IOWA HISTORIC PROPERTY STUDY: IOWANA FARMS MILK COMPANY

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City of Bettendorf, Scott County, Iowa

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Abstract

The Iowana Farms Milk Company factory building was considered to retain sufficient integrity and possess sufficient significance to be considered eligible for the National Register of Historic Places under Criteria A and C for its historical and architectural significance in the Bettendorf community. The Iowana Farms Milk Company was an important early to mid-twentieth-century business in Bettendorf, and was among the few that was not owned or operated by the Bettendorf Company. It was a strong and thriving business for many years, and its products were well known in the Quad Cities region. The importance of this property becomes even more significant when one considers that most of the buildings once associated with the actual Bettendorf Company, which was undeniably the most important business and industry in town, are now gone. As a result, the Iowana Farms Milk Company factory building was a physical vestige of the once-thriving commercial industries that made Bettendorf into a city in the twentieth century.

This property was further significant for its representation of the evolution of the dairy industry in the twentieth century from farm to factory production. It also reflected the changes to the industry based on scientific discoveries, mechanical innovations, and governmental regulations related to improved sanitation and the pure milk movement. The Iowana Farms Milk Company represented a model plant for the time, and the marketing strategies it employed followed the trends of the industry.

The Iowana Farms Milk Company plant had to be removed to make room for a new I-74 bridge over the Mississippi River at Bettendorf. The construction of the new bridge also required removal of the historic Iowa-Illinois Memorial Bridge. The documentation reported herein and for that of the Iowa-Illinois Memorial Bridge fulfils the requirements of the Memorandum of Agreement regarding the removal of these historic properties.

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Introduction

The Iowana Farms Milk Company building is being documented at this time to fulfill the requirements of the Memorandum of Agreement regarding the removal of the Iowa-Illinois Memorial Bridge and the Iowana Farms Milk Company Building for the proposed improvements to Interstate 74 in Bettendorf, Iowa. Fieldwork for the documentation occurred in November 2009, July 2010, and September 2010. Limitations on photography included a few areas of the building that were either inaccessible or too dark to photograph for lack of power in the building and for lack of sufficient light despite the use of the camera flash. Primary source research was aided considerably by the discovery of two 1938 national dairy industry journals, each containing feature articles on the original 1938 Iowana Farms Milk Company building. Considered "ultra modern" at the time, the Iowana building's grand opening in May 1938 attracted dairy industry attention. The journal articles focused on the Iowana Farms Milk Company's skilled management team, the efficient factory layout, and the striking Streamline Moderne architecture.

Other primary sources found online included numerous historical photographs, images of Iowana Farms ephemera (i.e., milk caps, glass bottles, and souvenirs), personal memories, and contemporary Davenport and regional newspapers. Additional primary source materials, including original newspaper advertisements, were found at the State Historical Society of Iowa in Iowa City, the Bettendorf Public Library, the Richardson-Sloane Special Collections Center at the Davenport Public Library, and the Iowa State University Special Collections in Ames.

Figure 1. Southeast entrance to the Iowana Farms Milk Company building, Bettendorf, Iowa. View is NW Photo by Tallgrass Historians L.C., July 2010

Part 1: The Factory Today

Factory Setting

The Iowana Farms Milk Company building (aka, Iowana building) is located in a busy urban setting at the northwest corner of State Street and 15th Street in the city of Bettendorf, Scott County, Iowa (Fig.2). State Street, a major, one-way downtown artery, is also the designated route of east-bound U.S. Highway 67 traffic through Bettendorf. The Iowana building is located approximately three city blocks north of the Mississippi River and less than one-half block east of the 14th Street ramp leading from the original 1935 span (east span) of the Iowa-Illinois Memorial Bridge, which carries the north-bound traffic of Interstate 74 across the river from Moline, Illinois, to Bettendorf, Iowa. A modern gas station and convenience store at the corner of State and 14th streets is situated just feet from the west side of the Iowana building. Catty-corner to the southeast is a circa 1960s motel and restaurant. Across State Street to the south are Bill Glynn Park and the Iowa-Illinois Bridge memorial monument. One-half block south of the park run the east-west tracks of the Burlington Northern & Santa Fe Railroad, south of which are several parking lots, a large parking garage, a riverfront walkway, and the riverbank, respectively. About four blocks away to the southeast is a modern riverboat casino and motel complex, which along with the interstate, bridge, and State Street/U.S. 67, generates a large amount of traffic that flows past the Iowana building (Fig. 3; see also Appendix, Site Plan).

Factory Exterior

The Iowana building is set back slightly from the two streets it fronts, allowing for some off-street parking on the 15th Street side, as well as a sidewalk, landscaping, and trees along both facades. The building itself is generally rectangular in shape and mainly one story in height, with an architectural horizontality that emphasizes both. The four distinct sections of the building are the result of four phases of construction over a period of 15 years (see Appendix, Main Floor Plan). A small ice cream store was first established on the northwest corner of State and 15th streets in 1936 (this building is non-extant).[1] The original milk plant – the mainly one-story southeast quarter of the extant Iowana building – was completed in 1938. The west half of the building contains the large one-story garage (with double barrel-vaulted steel trussed roof) on the northwest corner, built in 1947-48; the one-story west office space on the southwest corner was built in 1948, likely after the ice cream store and soda fountain was remodeled and enlarged, encompassing the original east office space. The two-story ice cream factory was built c.1952 and forms the northeast quarter of the building. A prominent smokestack, part of the original plant, rises between the rear of the original building and the two-story addition.

[1] No historical photographs, aerials, or maps have been discovered to date that show the 1936 Iowana Farms ice cream store originally on this corner.

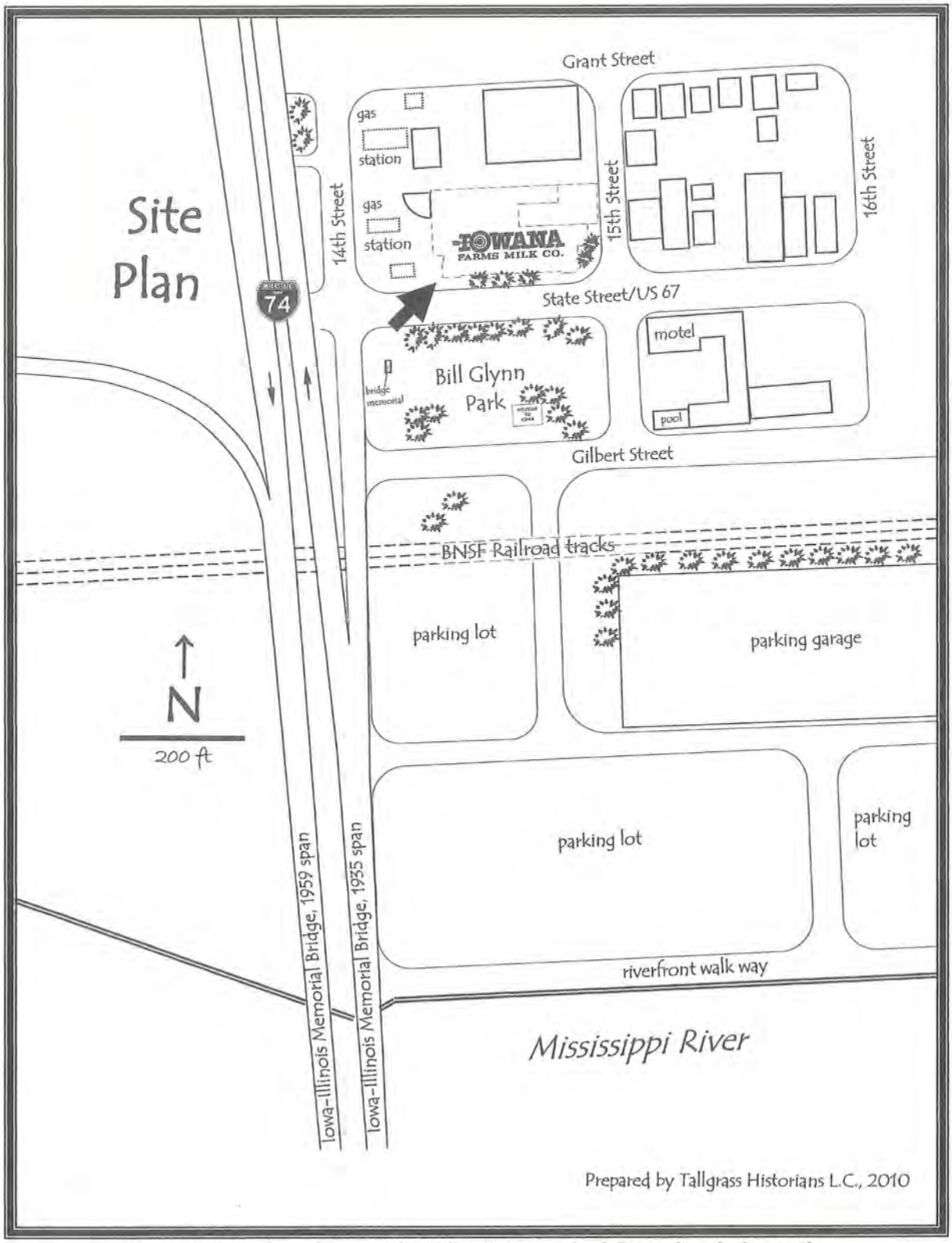


Figure 2. Location of Iowana building in Bettendorf, Iowa, in relation to the Iowa-Illinois Memorial Bridge Sketch map prepared by Tallgrass Historians L.C., 2010

Figure 3. Bird's-eye view of Bettendorf in 1961. Looking WNW along State Street toward Iowana Farms Milk Company (*white arrow*) and the ends of the ramps from the twin spans of the Iowa-Illinois Memorial Bridge (*upper right*) Source: Collins et al. *Bettendorf: Iowa's Exciting City* (2000)

Figure 4. View of the Iowana building to the NW. Shows the SE entrance and two-story addition.
Photo by Tallgrass Historians L.C., November 2009

Except for the rear, exterior walls are polychrome brick and glass block. Near the roofline, three contiguous bands of bricks are laid in a geometric weave pattern. The decorative bands further emphasize the overall horizontality of the building.

Originally, the State Street façade featured two rounded, streamlined corners, emphasized by a prominent molded band just above the windows and door at each corner (Fig. 3). Historic photographs of the building show this band in a light color against the darker color of the brick walls, thus enhancing the horizontal banding effect. A curved neon marquee with the name "Iowana Farms Milk Co" extended over the store entrance[2] (see Figs. 8 and 12 in Part II).

Since 1974, when Iowana Farms ceased dairy operations, the building exterior has been somewhat modified. The southeast entry has had a pebbledash cement coat applied over the brick walls and over the banded areas at the roofline. The southwest entry has been altered with a metal-sided rectangular wall bumped out from the original curved wall. Whether the curved corner was taken out or simply covered over is unknown. The main walls of the dairy building are the original uncovered polychrome brick. With the exception of windows around the entrances, eight original multi-pane windows are in place (with a few boarded up) on the rear wall of the building and on the west side near the northwest corner.

Original exterior features of the Iowana Building include: vertical molded bands extending up and over roofline, which are the remnants of a Streamline Moderne neon sign; polychromatic brick exterior and the geometric bandcourse near the roofline; and fifteen exterior glass block windows.

[2] A search of the interior of the Iowana building failed to discover the original Iowana Farms neon sign.

Factory Interior

The four sections of the Iowana building are discernable inside, although, since 1974, some of the interior spaces have been remodeled or adapted for other uses. The retail dairy store and soda fountain (Room A-1) and the West Offices (Section C) have been clad in modern office finishes (i.e., wall-to-wall carpeting, linoleum, dry wall partitions, and newer plate glass windows).

Most of the factory spaces, however, retain to a good degree the original layouts, as well as features and finishes within each section. These include: red brick tile floors in work areas of the original milk plant and ice cream factory; glazed buff-colored tile wainscoting in original milk plant and glazed pinkish beige tile walls in the ice cream factory; interior glass block windows, most of which were originally exterior windows, then enclosed within later additions; wall openings (some of which have been enclosed) in the original milk plant that once accommodated room-to-room conveyor belts; boiler room and machinery in original milk plant; nine wired-glass skylights (six in the original milk plant, and three in the ice cream factory addition); one service elevator that operated between the two floors of the ice cream factory; freezer control panel in Room A-8; concrete machine platforms, one with "IOWANA" etched in the surface (Fig. 5); and a curved, glass-block-enclosed stairwell on the second floor of the ice cream factory (Fig. 6). The "Iowana" machine platform appears to be the only vestige of the company name remaining in the building (Fig. 7).

Figure 5. Part of the c.1950-52 Ice Cream Factory addition, Room D-3. Features the smokestack base (bump-out, center right), boiler room access (not shown, but further back on right-side wall on either side of smokestack base), glazed tile walls, two wired-glass skylights, and remnants of concrete machine platforms (toward rear of room). View is to NW Photo by Tallgrass Historians L.C., September 2010

Figure 6. Top of concrete machine platform in Room D-3, with "IOWANA" etched in surface.
Photo by Tallgrass Historians L.C., September 2010

Figure 7. Glass-block-enclosed stairwell, Room D-4, Second Floor, Ice Cream Factory. This room also features glazed tile walls, service elevator access, and a wired-glass skylight (upper right). View to East.
Photo by Tallgrass Historians L.C., July 2010

Part II: Historical Background

Bettendorf, Iowa, 1937: A Good Spot for a Modern Milk Plant

In 1937, when the Iowana Farms Milk Company decided to build a milk plant at the northwest corner of State and Fifteenth streets in Bettendorf, Iowa, a relatively new community east of Davenport, the town was experiencing a growth spurt. The spot chosen for the new milk plant was less than a block west of the foot of the Iowa-Illinois Memorial Bridge, a modern suspension bridge built just two years earlier. The new bridge carried U.S. Highway 6, one of the busiest highways in the country, over the Mississippi River between Bettendorf and Moline, Illinois, and gave Bettendorf a modern architectural icon with which the river town came to be identified.

In addition to its "splendid new bridge," Bettendorf was well connected to transcontinental rail lines, a system of highways spanning two states, the Mississippi River inland waterway, and even a new airport. Bettendorf was located within the bi-state metropolitan area known as the Quad Cities, "a market with wonderful possibilities" that included the cities of Davenport, Rock Island, Moline, and East Moline, and a total population of nearly 200,000. Wide and well paved State Street, on which the new milk plant would front, doubled as the business route of U.S. 67, a beltline highway to downtown Davenport. A surrounding region of prosperous farms (particularly Iowana Farms located several miles east of Bettendorf in Riverdale) put the source of raw materials within easy reach of the new milk processing plant (Vimont 1938:25).

Incorporated in 1903, Bettendorf grew as a manufacturing center and desirable residential suburb for Davenport. The town was named for brothers William P. and Joseph Bettendorf, who in 1903 moved their manufacturing business, the Bettendorf Axle Company, to a riverfront site offered to them by the residents of Gilbert (as the community was then known). The new town of Bettendorf was incorporated that same year, after which the town grew quickly. In addition to establishing numerous subsidiary businesses, such as Micro-Westco and the Bettendorf Oxygen-Hydrogen Company, the Bettendorfs were leaders in civic improvements. William P. Bettendorf established the Bettendorf Improvement Company, which built homes for his company's workers and a first-class hotel for the town (Iowana Building Property Abstract of Title).[3] He also organized the Bettendorf Savings Bank, city waterworks, and the light and power company (Rogers 2002:8). By the mid-1930s, many of Bettendorf's residents worked "in factories, these having a wide variety of products, among them bread slicers, automatic oil burners, grain shockers, steel, oxygen, gas, and vinegar" (*WPA Guide to Iowa*, 484; quoted in Rogers 2002:9). In 1938, bottled milk, ice cream, butter, and other dairy items from the new Iowana Farms milk plant joined the list of Bettendorf-made products (*The Dairy World* 1938:8-9).

Architecture as Advertisement: The "Streamlined" Milk Plant

Just months after opening, the "ultra-modern" Iowana building was featured in two national dairy industry journals, *Milk Plant Monthly* and *Dairy World*, as a model of milk plant architecture. The new milk plant, itself, was considered worthy of note by the dairy industry for several reasons: 1) for its inviting, "modernistic" architecture and customer-friendly retail store; 2) for its efficient factory layout, modern interior finishes, and sanitary work spaces; and 3) for

[3] The new milk plant was built on property purchased from the Bettendorf Improvement Company.

its up-to-date, stainless steel milk processing equipment (Vimont 1938:24-32; *The Dairy World* 1938:6-9).

