

Bethlehem Visitor Center Timeline

[Information pertaining directly to the Stock House is displayed in bold type.]

1858 The Lehigh Valley Railroad moves its headquarters to a location on the south banks of the Lehigh River, across the water from the then City of Bethlehem, Pennsylvania. The railroad company previously had established its primary repair shop on the site. The new headquarters' location is a junction point where the Lehigh Valley Railroad connects to the North Pennsylvania Railroad and the Central Railroad of New Jersey, both of which have routes to Philadelphia and New York City.

The same year, Robert Sayre, General Superintendent and Chief Engineer of the Lehigh Valley Railroad approaches the founders of the Soucon Iron Company and arranges to purchase an undeveloped property adjacent to the repair shop. The Soucon Iron Company acquired the property the year before as the future site of an iron works they intended to establish, but did not.

Sayre forms the Bethlehem Rolling Mill and Iron Company to make rails for the Lehigh Valley Railroad on the property he purchases from the Soucon Iron Company.

1860 Robert Sayre hires John Fritz to serve as general manager and superintendent of the Bethlehem Rolling Mill and Iron Company. Fritz previously served as the superintendent of the Cambria Iron Company in Johnstown, Pennsylvania.

Fritz designs and begins supervising the construction of the most modern blast furnaces of the time, puddling furnaces, and an innovative rail mill that produces wrought iron rails that are stronger and more efficiently manufactured than rails made by competing companies.

Note: The banks of the Lehigh River where the Bethlehem Rolling Mill and Iron Company established its plant is an ideal location for iron production. All essential ingredients are at hand: abundant river water is available; there are iron ore deposits in the nearby Soucon Valley; limestone is quarried near the site; and a source of coal is only a few miles away. Products made by the company can be distributed by the Lehigh Valley Railroad and competing and connecting railroad lines that pass through the site. Within a decade of its founding, the nearly-established iron company became the leading supplier to the railroad-rail market in the Eastern United States.

The iron works founded by Sayre would eventually stretch four and a half miles along and near the Lehigh River. The site of the plant fell within the Borough of South Bethlehem when the borough was formed after the Civil War. South Bethlehem merged

with the City of Bethlehem in 1917 (West Bethlehem in Lehigh County and Bethlehem in Northampton County had merged in 1904). Bethlehem residents in the 21st century refer to the former South Bethlehem as South Side.

- 1863 Robert Sayre reorganizes the Bethlehem Rolling Mill and Iron Company and renames it the Bethlehem Iron Company.

Construction is complete for two blast furnaces; an engine house with machinery for steam generation, blowing, and pumping; a **stock house**; and a rolling mill with puddling furnaces. All are built according to the designs of John Fritz. The original repair shop, around which the new facilities are built, stands between the combination rolling mill and puddling furnaces to the west; and the foundry, engine house, blast furnaces, and **Stock House** to the east.

The Stock House is a long, slate-roofed, rubble-stone shed that runs along the southern length of the blast furnaces. It is approximately 260 feet long and 47-ft.-6-ins. wide. Two 50-ft.-wide bays extend 110 feet northward to form stock floors at the base of each furnace are. The bays are attached to the Stock House.

Raw materials for iron-making – iron ore, limestone, and anthracite coal (coke would soon replace coal in the iron-making process) – are deliver to the interior of the Stock House by cars that run along tracks in the building’s concrete floor. The materials are stored in the Stock House before they are transported to the top of the furnace stacks with hydraulic elevators powered by machines in the engine house. Once moved to the top of the furnace towers, workers shovel the material into the blast furnaces to make iron.

The Bethlehem Iron Company begins operating its blast furnaces in January 1863. In September, it rolls its first rails.

The Bethlehem Rolling Mill and Iron Company purchases a blast furnace built by another company. The newly acquired furnace is located a few hundred yards from the blast furnaces built by Fritz.

Note: The blast furnace purchased by the expanding company stands at the eastern end of where Machine Shop No. 2 was later constructed after the furnace was demolished. (Machine Shop No. 2 was the largest industrial building in the world when completed in 1892.)

