The A. D German Warehouse: Frank Lloyd Wright's Design Process

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ABSTRACT: This research discusses a long-overlooked building designed by Frank Lloyd Wright. The focus is on the project as a case study exemplifying Wright's design process. Although Wright's work is often described as appearing fully-conceived and then drawn in a single sitting onto the paper, the archival documents, correspondence and actual physical building of the A.D. German Warehouse tell a different story. The A.D. German Warehouse was designed ca. 1914 for Richland Center, Wisconsin, and was to be the only building Wright ever designed for the town of his birth. Built for businessman Albert Dell German of Richland Center, the warehouse is also Wright's only warehouse among his many projects.

The research presented involved the study of archival documents, the building, interviews with local residents, and a review of writings about the warehouse. Analyses of the drawings produced throughout the project were used to construct a view into Wright's interior design process.

When the warehouse was originally designed and constructed, Wright was also working on Taliesin (located approximately twenty-five miles from the warehouse project), Midway Gardens and the Imperial Hotel. The second design iteration occurred during the second phase of Wright's career when he was working on projects such as Fallingwater. The Warehouse project provides a snap shot of Wright's design approach during these two periods.

Wright's drawings for the Warehouse rehabilitation, located in the archives at Taliesin West in Arizona, have never been previously published. The complete holdings consist of approximately 90 drawings and sketches for the project including floor plans, sections, elevations and furniture design sketches. The significance of the A.D. German Warehouse to Wright is demonstrated by his decision to publish it in Wijdeveld's 1925 Wendingen collection of his projects which also included Midway Gardens, the Imperial Hotel and the Larkin Building. (Wright, 1965 reprint edition). This paper argues that the A.D. German Warehouse provides a view into the complex design process by Wright.

KEYWORDS: architecture, history, design process, Wright

INTRODUCTION

This research discusses a long-overlooked building designed by Frank Lloyd Wright. The focus is on the project as a case study exemplifying Wright's design process. The A.D. German Warehouse, located in Richland Center Wisconsin, is the only building designed by Wright in the town of his birth. Wright worked on the design of the warehouse while living at Taliesin in Spring Green—located within twenty-five miles of Richland Center--Wisconsin. Designed for businessman Albert Dell German of Richland Center, the warehouse is also Wright's only warehouse among his many projects. According to amateur local historian, Margaret Scott, Wright first met German while gathering supplies for the workmen and construction materials for Taliesin. Local lore contends that Wright and German bartered Wright's need for supplies for the design services on the warehouse. Although Wright claims the A.D. German Warehouse was first designed in 1912, local papers mention its actual construction between 1917 through 1920. Copies of the drawings located in the archives at Taliesin West do not contain a date. This has led historians to surmise that the original drawings for the warehouse burned in the fire at Taliesin.



Figure 1: Original Watercolor rendering in possession of Harvey Glanzer. Source: (Author 2008)

This paper argues that the A.D. German Warehouse provides a case study demonstrating the complex design process of Frank Lloyd Wright. It is also important for several other reasons—It is the first building by Wright that was actually built reflecting the influence of Mayan architecture; Wright's invention of the Barton Spider web structural system was unique to this building; and that the building is located in Richland Center Wisconsin and is the only Wright-designed building in the town of his birth. The building's primary contribution to history is as a window into the design process of a master as revealed through the changing design of the building. The proximity to Taliesin increased the likelihood that Wright would visit the Warehouse throughout his lifetime. In addition, Wright had a long-lasting relationship with German and created designs for him over a period of 20+ years (1912-1934 spanning two well-known periods of practice—the Prairie House and Usonian House eras.

1.0 History of the Warehouse Ownership

By 1916, the warehouse project was under construction as announced in the local paper that also includes Wright's cost estimate of \$30,000. According to the article, the building was a multipurpose warehouse including storage of wholesale goods, a small teahouse restaurant, retail space, gallery exhibition space for local artists and Wright's work, and a wholesale outlet store. By 1919, with the actual construction price of the warehouse, \$125,000, far exceeding Wright's original estimate, construction ceased. The first-floor windows and doors were boarded up. At the same time, the advent of World War I led to rationing of sugar, coal and other of German's commodities. This combination of unfortunate financial factors forced German into bankruptcy thus losing the building to a local competitor, H. H. Krousap. By 1935, German purchased the building back under his newly formed "Richland Warehouse Company, Ltd." and hired Wright once again—to finish the plans for the building. Unfortunately, a second round of bankruptcy proceedings against German were initiated again in 1936 and William Graff assumed ownership of the warehouse in 1937.