Built 1937-38, the Iowana Farms Milk Company plant was designed by company owners Glenn H. Moore and C.L. Gord. Both experienced in the dairy industry, Moore and Gord planned the layout and personally supervised construction and equipment selection and installation. The Streamline Moderne architecture and neon sign with "rounded edges and bold graphics" gave the milk plant an attractive, up-to-date appearance for style-conscious consumers and echoed the modern note set by Bettendorf's new suspension bridge less than a block away (Fig. 8) (Esperdy 2008:167). As one dairy industry writer described the new building:

> It is modernistic in design with a blending of materials that gives a very pleasing appearance. Glass blocks were used liberally to replace conventional windows in the pressed brick walls. Occupying a corner location, the building is in a commanding position and is accessible from all four sides. Sufficient real estate is owned in the site to build an attached garage which is planned for the future. The building is set back from the sidewalk line far enough to allow for parking space and for landscaping. This makes it convenient for salesroom customers and visitors and adds to its pleasing appearance (Vimont 1938:27).[4]

Figure 8. Historical elevation view of the original Iowana Farms Milk Co. plant in 1938. "The entrance doorway is on the corner. It is surmounted by a large neon sign which proclaims to the world 'Iowana Farms Milk Company.' Passing through this attractive portal brings the visitor into the salesroom."
Source: Vimont 1938

In the 1930s, Streamline Moderne architecture served as a visual metaphor for progress and modernity. Beginning in 1929 and lasting through the Great Depression, commercial building owners across the United States began modernizing their stores or building new stores in the Streamline style to attract more customers and increase sales. The style originated with American industrial product designers and combined two relatively new styles, Art Deco and German Bauhaus functionalism.[5] Product designers working in the Streamline style believed "the public desired visual confirmation of technological progress" (Meikle 1979:38). From the 1925 Exposition des Arts Decoratifs in Paris came Art Deco and the advent of architecture as

[4] The auto-friendliness of the building was modern in and of itself. Most of the country's commercial buildings had been built on narrow "main streets" in the pre-automobile past and thus provided little or no space for the cars in which their customers arrived.
[5] For example, Raymond Loewy, Norman Bel Geddes, and others.

advertisement, in which signage and façade were treated as an integrated whole (Esperdy 2008:151-52). While Art Deco tended to soar with strongly vertical elements, Streamline Moderne emphasized horizontal lines connoting speed and flow. Often, the two styles appeared in combination.

The Streamline Moderne style brought certain building and finishing materials perceived as "modern" into vogue. Materials most identified with the style were stainless steel and structural glass, such as glass block and colored opaque glass panels (i.e., Carrara and Vitrolite). Such materials produced the smooth, reflective surfaces the style demanded. In addition to implying a generic modernity, the smooth and shining surfaces also conveyed positive notions of cleanliness and efficiency.

Stainless steel, for example, was a relatively new steel alloy created around 1911-12 by adding chromium to carbon steel. The new steel compound resisted stains and corrosion and was easy to keep clean. The machined precision and slickness of stainless steel also proved perfect for creating the shiny surface details of both Art Deco and Streamline architecture. The new alloy also provided smooth and sanitary work surfaces, and stainless steel became widely used for equipment, machines, utensils, and tools in homes, hospitals, restaurants, food processing plants, any place in which sanitation was paramount. In a modern milk plant, gleaming stainless steel work surfaces and equipment indicated pure and healthful dairy products (Lisle 2010). After touring the new plant, the *Milk Plant Monthly* reporter concluded, "the boys running the Iowana show, prefer stainless steel because just about everything that could be fabricated from stainless steel has been, in this plant" (Vimont 1938:29). The abundant use of stainless steel throughout the plant became a major selling point in the Iowana Farms Milk Company's opening-day advertisement (Fig. 9) (*Davenport Democrat and Leader,* 5/23/1938).

Another popular material of the Streamline age was glass block, a structural glass product first exhibited by Owens-Corning at the 1933 Century of Progress Exposition in Chicago. Glass blocks eliminated the need for conventional window openings in walls, allowing architects to create the sleek building exteriors of the Streamline Moderne style, without sacrificing abundant sunlight, a requirement in modern factory design (see Biggs 1996:96-100). As noted before, in the Iowana Farms milk plant, "glass blocks were used liberally to replace conventional windows in the pressed brick walls" (Vimont 1938:27).

Streamline Moderne was architecture that usually doubled as advertising, making the place of business a company's most important signage (Esperdy 2008:151). As an economic and psychological palliative to the Depression, streamlining, or modernization as it was often called, was promoted by the building materials industry, industrial product manufacturers, advertisers, and the federal government through the Federal Housing Authority (FHA) and credit agencies. As the FHA noted in its Main Street modernization promotions: "The front of a business house is its best advertisement" (quoted in Esperdy 2008:151).

The perception of the Streamline storefront as modern and therefore irresistible to consumers was embedded deeply in the culture by 1938. The Iowana building's modernistic style and building materials created a storefront that, as one industry observer wrote, "impels customers into the plant . . . . The aluminum sign with high, wide spaced letters girdling the top front adds

much to the general effectiveness especially at night when it is outlined with red neon light" (*The Dairy World* 1938:8) (Fig. 10).

Figure 9. "The New Ultra Modern Dairy Plant" in 1938. Detail from opening-day advertisement
Source: *Davenport Democrat Leader,* May 23, 1938

Within marketing circles, as architectural historian Gabrielle Esperdy observes, "women were thought to be especially responsive to the type of [styling] recommended for the modernized storefront, its experts assuming that women would find colorful and shiny surfaces as appealing in a streamlined building as they did in a streamlined car or refrigerator. A basic marketing equation emerges here: a product designed to visually appeal to women should be sold in a store possessing the same visual qualities. In other words, form follows not function, but merchandise" (Esperdy 2008:165-66).

In the same way, Iowana's dairy products dictated not just factory layout and equipment installation, but the architectural style of the plant as well. A Streamlined Moderne milk plant flowed from the company's desire to court women, who in their roles as mothers and housewives were seen as the primary consumers for families. Thus milk was a product that needed the trust of women, and their trust was partly earned through modern architecture. The Iowana Farms Milk Company believed, as did most business people in the 1930s, that female consumers would "equate an 'ultra-modern front' with 'the latest and most up-to-date of anything for sale inside,'" including dairy products (Esperdy 2008:166).

Throughout the Depression, streamlined commercial buildings achieved "a legible and programmatic alignment between building and the goods for sale inside" (Espedry 2008:144). Not surprisingly, the importance of building appearance made its way into dairy science and engineering literature of the time. As one example explains:

> The type of building is important in that it affects the public reaction, as well as upkeep and first cost. Many milk and ice-cream plants go to extreme lengths to produce a favorable public appearance, for they find it to help sales. A well-designed artistic building with good landscaping is an asset to any dairy business which deals with the local public. Brick, stone, or concrete buildings are very popular; they are fireproof and withstand the moisture very well. Good

architectural treatment will produce a beautiful building in any of the three materials (Farrall 1942:356-7).

The Streamline style was particularly appropriate for milk plants such as that built by the Iowana Farms Milk Company in 1938. Milk plants sold a basic food commodity that needed a fresh and, above all, modern image. Milk producers had to sell not just their dairy products but also their manufacturing process, which encompassed the factory interior, all its equipment, its delivery methods, even its workforce. The milk plant, which contained the "manufacturing process," thus formed the architectural package through which the products were presented to the public for sale. The Streamline style milk plant like Iowana's was an advertisement in architecture for healthy dairy products manufactured with science, sanitation, and efficiency.

The Public Image of Milk and Milk Producers, 1850-1930s

Since at least the mid-nineteenth century, milk had suffered from a public relations problem. Back then, most urban families bought their milk from itinerant milk peddlers and store owners dispensing milk with dippers from bulk storage cans. Customers had long been aware of cheating milk vendors who "adulterated" (i.e., watered down or fat-skimmed) their product and the nation's first milk reform movement, lasting from the 1850s through the 1880s, concentrated on ending such practices. In 1890, a new invention called the Babcock Tester became the standard method for determining the butter fat content in milk and made quality (not quantity) the basis for pricing milk and cream.[6] Around the same time, however, milk was discovered to contain all sorts of microscopic contamination and was suspected to be the carrier of numerous diseases, such as typhoid, that if ingested were particularly fatal to infants and children. Consumers faced a conundrum: milk was considered good for one's health, while at the same time, milk was apt to be dangerous to one's health. The pure milk movement of the 1890s concentrated on ridding milk of harmful bacteria and made pasteurization of the entire milk supply the goal (DuPuis 2002:67-74; Pinkham 1923:34-5).[7]

Figure 10. This promotional image by the National Dairy Council in the 1920s equated milk with healthy children and patriotism Source: Dupuis 2002

Milk supply reform was part of the broader food and urban reform movements that characterized the Progressive Era. Milk reformers in the Progressive Era belonged to a new middle class of urban professionals and experts that included scientists, doctors, industrial philanthropists, and government officials. In 1906, Congress passed and President Theodore Roosevelt signed into law the Pure Food and Drug Act, which

[6] In 1890, S.M. Babcock wrote a paper detailing an economical and practical test to measure milk fat. The inexpensive test was easy enough to be conducted in the lab or on the farm. Babcock's test involved putting a small amount of milk with an equal amount of sulfuric acid into a special glass vial with a thin graduated neck and then mixing the milk and acid together, preferably in a centrifuge. During the spinning, the acid digested everything but the fat, and because it was less dense, the fat rose to the neck of the vial, where it could be measured. Spinning the samples in a centrifuge would speed up the separation. This test was known as the Babcock Test. Official Babcock Testers were devices that performed the spinning action needed for the test.

[7] Pasteurization involves heating milk to specific temperature for a specific period of time in order to kill harmful bacteria without sacrificing taste.

required federal inspection of meat products and forbade the manufacture, sale, or transportation of adulterated food products and poisonous patent medicines. In 1908, Roosevelt authorized the U.S. Public Health Service's Hygiene Laboratory (predecessor to the National Institutes of Health) to study as part of its broader mission every aspect of the dairy industry and make recommendations for resolving the milk problem. The resulting report, *Milk and Its Relation to Public Health*, implicated the individual dairy farmer, his "unsanitary" dairy barn, and his market milk supply as the main source of the milk problem, and recommended shifting the setting of milk production from rural farm to urban factory. (DuPuis 2002:71-73).

Eventually, however, regulation of the milk supply combining pasteurization with official inspections was mandated, first at the local level, then at the state level. The new rules caused those milk producers unable to comply with the new sanitary regulations to merge with larger concerns or go out of business (DuPuis 2002:82). Consolidation of numerous small dairy producers into giant industrial conglomerates like Borden and Sealtest boosted milk's favorable public image as well. In Iowa, the number of small factories (or creameries) decreased from 994 in 1900 to 414 by 1921, a reduction of more than 50 percent (Pinkham 1923:47). The industrialization of dairying shifted the setting of milk production from the barn to the factory and replaced the farmer with the public health official, industrialist, or dairy scientist as the central figure in the American dairy business. As these dairy industry experts worked to further enhance the safety, purity, and nutritional value of the milk supply, they took full charge of safeguarding public health, and especially, children's health (Green 1993:173; DuPuis 2002:126-27) (Fig. 11).

Figure 11. The white-garbed dairy scientist was the central figure in the production of safe and healthful Iowana Farms bottled milk. Detail from the opening-day advertisement, 1938. Source: *Davenport Democrat and Leader*, 5/23/1938

In 1923, biochemist Harry Steenbock discovered that the irradiation of food with ultra-violet light boosted its Vitamin D content. By the 1930s, the Steenbock Process, as it became known, was standardized and used throughout the industry to fortify milk and control rickets, a crippling bone disease in children caused by Vitamin D deficiency (McDermott and Furnas 1940:18-20; 54).[8] Another instituted process, homogenization, allayed consumer fears about the purity of the milk they purchased. Homogenization prevented milkfat, or cream, and fat-soluble Vitamin D from rising to the top of the milk and being poured off for uses other than drinking. Homogenization was believed to benefit children most, ensuring they obtained all the nutrients they needed from drinking milk (Putnam and Allhouse 2003).

[8] Probably no man personified the modern dairy industry at this time better than biochemistry professor Harry Steenbock, who perfected the Steenbock Process. Working in a laboratory at the University of Wisconsin-Madison in 1923, Steenbock (pictured in a 1940 article in his white lab coat) demonstrated that irradiating foods boosted Vitamin D content. Steenbock patented his process to ensure the standardization of the process and the equipment. All proceeds from his patent went to the Wisconsin Alumni Research Foundation, a general research fund. Dairies licensed by the Wisconsin Alumni Research Foundation to use the Steenbock Irradiation Process received educational materials explaining how to profit from marketing Vitamin D-enriched milk.

In Iowa and elsewhere, the trend toward the factory system for dairy products began around 1900, helping in part to rid the market of questionable milk supply and dairy products. Along with the factory system trend came improvements in the milk supply itself, including better dairy herds, dairy farm sanitation, the invention of the centrifugal cream separator, and the aforementioned Babcock tester. The factories themselves incorporated new science into dairy processing, encouraged new inventions, such as the pasteurizer, and implemented better transportation and delivery methods, all of which resulted in the safety and uniformity of the manufacturing process and in the dairy products as well (Pinkham 1923:41-5).

Although most public fears about the milk supply had been quelled by the early 1920s, nevertheless milk consumption changed very little throughout the 1920s and 1930s (Green 1993:172-73). In 1925, Americans consumed 33 gallons of milk per capita, an amount that remained unchanged through the Great Depression. In 1945, milk consumption peaked as rationing and the long war ended, rising to 45 gallons per capita before beginning a long decline up to the present day (Putnam and Allhouse 2003).

Because milk's questionable past lingered in living memory, people continued to need assurances from local milk producers of the safety of their products. Dairies went out of their way to assure potential customers of the safety and quality of their products as well as their operations. "Mr. and Mrs. John Q. Public [want] to know all the answers," one industry writer noted. "They are not buying milk nowadays just because it is white. They demand to know something of its pedigree. This is a wholesome condition for the up-to-date milk man" (Vimont 1938:30). In other words, a modern milk plant had "advertising value that can be utilized by encouraging the public to visit the plant. . . .Visits by school classes and women's clubs usually can be arranged, and when they are properly conducted, good will can be created (Sommers 1938:560).

Before Iowana Farms Milk Company opened its doors to the general public, "formal invitations were sent to the medical and dental professions, to educators, to the clergy and to all nurses in the Quad Cities" (Vimont 1938:30). In this manner, Iowana Farms courted the local professional class most concerned with the welfare of children, the same professional class that a generation earlier had fought to ensure a safe milk supply for the sake of children's health.

The general public was invited to inspect the new plant through a full-page advertisement in the local newspaper (Fig. 12). According to the ad, the Iowana Farms Milk Company had built "a model plant," with "all the modern devices perfected by science for the protection and safeguarding of the milk for your family." Every piece of equipment used to handle the dairy products, Iowana Farms assured the public, "is made of stainless steel - the most modern, sanitary equipment perfected by science" (*Davenport Democrat and Leader*, 5/23/1938). The invitation continued:

> Now... entirely completed and ready for your inspection visit, is one of the most talked about creations in modern dairy plant engineering. This model plant, which has been proclaimed by authorities as being far ahead of the times, both in architectural beauty and efficiency of operation, is truly an exciting combination of everything needed to produce IOWANA high quality dairy products in immaculate sanitation.

Here you will see for yourself all the modern devices perfected by science for the protection and safeguarding of the milk for your family. You will learn why IOWANA MILK excels in flavor, purity and wholesome goodness. IOWANA welcomes you with all of your friends and shall deem it an honor to show and explain every interesting phase of this "last word" in scientific dairy plants!

IOWANA is one of the few AIR CONDITIONED Dairy Plants in America! Every piece of equipment used in pasteurizing, cooling, bottling, freezing, and handling of IOWANA dairy products is made of STAINLESS STEEL - The most modern, SANITARY equipment perfected by science (*Davenport Democrat and Leader*, 5/23/1938).

Figure 12. Opening Day advertisement, featuring a view of the new Streamline Moderne plant. Note the descriptive text emphasizing such words as "ultra modern," "scientific," "protection," "safeguarding," and "sanitary" Source: *Davenport Democrat Leader,* May 23, 1938

The plant was open to the public for four days, during which time 10,000 people toured the plant. "The entire staff participated in the opening. Plant and route personnel were stationed at each piece of equipment to describe its working and the methods used in processing milk to make it safe and preserve its inherent goodness for Iowana customers" (Vimont 1938:30). All tours ended in the retail store, where souvenirs for parents, balloons for children, and Iowana Farms Milk Company ice cream awaited participants. During the five days of the formal opening, "approximately 10,000 people passed through the plant between 4 P.M. and 10 P.M." (ibid.).

