FUTURE THINKING

New York City makes changes to deal with more people and the related increased demand for parking.

By David Kubik, AIA, LEED AP BD+C

WITHIN THE PAST DECADE, cities have become home to more than half of the global population, and the United Nations projects that the proportion of urban dwellers will reach 66 percent by 2050. Growing populations are putting a strain on the physical infrastructure of many cities, including New York City, where the need to house increasing numbers of residents is inspiring several creative efforts by local governments.

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The New York Department of City Planning has already taken several bold steps to support the city's growing population, some involving increased control and even the reduced availability of parking. In 2013, the Manhattan Core Parking text amendment passed, with outcomes that included the promotion of car sharing and reduced parking requirements in almost every Manhattan neighborhood below West 110th St. and East 96th St.. As recently as September 2015, the planning commission referred for public review the zoning for quality and affordability text amendment, which aspires to update some of the barriers to producing new affordable housing. For example, the amendment proposes that in medium- and high-density zoning districts, providing parking would be optional for new affordable housing units that are located in areas with abundant access to public transit.

In addition to facilitating the creation of much-needed housing, many of these steps have the potential to create less-congested streets and a safer pedestrian experience in some of the most highly trafficked areas of New York City. Many agree that these steps will quickly improve everyday quality of life in the city and may also provide long-term benefits, such as reduced vehicle emissions and better air quality.

Despite all of these possible advantages, the fact remains that there is substantial demand for parking in New York City. Without being required or incentivized to include parking, it seems inevitable that many new projects will move forward without providing it. While open parking lots are still permissible in many areas of New York, they are becoming increasingly desirable sites for development, further reducing the available space for parking. And even if someone sought to quickly create space for parking, every square inch counts in dense residential environments such as New York City—gone are the days in which an open asphalt parking lot makes financial sense. This context begs the question: where will the cars go?

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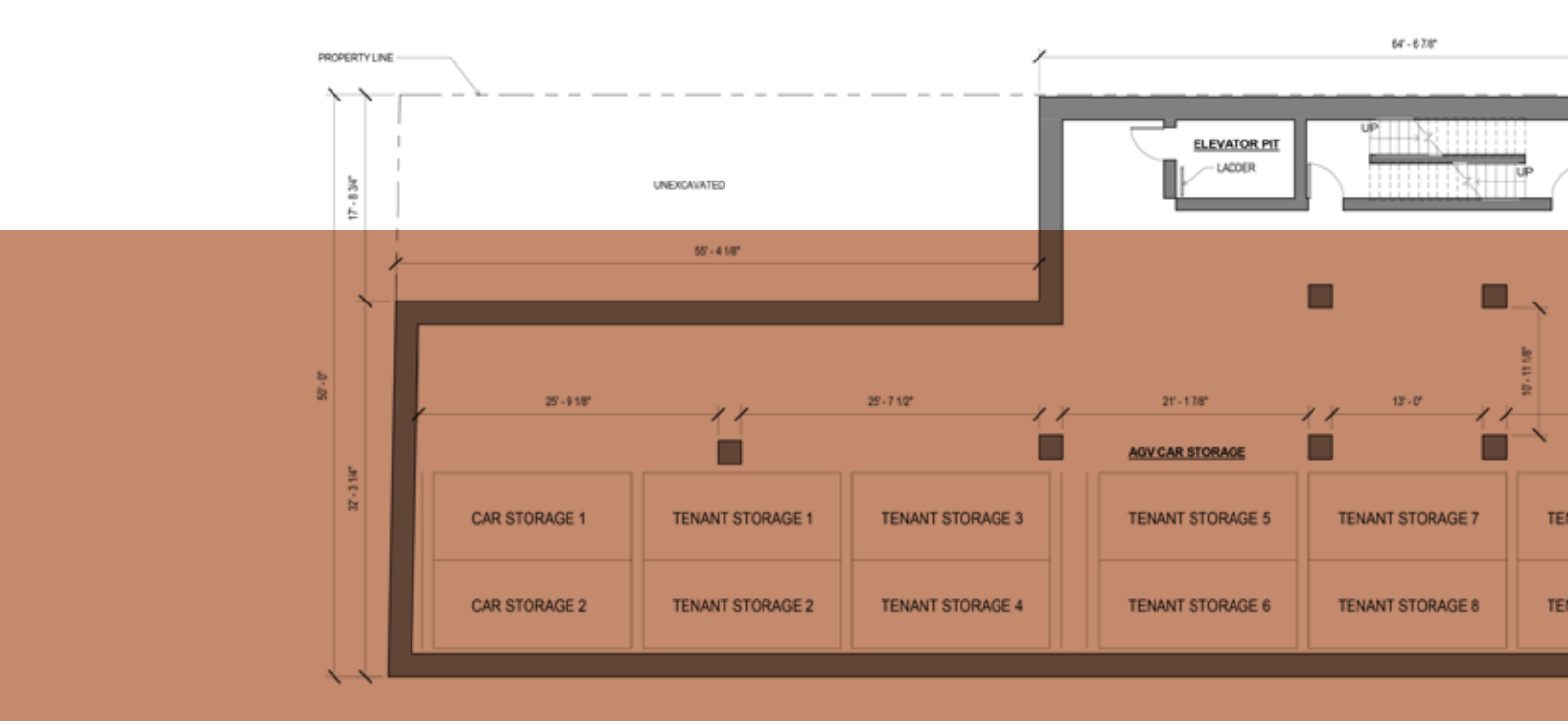
Automated parking can free space for other building or community amenities.