The warehouse sat largely unused—except for miscellaneous storage—during the period between 1937 and 1960. Some local residents proposed demolition of the building while others considered it as a location for the local library. In 1970, Barbara and Robert Bust purchased the warehouse with the intention of revitalizing it. The Busts worked to have the Warehouse listed on the National Register of Historic Places (1974). Although the Busts raised funds for the building revitalization, work was never completed. In 1980, Harvey Glanzer and Beth Caulkins, the current owners of the warehouse, purchased the building. They hired Wright's longtime apprentice, John H. Howe to design renovations for the building that were successfully completed in the 1980s. A small theater and gift shop were added to the first floor. In the tradition of the Busts, Glanzer and Caulkins continued to conduct tours of the building for interested tourists.

1.1. The ca. 1912-1915 Design for the Warehouse

Although no precise date for the production of the first iteration of warehouse drawings has been established, a comparison of an earlier rendering to later drawings and the final building hint at the mid-1910s as a likely date for the start of the design. According to Wright's own listing of his work in *An Organic Architecture: The Architecture of Democracy* (1939), Wright includes the A.D. German Warehouse among his buildings between 1887 and 1939 entered in both 1912 and 1915. An early rendering supports this view as the front of the Warehouse faces Haseltine Street. In the later drawings and in the final building Wright rotated the design ninety degrees to face Church Street, likely responding to the construction of a house in 1915 effectively blocking access to a train spur.

1.2. Architectural Description and Influences

The four-story warehouse building has a brick exterior on the first three floors and a poured in place concrete cornice on the fourth floor level. Although Wright used Mayan motifs in earlier buildings such as the Kehl Dance Academy (1912), the German Warehouse presented the first instance of actual built forms following the architecture of indigenous American people.

Scholarly discussions of the building indicate that Wright's inspiration for the Warehouse included many influences: Mayan prototypes, Japanese decorative motifs, and contemporary designers in Europe experimenting with similar motifs and influences. Tselos (1954) and Scully (1960) separately attributed the design of the cornice to Mayan influence, noting that Wright had seen photos and full plaster casts of Yucatan ruins at Chichen Itza at the World's Columbian Exposition at the Chicago World's Fair in 1893. Tselos (1969) later revisited his research of pre-Columbia architecture, indicating that Wright himself had written to the *Magazine of Art* to declare "his admiration of pre-Columbian architecture and the involvement of all living architecture, including his own, with the growth of man, society at large, and democracy, within whose fabric such involvements are best realized." "

By contrast, Hitchcock (1973) groups the A.D. German Warehouse with Wright's Japanese years works such as the Bogk House (Milwaukee, 1916), Midway Gardens (1913) and the Imperial Hotel (1916). Alofsin (1993) provides perhaps the most thorough discussion of influences for the A.D. German Warehouse. Alofsin describes the origins of the square within a square motif of the cornice, attributing a connection of Mayan architecture to contemporary European design practice as found in Owen Jones' *Grammar of Ornament*. Alfosin points out that Wright's design differs from Mayan inspiration in the treatment of the outwardly canting cornice, noting a connection to J.L.M. Lauwerik's design system for a wall cabinet and works by Joseph Maria Olbrick. 11

Regardless of the sources and influences that may have impacted Wright's design, the Warehouse represents a clear departure from Wright's earlier prairie work and links to other post-prairie commissions in organization and structural innovation. The building does not connect with the landscape, but rather, turns inward. Wright omits his customary views and outdoor connection in favor of a tomb-like experience recognizing that a cold storage warehouse would not require fenestration. The proposed use as a gallery also calls for lots of uninterrupted wall space. Wright located the functions that would benefit from the use of natural light—the retail space and teahouse—on the first floor, where a storefront was used at the entry. In the original drawings, the entry showed planters and a deep overhang that somewhat obscured the entry—Wright's only concession to nature.

