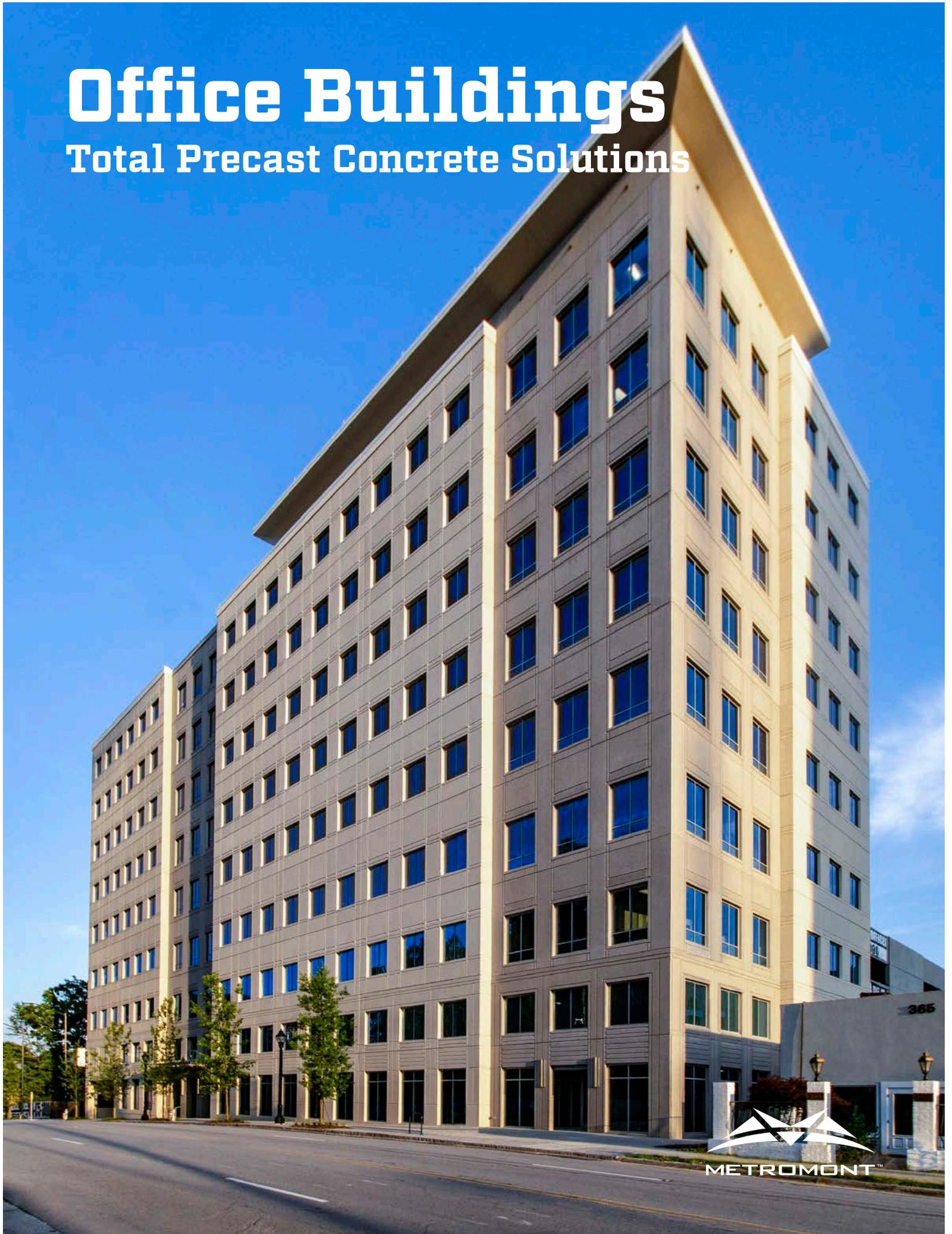


# Office Buildings

Total Precast Concrete Solutions



## About Us

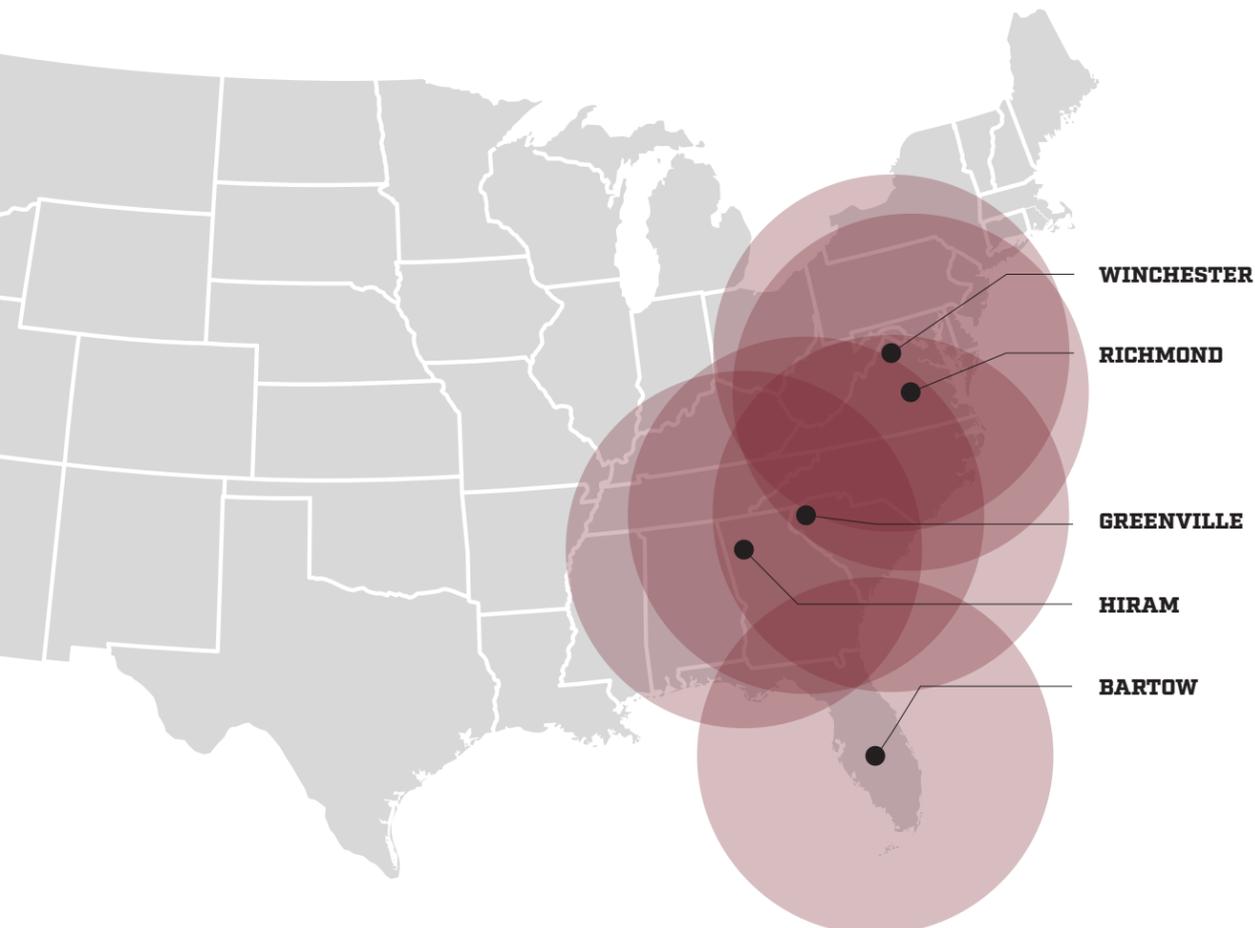
**Metromont Corporation** was founded in 1925, when Captain J. Roy Pennell founded Pennell & Harley Construction Engineers. He became known as the “Father of the South Carolina highway” and built many of the roads and bridges that still stand in South Carolina today. Over the years, Metromont has become a leader and pioneer in the engineering and manufacturing of precast concrete for multi-family housing, schools, parking decks, data centers, office buildings, industrial plants, and stadiums.