For reassurance to the public on a daily basis, Iowana Farms Milk Company provided at the back of the retail store a plate glass window with a view into the pasteurizing room. The window gave customers a privileged, behind-the-scenes view of the irradiator, pasteurizers, and bottle capping machine, all of stainless steel. In this way, the most important scientific discoveries in making milk safe to drink, and particularly healthy for children, pasteurization and irradiation was presented to consumers as routine safeguards carried out in modern, sanitary conditions inside Iowana's milk plant.

The nation's decades-long fight to ensure the purity and safety of the milk supply centered most passionately on public concerns over the health and welfare of children. With public health safeguards in place by the 1920s, milk producers nevertheless felt the need to assure and reassure potential customers of the safety of their product. Children and their primary caregivers – women – therefore continued to be the ultimate consumers of milk and milk products, figuring prominently in milk producers' advertising and promotions. As the following 1947 photograph shows, Iowana Farms Milk Company was no exception (Fig. 13). This photograph shows typical customers (mother and children) emerging from the retail store with their dairy purchase.

Figure 13. 1947 advertising photograph of the Iowana Farms Milk Co. Featured the streamlined architecture of the Iowana building, which provides a bright, clean, modern, and youthful "package" for Iowana's safe and healthful dairy products
Source: The Iowana Farms Milk Company (http://captainniesshow boat.com /iowana.html, 8/2010)

Additional marketing promotions included sponsoring the local baseball teams, with the players photographed drinking the company's milk (Fig. 14).

Figure 14. Iowana Farms Milk Company publicity photo, 1933. The new company was a sponsor of the Davenport Blue Sox baseball team. The photo-op shows an Iowana Farms delivery man passing out bottles of Iowana Farms milk to the team.

Source: Flannel of the Month http://Flannelofthemonth.blogspot.com/2010/07/cosmo-cotelle-effs-player-of-century.html - December 2010

In 1958, Iowana Farms aimed its marketing directly at children. The company began sponsoring a promotional TV show, Iowana Pow Wow TV, with hostess Princess Iowana handling all commercials and Trader Milt, the show's male personality, conducting an auction of three or four prizes. The audience of children used the "Iowampum" they collected from Iowana's product packages to pay, and many of the auctions brought in excess of 10,000 of these "proofs of purchase" (The Iowana Farms Milk Company 8/2010) (Fig. 15).

The use of the "Indian" motif for this promotion likely drew on the popular Westerns entertainment genre of the day for both television shows and movies. Whether there was any intention to draw on the Ioway or other Native American heritage of Iowa is doubtful.

Figure 15. Kids traded Iowampum, or proofs of purchase (*left*) for merchandise at auctions on the Trader Milt show (*below*). Princess Iowana (pictured in the Iowampum ad) was the Iowana Farms spokesperson. For the show, television commercials, and personal appearances at special Iowana Farms sponsored events, a local actress played the part / Source: The Iowana Farms Milk Company (http://captainerniesshowboat.com/iowana.html, 8/2010)

Part III: Factory History

From Model Farm to Modern Milk Plant, 1910-1938

Since the early 1900s, dairying had grown in importance in the rural area surrounding Bettendorf. Iowana Farms, located east of Bettendorf, was among the largest commercial-scale operations in the area. Iowana Farms had evolved from a hobby farm created by Davenport industrialist Colonel George Watson French in 1910-11. He reportedly "presented the farms to his second wife, Anna Elizabeth Decker, as a wedding gift in 1911" (*The [Des Moines] Register,* 11/28/1934). On the 300-acre model farm, French specialized in raising purebred Holstein cattle and by 1914 was distributing premium dairy products from his award-winning herd. On the farm proper, the dairy operation consisted of a creamery and six dairy barns. French's dairy operation met and even exceeded new sanitary regulations for farm-operated dairies. The dairy at Iowana Farms included a milk house and creamery built of concrete, considered in the 1910s to be the best building material for maintaining "absolute cleanliness" (Figs. 16 and 17). The distribution side of French's dairy involved established retail routes throughout Davenport and the surrounding area (Vimont 1938:24; Universal Portland Cement Co. 1914:126).

Figure 16. 1927 advertisement for French's Iowana Farms. Promoted its "100% Pure Holstein Milk" using the slogan: "Cleanliness is the keynote of our whole establishment" Source: *Davenport Democrat and Leader*, 4/25/1927

Figure 17. Photograph of Iowana Farms in 1914. French built his barns, outbuildings, and silos out of concrete, the recommended building material at the time for maintaining "absolute cleanliness"
Source: Universal Portland Cement Co., *Small Farm Buildings of Concrete* (1914).

In 1932, French sold the distributing end of the dairy business, including seven delivery trucks and dairying equipment, to the Iowana Farms Milk Company, a newly incorporated firm of three principals: Glenn H. Moore, president; Helen Grell, vice president; and Cleo L. Gord, secretary and treasurer. All three had previous dairy experience, including working for French at Iowana Farms (*The Dairy World* 1938:8; Gord v. Iowana Farms Milk Co 1953).

When G.W. French died of a sudden heart attack in November of 1934, his widow continued to operate the Iowana Farms for some time. In 1954, the Iowana Farms had been sold to the Aluminum Company of America (ALCOA), which had established a plant nearby and had plans to establish a housing subdivision on the old farmstead property. All of the buildings were to be demolished except for the French mansion to make way for the subdivision known as Pleasant Hills (*Davenport Democrat,* April 25, 1954).

Glenn H. Moore was born in Cedar Rapids in 1888. In 1916, Moore entered the dairy industry in Cedar Rapids, and until 1932, he was engaged in several dairy enterprises, in some of which his father-in-law, Elmer A. Runkle, furnished a substantial portion of the necessary capital. In April 1932 he was working for the Peerless Dairy Company in Rock Island, Illinois, when he began conversations with French about purchasing the Iowana Farms dairy and milk distribution business. Prior to this time, Cleo L. Gord had been in charge of the French dairy offices and its accounts and this arrangement was continued under the new company (Gord v. Iowana Farms Milk Company 1953). Moore was married to Evelyn Runkle, who would come to own a notable percentage of stock in the Iowana Farms Milk Company having loaned a considerable amount of her own funds to the company through the years. Mrs. Moore would also serve for a time as secretary of the company after Gord left the firm in 1951 (Abstract of Title; Gord v. Iowana Farms Milk Company 1953).

Cleo L. Gord was born in Ames in 1902. Upon graduating in 1926 from Iowa State College with a Bachelor of Science in Dairy Industry, Gord was employed by the Blue Valley Creamery Company of Chicago. He returned to Iowa in 1928 to become manager of the Marshalltown Co-Operative Dairy until 1930. For two years after, he worked with the Producers Milk Company at Memphis, Tennessee, according to one source; however, a court deposition stated that Gord entered the employ of George W. French on the latter's Iowana Farms in December 1930 as the farm manager. Another source, quoting Gord himself, reported that he had come to work for French "in the sales promotion department at Iowana" shortly after his graduation from Iowa State College (*The Dairy World* 1938:8). In addition to the farm business, Iowana Farms included a wholesale and retail dairy products distribution business, of which offices and accounts Gord was reportedly in charge (Gord v. Iowana Farms Milk Company 1953; Petersen 1952:279-80). He served as secretary of the Iowana Farms Milk Company from its beginning in 1932 until he quit in 1951 (Gord v. Iowana Farms Milk Company 1953). [The story of his lawsuit against the company is detailed later in this section.]

Helen L. Grell (by 1938, her married name was Helble), just 20 years old, had worked as a stenographer before becoming bookkeeper for French's Iowana Farms in 1930. As vice president of Iowana Farms Milk Company, she was in charge of the general office as well as the company's two retail ice cream stores in Davenport (Iowa Census 1925; US Census 1930; *Polk's Davenport City Directory* 1939). By 1952, Helble was described as heading "an active part of

the organization, having complete charge of the general office as well as the two retail stores in Davenport" (Petersen 1952:279). It is notable that a woman was an integral part of this company from its beginning and held the post of vice-president on the company board. In practice, it appears that she may have also filled much of the role of secretary for the board, taking the minutes and typing them up for Gord to sign (Gord v. Iowana Farms Milk Company 1953). However, her share of the company was also the least of the three, with Moore holding the most shares (along with his wife Evelyn), Gord the next highest, and Helble the least (ibid.).

The articles of incorporation for the Iowana Farms Milk Company read in part:

> The general nature of the business of the Corporation shall be to buy, manufacture, own, possess, sell and deal in, either at wholesale or retail, milk, cream, eggs, poultry, butter, buttermilk, cheese, confections, candies or any other articles of food made from milk or cream or both, or any articles of food which contain either milk or cream or both, or any by-products thereof; to condense or evaporate milk or cream, or both, and sell or deal in the same either at wholesale or retail; to buy, own, acquire or lease, operate and sell factories for the manufacture of such articles as are referred to herein and any allied or kindred products; to acquire, own, sell, lease, mortgage and otherwise deal in real or personal property, or both; to buy, acquire, breed or raise, own, sell or otherwise deal in dairy cattle or other livestock, and to engage in farming operations of any kind. . . . (Articles of Incorporation 1932).

After just a few months in business, Iowana Farms Milk Company, along with the rest of the Quad Cities, endured a milk price war that caused area milk prices to drop precipitously to six cents a quart. To stay in business, the new company began making use of all milk by-products, a move that resulted in a line of specialized dairy products, including the cottage cheese and flake buttermilk for which Iowana Farms Milk Company became renown. In 1936, the company began manufacturing ice cream with a single counter freezer and decided to open an ice cream store in Bettendorf, a growing suburb of Davenport on U.S. Highway 67 adjacent to the new suspension bridge over the Mississippi River. Business was good, and soon increased sales made the building and equipment at "the original Iowana Farms pasteurization plant inadequate to handle the product safely and economically" (Vimont 1938:24-25). The success of the Bettendorf ice cream store proved the corner of State and 15th streets to be an ideal business location. The following year, the company moved the ice cream store to Rockingham Road in Davenport, and erected in its place a modern milk plant (Vimont 1938:25).

Although a Davenport bank had promised Iowana Farms financial assistance for the construction of a new milk plant, the arrangement fell through when the bank decided not to risk a loan for a one-purpose building. At Moore's suggestion, Gord went to Chicago to seek financial assistance through the Reconstruction Finance Corporation (RFC), from which Iowana Farms Milk Company finally obtained a $72,000 mortgage in August 1938, two months after the plant was built and open for business (Abstract of Title; Gord v. Iowana Farms Milk Company 1953).

On May 23, 1938, the Iowana Farms Milk Company plant was opened for public inspection (Fig. 16). Invitations sent to nurses, teachers, doctors, dentists, and clergy in the Quad Cities, allowing public health and child-oriented professionals in the community to bestow on the plant their seal of approval. The same day, full-page advertisements in local newspapers invited the general public to inspect the new plant each afternoon and evening from 4 to 10 p.m., May 24 to 28 (see

Fig. 12 in Part II). Invitations in the shape of keys were also distributed, each bearing the message:

> This is your key to our new plant. You are invited to visit our new modern dairy plant –One of the world's finest—Bring your family and your friends. Refreshments and souvenirs for all –Children must be accompanied by parents (*The Dairy World* 1938:6).

The five-day-long "Open House" was well attended. The public toured the plant in groups of 15, stopping at various points of interest, where "a man conversant with the mechanisms and products explained what operations took place at that particular spot." All tours ended in the retail store, where Iowana Farms employees rewarded visitors with souvenirs and a choice of vanilla, chocolate, or strawberry ice cream (Vimont 1938:30; *The Dairy World* 1938:6)

Iowana Farms Milk Company produced and sold from its new plant the following dairy products:

- Ice cream (12 flavors that vary)
- Irradiated vitamin D milk
- Homogenized irradiated vitamin D milk
- Guernsey milk
- Regular milk
- Skim milk
- Coffee cream
- Whipping cream
- Golden Flake churned buttermilk (an Iowana Farms specialty)
- Cottage cheese (also a company specialty)
- Orange drink
- Chocolate drink
- Sweet cream butter
- Sweet cream unsalted butter (*The Dairy World* 1938:8-9).

A fleet of 16 white Iowana Farms trucks operated over as many retail routes, delivering dairy products directly to consumer's homes (Fig. 18). The company also maintained one wholesale milk route and sold products through their own stores (i.e., two ice cream stores and the milk plant store). In addition, Iowana Farms shipped their special cottage cheese to wholesale plants in Cedar Rapids, Clinton, Muscatine, and to a few firms in the Quad Cities (*The Dairy World* 1938:8-9). To further their wholesome image, it appears that the company preferred to hire "young married" men for their wholesale mile routes (*Davenport Democrat & Leader,* June 12, 1949). When the company began in 1932, they had 12 employees. By 1952, they employed 65 (Petersen 1952:279).

Figure 18. Iowana Farms milkman and delivery truck in 1938. Captioned: "Well trained, courteous salesmen carry Iowana's message to the housewives of the quad cities"
Source: Vimont 1938

The store entrance was located on the southeast corner of the building, beneath the curving neon sign. The door led customers into the "ice cream and dairy products salesroom" (Fig. 19). Within, knotty pine walls, ceramic tile floors, and streamlined cabinetry of cream enamel with stainless steel trim combined to create what industry writer Louis Vimont called "charming" and "a drugstore cowboy's dream." The salesroom also featured a dairy products display case; a package frozen goods display case; three 80-gallon two-temperature ice cream storage cabinets; and a soda fountain with six syrup wells and 12 malted milk mixers (Vimont 1938:27).

Figure 19. Iowana Farms Milk Co. retail store in 1938. Customers were confronted with "the good taste and refinement of this display and sales room" designed to "break down sales resistance." "The knotty-pine wall finish" was intended to be "soothing and restful" Source: Vimont 1938

When ice cream consumption soared in the postwar years, the ice cream salesroom was remodeled, giving it a more emphatic Streamline style and expanding the ice cream and soda shop function with more counter space and stool seating that encouraged customers to linger (Fig. 20). The pastel colors used for the new counters reflected a popular 1950s color scheme.

Figure 20. The remodeled Iowana Farms Milk Co. ice cream soda shop c.1959. The counters featured rounded corners, pastel colored enamel finishes, more counter space, and inviting stool seats
Source: Image of postcard found online at ebay.com - 7/20/2010

During the 1950s, the Iowana Farms soda shop became a popular hangout for teenagers, so popular, in fact, that photos of students sipping sodas at the counter and being served by familiar Iowana Farms clerks were featured in Bettendorf High School yearbooks (The Iowana Farms Milk Company 2010) (Fig. 21).

Figure 21. The Iowana Farms soda fountain was a popular after-school hang-out for Bettendorf teens. Scenes like this were featured in Bettendorf High School yearbooks during the 1950s.
Source: Iowana Farms Milk Company (http://captainerniesshowboat.com/iowana.html - 9/1/2011)

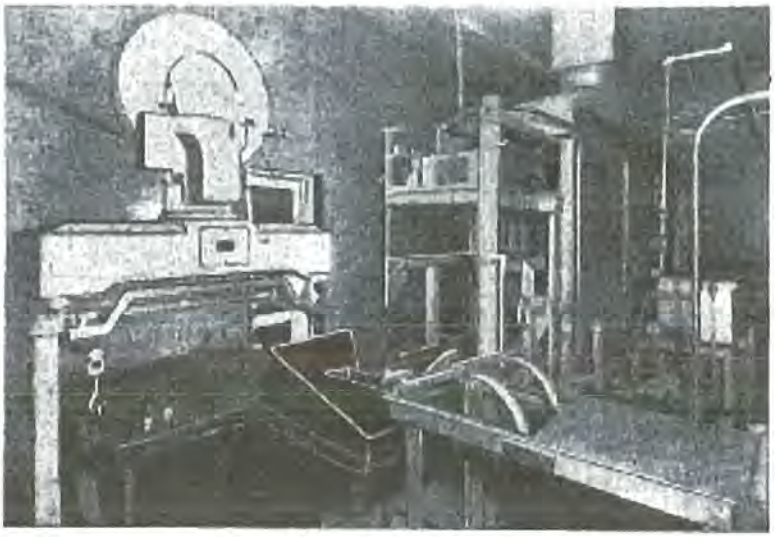
The Flow of Milk through the Plant

The Iowana Farms Milk Company promoted their new "scientific dairy plant" as being "far ahead of its time" in "efficiency of operation," well equipped with "modern devices perfected by science." The flow of milk through the plant, from delivery to bottling, was shown to visitors on tours during opening week in May 1938 and described a few months later by *Milk Plant Monthly* in its feature article (complete with photo-illustrations and floor plan) on the new Iowana Farms milk plant. A complete list of equipment and suppliers for the original 1938 plant and current Floor Plans are located in the Appendix.