It should be noted that many of Wright's public buildings are also inward focused. The Larkin Building directs all attention towards a central atrium. Unity Temple has small clerestory windows in the otherwise monolithic façade. In this way, Wright's use of this approach at the warehouse is not unusual.

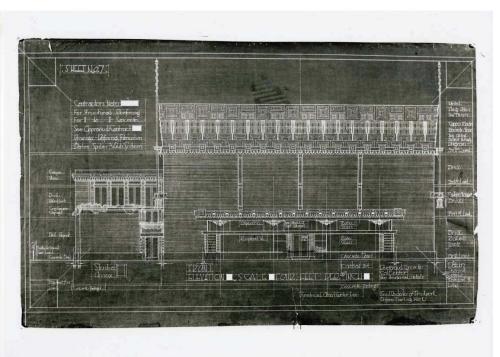


Figure 2: Blue Prints in possession of Harvey Glanzer. Source: (Author 2008)

1.3. The Structural System

As with a number of other commissions, Wright invented a structural system for the A.D. German Warehouse. Designed to carry the extra weight of bags of grain, sugar and other goods, Wright used a series of steel reinforcing rods (rebar) that were intertwined from the columns through their canted capitals and into the reinforced concrete floor system, not dissimilar from the system he used later in the Johnson Wax Building (1936-1939). Authors of the *Concrete Engineers' Handbook* describe the Barton Spider Web System as follows: "The Barton Spider Web system is similar to other flat-slab systems as to the arrangement of columns, column heads, and drop panels, but differs radically in the type of reinforcement used. As regards the slab, it is a four-way system and over the head of the column, it is a two-way system." The innovative use of steel reinforcement for this structural system has earned Wright a place in engineering history.

1.4. The 1934 Rehabilitation Scheme

Despite the many contributions of the warehouse to Wright's oeuvre, drawings for the A.D. German Warehouse rehabilitation have never been published in their entirety and can only be found in the archives located at Taliesin West in Arizona. The complete holdings consist of ninety drawings and sketches for the project including floor plans, sections, elevations and furniture design sketches. Wright published a few of the early drawings of the warehouse in Wijdeveld's 1925 Wendingen collection of his projects that also included Midway Gardens, the Imperial Hotel and the Larkin Building. (Wright, 1965 reprint edition)¹³. Only a limited number of extant drawings remain of the 1915 initial scheme. These include floor plans and exterior elevations. In addition, two color renderings of the initial proposal are in the possession of the archives at Taliesin West and with the owner of the warehouse. Whether burned in the fire at Taliesin or never completed, the only drawings showing Wright's interior designs for the Warehouse are in the 1934 rehabilitation scheme drawings and sketches.

Wright's return to the work on this building after twenty years suggests an affinity with the project and client. German and Wright were both of Welsh descent, near to each other in age and both grew up in Richland County Wisconsin. Like Wright, German was one of several siblings (the youngest of seven). Since part of German's original program was to include an exhibit space for Wright's work and because German chose to barter with Wright when others in Richland Center would not, it appears the two men had a mutually respectful relationship over several years. Aside from his own residences at Taliesin and Taliesin West, the warehouse is also one of the few projects to which Wright returned during his long career.

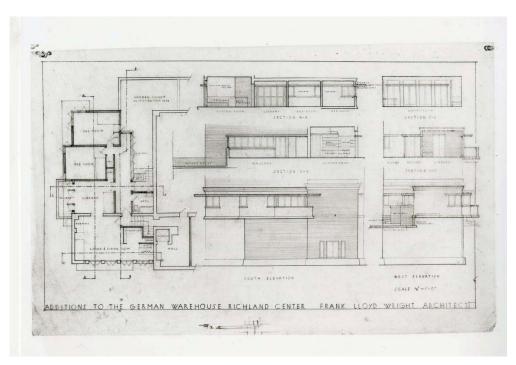


Figure 3: Sketch for German Apartment Source: (Taliesin Archives—will need to obtain written permission prior to publication)