- 1870 Construction of the Bessemer Plant and Rail Rolling Mill begins.
- 1873 Construction of the Bessemer Plant and Rail Rolling Mill is complete and operation of the facility begins. The Bessemer Plant and Rail Rolling Mill stands a short distance from the blast furnaces. The double-cruciform-shaped building, the Bessemer furnaces, and the

mills were designed by John Fritz. The building houses four Bessemer converters to manufacture steel using the company's pig iron. The new building also houses a rolling mill and machinery for making merchant bar stock (steel bars sold to outside customers). Now a steel producer, the company, which had previously manufactured iron rails for railroads, begins producing steel rails.

With the Bessemer Plant and Rail Rolling Mill, the Bethlehem Iron Company becomes an integrated steel mill which means the mill takes iron ore, fuel, and flux to create pig iron that it then converts to steel, which in turn it forms into products.

1874 A Spiegel furnace is built along furnace row. With four active furnaces, construction begins on a pair of blast furnaces that will be larger than any of the company's operating furnaces.

1876 Construction of blast furnace number five is complete. Operation begins in March.

1877 Construction of blast furnace number six is complete. Operation begins in March. As blast furnace row expands with the construction of two additional furnaces, Fritz simultaneously supervises the construction of support facilities that include a large engine house immediately south of furnaces five and six. The engines in the new house provides power for the entire operation, making the equipment in the 1863 engine house obsolete.

As part of the 1870s expansion, the Stock House is extended to the east to support the new furnaces. Built as a continuation of the original stock house with similar materials, the expanded Stock House is now nearly 750 feet long. Mechanically driven stock hoists are positioned within the Stock House extension and aligned with the two new Blast furnaces. As with the original Stock House, bays are built to the north of the Stock House addition that encompass the bases of blast furnaces five and six to form stock floors.

Machinery, engines, and roof trusses for the new facilities – including the trusses for the Stock House addition – are made in the machine shop and foundry of the Bethlehem Iron Company.

Note: There are five furnaces comprising blast furnace row. Blast furnace three, built originally by another company, is several hundred yards to the east of the other five furnaces.

1887 John Fritz introduces open-health steelmaking to the Bethlehem Iron Company.

Note: Between 1887 and 1969 the Bethlehem plant established four open-health furnace shops with a total of 36 open-health furnaces.

The company wins the first U.S. Navy contract to fabricate armor plate.

Note: In the 1880s, the company began losing market share in steel rail contracting to the Carnegie Steel Company in Pittsburgh. The Bethlehem Iron Company stockholders responded by investing in heavy-forging equipment to supply an emerging and largely unmet demand for forged steel products. By 1892 the company operated America's first heavy-forging steel plant and successfully contracted with the U.S. Navy to supply guns (cannons), shells, and steel armor-plate for warships. It also produced forgings for the electric power industry and crank shafts and propeller shafts for passenger liners and merchant ships.

1899 The Bethlehem Steel Company is organized as a holding company for the Bethlehem Iron Company.

1900c. A fire in the plant office destroys early records of the company and its facilities.

1904 Charles Schwab becomes company president and chairman of the board. The company reorganizes and renames itself the Bethlehem Steel Corporation. Schwab initiates a robust effort to upgrade and expand the company's capacities for the new century.

1905 The company purchases the U.S. rights to the Grey Mill, an invention of the Englishman Henry Grey. The Grey Mill enabled the Bethlehem Steel Corporation to produce wide-flange "H" beams, girders, and columns which are not being made anywhere in America.

Construction of the Hoover-Mason Trestle begins. **The Hoover-Mason Trestle will replace the Stock House's original function. The trestle will support standard- and wide-gage tracks approximately 28 feet above the ground for rail cars that carry raw materials to the blast furnaces more efficiently than the ground-level supply system supported by the Stock House. Of the 750-ft. long Stock House, all but slightly more than 190 feet at the western end is demolished to make way for trestle construction.**

Work begins to rebuild (modernize) the five blast furnaces comprising blast furnace row.

