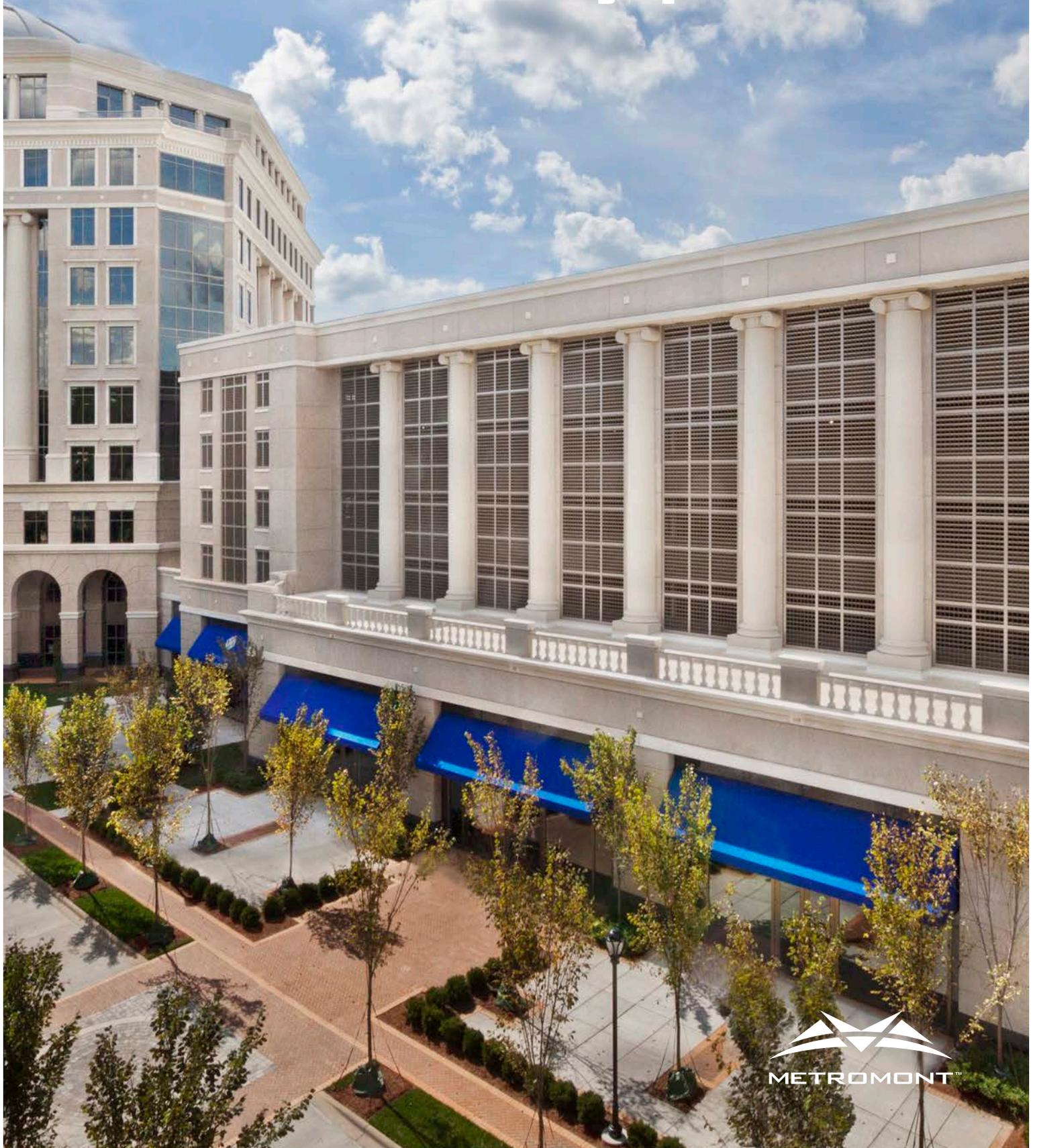


# Parking Structures

Precast Concrete Building Systems



## Not the Stereotypical Parking Garage

With more than 1,000 precast parking decks under our belt, suffice it to say, we know a thing or two about parking garages.