A majority of the dairy equipment was manufactured by two dairy industry leaders: the Mojonnier Bros. Co. and the Cherry-Burrell Corp., both based in Chicago. Mojonnier Bros., incorporated in 1916, were dairy engineers with numerous dairy machine patents, including an improved butterfat tester, vacuum condenser, ice cream overrun tester, packaging machine, buttermilk culture controller, a line of sanitary fittings, and a special line of conveyors specifically adapted to dairy processing plants. Cherry-Burrell Corp. was formed in 1928 from a merger of J.G. Cherry (Cedar Rapids, IA), D.H. Burrell (Little Falls, NY) and four other firms.

Cherry-Burrell specialized in milk pasteurizing systems, storage tanks, butter churns, ice cream freezers, homogenizers, processing vats, pumps, and pipes, and other dairy equipment.[9]

Receiving Room (Rooms A-19 and A-20 on Main Floor Plan) - The receiving room was the first stop for all incoming milk. Specialized equipment included the receiving conveyor, weigh tank and scale, 100-gallon sump tank and pump, automatic can washer, and clean-can conveyor to the outside delivery area. Cans of milk were delivered to the plant in trucks to the northeast side of the building. Drivers placed the incoming cans of milk on receiving conveyors which carried them directly into the receiving room. There, operators took quality samples from each can before dumping the contents into the weigh tank mounted on a scale, which automatically printed a record of the amount of milk delivered by each producer for the plant record (Vimont 1938:28) (Fig. 22).



Protection from contamination of milk starts in the receiving room. The stainless steel suspended weigh can and straight-way can washer are designed to do just that.

Figure 22. View of receiving room and equipment in 1938. Shows suspended weigh can and straight-way can washer. Source: Vimont 1938

At this point, the operator also takes fat samples for the Babcock tester to check the quality of the received milk. The inverted empty cans were pushed on the straightway washer from which they emerged with tops in place, clean, sterile, and dry, and returned to the outside of the plant to be picked up by the truck driver. After being weighed, the milk was dropped into a 100-gallon sump tank. From there, it was pumped to the storage tank or receiving tank in the by-products room (Vimont 1938:29).

By-Products Room (Room A-6 on Main Floor Plan) - Milk pumped to the receiving tank in the by-products room was diverted to various machines, each of which produced a specific dairy product, including ice cream, cottage cheese, chocolate drink, and cream. Machines and

[9] "About the Exhibitors at the National Dairy Exposition," *The Dairy World* 1 (October 1922), 17; Mojonnier Bros. of Chicago, Illinois (http://www.mojonnier.com/mojobros.html – 9/2/2011); Cherry-Burrell Corporation, Present Industries, excerpted from *Little Falls: 150 Years of Progress 1811-1961* (http://www.fortklock.com/lf2htm – 9/2/2011).

equipment found in the by-products room were as follows: an internal tube preheater; filter; separator; chocolate drink and ice cream mix pasteurizer; one 3000-pounds an hour direct expansion stainless steel cooler; two vest pocket coolers for cream; a cottage cheese vat; a cottage cheese container filler; a churn; and a by-products bottle filler (Vimont 1938:28-29) (Fig. 23).

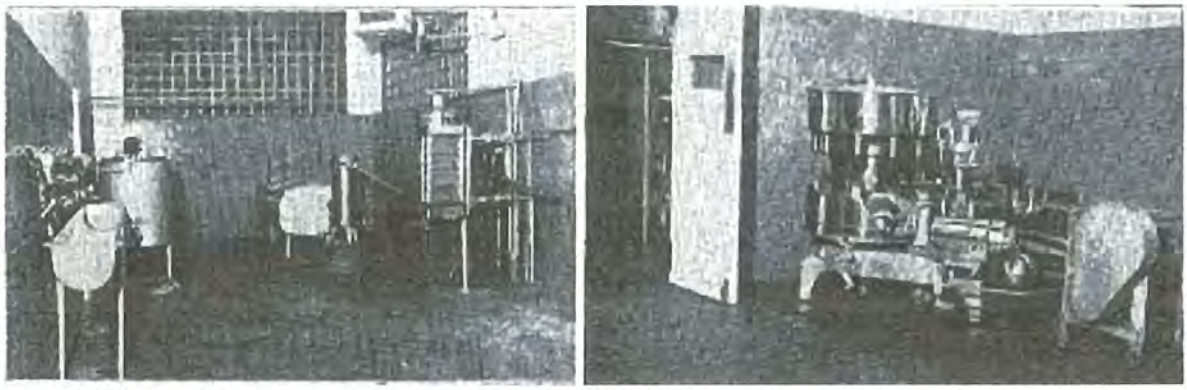


Figure 23. Views of the by-products room (A-6) in 1938. Right: sanitary pipe trough, cream pasteurizer, receiving tank, filter and separator with pocket type cream cooler; and left: by-products bottle-filler near the door into the pasteurizing room. Source: Vimont 1938

Mezzanine Floor (Room A-16) - Some of the by-products room milk was diverted to the mezzanine floor above the ice cream hardening room (A-7). The small mezzanine room, open to the by-products room, contained two 200-gallon buttermilk pasteurizers and ripeners manufactured by Mojonnier Bros. Co. (Fig. 24). When finished, Golden Flake Buttermilk flowed by gravity to the bottle filler in the by-products room (Vimont 1938).

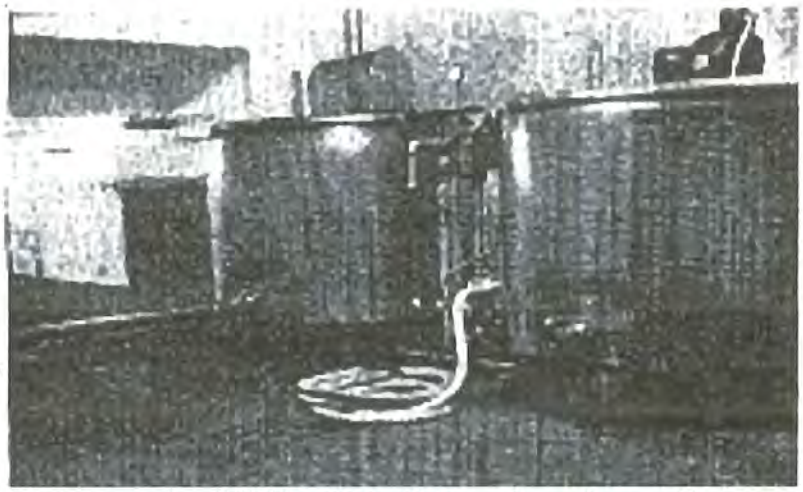


Figure 24. Vats produced Golden Flake Buttermilk, an Iowana Farms specialty.
Source: Vimont 1938

Pasteurizing Room (Room A-5) – Milk that was to be bottled was sent to the pasteurizing room, "a light and airy" room, which was visible to retail store customers through a plate glass window. The room was equipped with three 200-gallon pasteurizers fully controlled with all necessary thermometers and air space heaters, each with a stainless steel motor housing. Some of the pasteurized milk was sent through the irradiator to be fortified with Vitamin D (Fig. 25). All

pasteurized milk passed through the cabinet type cooler, and was then sent on to vacuum bottle filler (Fig. 26). Case and bottle conveyors moved the cased bottled milk into the refrigerated room through automatic portals designed to keep the refrigerators cold.

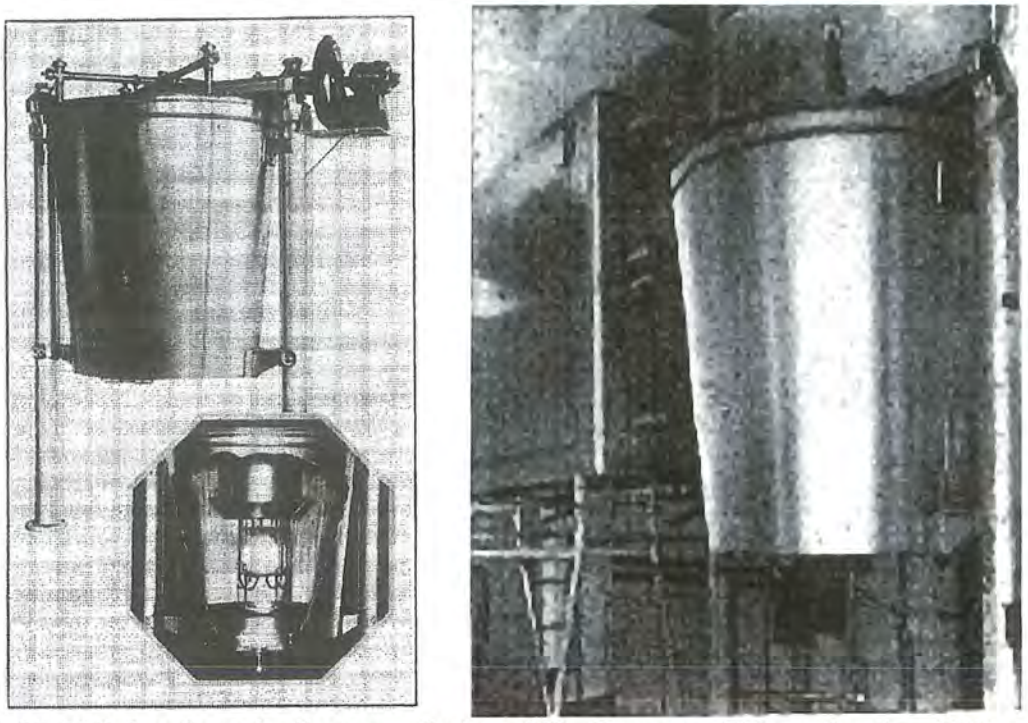


Figure 25. Milk Irradiator by Creamery Package Mfg. Company, Chicago (produced Vitamin-D fortified milk) (*left*); and same equipment in Pasteurization Room at the Iowana Farms Milk Co. plant (*right*). Sources: left- Sommers 1938; right- Vimont 1938

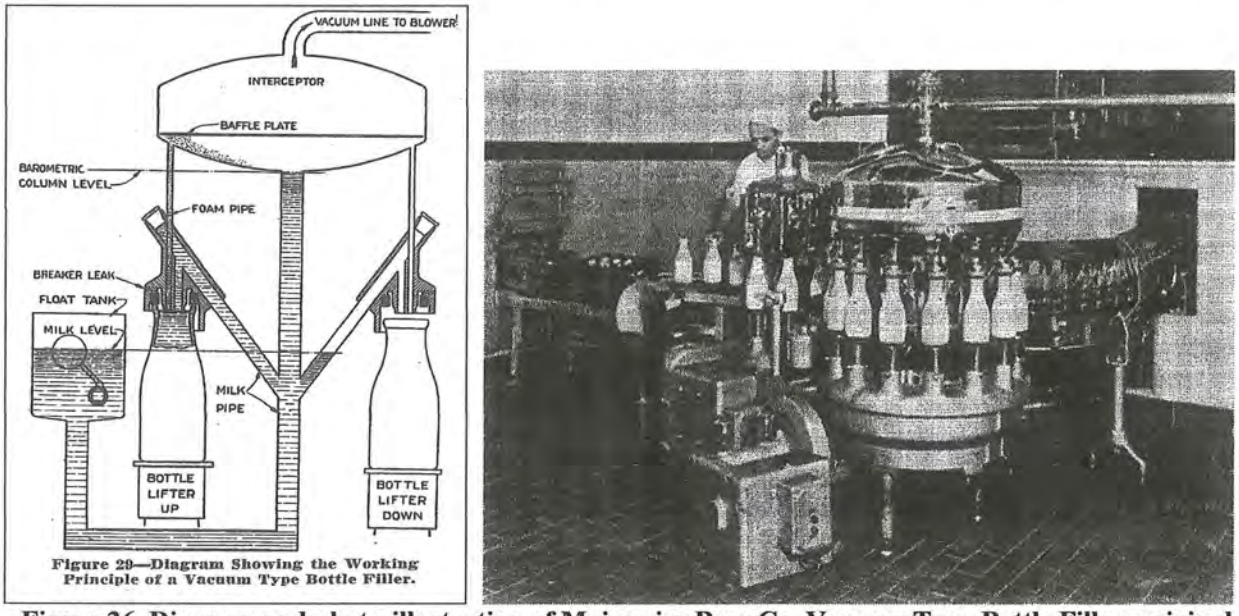


Figure 26. Diagram and photo-illustration of Mojonnier Bros Co. Vacuum Type Bottle Filler, original equipment in the Pasteurization Room at Iowana Farms Milk Company plant.
Source: Sommers 1938

Bottle Washing Room (Room A-4) - Empty return bottles were unloaded by delivery drivers through a combination case and can receiving door on the west side of the building. The special door closed from the inside and was entrance proof but easy to operate. A conveyor took the empties directly to the bottle washer in the bottle washing room. The large space doubled as storage for bottles and cases. The bottle washing machine was an 8-wide Dumore, manufactured by the Geo. J. Meyer Mfg. Co., Milwaukee, Wisconsin (Fig. 27). The bottles first passed through the soaker-brush washer to be cleaned and sterilized. After that, clean sterile bottles and washed cases passed on separate conveyors to the pasteurizing and by-products rooms to be filled with dairy products once again.

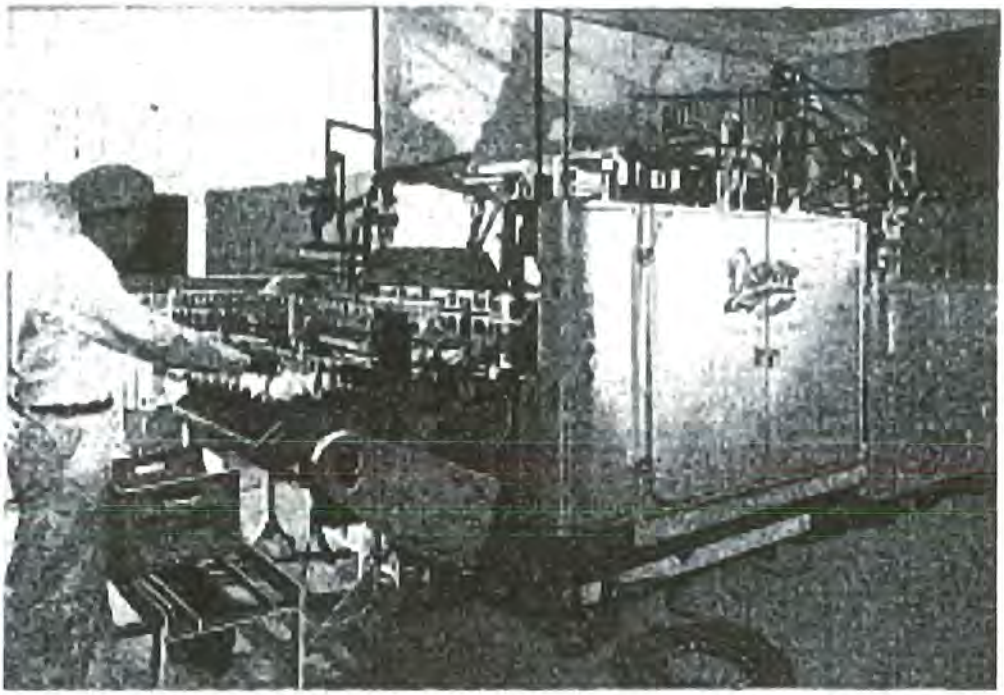


Figure 27. The 8-wide Dumore bottle washer at the Iowana Farms Milk Co. plant. This was a brush soaker type equipped with a liquid chlorinator, which resulted in clean, "bactericidally treated" bottles for filling with milk and other dairy products. Source: Vimont 1938

Boiler Room and Service Connections (Room A-15) - The basement level contained the compressors and fully automatic boiler with stoker. Three by four-foot service tunnels led off from the basement carrying water, steam, electric and sewer connections to all parts of the plant. Because Moore and Gord carefully planned the placement of equipment and machinery before construction began, they were able to provide connections for all services through the floor. This planning eliminated the need for overhead pipes and conduits, which greatly improved appearances and, with no objects overhead to accumulate dirt and dust, made sanitary conditions easier to maintain (Vimont 1938:30).