Today, Rick Pennell continues the family legacy as President and CEO of Metromont, with manufacturing facilities in Greenville and Spartanburg, South Carolina; Hiram, Georgia; Bartow, Florida; Richmond, Virginia, and most recently, Winchester, Virginia. In February of 2018, Metromont acquired **Shockey Precast Group**, a manufacturer and provider of structural and architectural precast concrete based in Winchester. The company now operates as Shockey Precast, a Metromont Company. Together, Metromont and Shockey Precast have completed more than 11,000 precast projects across the Mid-Atlantic and Southeast. The acquisition solidifies the Metromont brand as the premier precast concrete supplier in the Southeastern United States.



Metromont provides structural and architectural precast concrete for a variety of market segments including schools, parking structures, office buildings, stadiums and arenas, multi-family housing, commercial buildings and data centers.

## Our Locations



## What We Do

Metromont knows precast. In fact, we’ve completed more than 11,000 precast concrete construction projects from schools and office buildings to stadiums and parking garages in the last 20 years alone.

We provide the highest level of custom-engineered precast concrete solutions by leveraging the time-tested expertise of our people. We are not precast concrete manufacturers. We are pioneers, thought leaders, experts and teachers. We are innovators, constantly seeking ways to improve our products and systems to meet the demands of an ever-changing market.

Our job is to make our customers’ job easier by sharing our knowledge and expertise about precast concrete with architects, general contractors, engineers, developers, and building owners. After all, the best customer is an informed customer. And when it comes to prefabricated office buildings, we’re paving the way for total precast systems. Single structures to multi-structure complexes. Three stories to 14+ stories. We’ve completed more than 30 total precast office and mixed-use buildings, and as the largest precast manufacturer in the southeast, we continue to lead the way as an innovator of total precast concrete systems.

## OUR MARKET SEGMENTS

- Schools
- Parking Structures
- Office Buildings
- Data Centers
- Commercial & Retail
- Mixed-Use Structures
- Multi-Family Residential
- Warehouse & Distribution
- Industrial & Food Processing
- Institutional & Municipal
- Sports & Entertainment

## Why Precast

Precast's durability, safety, quality, and aesthetic flexibility make it the right choice for almost any project. Precast provides flexibility in space planning and increased return on investment, making it the optimal choice for parking decks, office buildings, data centers, and multi-family housing. Precast also contributes to the overall sustainability of a building and allows for integrated project delivery — reducing schedule and project costs. When you know what we know, the question isn't why precast...it's why not precast?

### Speed-to-Market

Unlike CIP concrete, which is produced and placed in the field and is dependent upon favorable weather conditions, precast concrete is manufactured in a controlled plant environment. Once produced, precast components are then shipped to the jobsite for erection. Typically erected more quickly than CIP, precast can contribute to an overall shorter construction schedule and reduced overhead costs.

### Durability

Precast concrete is highly resistant to impact, corrosion, weathering, abrasion and other ravages of time, which reduces maintenance and operating costs. A low water/cement ratio combined with high concrete strength and curing in a controlled factory environment ensures a dense, highly durable concrete that's more durable than field-placed concrete.

### Safety

Precast concrete is non-combustible with built-in fire-resistant capability. It creates a safe envelope that helps protect people, equipment, and the building itself. It can also be helpful in reducing property insurance premiums.

### Aesthetics

Precast concrete provides the designer with an unlimited architectural vocabulary of expression. Incredibly responsive to the designer's needs, precast can be shaped in a cost effective manner, with the only limits being imagination and creativity. Design flexibility is possible in both color and texture by varying aggregate and matrix colors, size of aggregates, finishing processes, and depth of exposure.

### Quality

Precast concrete components produced by PCI-certified plants are produced under strict, factory-controlled conditions to ensure the highest quality in the desired shapes, colors, and textures along with applicable tolerances. PCI inspections focus on the process by which the units are produced, as well as the plant's general operation. PCI Certification pays off for owners and architects because it produces fewer worries about on-site discovery of units out of tolerance, connection details that are incorrectly cast, or mismatched finishes from panel to panel. It also minimizes the need for continuous inspections, again saving the project money.

## BENEFITS

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Speed-to-Market

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Durability

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Safety

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Aesthetics

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Quality

---

Sustainability

---

Integrated Project Delivery

---

Flexibility of Space Planning

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Construction Costs

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The Riverfront Professionals Medical Office Building in Chattanooga, TN is a three-story, total precast structure with 31,300 sq ft of floor area.



The 371 East Paces Ferry Road Medical Office Building is situated in the heart of an affluent neighborhood in downtown Atlanta,. Originally conceived as a cast in place structure, the design team recognized the potential for a total precast concrete system to reduce costs and minimize disturbance to the tight, urban jobsite.

### **Sustainability**

Metromont’s thermal-efficient precast concrete building systems with continuous insulation offer several sustainability benefits during the construction process and long after the building has been completed. We help increase each building’s sustainability by reducing its embodied energy and assist in contributing to LEED® points in several ways. Precast concrete’s ability to store energy and dampen the effect of temperature change on heating and cooling systems which may save a considerable amount of energy over the long term and can result in significant cost savings as well.