The company builds a crucible steel plant to make ultra-high-quality steel alloys. (Among other products, crucible steel is used in the manufacture of scaffolding.)

1907 Construction of the Hoover-Mason Trestle is complete and the rail cars it carries begin supplying coke, iron ore, and limestone to the blast furnaces in bottom-dump hopper cars that run along the trestle's tracks.

The eastern end of the trestle occupies an abandoned limestone quarry half a mile from the blast furnaces. The abandoned quarry serves as a storage yard for limestone and iron ore and is adjacent to the company's coke production facility.

Material carried by the cars is dropped into storage bins beneath the tracks. From storage bins material is dropped to mechanically operated skip cars that hoist raw materials along a skip incline to the top of the furnaces.

The western end of the trestle stops approximately 8 feet from the portion of the Stock House not demolished as part of the trestle's construction. No longer functioning as originally designed, the Stock House is now used to store equipment used in making crucible steel.

The corporation's Grey Mill begins rolling steel.

- 1909 **The Stock House's original windows are removed. Masons fill in the bottom of the window openings with rubble stone that matches the surrounding walls. Carpenters replace the reconfigured Stock House window openings with shorter windows that stop approximately 3-ft.-6-ins. from the floor. (The original windows extended nearly to the floor on the south side of the building and approximately 2 feet above the floor on the north side.) Carpenters also replaced several doors in 1909. Drawings for the window and door replacements refer to the building as the Warehouse for Crucible Steel (Later, the building in company documents is referred to as the Tool Steel Bar Storage). This is the earliest known existing architectural drawing of the building. It documents a structure that is 190-ft.-3-ins. long with 13 14-ft.-3-in.-wide bays, each bay defined by a generously proportioned window or door.**

The 1909 drawing indicates that the roof of the Stock House is slate resting on 1 1/4-in. hemlock decking supported by wrought iron trusses.

The 1909 drawing documents a narrow-gauge rail line that enters the Stock House through a 10-ft.-wide door on the west side of the building near the southwest corner and through a 6-ft.-wide door on the north side of the building near the northwest corner. The rail runs along the entire south and west interior of the Stock House (segments of the rail were noted in a 2010 building conditions document and in photographs taken during the 2011 restoration).

A wider gauge loading track runs parallel with the exterior of the south façade for approximately 50 feet beyond the southwest corner of the building. This track is approximately 4 feet below the floor level of the building and is contained within an open trench formed by a retaining wall. The floor of cars carried by the track aligns with the floor level of the Stock House.

The 1909 drawing indicates that the Stock House has a 4-in.-thick concrete floor.

The 1909 drawing also shows columns immediately adjacent to the south exterior wall. The columns support a girder beam for a moveable crane used to lift and transport bars of tool steel and other company products stored in a yard in front of the Stock House.

A masonry building is attached to a section of the north side of the Stock House and is labeled the Hammer Shop. A building labeled the Store House is contiguous with much of the Stock House's western façade. The Store House straddles the site of the 1863 engine house.

- 1916 **The northern side of the Stock House's roof is reshaped -- along with the building's rubble-stone gables -- to enable the extension of the Hoover-Mason Trestle along the entire length of the Stock House. The trestle's new western termination aligns with the west façade of the Stock House. To support the trestle, six pairs of plate steel columns supporting plate steel girders are erected that connect between the outer north wall of the building and 12 feet within the Stock House interior. A slate roof on 1 ¼-in. sheathing covers the newly reconfigured roof truss.**

A 6-ft.-wide wall extension above the eave line of the second bay of the south façade is in place. This rubble wall extension rises 3 feet and is part of a new dormer. It supports a box truss that carries electrical wires on its top chords and a steam pipe on its bottom chords. The steam pipe passes through the Stock House and enters the Hammer Shop.

