



Cutaway of complete Robotic Parking structure

Robotics Make Parking Cars Easier and Safer

A new means of parking cars—automated parking—promises to relieve many of the problems associated with manual parking. An automated system not only parks cars but retrieves them for drivers as well, using a computerized system of pallets, lifts, and carriers.

Robotic Parking's Modular Automated Parking System (MAPS) makes garages safer than ramp-style parking facilities. In a conventional garage, drivers risk vehicle damage, theft, and personal injury. With automated parking, these problems are eliminated. Drivers never enter the garage, saving the headache of long walks to and from the car, looking for parking spaces, remembering where the car is parked, and waiting for elevators or trying to find the stairs.

With MAPS, a driver parks his or her car at the entrance to the parking structure. From there, the vehicle is automatically moved through the garage and stored in an open parking space, using computerized pallets, lifts, and carriers. The car is then returned to the driver via a signaling device located outside the building. MAPS automatically parks and retrieves the cars in multi-level parking systems, thereby doubling the number of cars that can be parked in a conventional garage. Alternatively, the system can be used to put the same amount of vehicles that can be parked in a conventional garage in half the land space of a conventional garage.

In addition to saving space, MAPS requires no attendants and, according to the developer, is more cost-effective than conventional garages. Drivers and passengers also benefit from increased safety for themselves since they never need to enter the garage and better security for their automobiles since vehicles cannot be damaged or stolen.

An automated parking system provides a number of benefits, including:

- Doubling the number of parking spaces compared to a conventional garage.
- Using half as much land for the same number of cars.
- Preventing cars from being damaged by scratches, fender-benders, and dings.
- Eliminating personal injuries from accidents, muggings, and rapes.
- Eliminating the possibility of vehicle theft or break-ins.
- Lowering garage maintenance costs with reduced lighting and ventilation requirements, less personnel, and no costly concrete deck repairs.
- Lowering insurance costs. By eliminating the possibility of vehicle damage and personal injury, garage owners will pay less liability insurance.

The system works via flexible transfer, the same car transport technology found on automobile assembly lines throughout the world. A new technology, developed by Robotic Parking specifically for MAPS, allows several cars to move independently throughout the parking structure at the same time. This advancement in automated parking makes the retrieval of cars extremely fast, with an average retrieval time of 60 to 90 seconds. MAPS uses a "fuzzy logic" application to further optimize the movement of carriers and lifts. Fuzzy logic is a system of logic that handles the concept of partial truth—truth values between "completely true" and "completely false."

A driver entering the system uses a designated ticketing machine. The driver can signal the system at any time to return the vehicle back to the bay. Cars are returned by pallet in a forward drive position for easy exit from the facility. The use of pallets to move, park, and retrieve cars eliminates the need for any kind of machinery to touch the vehicle. These pallets also stop drippings, oil, salt, and other debris from falling onto cars below during parking and transportation.

The entire system is monitored by a custom programmed computer running Windows NT. A Human Machine Interface (HMI), which shows real time car movements on screen, facilitates maintenance and diagnostics. The computer, which is installed at the garage, can be accessed from any remote location.

MAPS can be built up to 20 stories high, above ground, underground, or both, and within any facade or architectural design. It can also be modified, added to, or relocated after installation.

—by Sherri Alms

For more information on MAPS, please call Gerhard Haag at 888-762-6727.

Robotic Parking design specifications