### **Integrated Project Delivery**

Structural precast components interlock to support one another so they can be erected in a relatively short period of time. Simpler installation requires fewer crew members, which means less traffic and waste on a job site. A cleaner and safer job site means less risk and more assurance of a smooth and successful project flow.

### **Flexibility of Space Planning**

From a design perspective, the greatest advantage of a total precast system is the versatility and flexibility of space planning options. The use of total precast allows for longer spans, which significantly reduces the need for columns and creates an open interior space with greater design options. Typical total precast column grid spacing is comparable to other framing systems, however, it’s possible to eliminate interior column lines, if needed. The result is that total precast systems provide architects and designers with greater freedom to obtain the optimum office layout.

### **Construction Costs**

For general contractors, total precast systems provide a safer, cleaner jobsite, faster access for follow-on trades, and an overall shorter construction schedule. A shorter construction schedule can greatly reduce the general contractor’s costs (General Conditions) of running the job, while increasing the availability of GC crews for other projects. In this way, total precast systems actually provide economic benefit to the general contractor by freeing their resources to handle more work. Total precast systems also offer the benefit of requiring less site space for erection materials. As a result, total precast systems are a more flexible construction choice for projects with a small site footprint or limited site access.



Riverdale Medical Office Building in Jonesboro, GA is comprised of a total precast building system with 41,000 sq ft of floor area.

## Why Metromont

We're a family-owned company that excels at innovation. Over the past 85 years, we've built a name as a leader and pioneer in the precast concrete industry. We're the southeast's leader in prefabricated multi-family/student housing, and we continue to set the bar for total precast systems. From the beaches of South Florida to the 50-yard line in Foxborough to the banks of the mighty Mississippi - we've helped engineer and manufacture precast building projects all over the eastern half of the U.S. And Metromont's precast manufacturing facilities are strategically located where growth and development are happening.

Let us do the heavy lifting for you. Our team of experts can assist with layout development and erection sequencing to identify efficiencies in design, budget, and schedule. By involving Metromont early in the design process, you get a single point of contact for the full range of precast activities, from initial coordination and design through turnover of the building to the owner. With more than 60 years of experience in the production and erection of precast concrete, Metromont's unmatched quality, integrity, and dedication to customer satisfaction are what continue to set us above the competition.



Metromont has more than 60 years experience in the production and erection of precast concrete.

## Design Assistance - Why Get Metromont Involved Early?

Our experience has been that meaningful, early engagement is the surest path to rapid deployment and accelerated construction schedules. By involving Metromont at the earliest stages of design development, we can guide the design team toward a precast solution that meets the owner's schedule and financial needs, while also providing a structure that satisfies the design team's aesthetic vision. Early involvement also allows us to identify potential design issues and make recommendations before they become issues that could jeopardize the project schedule or budget. Below is a sample of our typical design-assist proposal document:

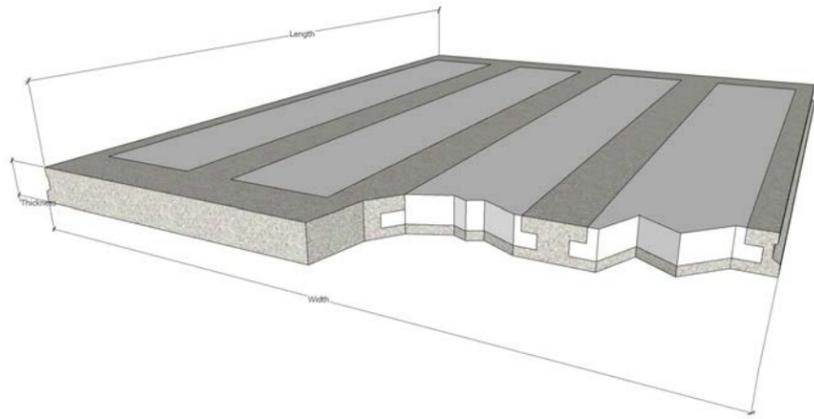
### General Principles:

- A. Metromont Corporation shall become a member of the Design Team (Architect/Structural Engineer/MEP Engineer), attend regularly scheduled meetings with other members of the Design Team, provide information, and make recommendations to the other members of the team in regard to development of the design, feasibility, constructability issues, time requirements for construction, safety issues, and development of the precast costs. Metromont, along with the Design Team, shall work together to complete the Construction Documents with the understanding and based on the condition that they will mutually cooperate and collaborate to enable each phase of the completion of the construction documents to be completed timely, efficiently, and with the highest possible quality.
- B. Metromont shall work with the Owner and the Design Team to analyze various design options, as required to maintain the precast budget established within the control estimate. At various stages of design, Metromont shall provide "Best Cost Solutions" that accomplish the intent of design. Such recommendations shall consider not only first cost of implementation, but also the time required for construction, resultant quality, maintenance, operational cost, and functionality.
- C. Metromont will be responsible to assist the Design Team in ensuring that the systems meet applicable codes, performance specifications, work within the physical constraints of the architectural/structural design and meet budget and schedule goals. Metromont will also assist in the development of precast/prestressed concrete specification section 03 41 00.
- D. Throughout the project, Metromont shall participate in the design, offering details and overall system design suggestions and aid the Design Team in the development of the drawings. All precast erection drawings, including shop drawings for casting product will be created by Metromont, through its in-house Engineering staff or its Precast Engineering Consultant(s). At the request of Owner, Metromont will develop a 3D BIM coordination model of the precast structure.

# Products

## MetroDeck

The MetroDeck precast/prestressed concrete framing system incorporates a floor and roof product based on proven engineering principles and applications. The flat floor plate design offers all the benefits of commercially available concrete systems and much more. The wet cast floor and roof components are typically 9.5" minimum to varying depths with a typical width of 12'. When the components are integrated with precast/prestressed columns, beams and walls, the framing system can be competitive on projects of all sizes from mixed-use, retail/condominium structures to multi-story office buildings and student housing.



### METRODECK DETAILS

Function: A voided horizontal spanning member. Generally used when a flat ceiling is required and thinner floor section

Design: Prestress

Width: Typical 12'

Length: Spans up to 45' and longer have been achieved

Depth: Topping will vary from 3 1/2" at ends to 2 1/2" at mid-span

MetroDeck is the ideal product designed specifically for Total Precast Structural Systems. The long span capability makes it compatible with typical floor-to-floor heights while also reducing bearing requirements allowing for open floor plans. They are typically supported by the exterior precast walls, architectural spandrel panels, interior walls, or beams for office buildings.