Never before have precast parking structures been more cost effective, low maintenance, durable, or architecturally easy-on-the-eye. With the vast array of finishes and colors available, parking structures can now easily be designed to blend into the surrounding architectural landscape. And with the versatility of precast framing, parking structures can be designed to include features such as retail and office space as well as amenity levels with green spaces and pools.

By specifying precast concrete, architects and engineers can meet their design requirements, contractors can accelerate the construction schedule, and owners can get the best value for their investment. It's a win-win.

Precast components are manufactured offsite with just-in-time delivery, condensing the overall construction schedule and reducing site congestion. Our precast components and systems can be erected in a short time, minimizing weather delays. This results in lower overall construction costs and a faster return on investment.

Metromont is committed to working with you to help overcome the challenges created by balancing a variety of design considerations, including:

- Site utilization, traffic flow and drainage
- Performance characteristics and cost analysis
- Aesthetic appeal with structural and architectural components
- Durability requirements and capabilities
- Life-cycle needs
- Sustainability and LEED®
- Establishing and maintaining project budget



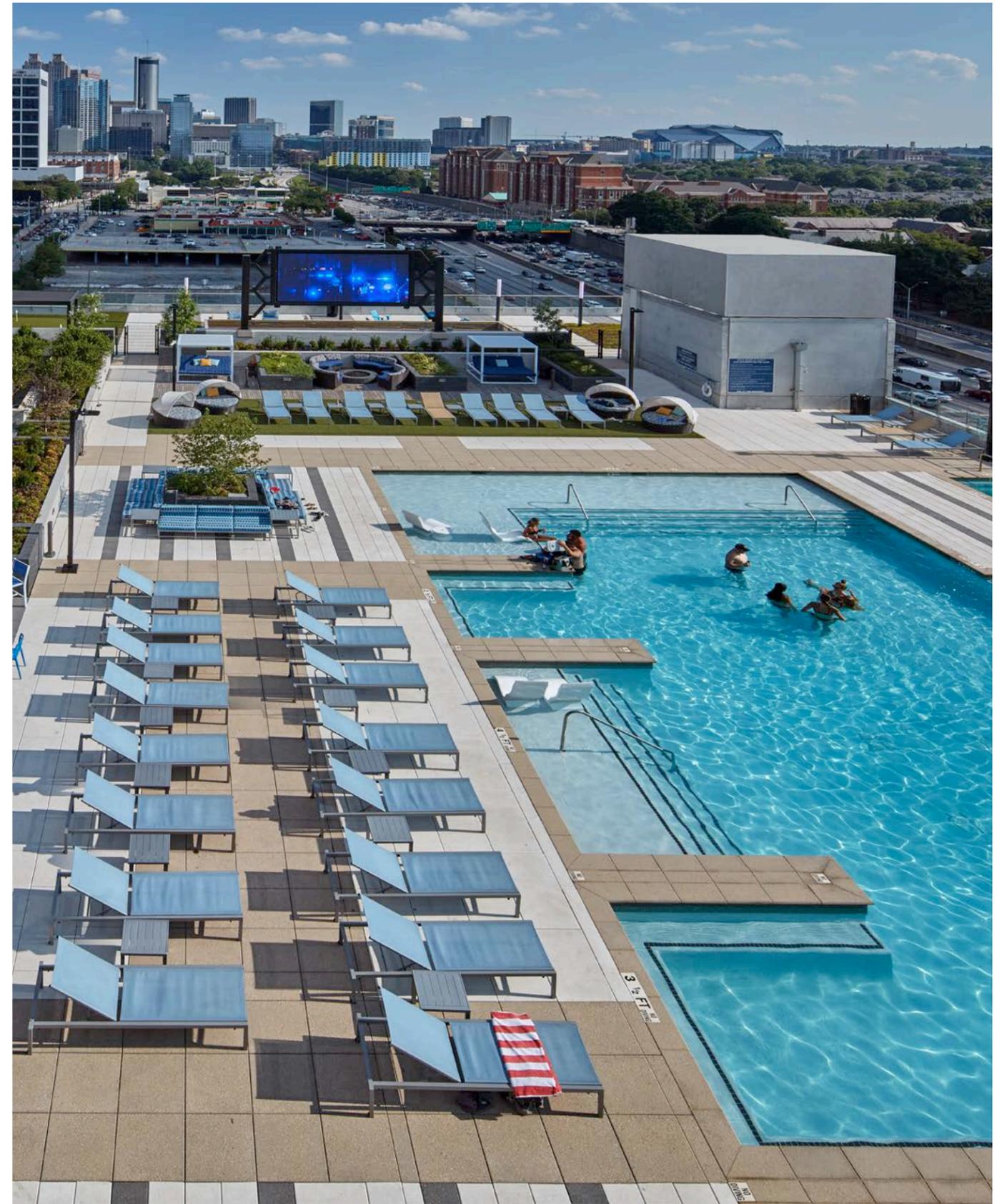
The AvidXchange parking garage in Charlotte, NC features a tumbled, cast-in thin brick that mirrors the look of traditional weathered brick.



