



MANUFACTURING

QUALIFICATIONS



bp bennett & pless
60 YEARS OF STRUCTURAL EXPERTISE





FIRM OVERVIEW

The demands of today's complex engineering environment require a highly skilled staff of specialists with real-world training in the required disciplines. Bennett & Pless incorporates an outstanding staff of qualified engineers/designers with decades of practical design and construction experience. Each of our projects is produced by a cohesive team that pairs technical skills and practical application within the framework of present day scheduling demands. Our track record of successful projects completed on-time and on- budget demonstrates a commitment to overcoming structural engineering challenges and providing quality client deliverables.

founded in
1964

9
offices

150+ team
members

60-year track record of structural expertise

Volkswagen Assembly Plant



Specialized Knowledge

We pride ourselves in our ability to deliver complex projects. Although not always high-profile, these projects challenge our capabilities and keep us on the leading edge of design.

Excellent Relationships

Our responsiveness, technical excellence, and “can-do” attitudes set a solid foundation for longstanding relationships and designing successful projects together.

A Specialist Partner

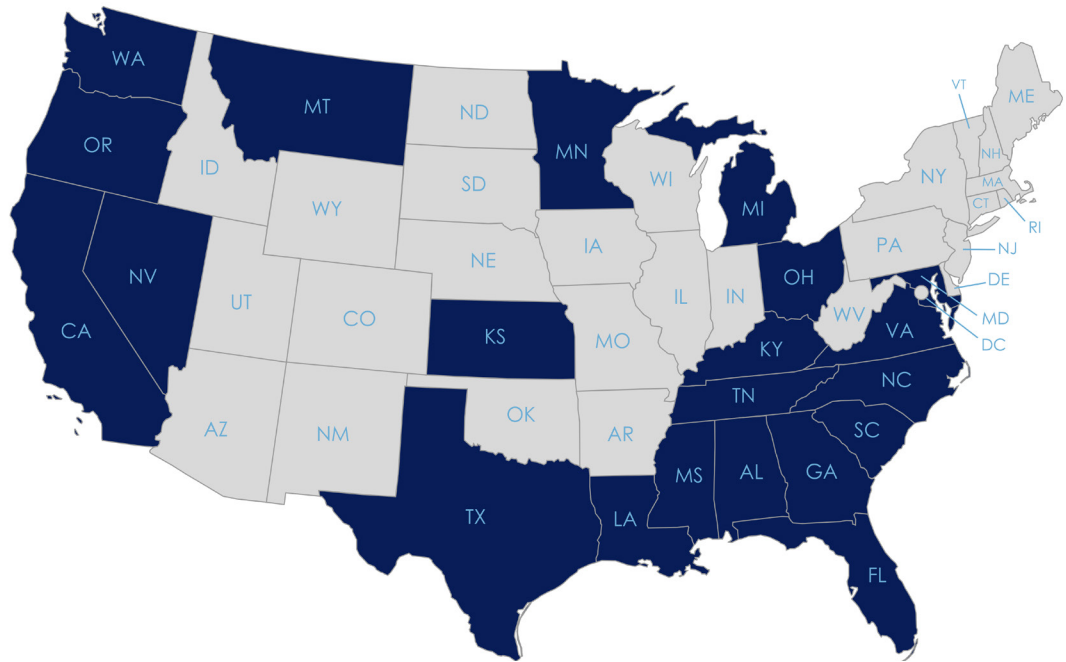
To understand limitations, maintain budgets, and create implementable usage plans, upfront coordination with the design team is paramount. Thorough and thoughtful planning and investigation can help to mitigate these complications before your schedule and budget are impacted.

Our Office Locations



PROVEN OUTCOMES

Manufacturing
Project Locations



250+

Manufacturing Projects

25M SF

of Manufacturing Space

20

Project States

MANUFACTURING

Since the 1700s, manufacturing has been the backbone of America's economy, with the U.S. dominating global production until the 1970s. However, shifts in exchange rates and trade agreements allowed foreign imports to surge, and by 2010, China had surpassed the U.S. in manufacturing output. The COVID-19 pandemic exposed the fragility of global supply chains, underscoring the need for a resilient manufacturing sector. Today, the U.S. is charting a new course in Advanced Manufacturing, leading the world in innovative methods and technologies. As structural engineers active in the industry since the 1960s, we have seen this evolution firsthand and have become specialists in key Advanced Manufacturing sectors like automotive, food and beverage, chemicals, and metals. Our deep understanding of structural design, from supporting heavy loads to accommodating thermal effects, allows us to create efficient, future-proof solutions that meet manufacturers' needs today and anticipate their growth tomorrow. Trusted by manufacturers, we are dedicated partners in optimizing the flow of products through their plants.