- 1917 **The United States enter World War I. Between April 1917 and November 1918 the Bethlehem plant produces 65 percent of the total number of finished artillery pieces manufactured by all the allied nations. Bethlehem Steel is the third largest industrial company in America after U.S. Steel and Standard Oil of New Jersey.**

- 1920s **A sixth and seventh blast furnace are added to blast furnace row. Each of the seven blast furnaces are now designated with a letter: "A" through "G."**

Molten iron produced in a blast furnace is transported to the pig caster, the ingot-mold foundry, or to one of the open-hearth furnaces where it is processed with other materials and converted into steel. Beginning in the 1920s, the company also builds and begins operating an electric-arc furnace to produce small batches of steel to very specific specifications for making tool-steel bars used for tool manufacturing.

- 1936 **Thirty-one feet (slightly more than two bays) at the east end of the Stock House are demolished to accommodate an extension to blast furnace "A," the westernmost blast furnace. Only 11 of the Stock House's original bays remain, reducing the building's total length to 159 feet. Concrete block is used to make a new east wall**

and to patch the southeast corner. (The approximate length of the building went from 260 feet in 1863; to 750 feet in 1877; to 190 feet in 1907; to 159 feet in 1936.)

Steam pipes and electrical cable are threaded through the Stock House on their route to other plant facilities. The Stock House is left standing, in part, because it is more cost-effective to continue using the building as an armature for utility infrastructure than reroute the power grid.

1943 Blast furnace “C” is rebuilt and enlarged. In 1943, during World War II, the number of people employed at the Bethlehem facilities reaches 31,523.

1950c. **Concrete block partition walls are added to the Stock House interior. A crane assembly is installed that operates along the length of the interior ceiling. The crane assembly is supported by 8-in.x 8-in. “H”-shaped steel columns. A metal stair and mezzanine is installed at the east end of the interior to provide access to the crane.**

Note: During the 1950s, the Bethlehem facilities employed approximately 18,000 people.

1953 Blast furnace “D” is enlarged.

1954 Blast furnace “B” is enlarged.

1955 Production is discontinued in blast furnaces “F” and “G.”

Note: These two furnaces are taken down in the 1960s. The five remaining blast furnaces are preserved into the 21st century.

1960 Blast furnace “A” is shut down.

Note: Furnace “A” was the first blast furnace modernized when Schwab gained leadership of the company. It was rebuilt in 1950.

1970c. **A corrugated steel roof replaces the Stock House’s slate roof. (The steel roof was dismantled during 21st century building restoration.) At this time, the Stock House is used to store parts and equipment for the blast furnaces.**

The blast furnaces “B,” “C,” “D,” and “E” still operate.

1976 The company closes Bethlehem’s Fabricated Steel Construction Division, manufacturer of the “H” beam.

1980s **The Store House and Hammer Shop are demolished, both of which are connected to the remaining 11 bays of the Stock House.**

1995 The last operating blast furnace goes cold on November 18. For the first time since 1873, steel is not being made in the Lehigh Valley.

- 1996 The Bethlehem Steel Corporation forms Bethlehem Works, a subsidiary to preserve, interpret, and redevelop portions of the plant. Bethlehem Works commissions a redevelopment master plan for approximately 125 acres at the eastern end of the plant.
- The City of Bethlehem updates its zoning ordinance to encourage a broad range of uses for the Bethlehem Works site.
- 1997 In March, the combination mill is closed. It was the nation's last producer of hot-rolled sheet piling. BethForge and CENTEC are sold, the last remaining operations of the Bethlehem plant. All other facilities in the plant are mothballed. The 1,800-acre site is now the largest brown field in America.
- 2000 The City of Bethlehem, Northampton County, and the Bethlehem School District -- the three real estate taxing bodies with jurisdiction over the sprawling, former Bethlehem Steel facility -- create a 20-year Tax Increment Financing District (TIF) for the Bethlehem Works site. TIF revenues will finance capital improvement on the site including the installation of new streets and utility systems that extend the infrastructure of the abutting commercial and residential district. The TIF will also pay for the development of public areas within the site including the restoration and adaptation of the **Stock House**, the design and construction of the Levitt Pavilion, and all the outdoor spaces of the future SteelStacks Arts and Culture Campus.
- 2001 The Bethlehem Steel Corporation, which had already ceased all operations in Bethlehem, files for Chapter 11 bankruptcy in October.
- 2003 On April 22, the United States Bankruptcy Court in Manhattan approves the sale of the company to the International Steel Group.
- 2004 The National Trust for Historic Preservation designates the former Bethlehem Steel Plant among the 11 most endangered historic places in America.