MetroDeck is wet cast. This allows for significant design flexibility and reduces framing elements. Cast-in plates or inserts can be added at minimal cost and stem spacing can be modified to allow for shafts and large penetrations.

Customizable depths allow for variations between projects and within the same project. Depths can also be increased for longer spans or heavier loads. The minimum depth is 9.5".

MetroDeck provides for an exposed smooth ceiling that is paintable. With customizable widths, the joints can be eliminated in rooms. There isn't a need for a drop ceiling other than those typically found in mechanical rooms.



Gunbarrel Suites in Chattanooga, TN is constructed with 15,986 sq ft of MetroDeck floor & roof system and 13,591 sq ft of load-bearing, insulated wall panels.

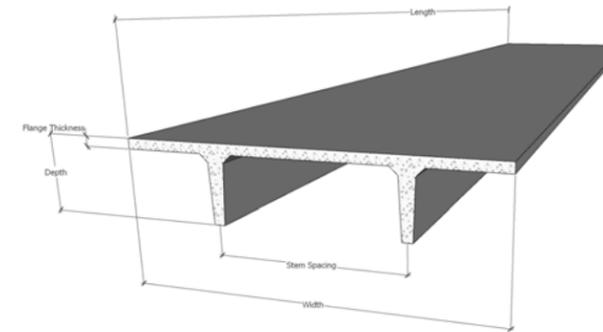


The Henry County Medical Office Building is 3-level, 48,000 sq ft total precast structure that was erected in 25 days.

## Double Tees

Precast Double Tees have traditionally been used in parking structures. Over the past several decades, double tees have been integrated into the building envelope for use in floor and roof systems varying between 30' to 60'. There are numerous benefits including inherent fire resistance, speed of construction, reduced vibration, and sustainable design – contributing to LEED®.

- Longer Spans
- Applications are Podiums, Floor and Roof Systems for Office Buildings, Data Centers and Stadium Concourses, Amenity Levels, and Integral Parking
- Profiles Vary by Plant



### DOUBLE TEE DETAILS

Function: Horizontal spanning member

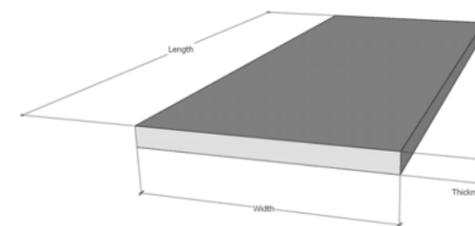
Design: Prestress

Width: Typical 12'

Depth: Depends on application

Length: Varies depending on loading and depth

## Flat Slabs



### FLAT SLAB DETAILS

Function: Horizontal spanning member

Design: Prestress or conventionally reinforced

Width: Typical 12'

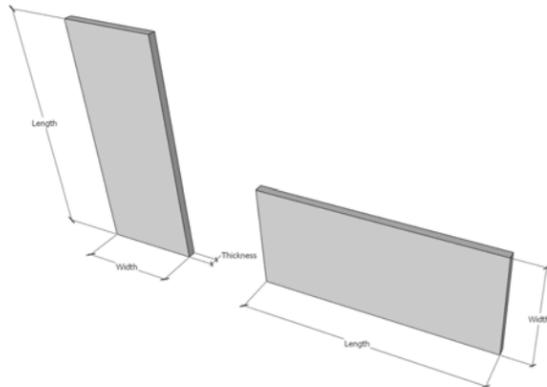
Depth: Depends on application

Length: Varies depending on loading and depth

## Wall Panels

Precast wall panels come in various shapes and sizes to meet your design needs. Typical story heights include 10', 12', and 13'-4" wide and panels turned vertically to accommodate floor to floor heights greater than 14', typical of the first level. Other custom widths are available. Typical wall panel heights range from 10' up to 50' for a single element (to accommodate three-level structures). Structures with multi-stacked wall panels can reach heights of more than 180'. Products can be insulated to provide superior thermal efficiency. Exterior finishes include cast-in brick, sandblasting, formliners, reveals and custom mix designs.

- Horizontal
- Solid or Insulated
- Openings and minimum areas of precast
- Continuous insulation (c.i.)
- Shearwalls



### WALL PANEL DETAILS

Function: Loadbearing or non-loadbearing vertical spanning element that can provide decorative finishes, soundproofing, and fire resistance. Panels can also act as shearwalls

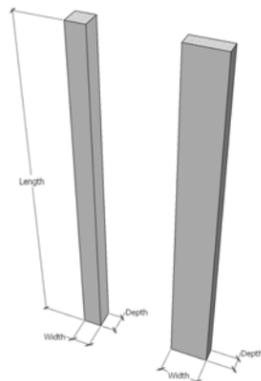
Design: Prestress or conventionally reinforced

Width: Typical 12'

Length: Typical up to 45'

Depth: Typically 8" to greater than 16", if required

## Columns



### COLUMN DETAILS

Function: Vertical members that provide support for floor or roof surface

Design: Prestress or conventionally reinforced

Length: Typically 45'; but can be stacked for taller structures

Size: Minimum column size is 18" x 18"

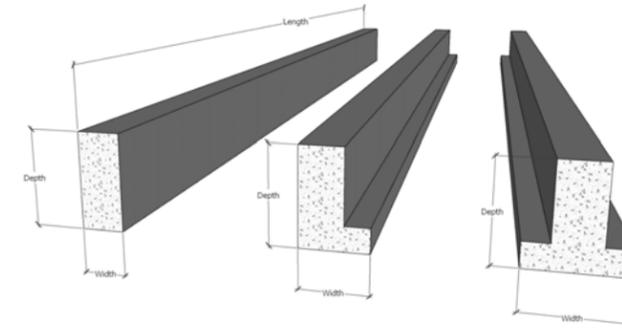


The exterior facade of the Palmetto Health Council Medical Office Building includes curtain wall glazing and thermal efficient precast concrete mass walls with continuous insulation and integral brick veneer.



Brabson Place, located in Chattanooga, TN, is a total precast office building with 40,000 sq ft of elevated floor space.