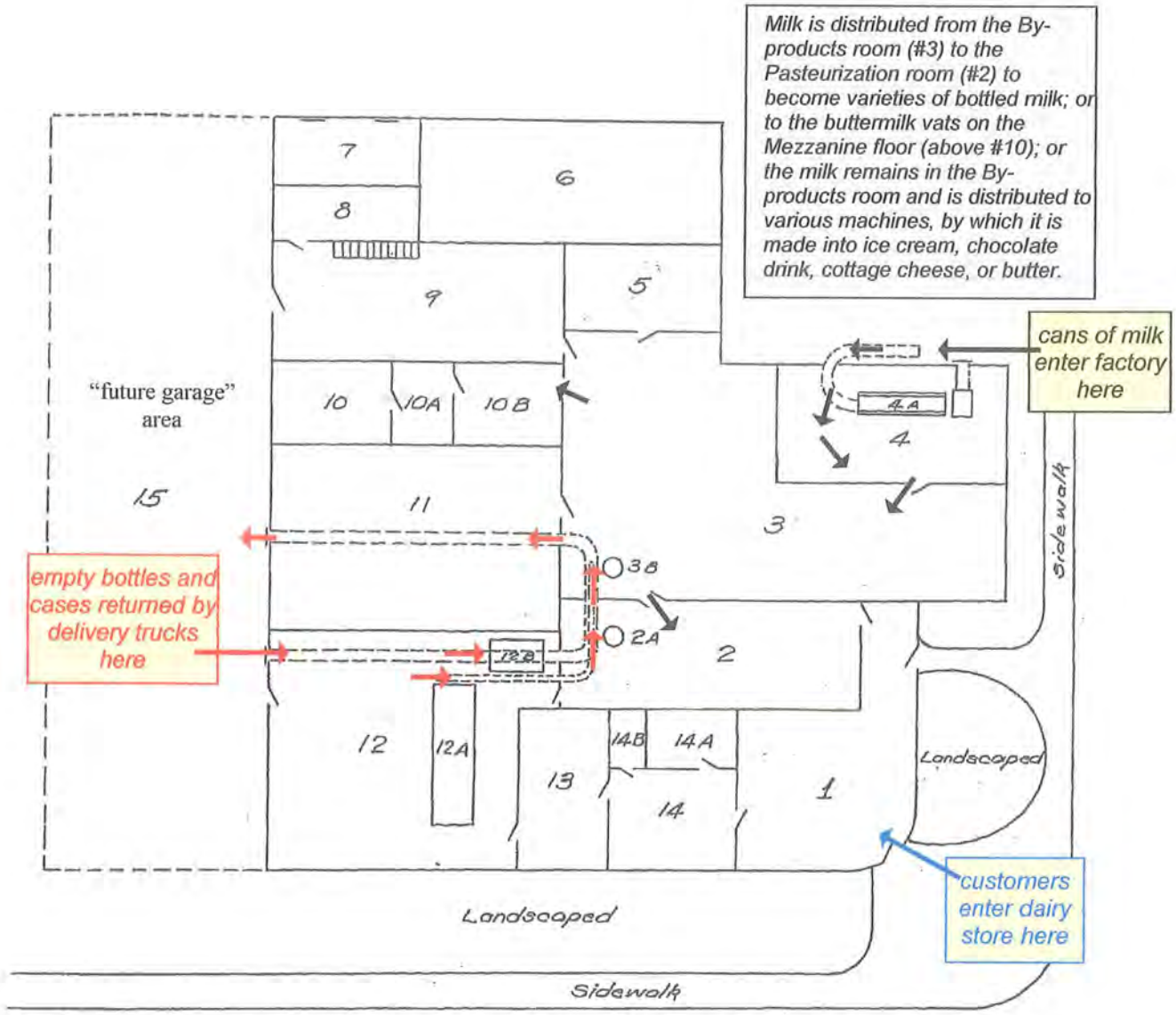


DIAGRAM OF PLANT LAYOUT OF IOWANA FARMS MILK COMPANY

1 Salesroom.—2 Pasteurizing room.—2A Vacuum bottle filler.—3 By-products room.—3A By-products bottle filler.—4 Receiving room.—4A Can washer.—5 Dry storage for caps, parchment paper, etc.—6 Boiler room and compressors.—7 Coal bunker.—8 Toilet and locker room.—9 Storage room for bottles and supplies.—10 Ice cream hardening room.—10A Ante-room to hardening room.—10B Ice cream freezer room.—11 Refrigerator for milk and other products.—12 Bottle washing room.—12A Bottle washer.—12B Case washer.—13 Route men's room.—14 General office.—14A General office.—14B Toilet.

Figure 28. Diagram of Plant Layout in 1938 showing flow of milk through the processing rooms and machinery of the plant / Source: Vimont 1938

Table 1. Location of Equipment - 1938 Iowana Farms Milk Co. Plant Layout

ROOM	*EQUIPMENT*	*MANUFACTURER*
RECEIVING ROOM	Receiving conveyor	Mojonnier Bros. Co., Chicago
	Weigh tank and scale	Toledo Scale Co., Toledo, Ohio
	100-gallon sump tank and pump to by-products room	Mojonnier Bros. Co., Chicago
	Can washer	Lathrop-Paulson Co., Chicago
	Clean can conveyor to outside	Mojonnier Bros. Co., Chicago
BY-PRODUCTS ROOM	Internal tube preheater	Cherry-Burrell Corp., Chicago
	Milk filter	Cherry-Burrell Corp., Chicago
	Separator	De Laval Separator Co., New York
	Chocolate drink and ice cream mix pasteurizer	Mojonnier Bros. Co., Chicago, Ill.
	3000 lbs/hr direct expansion stainless steel cooler	Mojonnier Bros. Co., Chicago, Ill.
	Two vest pocket coolers for cream	Mojonnier Bros. Co., Chicago, Ill.
	Cottage cheese vat	Creamery Package Mfg. Company, Chicago, Ill.
	Cottage cheese container filler	Bagby & Co., Chicago, Ill.
	Churn	Cherry-Burrell Corp., Chicago, Ill.
	By-products bottle filler and conveyors to refrigerator room	Mojonnier Bros. Co., Chicago, Ill.
	Stainless steel work tables	Stolting Bros., Davenport, Iowa
	Sanitary pipe wash troughs	Cherry-Burrell Corp., Chicago, Ill.
MEZZANINE	Two 200-gallon buttermilk pasteurizers and ripeners (finished buttermilk flows by gravity from mezzanine to by-products bottle filler)	Mojonnier Bros. Co., Chicago, Ill.
PASTEURIZING ROOM	Three 200-gallon pasteurizers (with thermometer controls and air space heater and stainless steel motor housings)	Mojonnier Bros. Co., Chicago, Ill.
	Irradiator	Creamery Package Mfg. Company, Chicago, Ill.
	Cabinet type cooler	Mojonnier Bros. Co., Chicago, Ill.
	Vacuum bottle filler with case and bottle conveyors to refrigerator room	Mojonnier Bros. Co., Chicago, Ill.
BOTTLE WASHING ROOM	Automatic bottle washer (792 bottle-capacity)	Geo. J. Meyer Mfg. Co., Milwaukee, Wis.
	Automatic case washer	Lathrop-Paulson Co., Chicago, Ill.
	Conveyors for clean bottles and cases to by-products or pasteurizing rooms	Mojonnier Bros. Co., Chicago, Ill.
BOILER ROOM	Compressors	Frick Company, Inc., Waynesboro, Pa.
	Fully automatic boiler with stoker	The James Leffel & Co., Springfield, Ohio

Source: Louis S. Vimont, "New Plant for Iowana Farms Milk Co.," *Milk Plant Monthly* 27 (September 1938): 28-30.

Ice Cream Factory (Rooms D-1 - D-7 on Main Floor and Second Floor Plans)

In 1946, as Americans celebrated the end of World War II, sugar rationing was lifted and U.S. per capita consumption of ice cream reached an all-time high of 23 pounds (more than 20 quarts per person) (Putnam and Allhouse 2003). Likely in response to this increase in consumer demand, by 1950, Iowana Farms Milk Company had made plans to build an Ice Cream Factory addition to their Bettendorf plant[10] (see fire insurance map figures in Part III). They had also remodeled the dairy store, probably in 1948 or 1949, into an ice cream soda shop, complete with colorful and shiny streamlined forms, equipment, and finishes. The new ice cream soda shop featured an expanded counter and customer seating (see Fig. 19).

The new ice cream factory continued the Streamline Moderne style of the original plant. Floors were red brick tile and walls and columns were clad in a pinkish subway tile. The ice cream manufacturing room on the second floor was reached either by freight elevator or by stairs located at the southwest corner of the first floor. The stairs led up into a glass-block enclosed stairwell with door at the second floor.

The Final Years of the Iowana Farms Milk Company and Plant

The final years of the Iowana Farms Milk Company appear to have involved both great success and great failure. They also involved a breakdown in the original partnership resulting in a lawsuit that was eventually heard in the Iowa Supreme Court. The summary of the court's decision contained a summary of the company's history and documented some of the discord that resulted in the lawsuit known as Gord v. Iowana Farms Milk Co. (1953). The decision noted the following facts of the company's history and evolution:

- Fall of 1932 – Cleo L. Gord, Glenn H. Moore and Helen L. Grell (later Helble) commenced the operation of the Iowana Farms Milk Company as individuals. The company had been acquired from G.W. French who retained a mortgage on the company's equipment. The original capital for the purchase was provided by Moore and Gord.
- The company was incorporated in November 1932. Moore was elected president and director; Gord was elected secretary and director of the corporation (until February 1950), and Moore, Gord and Helble constituted the Board of Directors until February 1950.
- At the time of incorporation, common stock was issued at $10 per share. Moore held $3,500 worth or 67.3%; Gord held $1,670 or 32.1%, and Helble held $30 or 0.6%. This division remained the same until November 26, 1949. By that time, Moore's wife, Evelyn Runkle Moore held 362 shares and together she and her husband held 1077 shares or 64.42% of the corporation. By that time, Gord had 562 shares (33.61%) and Helble had 33 shares (1.97%).
- The new milk plant was built in Bettendorf in 1937-38. Gord supervised the distribution of the dairy products, while Moore was in charge of production and the finances. It was also at the same time that the plant was being built, that Elmer A. Runkle (Moore's father-in-law) bought "an entire issue of stock in the amount of $5000" (Gord v. Iowana Farms Milk Co. 1953). He later gave this stock to his daughter, Evelyn. It was also noted that through the years, Evelyn Moore lent a considerable amount of money to the business. Helen Helble also lent lesser amounts. The

[10] The exact year of the construction of the Ice Cream Factory is unknown. No mention was found in the year-end issues of the *Davenport Democrat* for 1950-1953.

corporation was further indebted to the company, and a Davenport bank also held a mortgage on the business.

- In the summer of 1941, Gord and Moore jointly purchased the Ivanhoe Farms, which they sold for a profit in July 1951.
- In 1943, Gord and Moore purchased 185 acres of the Iowana Farms property, which they sold to ALCOA in 1950 for $116,000.
- Sales for the Iowana Farms Milk Company were reported to have been $552,000 in 1943 and by 1949 had risen to $1,190,000.
- By December 31, 1949, the total assets of the company were valued at $560,121.90. The total liability was $267,954.21, with the total net worth being $299,167.69.

At some point, Cleo Gord began to feel that he was either not getting his fair share or he was being cut out of the business, a conflict which came to a head in February 1950 when he was not re-elected to his position as secretary and no longer served on the Board of Directors. Despite this, he remained with the company for another year before terminating his employment with the company in February 1951.

Gord subsequently filed a lawsuit against the company for redress (Gord v. Iowana Farms Milk Co. 1953). Initially, the trial court "denied relief sought by plaintiff on the basis there was no fraudulent concealment and there was a waiver of the right" (ibid.). Gord appealed, and the trial court's decision was "reversed and remanded" by the Iowa State Supreme Court. From a legal standpoint, the result of the Supreme Court decision clarified that controlling shareholders of "closely held corporations" have a duty of "good faith and fair dealing" in dealings with minority shareholders (ibid.). In this particular case, the other members of the board had decided in November 1949 to issue additional common stock in the company and gave Ralph E. Baker and Gayle Whyte each a 24-month option to buy 100 shares of common stock in the company provided that these men became involved in the company. Helen Helble and Evelyn Moore were also offered additional stock at the same time. Despite Gord signing the meeting minutes and the certificates of stock issued to Moore and Helble, he would later claim that it "was not disclosed to him by Mr. Moore or Mrs. Helble" the value of the stock issued, how the value was determined, and the resulting impact on lowering the value of his own stock (ibid.). It was further noted that Gord had been given the opportunity to purchase additional stock but had declined because he "did not have the money." The trial court recognized that Gord was "well educated" and "was skilled in the dairy business and his education and qualifications perhaps exceeded those of the defendants" (ibid.).

> It is also held in [the trial court] findings of fact that the plaintiff as sales manager knew the amount of money the company took in and almost without exception signed all checks and notes given by the company and knew what the company owed and to whom; that he knew all the assets of the company;...It further held the plaintiff in his capacity was a stockholder, officer and director and knew all the facts which would be important in determining the value of the stock of the company and there is not fact of which he denies having knowledge except (a) that he did not know the value of the stock and (b) that he did not know an increase in the stock would have a tendency to dilute the value of the stock which he owned. The court further held that the defendants Glenn H. Moore and Helen E. Helble did not tell the plaintiff their opinion of the value of the stock nor did he ask for it and further held he had every opportunity to arrive at his own opinion as to its value and knew all the facts upon which a market value could possibly be based....It also held there was no fraud, actual, constructive or presumptive, nor any fraudulent

> concealment nor any unfair dealings or imposition on the part of the defendants, or either of them, against the plaintiff (ibid.).

The court case did reveal that while Cleo L. Gord was the secretary "after the first two or three years after the organization of the corporation," Helen Helble "kept the records of the directors' and corporate meetings and then typed them and presented them to Gord for his signature" (Gord v. Iowana Farms Milk Co. 1953). It also appears that Gord had very little involvement in the balance sheets and audit reports of the company and had to inquire of Moore and Helble to examine these reports. In the end, however, the Iowa Supreme Court determined that the valuation of the new stock options offered to Baker and Whyte versus those purchased by Evelyn Moore and Helen Helble were not calculated according to market value and that they had not fulfilled their "obligation to advise Gord of the diluting effect of the issuance of the new stock" on his own (ibid.). The final ruling was based on the court's opinion that Gord had not waived his pre-emptive rights to any unissued shares, which at the time of the opinion amounted to 729 shares. The court ruled that these shares were to be issued to him at the price of $15 per share. By doing so, the ruling of the trial court was "reversed and remanded" (ibid.).

The full cause of the discord among the partners is not known, although it appears that the attempt to involve others in the business (i.e., Baker and Whyte) was a decision that may not have been fully supported by Cleo Gord. It also appears that the involvement of Moore's family members in the corporation's stock and business dealings became an issue as time progressed. In the end, Gord appears to have been the "odd man out," with the Moores and Helen Helble siding against him, thus resulting in his ouster from the board of directors in 1950. Poor communication between Moore, Helble, and Gord may also be partly to blame. Additionally, Gord may have been too lax in his involvement in the company's finances. The fact that Helble seems to have early on become the secretary in practice, suggests that Gord had passed on responsibilities to which he probably should have been more attentive in order to protect his own interests. In the end, Gord's involvement with the Iowana Farms Milk Company came to an abrupt and troubling end in the early 1950s. The original company under Moore's tenure would only survive for a few more years. It is not known whether Gord's departure and his lawsuit hastened this end because there were other market factors at work that were impacting the dairy industry as a whole.

In 1952, the articles of incorporation for the Iowana Farms Milk Company were amended and noted in the process that Glenn Moore remained president but that Evelyn Moore was now secretary (Abstract of Title). When the articles were again amended in 1956, Moore was still president but Helen Helble was now listed as secretary (ibid.). Glenn H. Moore remained president of the company in 1955 when the Iowana Farms Milk Company merged with Bowman Dairy Co., a Chicago firm (*Carroll Daily Times*, 11/3/1955). The new company retained the Iowana brand name for the local market (Figs. 29 and 30). Moore continued to be part of the company through at least 1960 when the city directory listed him as Chairman of the Board of the Iowana Farms Milk Co. At that time, Walter G. Bartels was listed as the president-general manager.