Later in 2004, an investment group purchases 126 acres at the eastern end of the abandoned Bethlehem Steel facility that roughly corresponds to the Bethlehem Works site. This parcel includes many of the former plant's oldest and most historically significant structures, including the five remaining blast furnaces of blast furnace row and the **Stock House**.

Working in close collaboration with the Redevelopment Authority of The City of Bethlehem, the investors develops a new master plan for the 126-acre site that places a gambling casino at the east end of the parcel, a 9.5-acre arts and cultural campus at the west end, and residential and commercial development in between. Among other facilities, the site's five 20-story-high blast furnaces (steel stacks), the Hoover-Mason

Trestle, the former Turn and Grind Shop, and the **Stock House** are spared the wrecking ball.

- 2006 The Pennsylvania Gaming Board awards the Las Vegas Sands Corporation a slots license for a casino and related development envisioned in the 2004 master plan.
- 2008 **Planning for the restoration and adaptive reuse of the Stock House begins with the support of a Preserve America grant.**
- 2009 The Sands Casino Resort Bethlehem opens at the location specified in the 2004 master plan. Through a tax incremental financing (TIF) mechanism established in 2000, real estate and income taxes from the casino and its hotel, retail, parking, and convention facilities are dedicated to financing the development and maintenance of the remainder of the site.

Development begins of the SteelStacks Arts and Cultural Campus. The facilities of the campus are developed in part or in their entirety through TIF funding. The campus comprises two new flagship buildings (one for ArtsQuest, a nonprofit organization; the other for PBS39, a Public Broadcasting System affiliate), an outdoor concert pavilion with an amphitheater lawn (The Levitt Pavilion SteelStacks), a large surface parking lot that also serves as a concert venue, several outdoor plazas, a playground, and two historic buildings. One of the historic buildings -- a large shed (the former Turn and Grind Shop Building) -- will be restored and adapted for a range of flexible uses including an indoor marketplace. **The other historic building, the Stock House, is slated to be restored and adapted for use as a regional visitor center, support facility for the SteelStacks Arts and Culture Campus, and ArtsQuest administrative offices.**

Restoration and adaptive reuse of the Stock House begins at the end of 2009.

- 2011 The City of Bethlehem holds a ribbon cutting ceremony on July 2 for the SteelStacks Arts and Cultural Campus. The ArtsQuest Center, Levitt Pavilion SteelStacks, PBS Public Media and Education Center, and numerous outdoor campus facilities are complete and open to the public at the time of the ribbon cutting.
- 2012 **Restoration and adaptive reuse of the Stock House is completed.**
- 2013 **The Bethlehem Visitor Center housed in the former Stock House is dedicated on June 14.**
- The Redevelopment Authority begins rehabilitation of the Hoover-Mason Trestle to create an elevated walkway connecting the Sands Casino to the SteelStacks Arts and Culture Campus.
- 2016 **The Hoover-Mason Trestle** linear park opens to the public.

TIME LINE SOURCES:**Publications:**

Bethlehem Heritage Coalition, "Hoover-Mason Trestle: Preserving and Interpreting the Historic Backbone of the Bethlehem Steel Plant." Bethlehem, Penn. 2013. (unpublished recommendations from the Bethlehem Heritage Coalition presented to the Redevelopment Authority of the City of Bethlehem)

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Holley, AL and Smith, L. "American Iron and Steel Works: Works of the Bethlehem Iron Company." *Engineering*: 139-140, August 24, 1877.

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Drawings:

Ware-House for Crucible Steel: Details of Doors & Windows. 1909 (2 sheets)

Extension of Hoover & Mason Trestle at Blast Furnace "A." 1916 (1 sheet)

Extension of Blast Furnace "A." 1936 (1 sheet)

Interviews:

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