## Beams (Raker Beams, L Beams & T Beams)



### BEAM DETAILS

Function: Spanning members that provide support for floor or roof members

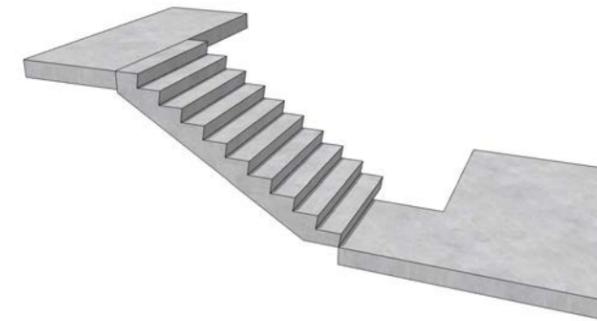
Design: Prestress or conventionally reinforced

Width: Varies depending on loading & spans

Depth: Varies depending on loading & spans

Length: Varies depending on loading and depth

## Precast Stairs



### BEAM DETAILS

Function: Provide vertical egress in an elevated structure

Design: Prestress or conventionally reinforced

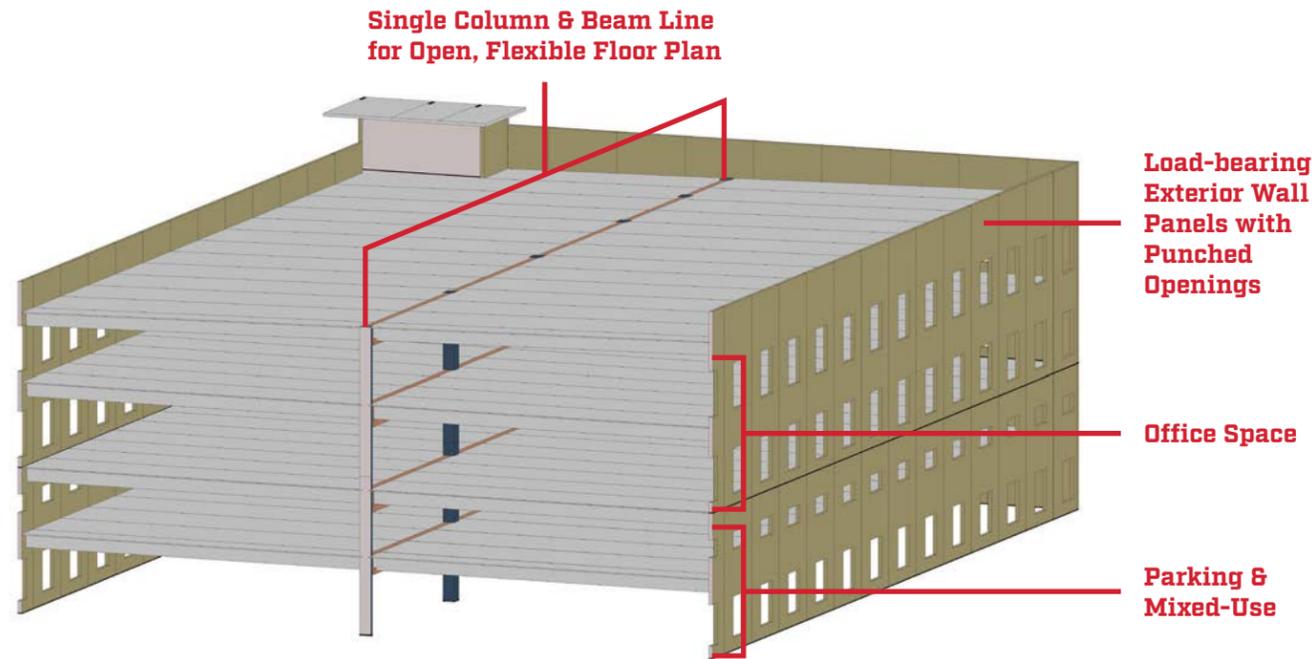
Width: Typical 4'-12'

Depth: Varies depending on loading & spans

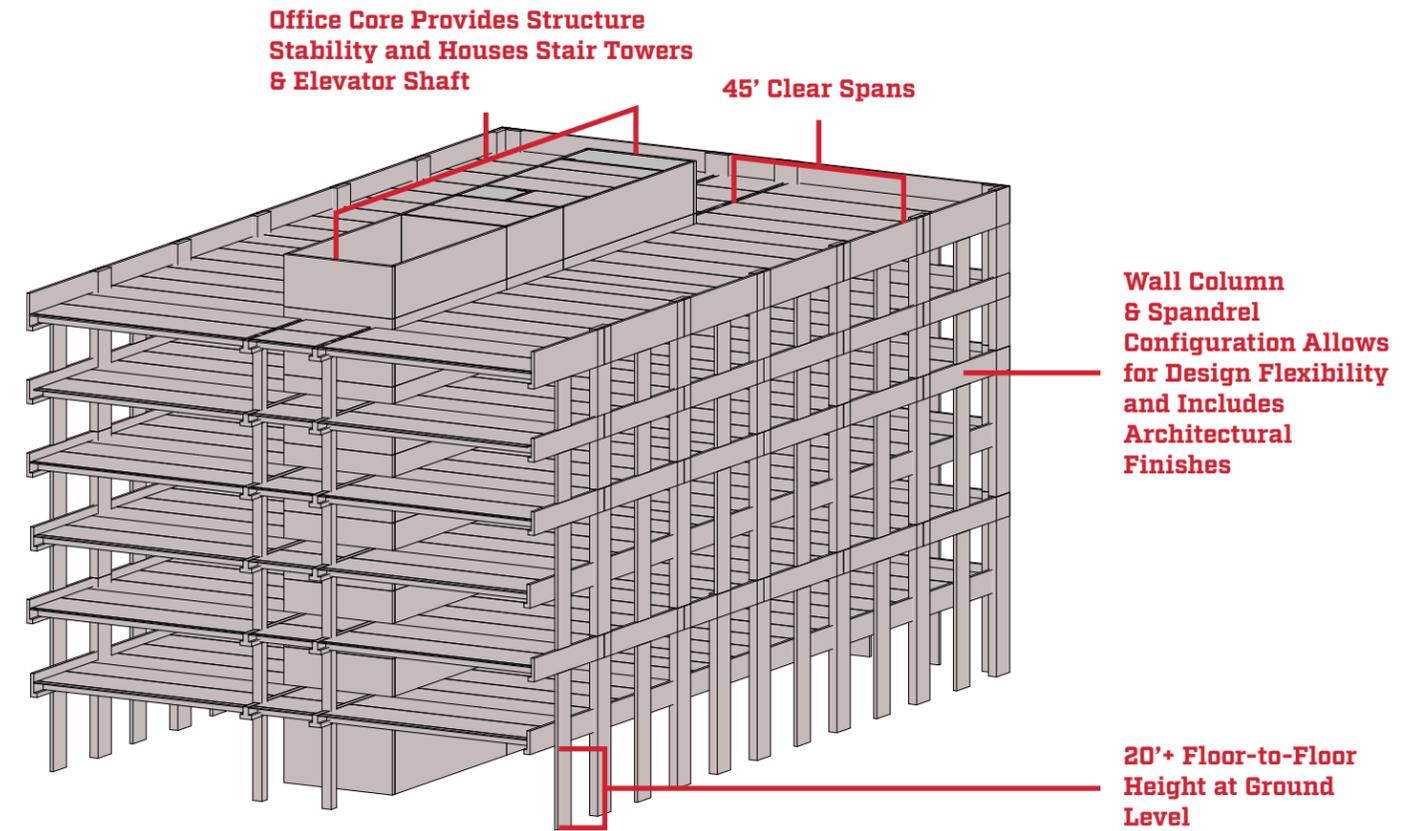
Length: Varies depending on loading and depth