Manufacturing Experience

Assembly Manufacturing

Select Listing

Bennett & Pless provides expert structural engineering services for the assembly manufacturing sector, offering tailored solutions for the design, expansion, and upgrades of assembly manufacturing facilities. Whether planning new construction or retrofitting existing assembly plants, our team ensures structural integrity while optimizing for modern assembly line requirements. We specialize in the structural design of automated production facilities, as well as providing assessments and advisory services for expanding and upgrading assembly plants to accommodate evolving manufacturing processes. With a focus on responsiveness, deep expertise, and a wide geographic reach, we partner with architects, contractors, and facility owners to deliver efficient and scalable structural engineering solutions.



Airbus Operations - FAL Hangar

Airbus Operations FAL Hangar, Service & Office Bldg. - Mobile, AL

Structural design of the approximately 300,000 SF final assembly line hangar includes crane runway framing, building frames, laced columns, wind columns, roof framing, catwalk framing, roof bracing, and vertical bracing. We also provided the structural design of a two-story service building with four HVAC galleries and a four-story office area. The service building spans the entire length of the FAL Hangar.

Airbus Operations – CFAL Hangar - Mobile, AL

Structural design of a separate 210,000 SF assembly hangar for the new C-Class Airbus jets. The roof trusses had a clear span of approximately 250', and a clear height of 75 feet.

Airbus Operations – A320 FAL Hangar - Mobile, AL

Structural design of a 200,000 SF assembly hangar for the Airbus A320 passenger jets. The roof trusses had a clear span of approximately 250' and a clear height of 75 feet.



Triton Boad Company

Polaris Off-Road Vehicle Manufacturing Facility - Huntsville, AL

Structural design of a 750,000 SF manufacturing facility with multiple buildings including a manufacturing area, a 2-story office building, a visitor's center, and 13 auxiliary buildings. Manufacturing processes included stamping, welding, and assembly.

Northrop Grumman Ship Systems Propulsion Bldg. - Pascagoula, MS

Structural design of a 42,300 SF, 80 foot tall, hybrid structural steel and pre-engineered building for the assembly of ship engines.

Triton Boat Company - Ashland City, TN

Structural design of a 177,500 SF boat manufacturing facility constructed in 6 months. The design/build team used numerous time-saving measures, including precast foundation walls off-site under controlled conditions. The project was delivered to the Owner on time and under budget.

Manufacturing Experience

Chemical & Related Products Manufacturing

Select Listing

Designing and upgrading chemical manufacturing facilities requires a deep understanding of the industry's specific structural challenges. From chemical production facility expansions to complex retrofits and new chemical processing plant construction, Bennett & Pless delivers precise engineering solutions for chemical facilities. Our team specializes in structural assessments and upgrades for facilities handling hazardous materials, ensuring safety, efficiency, and regulatory compliance. As a leader in structural engineering for chemical plants, we provide the expertise and responsiveness needed to support every stage of your chemical facility design and development.



Wacker Polysilicon - Charleston, TN

Structural peer review for the original plant design, and ongoing consulting services over the past 10+ years for the \$2.5 billion plant. This has included structural analysis and review, seismic review, peer reviews and design modifications for new equipment, electrical cable supports, various pipe supports, multiple platforms and ladders, reactor rigging, cooler racks, hoist beams, crane supports, vessel framing and supports, and numerous lifts. We also provided structural design of the plant's fire station.

Dongwha Electrolyte Plant - Clarksville, TN

Structural design of a new 55,000 SF, 90,000 tons/year electrolyte manufacturing plant including processing, storage, high-temperature storage, control room, and office spaces. Ancillary facilities include a quality control laboratory, covered loading and unloading areas, security office, truck scale and other discrete building and non-building structures and a secondary containment design.