In 1966, there was a series of quit claim deeds that conveyed the Iowana milk plant property first from Iowana Farms Milk Company to Bowman Dairy Co. (1/10/1966), then from Bowman Dairy Co. to Dean Foods Co. (1/19/1966), and then Dean Foods Co. back to Iowana Farms Milk Co. (10/7/1966) (Abstract of Title). What all these transfers signified is not readily apparent and

may have involved name changes in the company rather than a physical transfer of company ownership from one to the other. In another amendment to the article of incorporation of the Iowana Farms Milk Company dated September 1, 1966, during this period of quit claim deeds, the amendment noted that the company name was changing to "I F M Company," with William G. Myers now president and Patricia D. Hozian, secretary (ibid.). Then in 1969, "Iowana Farms Milk Co." quit claimed the property to Dextra Food Industries, Inc., which was noted to have been a *former* name for the Bowman Dairy Co., in a 1.5 million dollar mortgage filed in November 1970 (ibid.). However, when the "Iowana Farms Milk Co." closed its operations altogether in October 1973, after more than 40 years in business, it was noted that the company was then owned by Dean Foods of Chicago. At the time of its closing, the Iowana company had about 90 employees. It announced the closure by sending a letter to its customers, telling them the dairy was ceasing operations due to "rising costs beyond our control" (*Galesburg Register-Mail*, 10/8/1973). At the time, Warren Minor, "Iowana wholesale sales manager" stated that "increasing costs plus a tightening supply of raw milk drove the firm out of business. He said several price hikes on milk failed to save the company" (ibid.). Iowana sold the operation to Downing's All-Star Dairy of Rock Island, Illinois, which in turn, sold the Iowana building to the Knox Corporation, which remodeled the plant into a bakery (Abstract of Title) (Fig. 31).

Figure 29. 1964 advertisement for Iowana Farms Milk Company products Source: *Muscatine Journal*, 6/12/1964

Figure 30. 1959 view of Iowana Farms Milk Co. plant, then owned by Bowman Dairy, from the Iowa-Illinois Memorial Bridge Source: Fred R. White Papers, RS 21/7/33, Special Collections Department, Parks Library, Iowa State University, Ames, Iowa

Figure 31. Iowana Farms Milk Co. building after going out of business in 1973, just before Knox Corporation took over the building.
Source: The Iowana Farms Milk Company (http://captainerniesshowboat.com/iowana.html – 2011).

Part IV: Construction History

The Modern Milk Plant, 1937-38

When the Iowana Farms Milk Company decided to move their ice cream store and build a modern milk plant, the management team purchased enough real estate to build an attached garage in future (Abstract of Title) (Fig. 31). The plant was designed in 1937 by company founders Glenn H. Moore (president) and Cleo L. Gord (secretary-treasurer). Moore and Gord planned the layout and supervised the construction and equipment installations (Petersen 1952:279). It was completed and opened to the public in May 1938.

The brick and tile used for the exterior walls was supplied by Brazil Hydraulic Pressed Brick Co., Brazil, Indiana. The glass block used for most windows in the plant came from Owens-Illinois Glass Co., Toledo, Ohio. The Vulcan hematite workroom floors were bought from Vulcan Co., St. Louis, Missouri. The ceramic tile floor in the salesroom was manufactured by Tri-City Marble Co., Davenport, Iowa. Cork insulation manufactured by United Cork Companies, Kearny, New Jersey (Vimont 1938:31-32) (see Appendix for Equipment Summary).

The completed plant at Bettendorf, as one Iowa historian described it, "is of striking appearance."

> Of modern design, it is constructed of vari-colored brick and glass tile, eliminating the usual windows, except the corner section where the retail dairy products store is located. One story in height, the building is so designed that the horizontal lines are accentuated, making the structure seem even broader and lower than it actually is. The building has been ideally planned as the milk-producing plant that both serves dealers in the entire area, as well as in towns within a seventy-five-mile radius visited by the twenty-five snow-white trucks operated by the company. The plant is spotlessly clean, air-conditioned throughout, with dressing rooms equipped with showers and lockers for the employees. All equipment is of stainless steel. Interior walls are glazed tile, with

most of the outside walls glass brick. There are no overhead pipes for all pipes are carried in tunnels beneath the floor (Petersen 1952:279).

As the company grew and prospered over the next 12 to 15 years, the Iowana Farms Milk Company plant was expanded three times: (1) Garage, 1947-48; (2) West Office, 1948; and (3) Ice Cream Factory, c.1952.[11]

"With the exception of the retail store, there are no windows" (*The Dairy World* 1938:8). It was further noted that the lower walls of the plant interior were of "buff glazed tile and upper ones in cream paint, a cement floor with a special hardening coating, glass blocks and skylights" helped make the plant "conspicuous for cleanliness and light" (ibid.). The six wired-glass skylights added sunlight to interior rooms: the bottle and case washing room, the pasteurization room, and the by-products room.

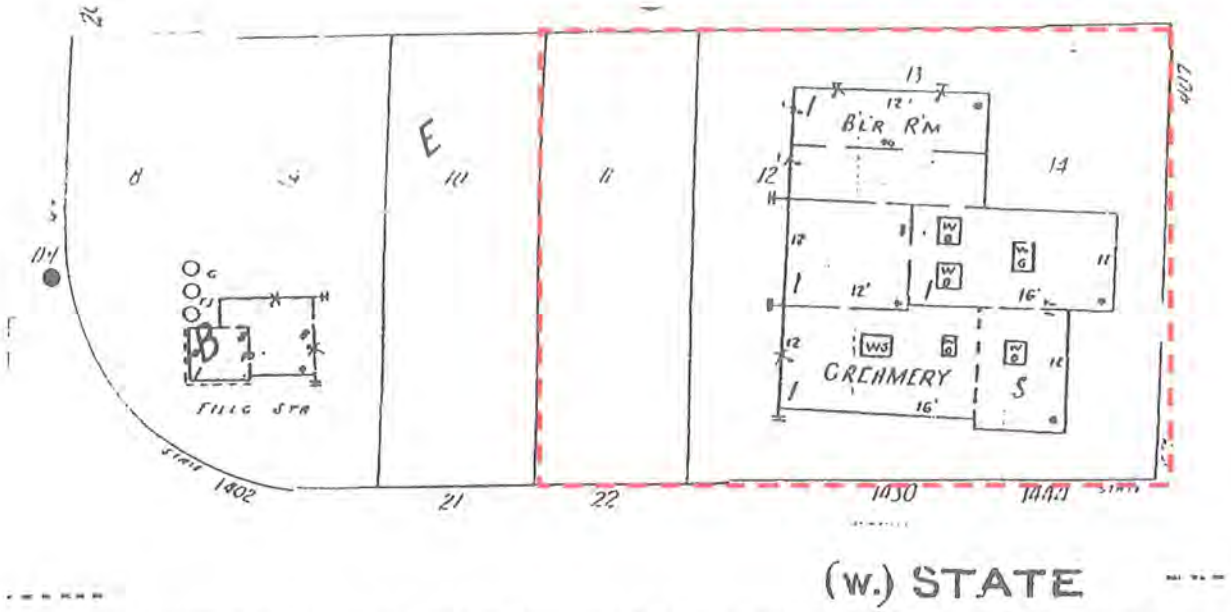


Figure 32. Footprint and layout of original Iowana building, 1944. The company had purchased most of the block (red dashed line) in 1937 with plans to build a garage on the west side sometime in the future
Source: Sanborn Fire Insurance Map, 1910, updated to 1944

Garage, 1947-48

In 1945, Iowana Farms purchased the adjacent Lot 10 in Block 8 giving the company enough room to build the long-planned-for garage. In 1948, the company created a deed of trust with the Davenport Bank and Trust Company, allowing Iowana Farms to borrow against their own property (Abstract of Title). Like a mortgage, a deed of trust suggests plans to build.[12] The company then built a large garage with a double barrel-vault truss roof on the west side of the original plant (*Davenport Democrat and Leader*, 12/31/1947) (Figs. 33 and 34). The garage

[11] Construction dates of additions are approximate, extrapolated mainly from dates of mortgages in the Abstract of Title, aerial views, and Sanborn maps.
[12] "Vents for Eliminating Excessive Plant Moisture," *Manufactured Milk Products Journal* 45 (1954): 28: "Plant of Iowana Farms Milk Co. in Davenport, Iowa, built in 1937, was specifically engineered and equipped to take care of the moisture problem, and an addition in 1947 was ventilated with 18-inch ¾ hp. ventilating fans."

housed the growing fleet of Iowana Farms Milk Company delivery trucks. Driver entry doors and container receiving doors on the west side of the main plant were afterward enclosed in the garage interior, providing drivers with a protected drop-off point for return bottles and cases and an interior access door to the Route Men's Room.

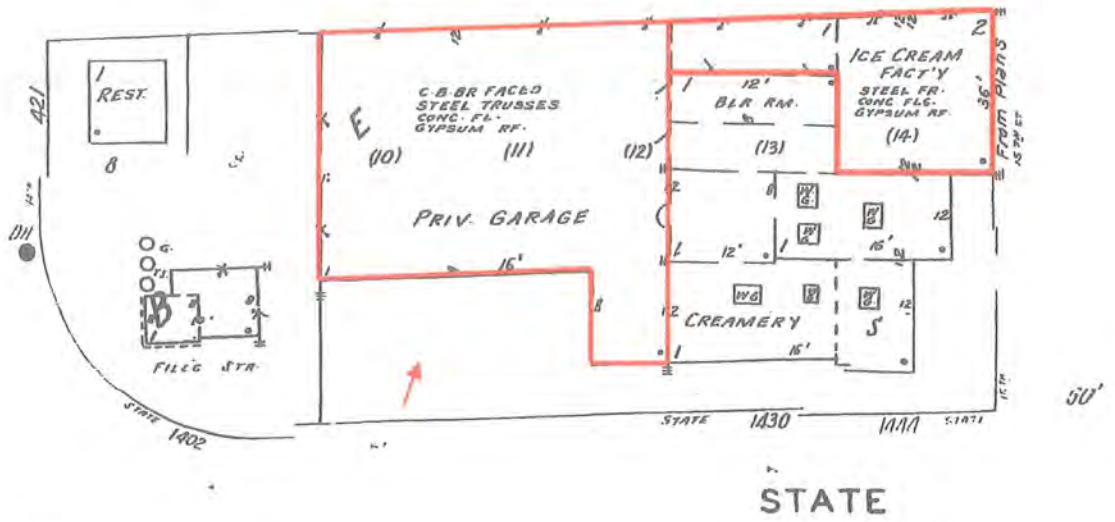


Figure 33. The updated 1950 Sanborn map shows the Iowana building with its 1947-48 barrel-vaulted garage, but not its 1948 West Office (*red arrow*). The company had made plans to build the two-story ice cream factory (*red outline*) Source: Sanborn Fire Insurance Map, 1910, updated to 1950

Figure 34. In December 1947, construction work on the new garage was well underway. View is to the NW. Source: *Davenport Democrat and Leader*, December 31, 1947.

West Office, 1948

The following year, the west office addition was built on the southwest corner of the building, providing symmetry to the Iowana building. The west office entrance was built as a mirror image

of the southeast corner, with rounded corner entrance and Streamline Moderne styling above (*Davenport Democrat and Leader*, 12/31/1948). The west office addition was likely built after, or in anticipation of, a remodel of the ice cream store that enlarged it to encompass the office space in the original plant (Figs. 35, 36, and 37).

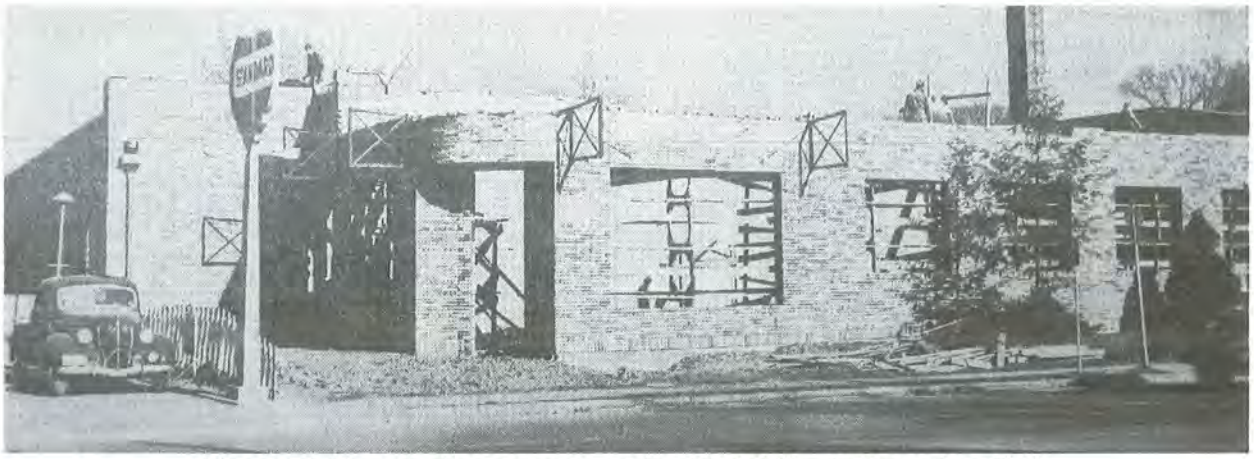


Figure 35. Construction progress on the West Office in December 1948. View is to the NNE from State Street. Source: *Davenport Democrat and Leader*, December 31, 1948.

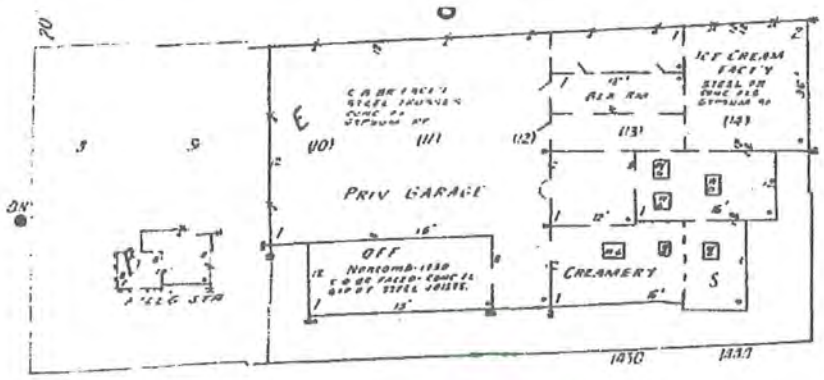


Figure 36. The 1956 updated Sanborn map obtained from the State Library of Iowa's online access to the digitized fire insurance maps of the Iowana building shows the West Office and the two-story ice cream factory as built. / Source: Sanborn Fire Insurance Map, 1910 updated to 1956, www.statelibraryofiowa.org, accessed May 1912.

This is a later view than in Fig. 36 given that the filling station to the west was replaced and sited in the NE corner of that lot sometime between the map in Fig.36 and this map.

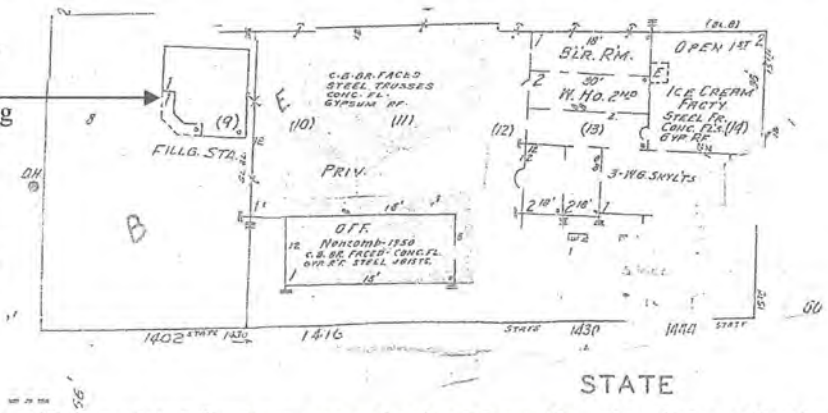


Figure 37. The 1956 updated Sanborn map obtained from the microfiche collection of the State Historical Society of Iowa shows the Iowana building in its present-day footprint albeit somewhat obscured by overlays Source: Sanborn Fire Insurance Map, 1910, updated to 1956

Ice Cream Factory, c.1952

Company officers took out a second deed of trust in 1951, which suggests more building was planned (Abstract of Title). The company appears to have built the two-story Ice Cream Factory addition to their Bettendorf plant around 1952 (Fig. 33). A deciding factor in making plans for a dedicated ice cream wing may have been the post-World War II ice cream consumer boom (see Part II). The two-story factory was added to the northwest corner of the existing plant. The addition may have included a one-story machine room between the northeast corner of the garage and the boiler room. Concrete machine platforms in that room were extant in 2009. The two-story factory included an open drive-up portico on the north side, pinkish tile clad walls, glass block windows, and a glass block enclosed stairwell on the second floor. Two freezer doors located on the second floor suggest a large ice cream hardening room was located on the north side of the upper floor of the factory.