## Total Precast Office Buildings

When it comes to designing office buildings, we know there are a lot of options to choose from. Steel. Cast-in-place. Tilt-wall. But precast concrete is a smart choice for banks, corporate headquarters, hospitals and medical centers, because it offers so many architectural finishes, speed of construction and budget-saving benefits. Total precast office buildings leverage the inherent benefits of precast concrete into a single system for the structural and architectural components of a building all while achieving an open, flexible floor plan. There are a multitude of layout options with a total precast system which can be customized to meet your project requirements such as office space integrated with retail, amenities, and parking. Getting our team of experts involved during the design phase will help you to get the most short and long-term value out of your building's budget.



In the sample layout above, a double-tee floor and roof system is combined with exterior, load-bearing wall panels and a single, interior column & beam line to create a 4-story structure with integrated parking and mixed-use space.



This total precast layout uses a repeating, configuration of exterior wall columns and spandrels where the spandrels alternate at each level between being flush with the exterior and recessed. This design allows for the appearance of large, two-story glass windows as shown in the rendering below.



## Aesthetics

Precast concrete offers owners and designers near limitless design freedom and the ability to create structures that blend seamlessly with the surrounding landscape. Metromont works with owners and designers to help them realize their unique project visions with individualized precast solutions that are durable, cost effective and beautiful.

### Color, Textures, & Applied Finishes

Through a variety of aggregates, choice of matrix colors, varying depths of exposure, and finishing techniques, precast can meet almost any color, form, or texture that may be specified by the designer. The beauty of natural aggregates is greatly accentuated when the aggregates are fused with the color and texture benefits of precast.



### Applied Finishes

There are a variety of post-applied techniques used to achieve the desired appearance and character of the facade. The structure's final appearance is obtained through the combination of the concrete mix design selection and the choice of applied finish.



**Retarder**



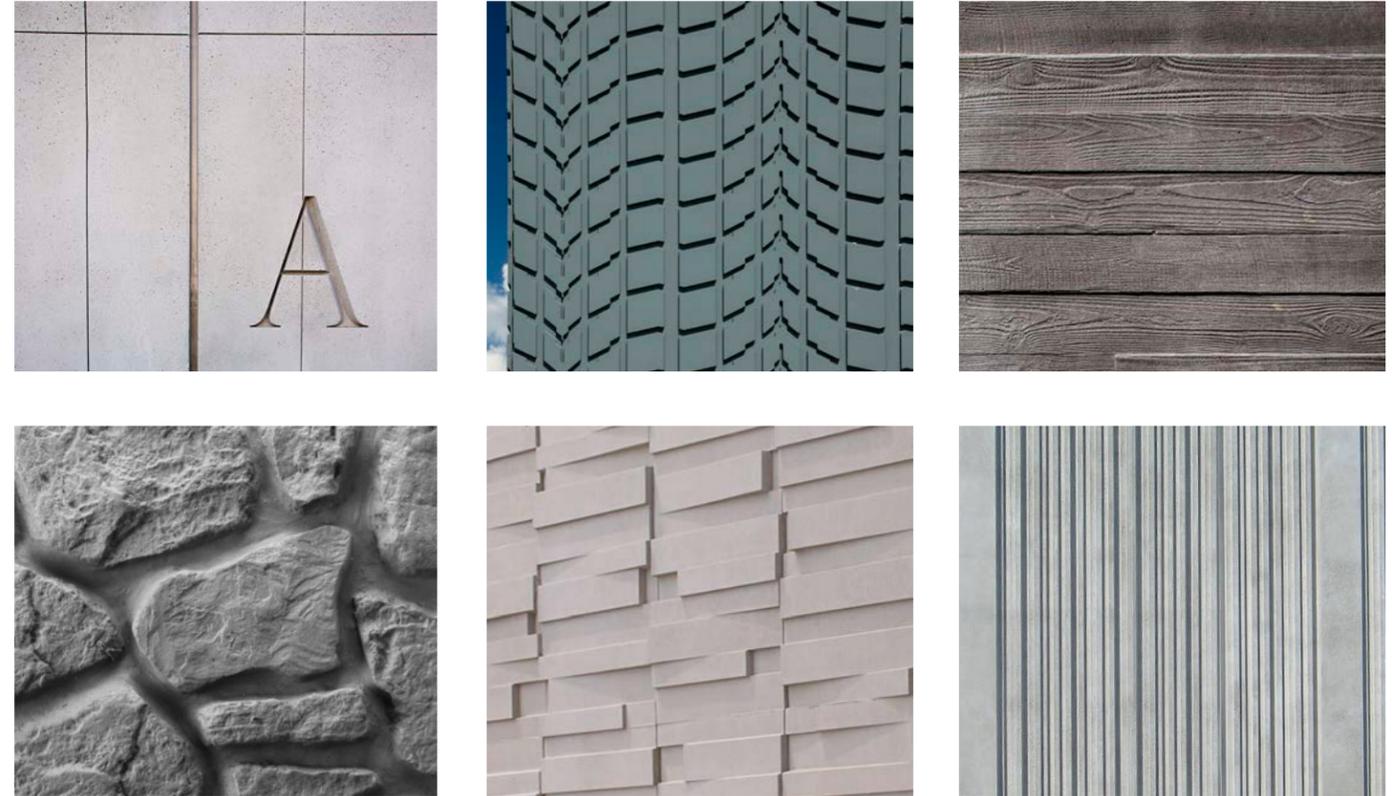
**Sandblast**



**Acid Etch**

## Formliners

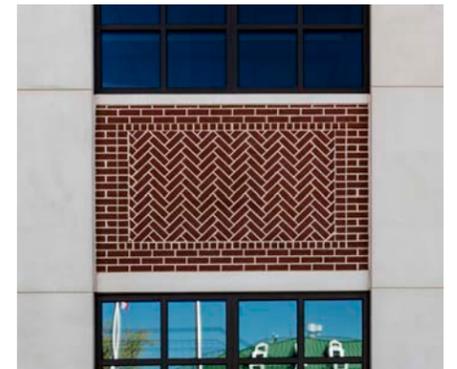
Formliners offer a wide array of possibilities in shapes, patterns, textures and designs. Any combination of applied finishes can be utilized in conjunction with formliners.