Group 14 Technologies | BAM-2 Battery Process Module - Moses Lake, WA

Structural design of multiple process manufacturing equipment platforms, access platforms (catwalks) and cross-over (stair/ladder structures) within and supported by a multi-story building.

GCP Applied Technologies Chemical Expansion - Mt. Pleasant, TN

Prepared construction documents of the structural scope for the addition of an outdoor containment basin to support one new and three future 15,000-gallon oil tanks, including a blind sump pit, supports for pumps, stair access and a new steel pipe trestle from the new containment basin into the oil process area inside the existing building.

Fibrominn 55 MW Biomass Power Plant Facility - Benson, MN

Structural design of a 40,000 SF fuel storage facility to support a 55 MW biomass power plant, fired by poultry litter and other biomass materials.

Manufacturing Experience

Energy & Power Systems Manufacturing

Select Listing

Bennett & Pless provides expert structural engineering solutions for energy and power systems manufacturing facilities, specializing in facility design, expansion, and upgrades. With extensive experience in structural engineering for energy manufacturing facilities, we address the unique demands of power systems manufacturing plants, from initial construction to retrofits and upgrades. Our team's deep understanding of industrial facility design for power systems ensures the structural integrity and adaptability required for evolving energy production technologies, including renewable energy systems. As a highly responsive, single-discipline firm, we deliver structural assessments, design, and advisory services to meet the challenges of this critical market sector.



Mitsubishi-Hitachi Power Systems

Mitsubishi-Hitachi Power Systems America - Pooler, GA

Structural design of a 440,000 SF facility including a 381,000 SF manufacturing/refurbish turbine parts building, with 60-to-90-foot clear span requirements and heavy cranes and hook heights to 60 feet, a 32,000 SF office building, a 17,000 SF conference center, and a 10,000 SF maintenance building.

Alamitos Battery Energy Storage - Los Alamitos, CA

Structural design of this first of a kind 100MW energy storage facility. We assembled a full-service team of highly respected consultants to establish the needs and design criteria, which resulted in numerous design innovations. Also provided structural design services for BESS facilities from 60MW-1200MW in Arizona, California Hawaii, New York, and Canada.

Siemens Energy - Alpharetta, GA

Provided structural design of a blackout system generator enclosure and anchorage of the genset to the foundation including calculations to determine the gravity and lateral loads in the foundations. Reviewed all of the geotechnical reports regarding the details of the proposed installation.

Alstom Renewable Power - Lusby, MD

Provided structural design of the enclosure and foundation loads for a liquefaction pass through steam turbine for Alstom Renewable Power, Elbląg, Poland. The steam turbine is located at the facility in Lusby, Maryland.

Aspen Power Turbine Generator Building - Lufkin, TX

Structural design of a two-story structure to contain a turbine generator. The first floor included liquid retention structures.

Tennessee Valley Authority - Multiple Locations

Ongoing structural consulting services for 10+ years for multiple TVA nuclear plants.

TVA - Browns Ferry Nuclear Plant - Athens, AL

Structural design of the new crawler building and various modifications within the plant including mezzanine analysis and design modifications, equipment load analysis and foundation reviews.



TVA - Browns Ferry Nuclear Plant



Manufacturing Experience

Food & Beverage Manufacturing Facilities

Select Listing

With deep expertise in structural engineering for food and beverage manufacturing facilities, Bennett & Pless provides tailored solutions for the design, expansion, and upgrade of food production plants and beverage manufacturing operations. Our team understands the specific challenges related to food processing plant structural design, including the need to incorporate new technologies and optimize production efficiency. From structural assessments to facility upgrades and retrofits, we deliver responsive, high-quality engineering solutions that ensure long-term success and adaptability in this dynamic industry.



Hilmar Cheese - Dodge City, KS

Structural design services for an approximately 500,000 SF cheese manufacturing plant. The selected structural system consists of a combination of precast concrete, concrete tilt-up wall panels, structural steel framing and steel joists/girders and interior and exterior stairs and catwalks.

