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## DEVELOPMENTS

# New Parking Garage Features Shelf Service

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HOBOKEN, N.J.

**F**OR DRIVERS LEAVING or retrieving their cars at a parking garage, it's a dream: no exhaust fumes, no strange nicks or scratches appearing on the fenders, no budding Mario Andretti squealing the tires around hairpin turns, no tip for the attendant.

That dream is coming true for some residents of this city across the river from Manhattan. A fully automated parking facility, which operates by using a computerized network of rails and pallets that handles cars with no human intervention, is scheduled for completion by the end of the year. The 56-foot-tall, 324-space garage will be the first of its kind in the U.S.

Developed by Robotic Parking Inc., Leetonia, Ohio, the system promises to make garage parking a new experience. The driver pulls into one of four bays, locks the car and inserts a card into a computer. The car is lifted on a steel pallet and moved to an available slot.

To retrieve the car, the driver again inserts the card in the computer and punches in a secret code. The car is delivered in a bay with its front facing the street for easy exit. For traffic safety, each bay will be designated as either an entrance or an exit. The process takes one to two minutes. The car is never driven once inside the facility, and the driver never sets foot inside the garage or in a driveway, reducing the risk of personal injury.

Robotic Parking and the general contractor, Belcor-Megan, of Hackensack, N.J., were awarded the \$6.2 million job by the Hoboken Parking Authority. The facility will be built on a 1,000-square-foot lot in a residential section of the city. The ground-breaking ceremony took place in mid-December and the project is currently awaiting building permits from the city.

From the outside, the garage will be inconspicuous. The architect hired by the parking authority, Patrick Gilgery, of Gilgery Associates in Red Bank, N.J., has designed a red-brick facade and fake windows to blend in with the neighborhood.

Parking is badly needed in the area, says Jo Ann Serrano, the parking authority's executive director. A mailing sent out last year to residents in a four-block radius from the site of the future garage brought back 675 requests to be put on a waiting list for monthly parking spaces. The authority has yet to settle on the monthly fee, but Ms. Serrano says it

will be less than \$200.

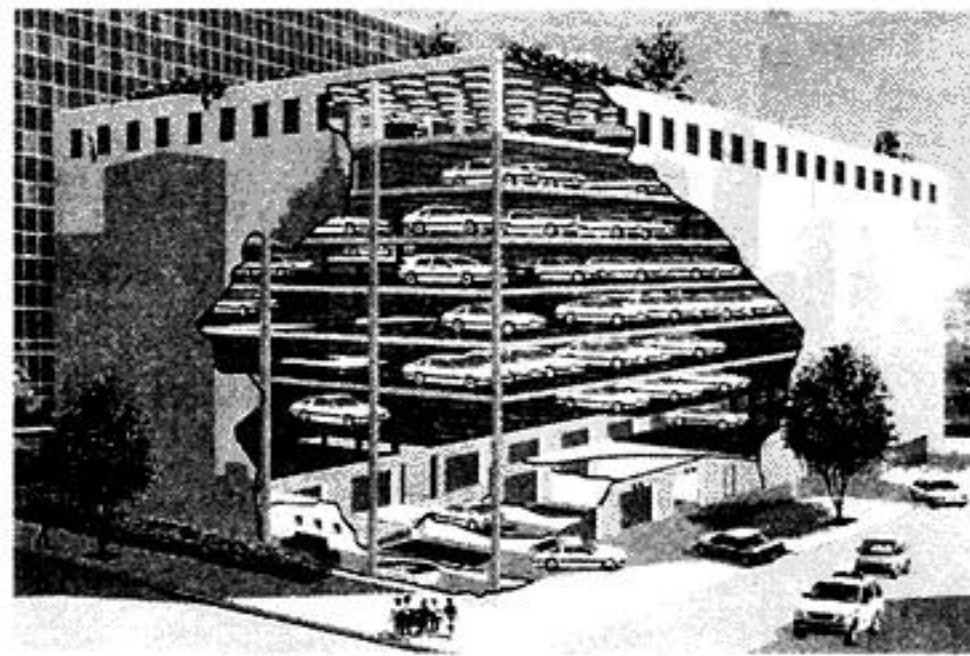
Space is at a premium in this residential area of row houses. "We couldn't build a traditional ramp garage here," says Ms. Serrano. In 1996, she went to Germany to look at automated garages and came back convinced. "It's amazing, a thing of the future."

Not exactly, says Gerhard Haag, the 46-year-old president of Robotic Parking. Automated garages have been around since the late 1950s, he says, when early mechanical parking structures using stacker-crane systems, hydraulics and pneumatics were first introduced in Europe and Asia. So why has it taken so long to come to the U.S.? Mr. Haag, the former president of Krupp Manufacturing's steel division in Stuttgart, Germany, says the need here wasn't as high as in Europe "because they had space here, but now is the right time."

Because of the scarcity of space in cities such as Hoboken, automated garages can now be more price-competitive. According to the New Jersey Parking Institute, a trade association, a garage parking space in the state costs between \$15,000 and \$20,000 to build. "I think automated garages are cheaper [than traditional ones] because you get more spaces for the land value," says Steven Monetti, president of the institute.

Robotic Parking's garage can pack in a lot of cars because of its "shelf construction," says Mr. Haag. "Left and right you have compartments from the floor up to the ceiling, and in the middle you have an aisle where shuttles and carriers are being moved on rails." Eighteen mechanical movements—whether up or down, turning, and back or forth—can occur simultaneously, so multiple cars can be handled at once.

The company, established in 1994, uses its own patented system, the Modular Automated Parking System. General Electric Co. will supply the motors, controls and the year 2000-compliant Human Machine Interface, the operating-software platform for the computer system.



*A cut-away rendering of an automated garage*

If the main computer were to fail, three to four backups are ready to take over instantly. The computer also allows the site to be monitored from a remote location, showing real-time vehicle movements for rapid detection of any mechanical problems.

Human error is still possible in this system—drivers can lose their cards. In that case, he or she will describe the car to a parking-authority attendant on duty at the site 24 hours a day. The attendant will be able to scan photos taken upon entry of all the vehicles and identify the right one and its location in the garage. With a proof of ownership, the driver is on the street.

And what if a rushed customer sends his car into the mechanical abyss and forgets that little Junior was in the back seat? Company officials say the garage is equipped with sensors, and if any unusual motion is detected the parking system won't operate. There are also internal video cameras monitored by the attendant.

Mr. Haag, who has built an automated-garage demonstration site in northeastern Ohio, is negotiating to build garages in Chicago; Portland, Ore.; Washington, D.C.; and New York City. He hopes to start construction on these in the next two years. The concept is ideal for busy downtown areas, he says. "I'm sure there will be skeptics, but like with ATMs, they'll get used to it."