## Thin Brick

There is no faster way to install brick on a building than concrete-faced wall panels. Brick liner systems offer diverse options for producing creative brick facades by accommodating any brick size, shape, pattern, and point devised. The advantages of brick-embedded concrete over conventional masonry include:

- Structural and aesthetic value
- Simplified engineering
- No flashing, lintels or weep cavities
- Reduced construction time
- Recommended in seismic zones
- No sand, mortars or mixers on site



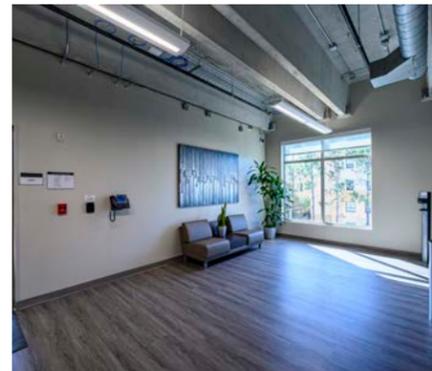
## Terra Cotta-Faced Precast Concrete

Terra cotta tiles have been used for decades by designers to give commercial and residential structures an aesthetically distinct character. Today, designers are realizing the options and advantages of embedding terra cotta into precast concrete panels as a way to more efficiently use terra cotta in the design and construction of commercial buildings. Terra cotta-faced precast panels offer aesthetic versatility, enable accelerated construction, provide high thermal performance, and reduce the number of joints and maintenance costs. For more in-depth information about designing with terra cotta-faced precast concrete, The Precast/Prestressed Concrete Institute (PCI) offers its Terra Cotta-Faced Precast Concrete Designer's Notebook on its website, [www.pci.org](http://www.pci.org).



## Interior

Precast concrete wall panels can be left exposed on the interior and painted or furred out with drywall. A MetroDeck or Double-Tee floor and roof system can be left exposed and painted. Drop ceilings are typically used to conceal MEP.



## Design Considerations & Solutions

This section covers just a few items to consider when designing a total precast building.

### MEP

All vertical and horizontal penetrations must be addressed whether cored or cast-in. Metromont only casts in penetrations over 10" square or diameter.

### Energy Efficiency

Case studies have shown energy savings of 30% to 40% using thermal efficient, continuous insulation wall panels versus traditional construction.

### Moisture Barrier & Waterproofing

When it comes to buildings, water has an unfortunate habit of getting where building owners don't want it to go. Once inside a building, it has the potential to do significant damage. Buildings gain, lose, and store moisture along with heat energy through a variety of physical mechanisms. Operating durability, efficiency and serviceability of the structure can be affected by moisture flow. Controlling moisture flow in a building also has significant impacts on occupant health, safety and comfort.

The concrete, typically over 5,000 psi in strength, absorbs and passes very little liquid water. Panel joints should have either two layers of sealant or sealant and a secondary method of defense against water penetration. Joints around openings should have primary and secondary seals. It is also important to determine the locations of joints and type caulking used along with the small details of slopes, offsets and flashing to direct water and reduce the risk of water intrusion.

### Vibrations in Mixed-Use Structures with Parking

Mixed-use structures combining retail, residential, or commercial tenant space with ancillary parking areas have become a widely accepted use of precast concrete construction. Such structures commonly incorporate and isolate the required parking levels above, below, or even at the same level as the occupied space, thus allowing the structure to serve multiple functions. With the simultaneous presence of moving vehicles and building occupants, there may be concern that vibrations from the vehicles will prove uncomfortable to the tenants under certain conditions. While there is no authoritative collection of research data on this topic, the widespread successful use of such systems endorses their suitability. Metromont can provide component and connection configuration and/or solutions that have proved effective on previous projects. Vibration sensitivity varies greatly depending on the intended use and special considerations may be necessary for structures housing vibration-sensitive equipment or processes.

### Acoustical

The floor system whether MetroDeck or Double Tees will achieve a STC rating of 51 or greater as has been verified through lab tests.



Heritage Plaza in Lakeland, FL combines 35,000 sq ft of office space with more than 200,000 sq ft of parking.

### Windows

Window and door openings are cast directly into the precast wall. When determining locations for windows and door openings, there are several things to consider. Is the panel loadbearing or non-load bearing? Is the panel being used for lateral stability? By engaging Metromont early, we can provide answers to those questions and help determine optimal window and door locations and dimensions that meet structural and aesthetic project requirements. See typical cross section detail for reference in the Appendix on page 65.

### Partitions

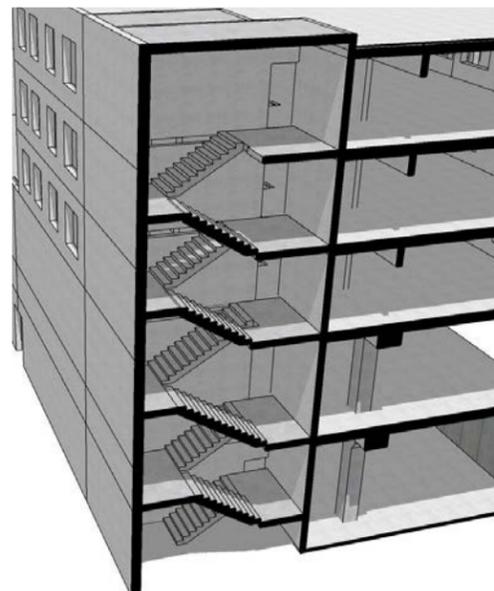
Slide Track. Drywall ceiling track should allow for floor deflections.

### Ornamentals

Architectural features can be added, but build-outs with other materials can be less costly.

### Precast Concrete Stairs

Precast concrete stairs can be installed with the structure. Temporary safety barriers provide instant access to the elevated levels, allowing other trades to begin work.



The Locust Grove Medical Office Building in Jonesboro, GA is a 28,452 sq ft, total precast concrete structure with load-bearing, architectural wall panels and a double-tee floor and roof system. The building shell was erected in 15 days.