Mars Wrigley – Cleveland, TN

As a trusted partner for structural engineering services to Mars Wrigley in Tennessee, we have supported over 20 projects in the past three years. Our work has included assessments of buildings, foundations, walls, columns, and roofs, as well as structural analysis for design modifications across various platforms, racks, beams, conveyor hangers, and silos.

RealtyLink Cold Storage Facility - Wilmington, NC

Structural design of a one-story 270,000 SF facility with 200,000 SF of cold storage, 65,000 SF of dock space and 5,000 SF of office space.

Breakthru Beverage Distribution Center - Tampa, FL

Structural design of a 570,000 SF tilt-up concrete distribution facility including cold storage and 60,000 SF conditioned space for wine storage.

Cracker Barrel Distribution Center - Lebanon, TN

Structural design of Phase II, 250,000 SF expansion including cold storage with 70,000 SF of super flat floor. This expansion doubled the size of the original facility.





Manufacturing Experience

Food & Beverage Manufacturing Facilities

Select Listing



Ardagh Can Manufacturing Facility - Roanoke, VA

Structural design of the conversion of an existing 530,000 SF warehouse facility to a modern food-grade steel can stamping, manufacturing and warehousing operation.

Performance Food Group Distribution Centers - Various Locations

Structural design of six customized distribution centers, including cold storage, ranging in size from 200,000 to 400,000 SF.

Tennessee Cook & Chill Production Center - Nashville, TN

Structural design of a 93,000 SF distribution facility including cold storage, mezzanines, and equipment support platforms.

Frito Lay - Fayetteville, TN

Structural construction administration of a 170,000 SF food processing plant to ensure compliance with plans and specifications for architectural, structural, and civil disciplines.

GFI Expansion - Lakeland, FL

Structural design of a 36,500 SF freezer, cooler and dock expansion to an existing food storage facility, with the freezer and cooler areas being constructed as a "box-in-a-box".

Mayfield Dairy Plant - Athens, TN

Structural analysis of foundations and supports, columns and frame connections for replacement of the existing milk tank farm.

Pilgrim's Pride Corporation - Chattanooga, TN

Structural design of several plant modifications including rooftop HVAC units and the structure for a new spiral freezer for the poultry processing facility. Coordinated all trades including architectural, civil, geotechnical, and surveying into one drawing set for permit submittal to the city.



Manufacturing Experience

Materials & Related Products Manufacturing

Select Listing

Bennett & Pless offers structural engineering for manufacturing facilities within the materials industry, addressing the unique demands of production environments. From new material manufacturing facility design to industrial building structural engineering, we provide comprehensive solutions for facility expansions, upgrades, and retrofits. Our engineers are experienced in structural assessments, ensuring facilities can accommodate advanced production technologies while maintaining efficiency and safety. Whether designing new plants or enhancing existing operations, we focus on delivering flexible, future-proof structures that support the evolving needs of material production.



Dixie Manufacturing

Georgia Pacific Dixie Manufacturing Plant - Jackson, TN

Structural design of an 893,600 SF facility with clear height of up to 50 feet on the exterior walls including a raw paper storage area, process equipment line, finished goods storage area, and a separate but connected 16,000 SF office.

Valmiera Glass - Dublin, GA

Structural design of a 375,000 SF fiberglass production facility including a five-story processing tower, 1-story manufacturing area, warehouse area, hazmat storage building and guardhouse.

Shaw Industries Plant #78 Expansion - Aiken, SC

Design development and structural design of 710,000 SF of new manufacturing space and construction of a five-level steel-framed, 328,000 SF extrusion tower with heavy process equipment loads.

Portobello Tile - Baxter, TN

Structural design of the first phase of an approximately 750,000 SF porcelain tile manufacturing plant. The majority of the superstructure will be a PEMB. There are numerous areas of elevated floors, mezzanines & platforms that will utilize structural steel. A two-story showroom and office area and a raw material building with push-walls will be constructed in this first phase. The design includes numerous trenches, pits, and equipment foundation.

American Wonder Porcelain - Lebanon, TN

Structural design of a 750,000 SF manufacturing facility with storage, R&D, office, and showroom space.

First Quality Tissue Plant - Anderson, SC

Structural design of an 881,000 SF paper production plant, consisting of a 465,000 SF converting building and a 416,000 SF warehouse facility.

