

Proposed Crescent Brass & Pin Historic District Final Report

By a resolution dated April 9, 2003, the Detroit City Council charged the Historic Designation Advisory Board, a study committee, with the official study of the proposed Crescent Brass & Pin Historic District in accordance with Chapter 25 of the 1984 Detroit City Code and the Michigan Local Historic Districts Act.



The Crescent Brass & Pin complex is located at 5766 Trumbull and 5755 Lincoln, north of the Woodbridge Historic District (NR), west of the New Center area, and south of West Grand Boulevard and Henry Ford Hospital. The location is just west of an industrial area known as Milwaukee Junction that contains early automobile plants and other factories, including the Ford Piquette Avenue Plant, presently under study for city historic designation. Historically the area around the Crescent Brass & Pin Building has been a light industrial district with a number of manufacturing buildings surrounded by residential neighborhoods. The property contains the main building, a quonset hut, and a tinning shed; those structures contribute to the significance of the proposed district.

BOUNDARIES: The Crescent Brass & Pin Building property is generally bounded by the Conrail and Canadian National Railway tracks to the northwest, Lincoln Avenue to the northeast, Elijah McCoy Drive to the southeast and Trumbull Avenue to the southwest. The boundaries, which encompass the real property containing the contributing resources, are outlined in heavy black on the attached map, and are as follows:

On the north, a line starting at a point, that point being the intersection of the centerline of Trumbull Avenue with the north boundary, extended east and west, of Lot 125 of Woodbridge Sub (L 9, P 93 Plats, WCR); thence east along said north boundary of Lot 125 to its intersection with the centerline of the north-south alley lying between Trumbull

Avenue and Lincoln Avenue; thence south along the centerline of said north-south alley to its intersection with the north boundary, extended east and west, of Lot 138 of Woodbridge's Sub (L 9, P 93 Plats, WCR); thence east along said north boundary of Lot 138 as extended to its intersection with the centerline of Lincoln Avenue.

On the east, the centerline of Lincoln Avenue;

On the south, a line starting at a point, that point being the intersection of the centerline of Trumbull Avenue with the south boundary, extended east and west, of Lot 116 of Woodbridge's Sub (L 9, P 93 Plats, WCR); thence easterly along said south boundary of Lot 116 as extended to its intersection with the centerline of the north-south alley lying between Trumbull Avenue and Lincoln Avenue; thence north along the centerline of said north-south alley to its intersection with the south boundary, extended east and west, of Lot 141 of Woodbridge's Sub (L 9, P 93 Plats, WCR); thence east along said south boundary of Lot 141 as extended to its intersection with the centerline of Lincoln Avenue.

On the west, the centerline of Trumbull Avenue.

HISTORY:

The Crescent Brass & Pin Company Building housed what was for much of its history the only firm in Detroit, and one of few in the nation, that specialized in the manufacture of chaplets, which were essential tools in the manufacturing process for radiators, boilers, engines, and other foundry products used by General Motors, Ford, Chrysler, and other automobile companies and a number of important manufacturers of such products as stoves and ranges, plumbing and heating equipment, and agricultural machinery throughout the United States. The Crescent Brass and Pin plant was also the place where Simplex roofing nails, an innovation in roofing shingle fastening technology because of their very broad heads, were first manufactured. Finally, the Crescent Brass & Pin Company Building was built in stages from 1905 to 1956 and, in its use of heavy timber mill construction and of reinforced-concrete framing systems, it illustrates the evolution of standard factory construction technology in Detroit and Michigan in the early twentieth century.

The Crescent Brass & Pin Company Building was built for a Detroit enterprise that dated back to the 1880s. In 1886 Alvin W. Needham designed and built a cigar box nail manufacturing machine at his home at 5748 Lincoln Avenue in Detroit. Once the machine was running successfully, Needham needed investors to help finance his nail manufacturing business. Needham approached his neighbor, John Allen Gray, and John's brother, William Allen Gray. John Gray, a blacksmith by trade but also a woodworker, carpenter, and machinist, and his brother operated a carriage building business located at Cass and Adams Avenues that John had founded in 1879, at a time when carriage and wagon companies were among Detroit's busiest enterprises. William Gray joined the business in 1882, and the company name became J. A. Gray and Brother. In 1886 the company was incorporated as the Gray Brothers Carriage Works. The firm produced carriages, wagons, buggies and sleighs and employed up to forty people. The Gray Brothers Carriage Works are credited as the first company to begin using rubber tires and roller bearings on their rigs. One of their more prominent clients was the Detroit Creamery, with whom they had a contract to maintain their wagons.