## Contact Us

Metromont's comprehensive building package has the potential to reduce both construction time and project costs for total precast office building projects. We hope that you've found the information and project profiles in this guide to be valuable and informative to your design process. If you have any questions regarding how to best utilize a total precast system for your next project, please contact one of Metromont's experienced sales professionals listed below:

### Virginia

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msorenson@shockeyprecast.com

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edenny@metromont.com

Robbie Nesmith Richmond, VA  
rnesmith@metromont.com

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Eric Scherden, Bartow, FL  
escherden@metromont.com

### Corporate

Mark Zirbel  
mzirbel@metromont.com



#### NBSC

Office Building  
Greenville, SC

#### OWNER

NBSC

#### ARCHITECT

Neal Prince Architects

#### GENERAL CONTRACTOR

BE&K Building Group

#### PROJECT DETAILS

Four-story total precast structure

75,000 sq ft of precast double tees

461 pieces of precast concrete

Architectural/structural precast walls panels

Double tee floor and roof system

Erected in 44 days

#### ARCHITECTURAL DETAILS

Thin brick

Limestone-like finish

Exposed aggregate

Sandblasting

Reveals

Buff colored concrete mix with local aggregates

The NBSC Regional Headquarters is a 75,000 sq ft structure situated on the corner of McBee and Spring Streets in downtown Greenville, SC.

Although originally specified as a structural steel frame with brick façade, the design team faced an aggressive construction timeline scheduled to begin during the winter months. Knowing winter time construction can often mean delays in schedule, the design team started to look at other options. The owner was open to the quality assurances and savings precast could provide, but did not want to compromise on the desired architectural impact. Metromont was able to deliver the desired look on time and on budget.

"Truthfully, we were both skeptical and reluctant to change to a total precast structure including the architectural brick façade. However, the cost savings Metromont offered coupled with assurances of quality, safety and schedule were convincing enough for us to take the gamble. The end result has been outstanding and a project which we are all proud of!" – Mac Carpenter, BE&K Building Group



**371 East Paces Ferry Road**  
 Medical Office Building  
 Clemson, SC

**OWNER**

The Loudermilk Companies

**GENERAL CONTRACTOR**

Brasfield & Gorrie

**ARCHITECT**

Rule Joy Trammell + Rubio

**PROJECT DETAILS**

9-level total precast system with 8" load bearing wall panels

126,673 sq ft of precast concrete; 859 pieces

Double-tee floor and roof system

Erected in 14 weeks

**ARCHITECTURAL DETAILS**

Buff colored architectural mix with formliner and medium sandblasting.

Gray architectural mix with formliner and medium sandblasting.

Situated in the heart of the Buckhead Village, an affluent neighborhood of Atlanta known for its high-rise office buildings, luxury shopping centers and restaurants, 371 East Paces Ferry Road Medical Office Building provides 121,000 square feet of much needed medical rentable area as well as 485 structured parking spaces.

This upscale healthcare hub will serve the fast-growing Buckhead population as well as the surrounding neighborhoods, providing medical practitioners with state-of-the-art offices and on-site amenities, all within walking distance of everything the Buckhead Village area has to offer.

Originally conceived as a cast in place structure, the design team recognized the potential for a total precast concrete system to reduce costs and minimize disturbance to the tight, urban jobsite. The design team worked closely with Metromont, getting us involved during the design schematic stage, to develop a total

precast concrete system with a double-tee floor and roof system and integral, load-bearing wall panels.

The use of a total precast concrete building system met the proposed construction schedule while offering economies in the building facade. The 8" thick exterior, load-bearing wall panels of the office tower serve as both the structural and architectural component, resulting in quicker construction, cost savings and a more column free tenant area.

The primary design challenge was to identify a competitive cost building solution that offered aesthetic versatility and ease of construction. Located in the heart of an upscale, urban community, this project faced logistical challenges due to the surrounding buildings and roadways. The adjacent property prohibited the use of a typical tower crane needed for cast-in-place while a total precast concrete system allowed for a more site appropriate crawler crane. The office tower was erected from within the parking garage footprint, working from one side to the other, requiring a nominal laydown area. Once erection was completed on the office tower, other trades could begin working on the interior while the parking garage was being erected. A total precast concrete system solved the logistical challenges, having the least disruptive and most expeditious approach, while also offering significant cost savings over the original cast-in-place design, particularly in the building skin.

A total precast concrete approach also met the overall design objectives of open floor plans with minimal interior columns and a high-end architectural look at a minimal cost. The exterior, load-bearing precast concrete wall panels doubled as both the structural and architectural components, minimizing trades, expediting construction and reducing costs. A conservative budget limited the panels to the standard 8" thickness which challenged the architect to articulate the façade design through creative use of reveals, texture and color.

The parking garage was initially designed to sit underneath the office tower. The use of precast required the parking structure to be pulled from underneath the building which proved advantageous as parking levels could then be aligned with office levels, offering patients direct access to their doctor's floor from the parking deck without going through the main lobby. The main ground level along East Paces Ferry Road provides 7,000 square feet of highly sought-after retail space.



A shared wall separates the parking garage from the office building. Initially designed to sit underneath the office tower, the use of precast required the parking structure to be pulled from underneath the building which proved advantageous as parking levels could then be aligned with office levels.



**Rosen Shingle  
Creek Operations  
Building**

Office Building & Parking  
Orlando, FL

**OWNER**

Rosen Hotels & Resorts

**GENERAL CONTRACTOR**

WELBRO Corporation

**ARCHITECT**

HHCP Architects

**PROJECT DETAILS**

Four-story, 140,000 sq ft total precast structure

33,953 sq ft of Factory-Topped Double Tees

66,457 sq ft Field-Topped Double Tees

33,725 sq ft of Specialty Double Tees for Roof Level

Nearly 50,000 sq ft of 10" Exterior Wall Panels

997 total precast concrete pieces

**ARCHITECTURAL DETAILS**

Smooth Finish with Punched Openings and Reveals

Painted by Others

The Rosen Shingle Creek Operations Office Building and Parking Deck is the headquarters for Rosen Hotel. The 140,000 sq ft, total precast office building includes two levels of parking at the ground and 2nd levels with an office cafeteria on the ground level. The 3rd and 4th levels include open office space with a single line of interior columns and beams. Double-tees span more than 60' to either side of the column and beam line allowing for an open, flexible floor plan. Load-bearing, exterior wall panels provide the building's structural and architectural components with a paint-ready, smooth finish on the exterior.