NISSEI America Expansion - San Antonio, TX

Structural design of a 63,000 SF expansion to the manufacturer of plastics injection molding machinery facility including covered loading area.



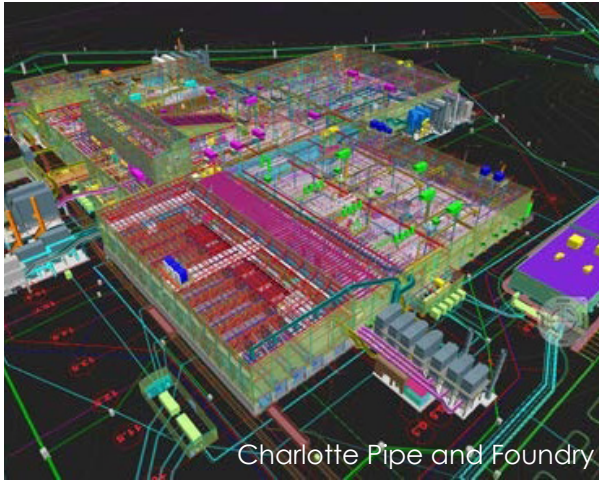
Shaw #78 Plant

Manufacturing Experience

Metals & Related Products Manufacturing

Select Listing

Metals manufacturing facilities require structural engineering solutions that can withstand the rigors of processes like metal forming, heat treatment, and alloy production. From smelting and refining operations to automation in metal manufacturing, our expertise covers all stages of the production cycle. With extensive experience in rolling mills, forging facilities, and machining and tooling, we design for durability and efficiency, ensuring safe and reliable support for industrial furnaces, structural steel frameworks, and advanced metal coating systems. Bennett & Pless delivers high-quality engineering services, providing the specialized knowledge needed to meet the evolving challenges of this critical sector.



Charlotte Pipe and Foundry

Charlotte Pipe & Foundry Spiral Pipe Mill - Charlotte, NC

Structural design of a new 514,000 SF cast iron pipe and fittings manufacturing facility. The facility is insulated prefab metal panels on 8" slab-on-grade foundations with 40-to-60-foot roof heights and 22 exterior roller doors. Also provided the design for 18 inch-thick wall / 24-inch equipment pits and bridge crane runways and supports for 23 bridge cranes.

Sewon America Manufacturing - Rincon, GA

Structural design of a 430,000 SF tilt-up concrete assembly building with roof-supported access catwalks, an 88,000 SF hot-rolled steel framed press building with support design for 30-ton overhead bridge cranes with clear heights to 59 ft., 20,000 SF of below-grade pits, tunnels and trenches, 70,000 SF of canopy structures and 31,000 SF of office space.

e-VAC Magnetics Manufacturing - Sumter, SC

Structural design of the building framework, including building structures for multiple interior cranes and specialized equipment. The structural system is comprised of composite steel beams at elevated floor and steel joist roof framing supported from steel columns. The perimeter of the buildings consists of load bearing concrete tilt-up panels.

TPCO Texas Seamless Pipe Mill - Gregory, TX

Structural design of a 1,400,000 SF steel products production plant with clear heights to 78 ft for interior cranes. The building was designed for windspeeds of 130 mph and withstood the full force of Hurricane Harvey in 2017 with only minor damage from debris impact to building.

IPSCO Metals Steel Coil and Flat Products Plant - Mobile, AL

Structural design of a \$425 million hot-rolled steel coil and flat products production facility, producing 1,250,000 tons per year of products from scrap steel.

Carpenter Technology Specialty Alloys Mill - Athens, AL

Structural design of the radial press forge building, the forge finish building, and the re-melt building; totaling 406,000 SF.



e-VAC Magnetics Manufacturing



Manufacturing Experience

Metals & Related Products Manufacturing

Select Listing



Gerdau Ameristeel Melt Shop Reheat Furnace Building - Jacksonville, FL

Structural design modernization of the melt shop and electric Arc Furnace designed and constructed adjacent to the existing facility without disrupting existing production. The project consisted of 1,200 tons of structural steel, 200 tons of light gage cold rolled purlins, and girts, bar joist, and was clad with a standing seam roof system and long span metal wall panels.