In 1886 Alvin W. Needham and the Gray brothers established the Empire Wire Nail Company to manufacture his product. The company was first housed in John Gray's two-story barn located behind his house at 5155 Trumbull Avenue. Empire Wire Nail was manufacturing nails by the late 1880s. For the next decade, Needham ran the company from John Gray's barn. During this time, Needham proceeded to design and build another machine that made radiator chaplets. Thus, the company was producing both nails and chaplets by the turn of the century. Chaplets are metal devices for holding a core (a separate part of a mold that shapes the interior of a hollow casting) or section of a foundry mold in place. An essential feature of the casting process for foundry products such as radiators and boilers, they hold the mold in place as the hot metal is poured into it. As Empire Wire Nail increased production, additions were built onto John Gray's barn. At the end of the 1890s the chaplet business was very profitable while the nail business had slowed down. Eventually, the nail machines were converted to make pins.

In 1897 the nail and chaplet business was moved from John Gray's barn on Trumbull Avenue to the same building at 101 Adams that housed the Gray Brothers carriage business. After the move, the name of the company was changed to the Crescent Machine Company. In this location the company added other lines of work, such as brass shop machinery and various other lines of merchandise, a certain type of coin operated machine, cigar machines and so forth. Prior to the move, Needham had managed the company, but soon after moving to 101 Adams, he sold out to John and William Gray. The brothers then began working full time at the Crescent Machine Company. In 1902 the company expanded to include the addresses from 99 to 103 Adams; they remained at this location until 1905.

In the year 1904 the Crescent Machine Company was incorporated for \$65,000 with 6500 shares of stock at \$10.00 per share, par value. In 1905 the company moved to a new building constructed for it the oldest part of the complex being considered for designation at 1148-1150-1152 Trumbull Avenue (now 5766 Trumbull). This location is just north of the site of John Gray's house. The Detroit-based architectural firm Rogers and MacFarlane designed the building. The building was enlarged to its present size by the company in several stages from 1916 to the 1950s.

Upon moving into the building, the company expanded its product line to include brass plumbing supplies. Following this an amendment was made to the Articles of Incorporation changing the name to Crescent Brass & Pin Company, in 1908. The brass department did not last but the new name stayed, even though the business went on to specialize in chaplets and roofing nails, not brass plumbing supplies or pins. According to John Cameron, former employee and grandson of John A. Gray, the nail business primarily paid the bills (water, electric and heat) while the chaplet business made all of the money. During one period, according to Cameron, when the chaplet market slowed down, Cameron ordered production of nails to be increased in order to keep the employees working. As the nail stock increased, board members became nervous. The problem was solved by the timely occurrence of a natural catastrophe that increased the demand for nails so that the company was able to sell their surplus.

During the first half of the twentieth century the company made a variety of items. They included: bank, office and pyramid pins, brass plumber supplies, cigar box nails, Simplex roof nails, radiator and boiler chaplets, double head chaplets, motor chaplets, shoulder chaplets, crescent fusett foundry chaplets, core plates, taper plugs (placed where a hole was wanted in the casting process), skim gates (bought by automotive companies to keep the molten metal pouring slowly during the casting process and made from recycled tin) and metal stampings. The production of bank, office and pyramid pins began in 1905 and continued into the 1920s, according to the city directories. Bank pins were used to hold paper together prior to staples and paper clips. The pins resembled what a straight pin looks like today.

But it was chaplets and Simplex roofing nails that made the company a success and that gives it much of its historical importance. Chaplets are used by any business that casts its products in molten metal. They can be any thickness or length. Many were handmade for specialized purposes. Chaplets are spacers that hold the core of a mold (which shapes the interior of a hollow casting) in place as hot metal is poured into it. According to John Cameron, Crescent's chaplet work was an art. The size and design of the chaplet depended on the item being cast and the temperature of the molten metal. If the process is done correctly, the chaplet will melt and never be seen in the final product. If done incorrectly part of the chaplet may be found on the final product. Also, there must be an appropriate amount of tinning (making it fuse) that can cause foundry men problems. Often foundry men came to the Crescent Brass & Pin Company with special needs, and Crescent Brass & Pin would develop chaplets to meet them.

