

By Christopher W. Carlson, P.E., SECB

Chris has been practicing structural engineering for over 24 years and is focused on the evaluation and repair of defects on existing buildings. He is the chief structural engineer with ETC, Inc. and oversees the structural staff

What Statement Does Your

Garage Make?

or many visitors, the parking garage creates the first impression of a building. Performing routine maintenance provides a cleaner, safer, more welcoming atmosphere. However, the parking garage is often the least maintained part of a facility even though they are often exposed directly to the weather unlike the rest of the building. Therefore, they need more attention because the garage is not a destination, just a transfer point. It is also "painful" to disrupt the status-quo and have a hundred or more residents move their cars out of their spaces for a few days. Just the thought of this endeavor could make you cringe. After all, if there were plenty of parking spaces nearby, you wouldn't need a parking garage.

Maintenance is intended to delay future major garage repairs by performing small-

A new deck coating and striping brightens any garage.

er tasks in a periodic manner before they degrade into bigger issues. Parking industry trade associations and manufacturers of products used to protect parking garages from deterioration offer many resources to aid in developing a routine maintenance plan tailored to your garage. Experts suggest that you should budget at least \$35 to as much as \$500 per space, per year, for annual maintenance, as well as to help put money aside for that day when a major repair is

Garages contain many systems that must be maintained besides the structure, often including HVAC, electrical, plumbing/drainage, elevators, landscaping, lobbies, and access/security. Several items to consider when developing your maintenance plan for each system are listed below.



Snow plows often damage expansion joints



Structure maintenance plans are primarily aimed at protecting the concrete and steel from water and deicing chemical attack. The following major items should be includ-

- Flush and clean driving surfaces and drains to remove dirt and deicing chemicals at least twice a year (spring and fall). This may include hydro jetting of the drainpipes to ensure they are flowing freely. Include all levels of the garage, not just the outdoor surfaces where deicing chemicals have been applied. Don't forget the stairways.
- Once a year, check the moisture protection systems, such as membrane deck coatings for excessive wear, tears, bubbling, and ripping. Check sealant joints for debonded areas. Look for unsealed cracks that can allow water to migrate through the concrete. A telltale sign that the membrane is damaged is if water and minerals are dripping from the slab above onto cars.
- In the spring, check the expansion joints as they are often damaged during snow plowing operations.
- Several times a year, inspect for spalled concrete, corrosion stains, and white mineral deposits. At the same time look for life safety concerns such as damaged cable barriers, handrails that wobble, and trip
- Recoat your deck membrane at least every five years to help ward off damage. This can be a full recoat or a targeted coating of the drive aisles, turning areas, and ramps where the membrane is subjected to the most abuse.
- Retain experts to perform an in-depth garage evaluation/audit every three to five years. This inspection might need to be performed yearly if the garage is over ten years old and has been neglected.

Maintenance items to be performed on the other systems usually include the following:

- · General cleaning, painting, door and hardware repairs, and elevator mainte-
- Electrical equipment—light fixture cleaning and replacement. Check emergency lights. Electrical conduits that have corroded through must be replaced.

- Parking access controls, security, and CCTV systems usually are upgraded as technology advances require.
- Ventilation systems must be maintained. Few realize that carbon monoxide detectors need to be replaced about every five years.
- Painting— Fire sprinkler system pipes often sweat during times of high humidity and can corrode. Metal stair treads corrode over
- · Check the condition of aesthetic items such as signage, striping, and landscaping.
- · Water intrusion through perimeter walls into underground garages should be addressed as they are found.

Do not rely on your static reserve study to determine when the garage system needs to be repaired or replaced, things change over time, and the current condition might dictate otherwise.

Many problems can be inexpensively remedied if addressed in a timely fashion.

Neglecting maintenance or making improper repairs will contribute to shortening the life of the structure and/or the system. Start a maintenance program today and have your garage make a positive statement.