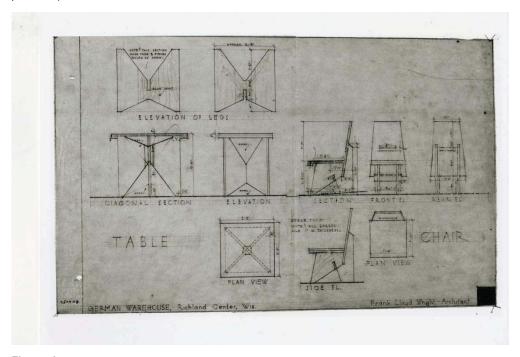


Figure 4: Sketch for Proposed Restaurant Furniture Design Source: (Taliesin Archives—will need to obtain written permission prior to publication)

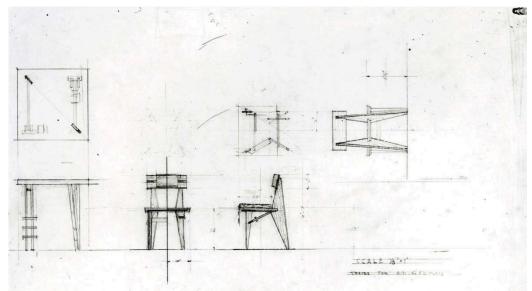


Figure 5: Sketch for Proposed Restaurant Furniture Design Source: (Taliesin Archives—will need to obtain written permission prior to publication)

1.5. Frank Lloyd Wright and Process

One of the most revealing aspects of the A.D. German Warehouse building and project is that there was a process to Wright's interior design work that is rarely written about. In this single project, we see no fewer than four phases of revision including sketch plans, elevations and furniture designs. The first rendering as compared to the first final set of drawings, shows that the orientation of the building's main façade changed and that an apartment was added for Anna German. For a second intervention, Wright created a series of floor plans for the ca. 1915 design. Then in 1934, several new variations were presented—although none were built.

According to authors Tice and Laseau (1992), "Within the extraordinary volume of literature on Wright is an amazing poverty of discourse on his design processes. Even colleagues who worked by his side for thirty years appear incapable of or reluctant to discuss his methods." They go on to outline their proposal of Wright's methods. "Wright's achievements in design owe much to his mastery of a design process strongly driven by geometric order. His design approach proceeds from form as well as principle. He gave his design principles a formal expression through the use of the grids that integrated compositional structure and thematic unity." They further claim that Wright's process is a "critique of the limits of pure inductive reasoning" and "an affirmation of the value of deductive reasoning."

What Laseau and Tice do not include in their description of Wright's process is the notion of multiple iterations in response to the site and a client—both which appear in the A.D. German scheme and its multiple revisions. For example, the A.D. German Warehouse reveals an interesting difference between Wright's approaches to the design of the interior versus that of the exterior. The exterior form, mass, and details are basically the same from the first conceptual rendering through the final construction documents and through the 1934 ideations. Even when the orientation of the building shifts 90 degrees on the site to respond to site changes, the exterior design does not vary. Wright's approach to the interior, on the other hand, depicts a much more iterative and exploratory process involving test fits responding to programmatic variations and embodies the notion of designing spatially in plan, elevation and detail simultaneously.

1.6. Iterations

The design process drawings can be divided into three types: Floor Plans, Elevations, and Details including Furniture and into two periods of design (1914-17 and 1934). The floor plans included revisions for the first floor, the fourth floor and the adjoining apartment. Corresponding elevations, sections and details were also produced. The drawings included three different versions of tables and chairs for the restaurant as well as several drawings for built in shelving, tables and other furniture for the restaurant and upper floor apartments as well as door openings for the stair landings.