In keeping with the "Nurture through Nature" theme of the office building's exterior, the architect designed the Children's Healthcare of Atlanta parking deck with multiple finishes and architectural elements of similar colors and textures.



The project site for JMU's Mason Street Parking Garage was surrounded on two sides by high traffic volume streets and on the other two sides by construction sites. This, coupled with a very tight site footprint, required extensive planning by the project team to ensure minimal site disturbance.



Located in downtown Atlanta, the Standard at Atlanta made the most of vertical space by adding a rooftop pool over the residential precast parking deck. Parking with rooftop amenities is becoming increasingly popular, particularly in tight, urban areas.



The Durham County Justice Center Parking Deck provides 897 spaces to the adjacent Courthouse.

## Why Precast?

Durable, corrosion-resistant parking structures begin with quality concrete. High-quality concrete is achieved by reducing the water-to-cement ratio, which increases concrete strength. Metromont's manufacturing facilities produce the highest quality structural and architectural precast/prestressed concrete components, and all Metromont plants are certified by the [Precast/Prestressed Concrete Institute](#).

### Why Precast Concrete?

- Speed of construction – compressed schedules allow for early occupancy and shorter construction financing
- Manufacturing off-site in a controlled environment eliminates lay-down areas and facilitates construction on tight sites
- Concrete strength, durability and sustainability
- Virtually unlimited architectural expression
- Risk reduction – minimize trade coordination, weather delays, and provide a safer jobsite

### WHY PRECAST FOR PARKING DECKS?

Speed of Construction

Off-site Manufacturing

Lifetime Value

Architectural Finishes

Risk Reduction

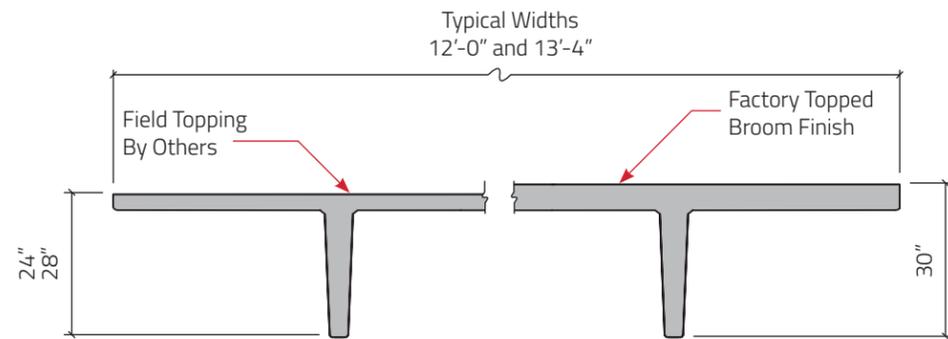
Versatile Design Capabilities



Massive, triangular sails line the perimeter of the Pompano Beach Parking Garage, delivering a signature look befitting of the coastal atmosphere.