Figure 38. Photograph of West Office addition in 2009. View is to NE. Photo by Tallgrass Historians L.C., 2009

Later Modifications, 1973-2009

When the Knox family bought the building in 1974, all equipment belonging to the Iowana Farms Milk Company had been cleared out. The original two-foot-thick cork walls were extant in some areas, as were a service elevator and original glazed tile walls in the two-story northwest corner of building. Knox tried to save the old concrete exterior ornamentation around the corner entrances, but the concrete had problems with freeze-thaw cycles. The new pebble exterior wall finish at both entrances either replaced or covered the original exterior cladding. The Knox Corporation located their administrative offices in the west office addition, which the company remodeled in 1970s décor, complete with shag carpet and stock wood paneling. Knox went out of business in 2002, but continued to own and lease the building to various businesses until 2009, when the Iowa Department of Transportation purchased the property (Interview with Rick Knox by Joyce Barrett, Tallgrass Historians L.C., 4/12/2002).

Part V: Significance

The Iowana Farms Milk Company factory building was considered to retain sufficient integrity and possess sufficient significance to be considered eligible for the National Register of Historic Places under Criteria A and C for its historical and architectural significance in the Bettendorf community. The Iowana Farms Milk Company was an important early to mid-twentieth-century business in Bettendorf, and was among the few that was not owned or operated by the Bettendorf Company. It was a strong and thriving business for many years, and its products were well known in the Quad Cities region. The importance of this property becomes even more significant when one considers that most of the buildings once associated with the actual Bettendorf Company, which was undeniably the most important business and industry in town, are now gone. As a result, the Iowana Farms Milk Company factory building was a physical vestige of the once-thriving commercial industries that made Bettendorf into a city in the twentieth century.

This property was further significant for its representation of the evolution of the dairy industry in the twentieth century from farm to factory production. It also reflected the changes to the industry based on scientific discoveries, mechanical innovations, and governmental regulations related to improved sanitation and the pure milk movement. The Iowana Farms Milk Company represented a model plant for the time, and the marketing strategies it employed followed the trends of the industry.

The Iowana Farms Milk Company plant had to be removed to make room for a new I-74 bridge over the Mississippi River at Bettendorf. The construction of the new bridge also required removal of the historic Iowa-Illinois Memorial Bridge. The documentation reported herein and for that of the Iowa-Illinois Memorial Bridge (see Price and Rogers 2012) fulfils the requirements of the Memorandum of Agreement regarding the removal of these historic properties.

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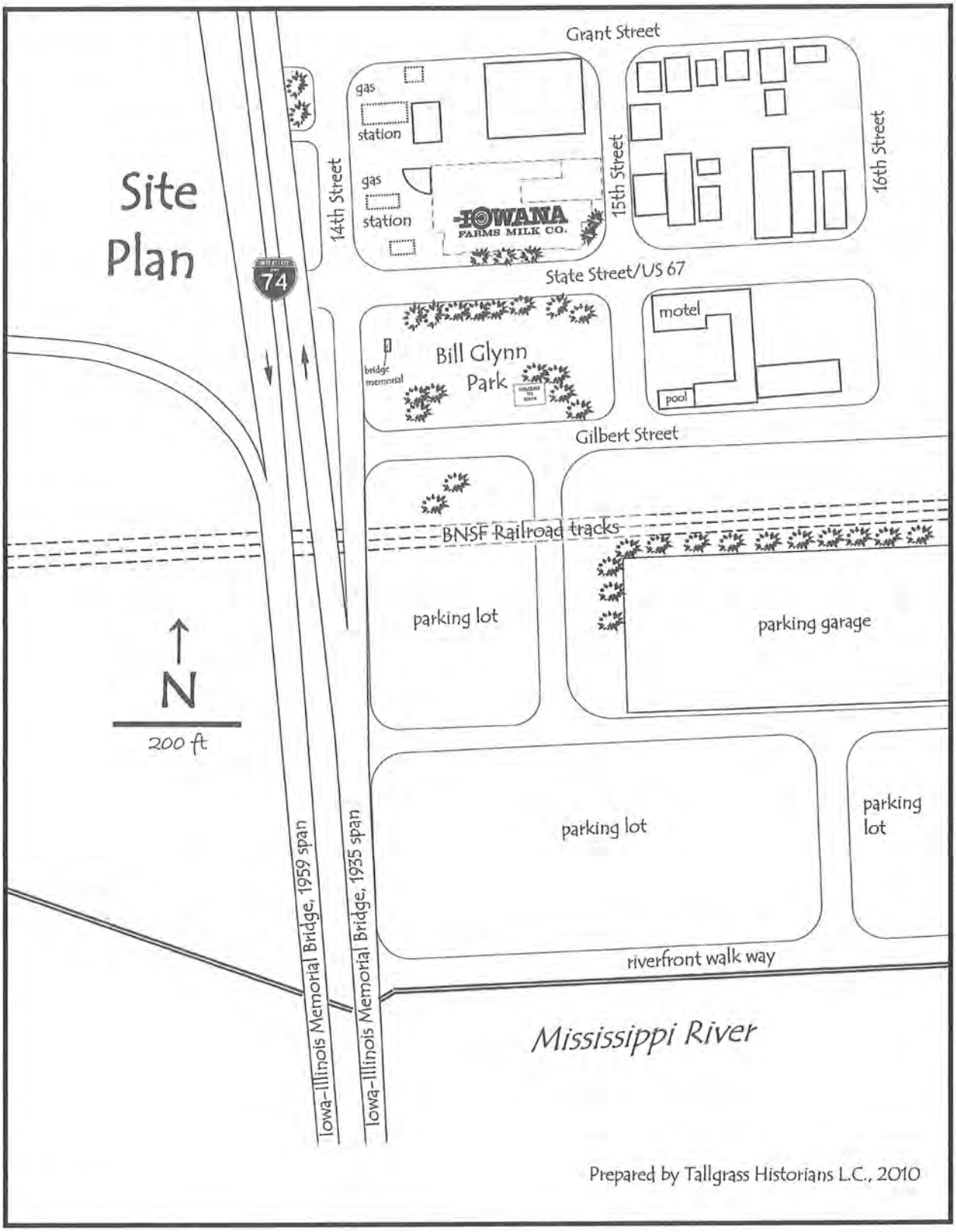
Part VII: Appendices

- ☐ Site Plan Map
- ☐ Aerial Views
- ☐ Original Plant Layout, 1938
- ☐ Architectural Building Material Vendors for the 1938 Iowana Farms Milk Co. Plant
- ☐ 1938 Equipment & Materials Summary for Iowana Farms Milk Company Plant
- ☐ Current Floor Plans (First Floor; Second Floor; Mezzanine)
- ☐ Bird's Eye Aerial of the Iowana Farms Milk Co. plant building prior to demolition, 2010
- ☐ Additional historic promotion advertisements
- ☐ Iowa Historic Architecture Data Base (HADB) form

Original materials previously submitted to the IDOT and the IA SHPO:

- ☐ Black-and-white photograph 5x7 prints
- ☐ Photograph Catalog sheets
- ☐ Negatives in sleeves
- ☐ Contact print sheets in sleeves
- ☐ Kodachrome slides in sleeves



Site Plan Map
Prepared by Tallgrass Historians L.C., 2010 based on modern aerial photographs

Aerial View of Iowana Farms Milk Company, Bettendorf, ca. 1938

The location of the original building adjacent to the Bettendorf approach to the new Iowa-Illinois Memorial Bridge (1935). Note the size of the original milk plant, the shadow of the smokestack, and the single-span of the bridge

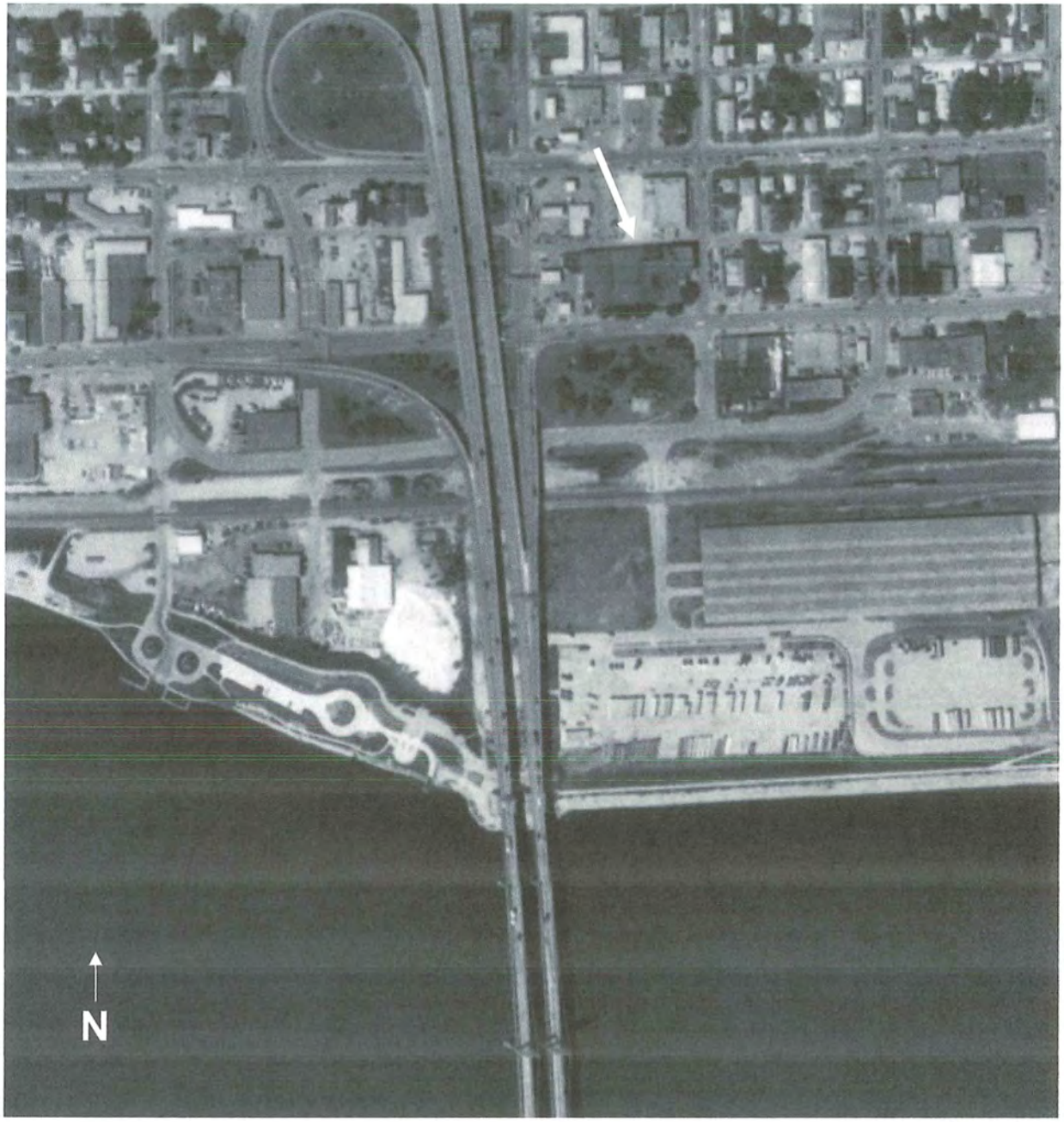
Source: Iowa Geographic Map Server - Iowa State University Geographic Information Systems Support & Research Facility
http://ortho.gis.iastate.edu – December 2010

Aerial view of Iowana Farms Milk Company (arrow), ca. 1955

Source: Iowa Geographic Map Server - Iowa State University Geographic Information Systems Support & Research Facilityhttp://ortho.gis.iastate.edu – December 2010

Aerial view of Iowana Farms Milk Company (arrow), ca. 1965
This view shows the twin bridge in place having been built in 1959. The construction of the twin bridge resulted in a reconfiguration of the intersection just west of the Iowana building at State Street to accommodate the new ramp system.

Source: Iowa Geographic Map Server - Iowa State University Geographic Information Systems Support & Research Facilityhttp://ortho.gis.iastate.edu – December 2010



Aerial view of Iowana Farms Milk Company (arrow), 1994
This view shows the new ramp system that was built when the Iowa-Illinois Memorial Bridge became part of the I-74 interstate system.

Source: Iowa Geographic Map Server - Iowa State University Geographic Information Systems Support & Research Facilityhttp://ortho.gis.iastate.edu – December 2010

Aerial view of Iowana Farms Milk Company (arrow), 2009

Source: Iowa Geographic Map Server - Iowa State University Geographic Information Systems Support & Research Facilityhttp://ortho.gis.iastate.edu – December 2010

Architectural Building Material Vendors for the 1938 Iowana Farms Milk Co. Plant

Brick and tile, Brazil Hydraulic Pressed Brick Co., Brazil, Indiana
Vulcan hematite workroom floors, Vulcan Co., St. Louis, Missouri
Ceramic tile salesroom floor, Tri-City Marble Co., Davenport, Iowa
Soda fountain/equipment in salesroom, Grand Rapids Cabinet Co., Grand Rapids, Michigan
Glass block, Owens-Illinois Glass Co., Toledo, Ohio
Insulation, United Cork Companies, Kearny, New Jersey
Black crackel office furnishings, Remington-Rand, New York, New York

1938 Equipment & Materials Summary for Iowana Farms Milk Company Plant

Source: Louis S. Vimont, "New Plant for Iowana Farms Milk Co.," *Milk Plant Monthly* 27 (September 1938): 31-32.

EQUIPMENT OR MATERIALS	*NUMBER OR AMOUNT*	*SPECIFICATIONS*	*VENDOR*
Boiler	1	75 h.p. Scotch marine stoker	The James Leffel & Co., Springfield, Ohio
Bottles			Owens-Illinois Glass Co., Toledo, Ohio
Bottles			Thatcher Mfg. Co., Elmira, N.Y.
Bottle closures			Mid-West Bottle Cap Co., Belvidere, Ill.
Bottle fillers	1	Vacuum, 68 qts. per min.	Mojonnier Bros. Co., Chicago, Ill.
Bottle fillers	1	G 100 Nuline	Cherry-Burrell Corp., Chicago, Ill.
Bottle washer	1	8 wide Dumore	Geo. J. Meyer Mfg. Co., Milwaukee, Wis.
Alkalinity control			Mathieson Alkali Works, New York, N.Y.
Bactericides and cleanser			Oakite Products, New York, N.Y.
Brick and Tile			Brazil Hydraulic Pressed Brick Co., Brazil, Ind.
Cartons, Butter and Ice cream			Bloomer Bros., Newark, N.J.
Can washer	1	6 per min., straightway	Lathrop-Paulson Co., Chicago, Ill.
Cases			Barker Poultry Equipment Co., Ottumwa, Iowa
Chlorination equipment		bottle sterilization	Wallace & Tierman Co., Inc., Newark, N.J.
Chocolate syrup			Krim-Ko Co., Chicago, Ill.
Churn	1	600 lb.	Cherry-Burrell Corp., Chicago, Ill.
Conveyor	38 ft.	bottle	Mojonnier Bros. Co., Chicago, Ill.
Conveyor	35 ft.	can	Mojonnier Bros. Co., Chicago, Ill.
Conveyor	80 ft.	case	Mojonnier Bros. Co., Chicago, Ill.
Coolers (surface)	1	7000 lb. per hr., stainless steel, direct expansion, cabinet type	Mojonnier Bros. Co., Chicago, Ill.
Coolers (surface)	1	3000 lb. per hr., stainless steel, direct expansion	Mojonnier Bros. Co., Chicago, Ill.
Coolers (surface)	2	vest pocket, stainless steel, inclosed, direct expansion	Mojonnier Bros. Co., Chicago, Ill.
Cottage cheese coagulator and B.F.A.			Verky Products Co., Chicago, Ill.
Cottage cheese caps and capping machines			Aluminum Co. of America, Pittsburgh, Pa.
Doors	3	Refrigerator	Streator Products Co., Fairfield, Iowa
Doors	5	Conveyor	Conveyor Specialty Co., St. Paul, Minn.
Door push plates		stainless steel	Building Products Co., Davenport, Iowa
Filter, Milk	1	8000 lbs. per hr. (1)	Cherry-Burrell Corp., Chicago, Ill.