Crescent Brass & Pin chaplets were used in the production of automobile, boat, airplane, and farm equipment motors, radiators, and stoves. Radiator chaplets were a major product line from 1910 into the 1940s, and the automobile companies including Ford, Chrysler, and Chevrolet were among the company's biggest consumers of chaplets, both for motors and radiators. During World War II the company even supplied parts [such as chaplets and core wires (#20 wire)] for aircraft production. Crescent Brass & Pin clients in the 1950s and 1960s included a who's who of important automobile and auto parts, furnace, stove and range, agricultural machinery, hardware, plumbing fixture, and other manufacturers across the United States, including American Radiator & Standard, Champion Spark Plug, International Harvester, John Deere,

Kohler, and Ingersol-Rand. By the 1950s Crescent Brass & Pin was one of only four companies in the nation manufacturing chaplets on a large scale, the others being Fanner, Milwaukee Chaplets, and Smith & Richardson (only Milwaukee Chaplets and Smith & Richardson are still in business today) and the only one in Detroit and Michigan.

The company designed and built much of its manufacturing machinery and constantly modified it to increase production and safety. John Cameron designed and built two of these machines, the Reel Strip-Take Off Stand, used to facilitate moving reels of wire, and the Wire Feeder, while working for the company in the 1950s. CB & P used state-of-the-art quality control techniques and filmed its equipment while it was running in order to find ways to make improvements and raise production.

Although the Crescent Brass & Pin Company flourished in the chaplet business, the company also continued manufacturing nails, its original product. Crescent Brass & Pin's most important nail product was its Simplex roofing nail, for which the company received a patent in the 1930s. The inventor of the Simplex nail is listed as John C. Alpeters, who held the positions of treasurer and sales manager at the company. This nail was unique because it was the first *designed* as a roofing nail for asphalt roofing. According to the patent, when the very broad disk-like head of the nail was driven into the roof it would flatten in such a way that water would not be able to seep under the head and cause leaking or rusting. Also, while older types of nails ripped through asphalt, Simplex nail heads were large enough that they did not penetrate the asphalt.

Simplex nails were used for roofing, tacking signs, packing and sheathing. An advertisement in the 1956 R.L. Polk Detroit directory stated, ■SIMPLEX are used on Roofing, Roof Covering, Veneering ■ also Lining and Covering Buildings, Tacking Signs, Pre-packing Furniture, Export Packing, and applying sheathing to Wood and Steel Structure Houses, etc. SIMPLEX have four times the head area of so-called large headed nails, hence four times the holding power. • Furniture companies were one of the biggest consumers of Simplex nails. The nails were packed in barrels of 100-pound boxes. In the late 1950s, the Crescent Brass & Pin Company made 8,000 pounds of Simplex nails each day. Simplex nails are still made and widely used today by roofers.

Crescent Brass & Pin was an innovative company, which was constantly striving to improve its building, production, techniques, safety and equipment. From 1916 to 1924 there were three substantial additions to the building and a final addition in 1956 on the south end of the building. In 1949 the company constructed a large Quonset hut structure behind the main building to store its steel supply. In the 1950s, there were electric cars within the building that were used to move heavy materials from one end of the building to another. From 1953 to 1957 over \$1 million was spent modernizing the building and automating the equipment. When John Cameron (employed as vice president and general manager in 1951-1957) came to the company in 1951, the business still operated with line shafts. Cameron motorized all of the equipment and got rid of the line shafts. Approximately \$125,000 was spent in order to build the final addition.

Crescent Brass & Pin operated the plant at 5766 Trumbull from 1905 until 1958 when, because of labor issues, the company moved its operations to Americus, Georgia. Richard A. Snyder, John A. Gray's grandson, ran the company at the new location. Simplex Nails, Inc., a new company formed when the business moved to Americus, today continues to produce Simplex roofing nails along with a variety of other nail products. While the nail operation remained in Americus, Crescent Brass & Pin's other manufacturing operations, including chaplets, were returned to 5766 Trumbull within a few years. By this time, however, the company's experienced work force had scattered, competition had grown, and the economy was in a slump. A name change in the early 1970s to Crescent Chaplets did little to help. The company never recovered from the Americus adventure. In 1984 they closed the Trumbull Avenue plant. The company donated the building to St. Vincent de Paul and sold the equipment to Milwaukee Chaplets.

The Crescent Brass & Pin Company Building is representative of the evolution of standard engineering for Detroit and Michigan factory buildings in the first decades of the twentieth century because of its use of heavy wood timber post and beam mill construction and of reinforced concrete construction. The original 1905 post and beam structure was designed by the Detroit architectural firm of Rogers and MacFarlane. The firm, comprised of James S. Rogers and Walter MacFarlane, was in practice for nearly twenty-five years, from 1887 to 1910. Approximately two hundred of their commissions are known. Rogers & MacFarlane specialized in designing small business structures, residences, and resort hotels, but also planned a substantial