Wright produced several versions of floor plans for the first level of the main warehouse building. The first of these plans shows a side entry into a restaurant on the left and a store on the right. Booths are located on the lower level with steps up to an area containing freestanding tables and chairs. The drawing is quite sketchy in nature although the walls are drafted in this development of the scheme. A drafted version of this same plan provides additional detail and all furniture is drafted. Another version illustrates a larger store and storage area on the right. A complete departure from this is shown in the next version of the floor plan that places an office at the front of the first floor entered through a centrally placed door. The rear of the first floor is not show. A small office for AD German is located to the left of the main entrance. A variation on the restaurant theme illustrates a much smaller restaurant, maintains the office for German and adds a large storage area at the rear of the first floor. The bathrooms are relocated as is the kitchen and bar. Two additional sketchy plans are provided in this grouping showing different table configurations. Only one blue print resulted from this series—that of the larger restaurant with small store. The multiple floor plans clearly show Wright working through the space allocations for the first floor and exploring a variety of configurations, options and finally arriving at an agreed upon solution.

A similar series of explorations exists for the annexed apartment. Like the first floor iterations, some of these are drafted and others are much sketchier exploring room variations, bathroom locations and even the addition of a bay window in one. Like the restaurant series, things are crossed out, drawn over and finally result in a single drawing. Again, the series of six different schemes illustrates an interactive and iterative design process.

A series of floor plans were also produced for the fourth floor apartments. The first version shows eight apartments. Although they vary in size, all include an efficiency-style apartment with a bed area, a kitchen area and a bathroom. Following the methodology of the first floor plans, a more complete drafted version follows the first plan. The next drawing shows a single unit at an enlarged scale for the kitchen and bath area showing specific fixture locations and an additional level of detail. Elevation drawings and partial sections accompany the enlarged plan. Another iteration also includes eight units, but each unit has been altered. The drawing itself is partially drafted and partially sketched in. This last set of alterations then became the basis for the blue print of the fourth floor.

A clear process is revealed in these floor plans. First a sketch plan is drawn. This is then developed into a more drafted and precise version followed by additional detail. Finally another round (or more) of revisions is explored in sketch form and then developed into a final drawing with a title block for distribution. The presumed reasons for the revisions are evident in the change in use with each version. In response to changes in Richland Center and in German's business—availability of product, changes to the location of the railroad spur which was to originally serve the building—required changes in Wright's design during the initial design time between 1914 and 1917 when construction commenced.

Although interior elevations were not produced to accompany every floor plan, they reveal the same sort of process. Nearly every floor plan has drafted elevation drawings below the floor plan on the same page. Often these also include materials notations such as "plaster" and "plywood counter." The corresponding elevations show furniture, ceiling heights, partial walls, the splayed topped columns and steps. Built-in planters are also illustrated. In the case of the apartment annex, most of the elevations are actually exterior views to show the multiple window locations for each version of the floor plan.

The only freestanding furniture variations designed by Wright were for the restaurant. These too illustrate his process. The first set of chairs and accompanying table include minimal dimensions and materials notes (1/2" plywood). The axonometric view of the proposed table is crossed out. A second iteration includes a completely different table and chair. Some freehand sketching is done over the drafted drawings. The third version of the tables and chairs is sketchy with only some drafting. Several connections details are added as well as some additional materials such as "white oak top (no finish)." As with all the other drawings produced, this version was then drafted more formally with drawings notations, dimensions, and a title block. The furniture drawings alone show Wright trying different options for single design.

The drawings for the A.D. German Warehouse show that Wright worked out his ideas on paper. Using a combination of sketching and drafting, he thought through the design problems with which he was grappling while responding to client needs and his own changes. Input, either from the client or another source, led to revisions and new ideas, until a final solution was drafted for dissemination.

1.7. Frank Lloyd Wright's Design Process

The A.D. German Warehouse, like much of Wright's work, emphasizes geometric forms and the adherence to a single conceptual approach throughout the project. As the most prominent feature of the exterior, the

cornice consists of a series of squares, squares within squares and rectangles. A 16' x 16' column grid reinforces the geometry of the square. Even the floor of the restaurant was to be "cement floor lined in squares." The tables were square as were the seats of the chairs. The geometry of the square impacts all aspects of the project, including the title block and page layout of the final drawings. This adherence to a single geometry is common in Wright's work.