## Typical Double Tees

Metromont began manufacturing precast/prestressed double tees in the 1960s and today, we're still developing innovative double-tee sections specifically for the parking structure market. As shown below, the 12'-0" wide or 13'-4" wide double tee is available to meet your specific design requirements. By specifying a 13'-4" wide double tee, project costs can be reduced and fewer joints have to be maintained.



### FIELD TOPPED DOUBLE TEES

#### STANDARD PRODUCT SIZES:

12DT24  
12DT28  
13-4DT28

#### WHEN SPECIFIED:

Increased efficiency from precast plant (may be able to reduce transportation cost)  
Field topping by others  
Optimize drainage  
Tool joints per ACI 362 code  
Field applied surface finish and sealer as required per specifications

### FACTORY TOPPED DOUBLE TEES

#### STANDARD PRODUCT SIZES:

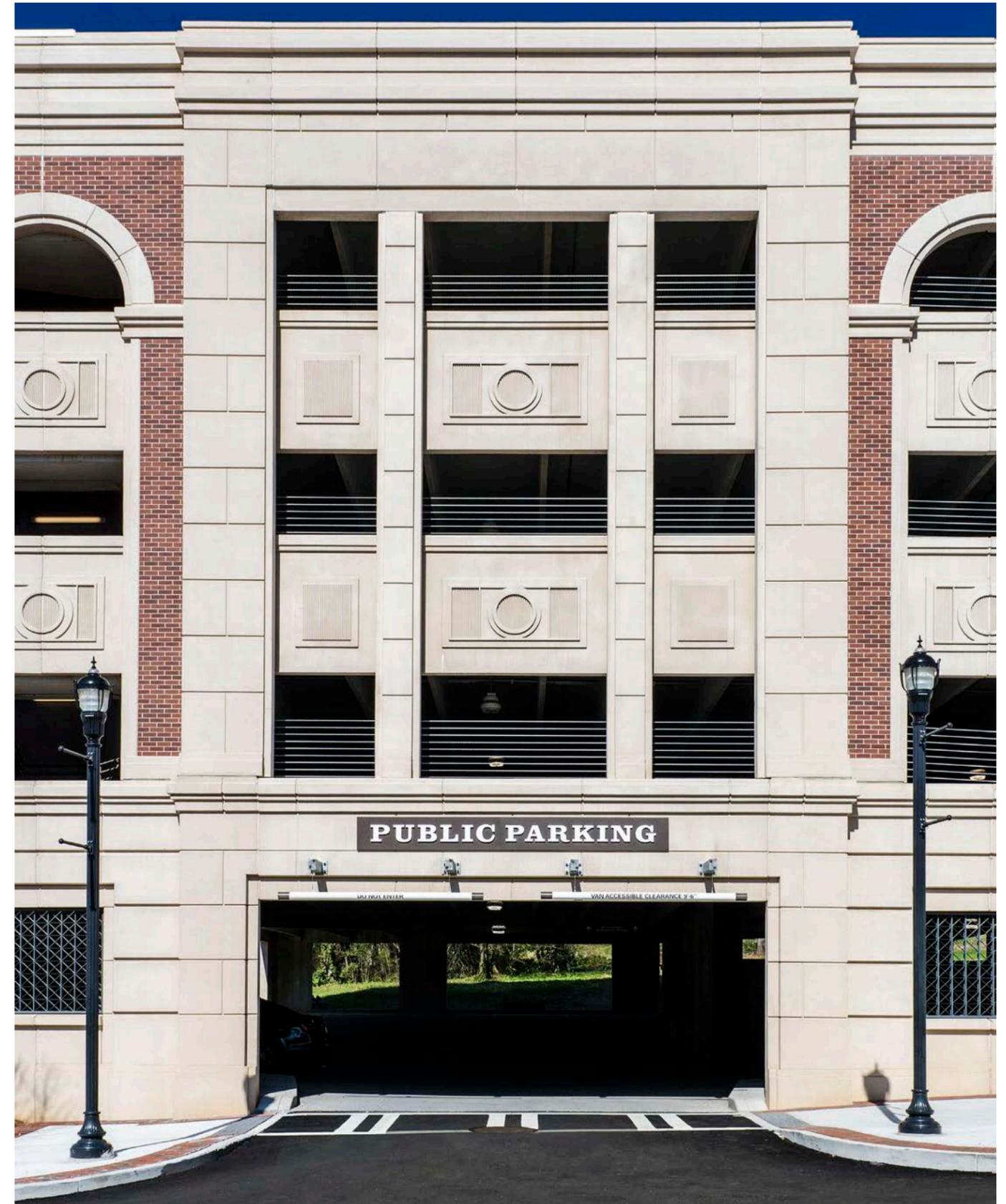
12DT30  
13-4DT30

#### WHEN SPECIFIED:

Increased durability of the drive surface (5,000 psi concrete)  
High performance system available, including connections  
Factory controlled broom finish

#### HIGH PERFORMANCE, SUSTAINABLE DOUBLE TEES

More durable and less long term maintenance  
No sealer required  
8% less weight = fewer materials, less embodied energy and reduction in foundation costs  
10 year sealant warranty and annual maintenance/inspection agreement available



The Alpharetta City Hall Parking Deck has a very complex façade of colored concrete, inlaid brick, and a system of reveals and decorative inlays to compliment the complex façade design of the Alpharetta City Hall it serves.



Located in the north section of Philadelphia, in a high-traffic area between an operating medical facility and a residential neighborhood, the Temple University Health System Parking Structure offered numerous construction challenges, including limited site access, a small project footprint, and a fast-track construction schedule.



The Standard at Gainesville parking garage features a rooftop pool, cabana and fitness center and retail space at the ground level.