number of industrial and warehouse buildings in Detroit. Virtually all of the industrial work has apparently been destroyed. The 1905 Rogers & MacFarlane building exemplifies the standard timber-frame mill construction that remained popular in wood-rich Michigan into the early twentieth century. Large posts and beams permitted relatively open and column-free spaces to accommodate the industrial machinery of the period. The massive, single-stick posts and beams and exposed floor joists in Crescent Brass & Pin's original section reflected an awareness of slow-burning mill construction. First promoted by the mutual fire insurance companies beginning in the later nineteenth century, slow-burning construction came into common use in Michigan, as elsewhere in the nation, by the turn of the century. This type of construction was designed both to facilitate the detection of fire, by avoiding wooden partitions and ceiling spaces where fire could spread unseen, and to render the wooden structural system strong enough to support the load even when major beams were charred or partly burned away. The building's 1905 section, with its 10 X 10 and 14 X 14 timbers and floor system visible from below, not hidden behind a ceiling, clearly exemplifies this type of construction that was still much used in the first years of the twentieth century in Detroit and Michigan before steel and reinforced concrete framing systems came into common use.

The building's second, third and fourth additions occurred in 1916, 1916/1917 and 1924. These three additions are constructed using reinforced concrete framing. Reinforced concrete construction became common for factory buildings in the early twentieth century due to then recent developments in reinforcing techniques. Detroit was the home of architect Albert Kahn, an early proponent of reinforced concrete construction whose successes with the material in industrial building gave rise to a national reputation by 1910. Kahn's large reinforced concrete factories in Detroit, beginning with the 1905 Packard Plant No. 10, probably played a key role in popularizing the use of reinforced concrete for factories, warehouses, and other structures in the city within the next few years. There is no evidence that Kahn's firm designed any of the three 1916-24 additions to CB & P's building, but these additions all utilize a reinforced concrete structural system with concrete floors and the frame exposed in the exterior walls similar to that used by Kahn in his earliest work in 1905 at Packard Plant No. 10 in Detroit.

They also utilize a flat slab concrete floor system using two-way structural reinforcing, supported by round-section mushroom concrete columns, similar to construction Kahn had employed in his 1910 Hudson Motor Car Company plant in Detroit. This flat slab floor construction, which made beams spanning the spaces between the columns unnecessary, was not invented by Kahn, but by Minneapolis civil engineer C. A. P. Turner. Turner's first use of what he called the Mushroom System was in the 1905-06 Johnson-Bovey Building in Minneapolis. By the time Crescent Brass & Pin's additions were being built, flat slab and mushroom column construction was coming into common use. CB & P's 1905 building and 1916-24 additions illustrate the evolution of common factory construction methods in the early twentieth century.

DESCRIPTION:

The Crescent Brass & Pin Company Building is a flat-roofed, two- and three-story industrial structure that is generally rectangular in form. Its general ground dimensions are 170 feet in length along Trumbull Avenue by 124 feet eight inches in width. The building surrounds an open central courtyard. An extension at the building's southeast end is fifty-seven feet in width and thirty-one in length along Trumbull, making the overall length on the southwest façade facing Trumbull Avenue 201 feet. Crescent Brass & Pin's building was constructed in five sections from 1905 to 1956, with the L-shaped section on the far north end built first and the southeastern extension built last. The different parts of the structure exemplify heavy wood timber post and beam and reinforced concrete construction. The property also contains a tinning shed and a Quonset hut storage shed, constructed in 1949; both contribute to the property's historic character.

The main Crescent Brass & Pin Company Building is a medium sized, industrial building constructed with unadorned facades, reflecting the building's utilitarian nature as a factory. The building's footprint forms a hollow rectangle with an open central, rectangular courtyard. The first floor contains 21,970 square feet of floor space and the second 19,234 square feet. There are two small basements beneath portions of the building.

The overall building is comprised of five structures built in stages from 1905 to 1956. The entire building, except the 1956 addition, is two stories in height, while the 1956 addition contains three stories. The building has maintained the distinct characteristics dating from each period of construction. Structurally it utilizes two systems, each typical of its period of construction. The original 1905 section displays heavy timber framing and masonry bearing walls, while the 1916-24 sections use reinforced-concrete framing, with a concrete, ■two-way■ structural slab system (with reinforcing bars going in both directions). The building reflects typical design and construction methods of factory buildings built throughout the United States in the first half of the twentieth century.

The original L-shaped building built in 1905 uses a triple wythe brick masonry bearing wall for the exterior walls and a heavy timber post and beam structural system for the first-floor and roof framing. The columns are single wooden members 10• X 10• in section. They support 10• X 14• beams ■ also made from single timbers ■ spanning the space that in turn support the second-floor joists. The second floor, visible from below, is built using a heavy wood subfloor topped by hardwood finish flooring ■ all placed directly span between the wood beams. The floor to floor height is approximately fourteen feet high. The exterior wall has double-hung wood windows.