Through the many variations and explorations, Wright adhered to his singular vision for the development of the interiors. The basic geometry of the rooms and furnishings as well as materials selections remained constant. The only interior materials mentioned by Wright throughout the project drawings were plywood, plaster, concrete/cement and brick. All counters, shelving and furniture were fabricated from oak plywood. Concrete formed all floors, ceilings and columns as well as the walls on the fourth floor. Wright indicated a painted finish to the fourth floor columns. Plaster clad the brick exterior walls exposed to the interior spaces. Any added interior walls also featured a plaster finish. All windows had wood frames and plate glass with the exception of the metal storefront on the first floor.

In keeping with his other work, Wright used shelving and a relatively low ceiling to emphasize the horizontality of the rooms. The shelving device as a horizontal constant is used in the restaurant and shop, in the apartment annex and the fourth floor apartments. In all instances, the horizontal shelves stop two-thirds of the way up the columns leaving the column capital splays a visible and prominent feature in the space. The use of built in furniture also echoes Wright's residential work. The apartment annex and fourth floor apartments all include built in shelves, tables, counters, closets, and desks.

CONCLUSIONS

The interior designs for the A.D. German Warehouse provide a rare look into a building by Wright which has never been completed and for which a series of proposals over twenty years were made. This insight into Wright's design process and thinking for the interior goes against traditional wisdom that Wright produced his designs in a single and final iteration—as is often told regarding how Wright designed Fallingwater and other projects. The building stands vacant (in Richland Center Wisconsin) as it has been for most of its life. For a brief period in the 1980s and 1990s, the building was open to tours at the convenience of the owners who also ran the first floor gift store. Over the years, the building has fallen into further disrepair and the tours have recently been discontinued. Despite this, the A.D. German Warehouse is a significant building and has much to tell us about Wright, the designer and an aspect of his design process.

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- ² Scott. 1984.
- ³ Frank Lloyd Wright, An Organic Architecture, (London: Lund Humphries and Co., Ltd.), 53.
- ⁴ Randall C. Henning, "The A.D. German Warehouse: A Critical Study," *FLW Update* 53:6, (May 1994), 41-43.
- ⁵ Archival Drawings, Taliesin Archives Scottsdale Arizona, numbers 1504.002-1504.011
- ⁶ Scott.
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- ⁸ Frank Lloyd Wright, *An Organic Architecture* (London: Lund Humphries and Co., Ltd., 1939), 53.
- ⁹ Dimitri Tselos, "Frank Lloyd Wright and World Architecture," Journal of the Society of Architectural Historians, 28:1 (March 1969): 58.
- ¹⁰ It should be noted that Wright gives a 1912 date for the Bogk House in *Organic Architecture* (54). Henry Russell Hitchcock, *In the Nature of Materials* (New York: Duell, Sloan and Pearce, 1942), 69-70.
- ¹¹ Anthony Alofsin, Frank Lloyd Wright the Lost Years, 1910-1922 (Chicago: The University of Chicago Press, 1993), 232-235.
- ¹² George A. Hool, Nathan Clarke Johnson and Solomon Cady Hollister. *Concrete Engineers' Handbook*. New York: McGraw Hill Company, Inc. 1918, 461
- ¹³ The Wendigen Publication originated in Holland. The preface was written by T. Wijdeveld, a Dutch Architect. Published in 1923, this was one of the first published volumes of Wright's work in Europe. Thirty one projects were included in the publication dating between 1902 and 1923. Henrikus Theodorus Wijdeveld was a Dutch architect and the founder of the *Wendigen* magazine. The 1925 Wendigen Series was originally published as seven issues of Wendigen focused on Wright's work and later one book (*Frank Lloyd Wright: The Life-Work of the American Architecture Frank Lloyd Wright*) in Holland.
- ¹⁴ According to local residents, Frank Lloyd Wright incurred several debts in Richland Center that he never repaid. Thus local vendors would no longer allow him to buy things on credit.
- ¹⁵ Laseau, Paul and Tice, James. Frank Lloyd Wright: Between Principles and Form. New York: Van Nostrand Reinhold, 1992, 180.
- ¹⁶ Laseau, 180.
- ¹⁷ Laseau, 180.
- ¹⁸ Taliesin Drawing 3504.062, floor plan notation.
- ¹⁹ In 2010, the building's longtime owner and advocate, Harvey Glanzer, died.