EQUIPMENT OR MATERIALS	*NUMBER OR AMOUNT*	*SPECIFICATIONS*	*VENDOR*
Floors	1000 sq. ft.	cast steel floor grids	Hayes Mfg. Co., Cincinnati, Ohio
Floors, Surfaces of work room		Vulcan hematite	Vulcan Co., St. Louis, Mo.
Floors, Sales room		ceramic tile	Tri-City Marble Co., Davenport, Iowa
Fountain and Sales Room equipment			Grand Rapids Cabinet Co., Grand Rapids, Mich.
Freezer, ice cream	1	40 qt., triple dasher, batch type	Cherry-Burrell Corp., Chicago, Ill.
Glass block			Owens-Illinois Glass Co., Toledo, Ohio
Heating and Ventilating	10	unit heaters and coolers combined	The King Company, Owatonna, Minn.
Heating and Ventilating	3	exhaust fans, suction type	The King Company, Owatonna, Minn.
Homogenizer	1	300 gal. per hr. Viscolizer	Cherry-Burrell Corp., Chicago, Ill.
Instruments (control)	6	indicating thermometers	C.J. Tagliabue Mfg. Co., Brooklyn, N.Y.
Instruments (control)	3	recording thermometers	Taylor Instrument Companies, Rochester, N.Y.
Instrument panel		stainless steel	Mojonnier Bros. Co., Chicago, Ill.
Insulation			United Cork Companies, Kearny, N.J.
Irradiator, Milk	1	4000 lbs. per hr.	Creamery Package Mfg. Company, Chicago, Ill.
Office Furniture		Black crackel	Remington-Rand, New York, N.Y.
Pasteurizers, Milk	3	200 gal. stainless steel, completely equipped	Mojonnier Bros. Co., Chicago, Ill.
Pasteurizers, Buttermilk	2	200 gal. stainless steel, insulated for buttermilk	Mojonnier Bros. Co., Chicago, Ill.
Pasteurizer, Ice cream, By-products	1	300 gal. stainless steel, ice cream mix, by-products	Mojonnier Bros. Co., Chicago, Ill.
Packaging machine	1	ice cream	Bagby & Co., Chicago, Ill.
Packaging machines	1	cottage cheese	Bagby & Co., Chicago, Ill.
Packaging machines	1	cheese glass capping machine	Aluminum Company of America, Pittsburgh, Pa.
Plumbing fixtures			Ideal Heating and Plumbing Co., Davenport, Iowa
Pre-heater, Milk	1	8000 lbs. per hr. Boxtube	Cherry-Burrell Corp., Chicago, Ill.
Pumps, Milk	4	8000 lbs. per hr.	R.G. Wright, Buffalo, N.Y.
Pumps, Water	1	deep well, 6 inch turbine type	Sterling Pump Co., South Bend, Ind.
Refrigeration	3	compressors, total capacity 38 tons	Frick Company, Inc., Waynesboro, Pa.
Refrigeration	4	unit coolers	Acme Steel Co., Chicago, Ill.
Return to boiler system		to reclaim condensation	Kisco Boiler & Eng. Co., St. Louis, Mo.
Sanitary piping and fittings		1½ stainless steel piping, white metal fittings	Cherry-Burrell Corp., Chicago, Ill.
Scale, Milk	1	500 lb. Print-weight	Toledo Scale Co., Toledo, Ohio
Separator	1	No. 70	De Laval Separator Co., New York, N.Y.
Transportation	6	trucks	Divco
Transportation	8	trucks	International
Transportation	4	trucks	Chevrolet
Transportation	1	truck	Reo
Uniforms			Service Garment Co., Des Moines, Iowa
Vat	1	300 gal. stainless steel receiving vat, covered	Cherry-Burrell Corp., Chicago, Ill.
Vat	1	400 gal. stainless steel cottage cheese vat	Creamery Package Mfg. Company, Chicago, Ill.
Weigh can	1	500 lbs stainless steel	Mojonnier Bros. Co., Chicago, Ill.
Weigh can, sump tank	1	100 gal stainless steel	Mojonnier Bros. Co., Chicago, Ill.
Work tables		stainless steel	Stolting Bros., Davenport, Iowa

Iowana Farms Milk Company

1416 State Street, Bettendorf, Iowa

First Floor Plan

GB =	glass block window
OHD =	overhead door
WG =	wired glass skylight
E =	freight elevator
S =	smoke stack

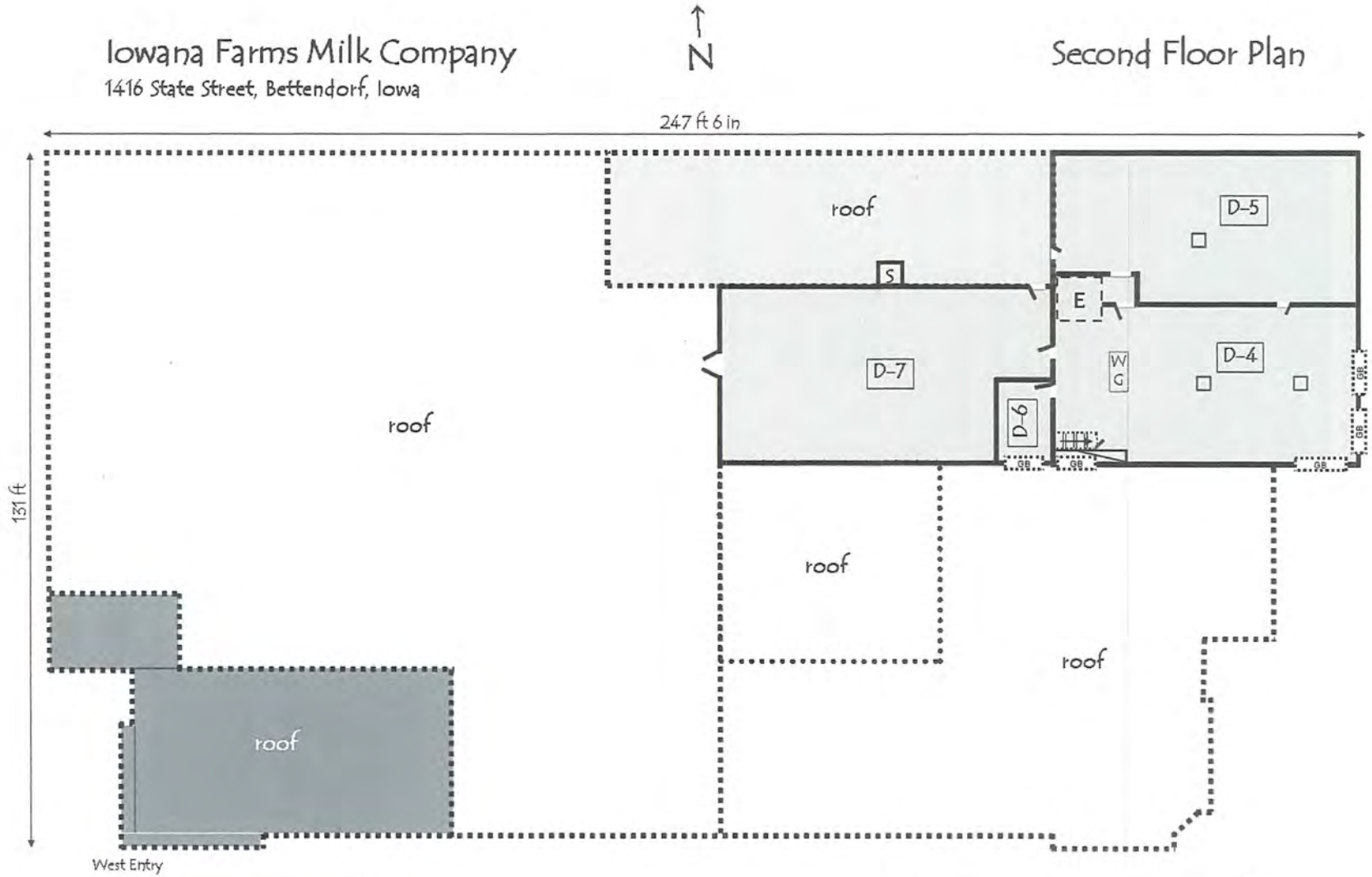
Prepared by Tallgrass Historians L.C., 2010

- Section A — Soda Shop/Dairy Plant, 1938
- Section B — Garage, 1947-1948
- Section C — West Office, 1948
- Section D — Ice Cream Factory, c.1952

Iowana Farms Milk Company

1416 State Street, Bettendorf, Iowa

Second Floor Plan



GB =	glass block window
OHD =	overhead door
WG =	wired glass skylight
E =	freight elevator

Prepared by Tallgrass Historians L.C., 2010

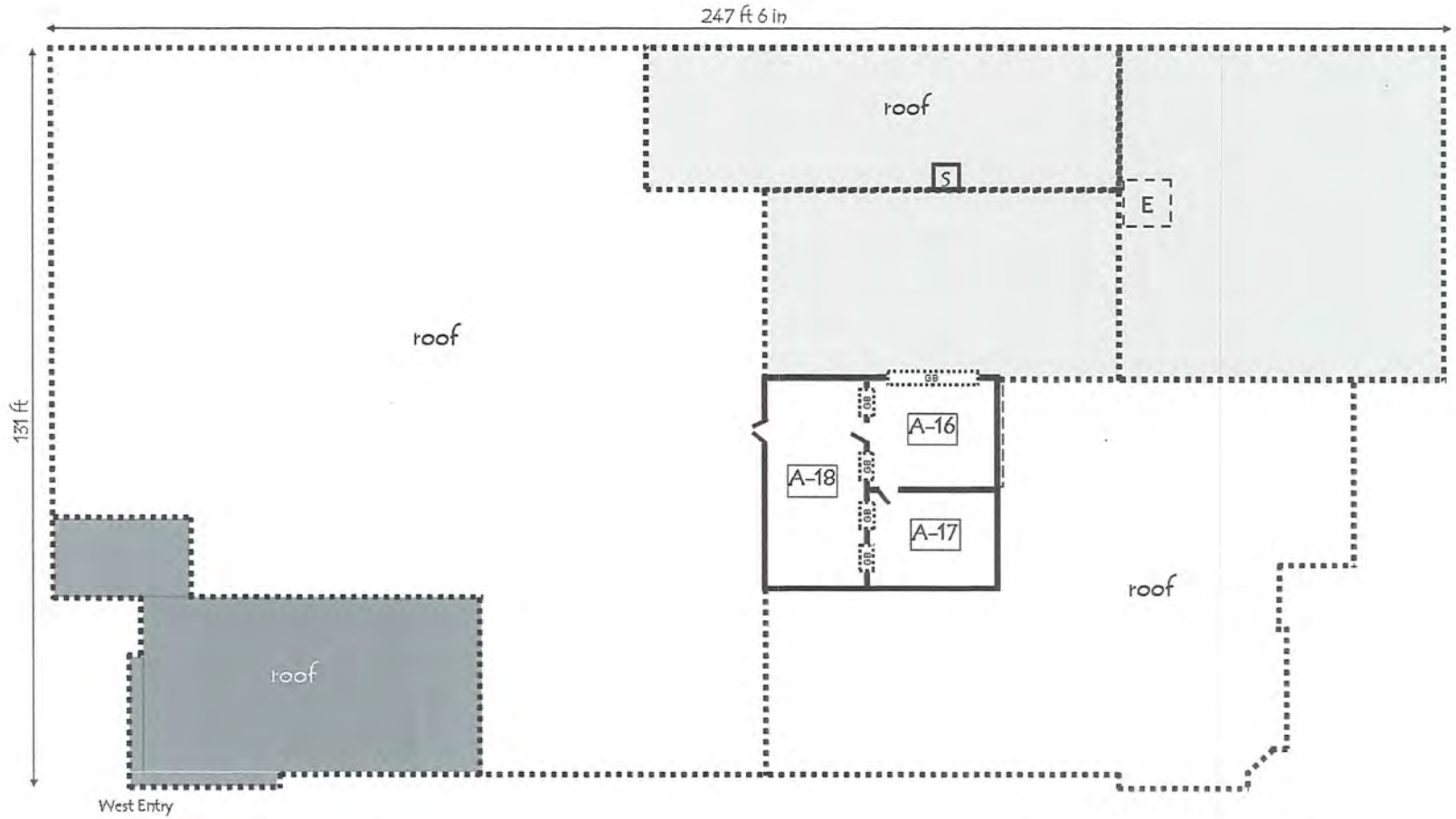
- ☐ Section A — Soda Shop/Dairy Plant, 1938
- ☐ Section B — Garage, 1947–1948
- ■ Section C — West Office, 1948
- ■ Section D — Ice Cream Factory, c.1952

Iowana Farms Milk Company

1416 State Street, Bettendorf, Iowa

N

Mezzanine Plan



GB =	glass block window
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- ☐ Section A — Soda Shop/Dairy Plant, 1938
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- ■ Section C — West Office, 1948
- ■ Section D — Ice Cream Factory, c.1952

Bird's eye aerial view of the Iowana Farms Milk Co. plant building prior to demolition, 2010. View is to North.
Source: Bing Live Maps, accessed at http://www.bing.com/maps/, 2010

Tumbler promotion for Iowana cottage cheese
Davenport Democrat Leader, March 16, 1949

Easter basket promotion for Iowana cottage cheese,
Muscatine Journal, March 1, 1955

Historical Architectural Data Base

Data Entry Form for Studies and Reports

Doc. No.: _____

Source of Study: ☐ Certified Local Government Project ☒ Section 106 Review & Compliance Project
☐ Historical Resource Development Program Project ☐ Other

Project Reference #: _____

Authors/Editor/Compiler/Originator:
Jennifer A. Price and Leah D. Rogers

Author Role: ☒ Consultant ☐ Private Researcher/Writer ☐ Teacher ☐ Student
☐ Project employee/volunteer ☐ Site Administrator ☐ Other: _____

Title of Work:
Iowa Historic Property Study: Iowana Farms Milk Company, Bettendorf, Scott County, Iowa

Year Issued: 2011

Type of Work Performed:
(*check one only*)

Survey:
- ☐ Windshield survey minimum level documentation
- ☐ Reconnaissance survey to make recommendations for intensive survey(s).
- ☐ Intensive survey
- ☐ Mixed intensive and reconnaissance survey

Plan:
- ☐ Planning for Preservation/Survey
- ☐ Community Preservation Plan

Property Study:
- ☒ Iowa Historic Property Documentation Study
- ☐ Historic American Building Survey (HABS)
- ☐ Historic American Engineering Record (HAER)
- ☐ Management or Master Plan
- ☐ Historic Structure Report
- ☐ Feasibility/Re-use Study
- ☐ Architectural/Engineering Plans and Specs.

National Register:
- ☐ Multiple Property Documentation Form

Other (e.g., private research, school project, video): _____

Iowa Historic Property Study: Iowana Farms Milk Company, Bettendorf, Scott County, Iowa

Kind of Work Produced:
(fill in one section only: Report or Monograph or Chapter, etc.)

Report: Published/produced by: Tallgrass Historians L.C.
Place issued: Iowa City, IA
Client: Iowa Department of Transportation
If applicable, include:
Series Title: _____
Volume #: _____ Report #: _____

Monograph: Publisher Name: _____
Place: _____

Chapter: In: _____ First pg. #: _____ Last pg. #: _____

Journal: Name: _____ Vol. _____ No. _____ Pages: _____ to _____

Thesis: Degree (check one): ☐ Ph.D. ☐ LL.D. ☐ M.A. ☐ M.S. ☐ B.A. ☐ B.S.
Name of College/University: _____

Paper: Meeting: _____
Place: _____

Other: _____

Geographic Scope of Study:
☒ City/town ☐ Township(s) ☐ County ☐ Region of Iowa ☐ Statewide ☐ Other: _____

State:	IA	__	__	__
County:	Scott	_____	_____	_____
Town:	Bettendorf	_____	_____	_____
Township:	___	___	___	___
Range:	___	___	___	___

Time Focus: (check any decades that receive particular attention)
☐ before 1830 ☐ 1830s ☐ 1840s ☐ 1850s ☐ 1860s ☐ 1870s ☐ 1880s ☐ 1890s
☐ 1900s ☐ 1910s ☒ 1920s ☒ 1930s ☒ 1940s ☒ 1950s ☒ 1960s ☒ 1970s ☐ 1980/later

Keyword: (Index of any subjects, topics, or people given prominent attention in the report)

Iowana Farms Milk Company	Streamline Moderne style
Iowa-Illinois Memorial Bridge	Steenbock Process
State Street	milk
15th Street	ice cream
Col. G. Watson French	dairy sanitation
Glenn H. Moore	Princess Iowana
Cleo L. Gord	_____
Helen Grell	_____