SeverStal Hot Dip Coating Line - Dearborn, MI

Structural design of a 1,120 foot long, 255,000 SF facility that houses the hot dip galvanizing coating line on the Ford Motor Company campus. The main roof line is approximately 140' above grade, while the APC Tower roof rises 240' above grade.

Stupp Corporation Spiral Pipe Mill - Baton Rouge, LA

Structural design of a 230,000 SF spiral pipe mill facility. The facility was designed as a hybrid pre-engineered building consisting of a coil storage/warehouse bay, process bay, receiving and process support areas and office.

Bethlehem Steel Cold Mill - Sparrows Point, MD

Structural design of what is hailed as the most state-of-the-art steel processing plant in the world. The 850,000 SF complex has an annual cold rolled capacity of 1.5 million tons and is capable of pickling 1.7 million tons annually.

National Southwire Aluminum - Hawesville, KY

Structural design of two heavily loaded buildings supported by concrete columns at 10' AFF on a 1,100 acre Aluma ore refining facility producing the footprint of each building as 65'-4" x 1059', for a total of 138,369 SF.

SMI Steel Rolling Mill - Cayce, SC

Structural design of a 17-stand rolling mill at the SMI Steel plant, with an annual capacity of 850,000 tons and a construction cost of \$100 million.

Independence Tube Mill - Decatur, AL

Structural design of a 310,000 SF steel products plant, including four overhead crane runways, longitudinal bracing, wind columns and roof trusses.





Manufacturing Experience

Metals & Related Products Manufacturing

Select Listing



IPSCO SSAB Quench Line Six

Hoeganaes Atomized Metal Powder Plant - Gallatin, TN

Structural design and consulting for upgrades and additions to the plant for 10+ years. The plant consists of a 60 ton electric arc furnace with a ladle refining furnace and 12 annealing furnaces.

IPSCO SSAB Quench Line Six Addition & Heat Treat Facility - Mobile, AL

Structural design of a 250,000 SF quench line facility and 125,000 SF heat treat facility for the processing of steel products.

Feintool - Nashville, TN

Structural design of a 40,000 SF metals processing facility, a second floor office, a mezzanine level, and a high bay with a clear height of 46 feet.

NUCOR - Vulcraft Group - Fort Payne, AL

Structural design of steel open web joists and the coordination between detailing, design, and fabrication of steel joists and related accessories for various plant expansion projects.

Perfect Equipment Lead Products Smelter Plant - Murfreesboro, TN

Structural design of a 100,800 SF manufacturing headquarters with 20,300 SF of office/administration space.

LTV Galvanizing-LSII Expansion - Columbus, OH

Structural design of a 23,000 SF expansion and renovation to an existing galvanizing plant.

Nyrstar Ball Mill - Gordonsville, TN

Structural design of the foundation system and the access platforms for the installation of a ball mill that had been purchased and relocated from another plant. We “reversed engineered” the ball mill and were able to establish design parameters for the support of the equipment.

Ardagh Can Manufacturing Facility - Roanoke, VA

Structural design of the conversion of an existing 530,000 SF warehouse facility to a modern food-grade steel can stamping, manufacturing and warehousing operation.



NUCOR - Vulcraft Group



Manufacturing Experience

Vehicle & Related Manufacturing

Select Listing

Bennett & Pless offers comprehensive structural engineering solutions tailored to the unique needs of automotive manufacturing facilities. With extensive expertise in automotive plant development, expansion, and upgrades, we ensure structural designs meet the increasing demands of modern automotive production, including electric vehicle (EV) and battery manufacturing facilities. Our work accounts for the integration of advanced automation and heavy mechanical systems, ensuring robust and efficient structural frameworks. By focusing exclusively on structural engineering, we deliver responsive, expert-driven solutions that support both the immediate and future needs of automotive manufacturers across the U.S.



General Motors Saturn Manufacturing Plant - Spring Hill, TN

Structural design of 20 projects, including the 220,000 SF service parts warehouse addition and the visitors center.

Kia Motors - West Point, GA

Originally designed in South Korea, we became the Structural Engineer of Record. We reviewed and redesigned the 2,000,000 SF facility.

