After Sept. 11, 2001, the focus on improving airport security intensified. That is still the case today. With new technology, airports can keep security at the lowest cost possible without sacrificing safety.

That’s where the rubber meets the road — keeping airports safe, cost-effectively. The cost focus is twofold: initial installation and ongoing operations. While the initial installation cost can seem high, the airport lives with ongoing operational costs, which over the years will be many times the installation cost.

The Lambert-St. Louis International Airport is addressing these issues with the airport experience program. The initial phases include improvements to the main terminal ticketing hall, baggage claim and concourses. Burns & McDonnell is responsible for the design enhancements and renovation of the main terminal and concourse mechanical, electrical, plumbing and special systems. One goal of this project is to improve the passenger’s experience by redesigning the passenger screening checkpoint area.

The reconfigured checkpoint layout must meet the current Transportation Security Administration requirements, provide flexibility for future requirements, be adapted into the existing area and add sustainability into the equation. Our efforts will address the technical and sustainable needs for the mechanical, electrical and communication systems.

Faced with an aging airport infrastructure, the cost of upgrading versus leaving existing equipment needs to be considered. Performing a life cycle cost (LCC) analysis addresses this issue. Air handling units are an example. The LCC examines the overall cost — both initial installation and ongoing operations — over the life of the improvements. Why do an LCC? Because replacing or leaving existing equipment can have a significant
SAVE LIVES AND BUDGET WITH FIRE PROTECTION ENGINEERING

By Tony Schoenecker, PE, FPE, LEED® AP

As more aviation facilities are executed using a fast-track, design-build method, the role of fire protection engineering becomes more imperative.

In a traditional approach, each discipline completes its design, complying with the prescriptive codes applied to the trade. Unfortunately, compliance of these codes can be achieved through several methods. For example, in a hangar it may be possible to use wet-pipe sprinklers, deluge foam-water sprinklers, low-expansion foam, high-expansion foam or a combination. However, in a support area for chemical storage compartmentalization, a better option may be to use suppression, which minimizes the environmental impact of runoff and hot gases containing potentially hazardous materials. Each of these options affects the mechanical, electrical and architectural approaches to designing the hangar.

A fire protection engineer’s task is to provide the best, most cost-effective method meeting the intent of the code and the stakeholder’s goals. The advantage of having a fire protection engineer on the project is that he or she pulls the other disciplines together when producing a consolidated approach to life safety and asset protection.

Fire protection engineering brings great value to a project:

-Eliminates unnecessary over-design and redundant systems, reducing capital and life-of-the-building inspection, testing and maintenance costs

-Minimizes costly retrofits required to obtain occupancy certification caused by issues with cross-discipline coordination

-Increases mission continuity by decreasing the potential for false alarms

-Use performance-based design to achieve project goals while complying with the appropriate codes

lifetime operation cost. Over the long term, installing new, more efficient equipment may be more cost-effective.

Burns & McDonnell is also responsible for upgrading the utility, fire/life safety and communication systems. Improving the electrical system will decrease the energy required to run the airport. Heating, ventilating and air conditioning system improvements will keep costs down through efficiencies and controlling air quality throughout the airport.

Cost-effective security improvements keep passengers moving, safely and efficiently.