

## FEATURE — SALLY PORT DOORS

# Four-Fold Doors Gain Popularity in Corrections Industry

By Burt Laine

In the past 12 years hydraulic four-fold doors, or bi-fold doors, have become widely used on vehicle sally ports at county, state, and federal correctional facilities, as well as at federal courthouse secure parking entrances.

### History

In 1969 the first hydraulic four-fold door was installed in a correctional facility, but it wasn't until 1987 that the corrections industry started to take notice. Up until that time, roll-up and overhead sectional doors were commonplace as sally port doors, but recurring problems with the doors started designers and corrections facilities to look for an alternative.

In 1987 Electric Power Door (EPD), a supplier of hydraulic four-fold doors, surveyed county correctional facilities across the United States. What it found at the time was that 70 percent of facilities had sally ports, and were using overhead sectional doors, roll-up doors or roll-up grills. And of those, 80 percent were experiencing problems.

According to Jeff Jacobson, vice president of sales and marketing at EPD: "We found that the roll-up doors were only made to withstand about 100,000 cycles and were having problems with springs and other hardware. And we found that the larger jails had vehicle sally port doors that were opening and closing 200 to 250 times per day. At that rate it doesn't take long before there is going to be costly maintenance."

### Applications

"We've worked together and developed solutions for projects all over the country," says Michael Murphy, senior architect and chairman of justice technical committee for DMJM. "Universally most owners will say the nightmares with vehicle sally port doors have been roll-up doors that get backed up into or driven into by police vehicles," he explains.

Projects Murphy has worked on and for which he recommended four-fold doors include Virginia Peninsula Regional Jail, Hampton Roads Regional Jail in Virginia, and more recently the Salt Lake County Detention Complex.

Steve Bonacci, sales representative coordinator for EPD, adds, "Hydraulic, four-fold doors easily handle 2 million cycles with minimum maintenance. Because they're hydraulic, there are no springs or counterbalances. The doors operate at two feet per second, making it even more unusual for vehicles to hit them."

Wayne Cooper, facility services manager, Arapahoe County, Colo., agrees that the springs in roll-up doors are a major problem: "We put two retrofit four-fold doors on the booking area for a detention center, which operates 24 hours a day. Most days those doors will open and close 200 times a day. The roll-up steel doors had problems with breaking springs several times a year. About three years ago we installed the four-fold doors and they are a very good operating equipment—very reliable."



The bar hydraulic four-fold door at the Twin Towers, Los Angeles Central Jail, Los Angeles, California.

"I started working with four-fold doors on detention facilities 15 years ago," says Frank Erbschloe, Sr., formerly of HOK and now an independent consultant with Erbschloe Consulting Services Inc. "We had previously always had trouble with vehicles running into the doors. Since I started specifying four-fold doors, I've heard zero complaints from owners."

Four-fold doors have also been popular in downtown settings, where the doors need to be "designer" doors and be aesthetically pleasing.

"Hydraulic four-fold doors can be customized for climate," says Bonacci. "In warmer parts of the country, our research showed that roll-up grills were being used because of ventilation purposes, but there again these were not durable, long-life doors. Our four-fold doors can be custom-made into a grill or bar-type door with structural steel. We see a lot of 3/4-inch round rods, or a variety of specified wire security mesh."



*The mesh hydraulic four-fold door at the Taycheeda State Prison in Fond du Lac, Wis.*

## Federal Prisons and Courthouses

In federal prisons EPD has had to customize doors with attack-resistant devices and riot control devices. Over the years the company has designed a number of locking mechanisms and security mechanisms for doors.

"In recent years more federal prisons are being located in urban settings," says Jacobson. "Because of the land space constraints in an urban setting along with the need for buildings to be more aesthetically pleasing, design changes have had to take place.

"Prior to a redesign at federal prisons, they had always used sliding gates. When the design of prisons changed, the sliding gates didn't work anymore because there wasn't enough side room, and the sliding gates weren't holding up to extremely

high cycle applications," he adds.

Since installing doors in the new Houston Federal Penitentiary, new projects in design at EPD include federal penitentiaries in Atwater, California; Oahu, Honolulu; and Lee County Federal Penitentiary in Virginia.

Secured judges parking at federal courthouses is another area where four-fold doors are becoming more common. Federal buildings offer unique challenges, and four-fold doors have been customized and have vertical lift doors for larger openings.

A recent vertical lift door had 3-inch rods installed for security, and most federal buildings now have special attack-resistance features. EPD has recently designed a new attack-resistant locking mechanism for a door on the new federal prison in Houston, Texas, and has worked closely with the Federal Bureau of Prisons on a locking device to meet additional needs for riot control. After developing technology such as this in the past, designs have been later specified for other similar facilities. Other custom features include security mesh and bullet-proof doors.

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