Denso Manufacturing Tennessee - Maryville, TN

Trusted provider of structural engineering support services to Denso Manufacturing in Maryville, Tennessee for over 150 projects 20+ years, including design of new facilities, and modifications to existing facilities. Denso operates four buildings totaling 2,300,000 SF under roof at their Maryville complex.

Volkswagen America - Chattanooga, TN

Ongoing structural design of modifications of the existing plant including, body shop expansion, vehicle inspection structure, crane cab, connector tunnel, and structural design peer review.

Volkswagen America Electric Battery Lab - Chattanooga, TN

Structural design of high-voltage electric battery lab as part of a 564,000 SF expansion to the existing plant. LEED Certified.

Nissan Assembly Plant - Smyrna, TN

Structural design for numerous plant additions and modifications.

Hankook Tire Phase II - Clarksville, TN

Responsible charge for the structural portion of the bridging documents for the proposed 2,600,000 SF Phase II expansion to the existing plant.

AWTX Aisin South Expansion - Cibolo, TX

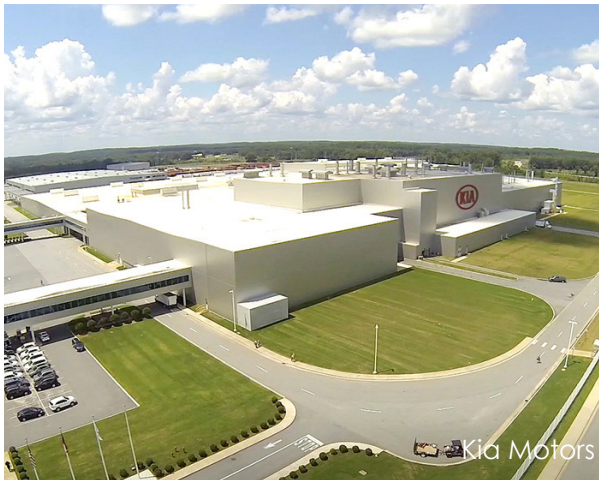
Structural design of an approximate 292,320 SF and expansion to an existing automotive parts plant.

Nissan EV Battery Plant Addition - Smyrna, TN

Structural design of a 26,000 SF addition to the existing EV battery plant.

Nissan Integrated Logistics Center - Canton, MS

Structural design of a 1,500,000 SF warehouse and distribution center.





Manufacturing Experience

Vehicle & Related Products Manufacturing

Select Listing



Bridgestone Wilson Creel & Power Upgrades - Wilson, NC

Structural design of a two-story, 7,000 SF creel room addition. Load-bearing reinforced CMU walls were designed on three sides of the addition and the north wall is enclosed using IMP for future expansion. The elevated mezzanine is framed with composite steel beams supporting a concrete slab on metal deck assembly with numerous pieces of electrical and dehumidification equipment. The SOG was designed to support the equipment foundations for the creel equipment and the rails embedded in the floor with two 250 lb hoists installed over the creel room.

Bridgestone LaVergne L&M Curing Line Revisions - LaVergne, TN

Structural design to convert the existing L&M curing lines from passenger tire production to curing trench designed bus tire production. This required the curing trench to be demolished, and a new, deeper, and wider trench constructed to accommodate 14 new curing presses. This included modification of the steel-framed trench conveyor & walkway system to accommodate the larger tires, and the existing roof trusses for updated conveyors.

Bridgestone Warren 9400 TPD Expansion - Morrison, TN

Structural design to expand the capacity to 9400 tires per day. Including the addition of 5,712 SF to the stock prep area, supports for new RTU, 28,180 SF to the tire room and modifications to the curing trench.

Bridgestone TBR Stock Prep Expansion - Morrison, TN

Structural design of a two-bay, 5,610 SF expansion to the stock prep area including a three-ton bridge crane.

Bridgestone Passenger Tire Plant - LaVergne, TN

Structural design of numerous plant expansions and modifications, including the curing press and extruder areas.

Calsonic Kansei North America - Lewisburg, TN

Structural design of a 310,000 SF auto parts manufacturing facility.

Eagle Bend Plant Expansions - Clinton, TN

Structural design of a 33,600 SF building expansion including a 55 ft high stamping bay, and 28 ft coil storage bay.





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