Luxury Appeal

Automated parking is emerging as a clear leader in addressing parking demands in contemporary cities. Beyond its baseline ability to respond to the continuing demand for parking, automated parking is being recognized by building owners and developers as a differentiating amenity for tenants—particularly buyers of condominiums. In a city such as New York, concierge culture is more the rule than the exception. Food can be delivered to an individual's exact specifications, and adjustments to a room's temperature or lighting can be made with just a few taps to a smartphone. The option to have a resident's car appear in a similarly convenient manner is a logical progression of this trend.

In fact, one residential tower in West Chelsea has already taken the concept of extreme vehicle convenience one step further, providing residents with an "en suite sky garage" located adjacent to their luxury residences. But for those who cannot afford a private garage several stories in the air or who would prefer that the car be fully out of sight and out of mind, automated parking has real allure.

Enabling Amenities

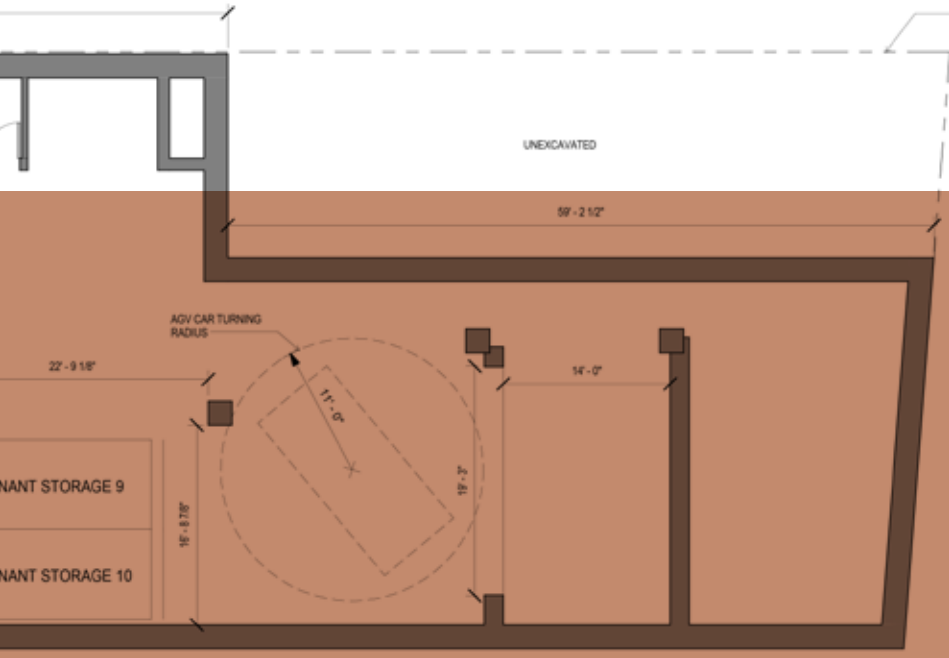
Even outside of the luxury residential market, automated parking provides tangible appeal. Its density is a clear benefit when compared with traditional parking arrangements, as increased density of parking allows for reallocation of existing parking use on a site, therefore freeing up floor area in existing structures. In more than one location in New York City, BKSK Architects has been asked to study how an existing above-ground parking garage can be altered and potentially moved below grade, specifically to increase available floor area above. Automated parking systems are an obvious option in these scenarios.