## Design Guidelines

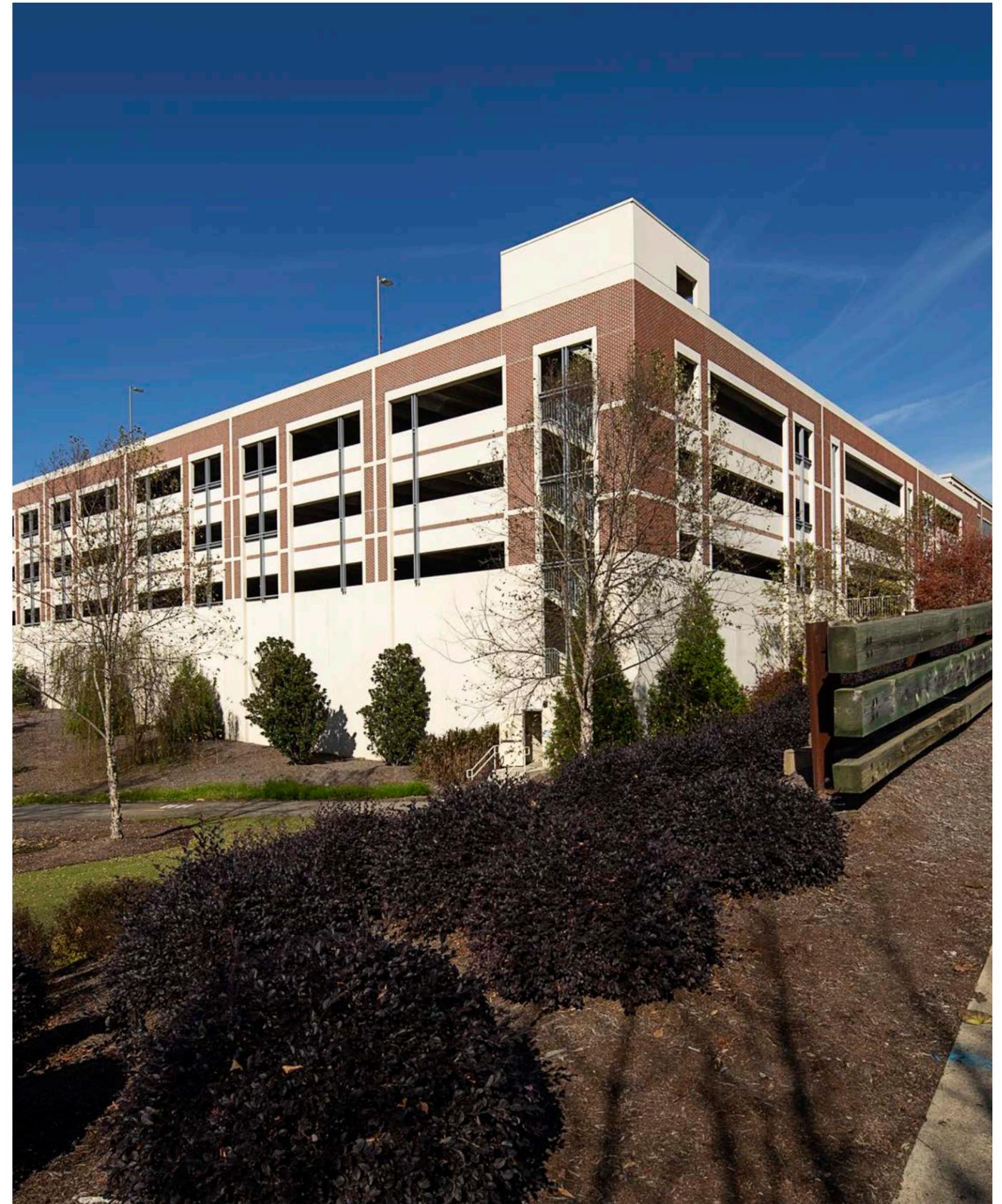
Get our team of experts involved early in the design process to achieve the most cost-effective design solution for your project. In the meantime, here are some things to consider when planning your precast parking garage:

- Assume 300 to 325 square feet per car space to obtain total square footage of parking structure
- Dimensions of useable site: select traffic flow plan that will fit the site dimensions
- Traffic ingress/egress conditions: ramp slopes, traffic flow, etc.
- Local building code limitations: stall size, aisle width, headroom, ADA, story heights, etc.
- Deck drainage
- Lateral bracing and shear wall locations
- Connection details at major interfaces
- Exterior finishes, mix designs, and product samples

## Typical Components & Dimensions



1. Bay Spacing: 36', 40' or 48' – allowing for 3 – 12' tees, 3 – 13'-4" tees or 4 – 12'-0" tees depending on market/shipping restrictions.
2. Spandrels: For typical bay spacing, length of 48' and height of 77" to 84" (architectural finishes available to meet design requirements)
3. Columns: Typical interior column size of 24" x 24"; typical exterior column size of 24" x 33", finish to complement spandrels (precast parking decks can be designed to be column-free on the interior)
4. Double Tees: Typical 60' DT span to accommodate two 18'-0" long parking spaces and a 24'-0" wide drive aisle
5. Ramps: Typical recommended slope of 5% to 6% (absolute max slope is 6.67%) when parking on ramp
6. Metro-Wall: Vertical or horizontal design, typically 8" thick (horizontal Metro-Wall is shown)
7. Stair and Elevator Cores: Precast wall panels and precast stair components are utilized to meet design requirements
8. Floor to Floor: Typically 10'-8" for non-van accessible access
9. Shear Wall: Designed to meet seismic or wind requirements (line of sight openings are possible)
10. Beam: Inverted tee beam carries double tees allowing for ideal traffic flow (drive aisle and parking)



The 600-space, 210,036 SF MEDAC Parking Garage in North Augusta, SC provides the parking infrastructure required to support a multi-faceted private-public mixed use development.

# Contact Us

Let's talk about your next parking deck project.

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