Concrete Houses: Manufacturing Towns Part Two

By 1900 the use of concrete had boomed, and journals named Cement and Cement Age detailing controlled experiments and the latest building and structural uses of concrete; a professional organization, the American Concrete Institute, which provided information for its members and had housing experts on staff; and architects and builders experimented with concrete to determine the feasibility and durability of reinforced concrete in residential construction. At least three of these experiments and probably several more remain in our area.

The popularity of concrete was accelerated by Thomas Edison, who in 1902, founded a portland cement factory to make use of heavy equipment and crushing rolls left over from earlier failed experiments with iron-ore. Edison became convinced that concrete houses could be built economically and on a large enough scale as to “take from the city slums everybody who is worth taking.” His engineers fabricated a set of cast iron molds which, when filled with concrete and reinforcing rods, could turn out a beautiful, two-story Renaissance Revival style house designed by architects Mann and MacNeille of New York. Articles in Scientific American and other popular journals fueled interest in the procedure, but actual construction lagged and ultimately Edison’s men only completed a few experimental houses. His friend and
neighbor Frank D. Lambie, however, formed the New York Steel Form Company in 1908 and cast two small groups of concrete houses in Montclair and South Orange, New Jersey in 1910. The proposal that reinforced concrete poured into re-usable molds could be an economical way of building whole neighborhoods of housing for the boom towns then growing around enormous manufacturing plants had yet to be tested on a large scale. The steel, rather than cast iron, forms were popular with steel companies since making the forms was relatively inexpensive for them.

Western Pennsylvania has a long tradition of building towns adjacent to work sites from iron plantations in the first half of the 19th century to mines, glass, and steel factories in the second half. Keeping the workers nearby was a necessity before automobiles and small gauge trains made
On the hillside overlooking the sprawling plant lie 16 houses of rough aggregate concrete grouped around a single city block between Seventh and Eighth streets along Virginia and Ohio avenues. The houses: six single family, eight duplexes, and two triplexes were completed in 1913 under the supervision of Lambie himself, who came to Midland to oversee the building of the first group of houses. Promoter Frank Lambie told the Beaver Daily Times that it took eight men three to four days to excavate for the cellar and pour the foundation footers. Once the molds were

Of Cement Houses at Midland for Workingmen” on page 1 of The Daily Times of Beaver lists local Henry Rankin as the superintendent of construction. The neighbors in Midland nicknamed the houses “Toyland,” perhaps because they never expected them to last.

When Midland Steel was purchased by Crucible Steel (c.1911) the new owners needed to increase the town’s housing quickly. They commissioned 1,000 houses for Midland. Why only 16 were ever built is unclear, but the cost overruns endemic to the new process may explain it.

commuting possible. So it was predictable that the newly formed Midland Steel company built housing adjoining its steel plant just after the turn of the 19th century.

A view of the Crucible Steel plant from “Toyland.”
in place he surmised it would take only one day to pour an entire story of the new house, including the ceiling; he called the entire space “monolithic.” Lambie struggled to convince the corporate engineers from all the large steel companies that concrete housing was a sound investment. While the numbers of houses were never realized in Midland, those that were built are snug and fully occupied today; they blend with their middle class neighbors and are only apparent as experimental houses to a sharp eye.

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2 Midland Steel, founded by H. C. Fownes, W. C. Fownes, Jr., J. Ramsey Speer and Charles McKnight purchased four farms totaling 991 acres in 1904. The plant opened in July 1905 and the blast furnace began operating in the Fall of 1906. Midland Steel became Crucible Steel Company c. 1911.
3 By 1913 Lambie had either founded another company called the American Building Corporation, or was working for them.
4 The words concrete and cement are often used interchangeably, but, in fact, cement is a powder that forms concrete when mixed with water, sand, and gravel.