

# CIVIL ENGINEERING

## STRUCTURES

### Automated Parking Garage Provides Tight Fit

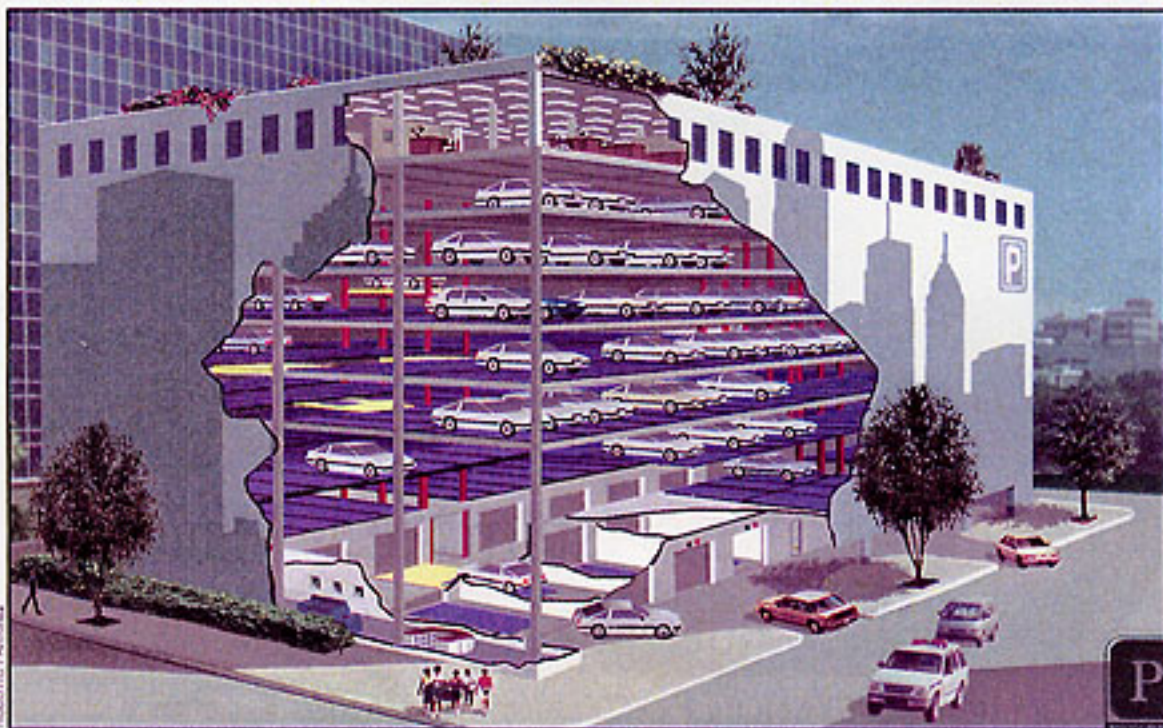
**W**hen the Hoboken Parking Authority bought a 929 m<sup>2</sup> (10,000 sq ft) lot in land-starved Hoboken, New Jersey, it had to find a way to take advantage of the space. The authority is building the country's first automated parking facility for commercial use so that it can pack more cars into a smaller space. The \$6.5-million structure will house about 324 cars on seven levels—about twice the norm for conventional parking structures of similar size.

empty space—no ramps, walkways, or pedestrian elevators are necessary. Patrons use key cards to “park” and retrieve their cars and never enter the facility. Parking spaces inside can be narrower than in conventional garages because the car doors never open.

“It’s a great big sophisticated shelving unit for cars,” says Terry Blackburn, a senior vice president with Schoor DePalma in Manalapan, New Jersey, the parking authority’s engineering consultant.

The 17 m (56 ft) high garage is basi-

A conventional garage costs about \$21,000 per space to build, says Jo Ar Serrano, the executive director of the Hoboken Parking Authority. At \$6.5 million, the automated facility will come in at about \$20,060 per space. The authority plans to sell monthly parking passes at the new facility for less than \$200. ▼



ABOUT TWICE as many cars will be parked in an automated garage being built in Hoboken, New Jersey, as are parked in conventional facilities of the same size.

With building height restrictions and a high groundwater table that makes underground construction expensive, the authority had little choice but to introduce automation into its parking regime. Automated parking garages have been built in crowded cities in Europe and Asia since the 1950s, but the United States has generally not had much difficulty finding space for parking, says Gerhard Haag, the president of Robotic Parking, Inc., in Leetonia, Ohio, which is building the Hoboken garage.

Cars are left on a pallet at the garage entrance and automatically pulled into the garage and placed in an

ally a box with steel columns and a concrete shell. Project architect Patrick Gilgery of Gilgery Associates in Red Bank, New Jersey, incorporated a red brick facade and false windows into the design so the building would blend into the neighborhood. The contractor, Belcor-Megan of Hackensack, New Jersey, started foundation work in February and is required to complete the structure by mid-December.

The cost of an automated parking structure is generally 10 to 30 percent higher than for a conventional garage, Haag says, but land costs are much less because more cars can be parked in the automated structure.