The density of automated parking systems is very attractive for new building projects as well, in part because they allow more space for shared building amenities from the outset. In working on recent multifamily projects, BKSK teams have observed buyers and renters making more trade-offs in regard to private and common areas. Specifically, there seems to be increasing openness to owning or renting less-private space in exchange for greater access to common space, such as roof gardens, fitness centers, and co-working style spaces. When projects seek to include parking onsite, automated parking systems support this trend more effectively than other more traditional solutions.

Notably, the benefits of increased floor area are a driver for projects of several scales. Some buildings may seek an automated parking system with 100 or more spaces, while other smaller ones offer as few as two private spaces. In either case, the square footage conserved through a denser parking arrangement provides valuable real estate opportunities, particularly in cities with neighborhoods that already suffer from limited development opportunities. The New York Department of City Planning has started formally acknowledging this potential in the context of new projects, providing zoning floor area exemptions for automated parking of up to 40 feet above grade in some applications.

Safety and Wellness

A less immediately obvious advantage of an automated parking system is increased safety for tenants. Because cars are no longer being driven while being parked by an automated parking system, the rate of accidents caused by human error substantially drops. In addition, the cars are not powered on while being parked, which means that the parking area is subject to significantly reduced amounts of vehicle exhaust, improving both the indoor and outdoor air quality. This latter fact also means that a building's associated mechanical systems require far less ductwork and fewer air changes, which pump exhaust



A project now in development in Manhattan gained space for alternate uses when automated parking was added.

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air back into the open spaces surrounding the building. The simplification or decrease in size of these systems often has the advantage of reducing construction and operating costs.

The need for different systems, including the automated parking system itself, does come with some drawbacks. Unlike above-ground parking garages and lots, the storage areas of automated parking systems are most frequently located on lower floors of buildings. As a result, project teams seeking to install these systems have to proactively investigate scenarios involving extreme weather events, particularly those that result in flooding. Careful consideration must be paid to floodplains, such as those defined by FEMA, to minimize risk of flooding.

Similarly, power outages caused by storms or other events have the potential to impede residents' access to their cars, as automated parking systems require electricity to function. One solution that many project teams consider is connecting automated parking systems to a building's main generator in the same way that elevators and other critical systems would be. In the case of a major power outage, a resident in a building set up that way can still retrieve his or her car.

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The AGV automated lift in-place in Brooklyn.

Looking Forward

Currently, there are not many manufacturers offering automated parking systems, and only a few buildings in New York City have fully-installed systems at this time. This greatly limits any design and construction teams in their coordination processes, because site visits to existing examples are one of the best ways to ensure that a system complies with local regulations and achieves all of a project's design goals. For example, for projects to be compliant with the Americans with Disabilities Act they must achieve certain clearance minimums for the space where the dropping off and retrieving of vehicles occurs. Without having a fully installed automated parking system to reference in the local area, a project team has to be that much more careful in its coordination and fact-checking throughout the project.

Despite these challenges, automated parking has already proven to be a safe, convenient, pedestrian-friendly, and space-effective solution for providing parking in today's growing cities. As the technology behind these systems continues to improve, their popularity and availability will only increase. In New York City—where the demand for parking remains high and the amount of developable space continues to decrease despite a rising need for residential space—automated parking is on its way to becoming the new normal.

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