise environment has also reduced. In 1980, nearly 63,000 people resided within the 65 DNL dBA or higher noise contours. In 2005, that number had dropped to just over 6,400. The steady decline in affected population is attributable to quieter aircraft and noise abatement procedures, even though aircraft movements have grown significantly since 1980.
- Local air quality has also improved. A cleaner aircraft fleet and a range of alternative ground access transportation options (including a reduction of on-airport traffic and conversion to compressed natural gas of the shuttle buses that carry passengers to and from its terminals) contribute to air quality improvement. The Logan Air Quality Initiative is Massport's innovative programme to maintain NOx levels at or below 1999 levels.
- Boston Logan's Environmental Management System incorporates air quality, noise, and water quality analyses into a system designed to reduce environmental impacts associated with operations. Annual reporting of environmental conditions is available to the public directly through the airport's website.

\* Other North American airports have achieved or are currently working towards LEED certification for development projects including Indianapolis, Toronto, Winnipeg and Oakland.



#### Company profile:

The Massachusetts Port Authority (Massport), operates Boston Logan International Airport. It serves nearly 28 million passengers and handles over 410,000 flights each year. New England's largest transportation centre, the airport boundary encompasses approximately 2,400 acres in East Boston, Massachusetts.

Logan ranks 20th in the USA in passenger volume and employs about 12,000 workers and stimulates the New England regional economy by approximately \$7 billion per year.

[www.massport.com](http://www.massport.com)