Beginning in 1916, the building had three substantial additions made to the original 1905 structure. These occurred in 1916, 1916/1917 and 1924 and gave the building a "hollowed square" configuration of buildings surrounding a rectangular interior courtyard. The central courtyard made possible windows on both sides of all parts of the building, providing good lighting throughout.

Starting with the 1916 addition, reinforced concrete rather than timber was used for the structural system. The additions to the original 1905 structure use "two-way" structural ■flat slab■ floors supported by concrete ■mushroom■ columns. The slab was "dropped" at each column to provide additional reinforcing steel and covering concrete. This "two-way" structural slab system did not require beams between the columns to support the floor slab.

The exterior walls of the additions are very different from the original 1905 structure walls. They display the exposed concrete structural frame on the exterior of the building. The exposed structural frame is composed of vertical concrete columns with horizontal concrete beams spanning between them. The concrete frame supports the floors and roofs of the additions on the exterior wall. The building exterior within each section of the exposed structural frame displays a low masonry wall rising approximately thirty-six inches above the concrete floor. The remainder of the area within each section of the structural frame is infilled with an industrial sash window. Typical of construction methods used during the 1920s era, the windows have very narrow sash profiles (less than 1 1/2"), providing maximum visibility and light to the interior of the building.

In 1956 the last addition was made to the building. This addition also reflects a predominant construction technique of its era. The 1956 addition continues the use of masonry exterior walls with reinforced concrete columns and floor and roof slab system. Unlike prior additions, the 1956 addition does not express the concrete structural frame of the building on the exterior but rather uses a brick veneer on the concrete block back-up it employs. This addition is covered with tan brick, darker in color when compared to the burnt umber color brick on the industrial portions of the building. The windows for this addition do not use industrial sash but rather a "ribbon" or "strip" window type commonly used for office buildings of that era.

The interior of the building reflects an open plan for an industrial operation as well as the use of standard construction techniques. The original 1905 structure has wood floors and ceilings with double-hung windows. The heavy wood timber structural system is visible throughout. On the second-floor level are three skylights

that bring additional light into the space (skylights are possibly original to the 1905 building). The concrete ceiling slabs in the 1916, 1916/17 and 1924 additions have exposed sleeves inserted into them flush with the finished surfaces of the slabs. The inserts allowed steel brackets to be inserted in the sleeves to carry industrial equipment and systems from the slabs. The areas receive large amounts of light from the industrial sash windows on both the exterior and interior (courtyard-facing) walls. The 1956 addition is different because it was not designed for industrial activities. This addition was split into office and conference space. When the 1956 addition was completed, the main entrance into the building was switched to the southwest corner of the south elevation.

There are several access points into the building. There exists a "public" entrance facing Trumbull Avenue that enters the former office portion of the building. Other entrances exist at the southeast corner of the building, with doors entering into the former office portion of the building as well as into the former industrial portion of the building. Also, in the southeast corner of the building, garage doors allow vehicular access into the industrial area of the building as does a loading dock exit.

A 900-square-foot tinning shed stands in the interior courtyard. It was constructed in a manner similar to the 1905 building using multi-wythe exterior walls with punched openings and a heavy timber roof structural system. Unlike the original 1905 structure, the shed's roof is a highly pitched hip roof.

A Quonset hut standing to the east-southeast of the main building was constructed by the company in 1949 as a place for storing steel and nails. The forty foot wide by eighty foot long shed is constructed of curved corrugated metal plates bolted together to form a half-cylinder shape. The sheet metal sides are attached to a poured concrete foundation wall that rises approximately three feet above grade. The building's gable end displays a modern rolling garage door and standard swing door. Two large metal-clad sliding doors at the opposite end may be original. Electrical and plumbing service and a gas-fired furnace that were once present have all been removed.



Criteria: The proposed historic district meets the first and third criteria contained in section 25-2-2: (1) Sites, buildings, structures, or archeological sites where cultural, social, spiritual, economic, political or architectural history of the community, city, state or nation is particularly reflected or exemplified; and (3) Buildings or structures which embody the distinguishing characteristics of an architectural specimen, inherently valuable as a representation of a period, style or method of construction.

RECOMMENDATION: The Historic Designation Advisory Board recommends that City Council designate the proposed Crescent Brass & Pin Historic District as an historic district; a draft ordinance of designation is attached.

The staff of the Historic Designation Advisory Board wishes to acknowledge that this report is almost entirely derived from the National Register nomination form for the property provided to the Board by the State Historic Preservation Office.

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