

# Origins of Chicago Common Brick: Examining a Masonry Shell Encasing a New Ando Museum

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**Abstract**—This paper examines the broad array of historic sites from which Chicago common brick has emerged, and the methods this brick has been utilized within and around a new hybrid structure recently completed-and periodically opened to the public, as a private art, architecture, design, and social activism gallery space. Various technical aspects regarding the structural and aesthetic reuse methods of salvaged brick within the interior and exterior of this new Tadao Ando-designed building in Lincoln Park, Chicago, are explored. This paper expands specifically upon the multiple possible origins of Chicago common brick, as well as the extant brick currently composing the surrounding alley which is integral to demarcating the southern site boundary of the old apartment building now gallery. Themes encompassing Chicago's archeological and architectural history, local resource extraction, and labor practices permeate this paper's investigation into urban, social and architectural history and building construction technology advancements through time.

**Keywords**—Masonry construction, history brickmaking, private museums, Chicago Illinois, Tadao Ando.

## I. INTRODUCTION

A BROAD assumption is often applied to Tadao Ando's work: all of his pristine buildings are new construction, possessing trademark formwork tie-hole gridded, smoothly polished concrete walls inside and out. The case study, examined within this paper, is a private gallery called "Wrightwood 659", and certainly contains a generous amount of "Ando concrete"; however, it is primarily grouped in a highly ordered three-level monumental staircase as well as strategically employed as an efficient vehicle comprising structurally supportive walls enabling massively deep roof cantilevers (12'-3" or 3.73 meters) on the fourth floor. A new material comprising this private museum that many Ando architecture acolytes may find somewhat surprising is the element of Chicago common brick, re-used on the interior.

Due to a variety of zoning and site constraints, it was determined early on in the project, prior to Ando's involvement in the summer of 2013 as design architect, that retaining the three wythe thick masonry shell of the former 1930-era, 39-unit apartment building (enclosing approximately 38,000 square feet {3,530 m<sup>2</sup>} on four levels) was the best method to proceed forward [1]. This "new building inside old" mantra was retained and drove the implementation of the museum program during the planning and engineering phases of the project,

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while it solely existed in draft form on paper. Where exactly did this brick come from? The following paragraphs will elucidate various potential answers to this query and offer a plausible array of likely solutions to a mystery which, due to the absence of receipts from the era of construction of the building (1929-30), and lack of other paper ephemera, eludes the architectural historian to this day.



Fig. 1 Row house, historic photo [2] of what is known today as 655 West Wrightwood Avenue. Note the gable-roofed corner of the wood frame structure to the west (on the right). This former single-family home at 659, was demolished to make way for a new 39-unit apartment building

## II. PRE-APARTMENT BUILDING

### A. Estate Planning

Prior to the construction of the masonry apartment building, the residential nature of this portion of the Lincoln Park neighborhood was decidedly less transient.

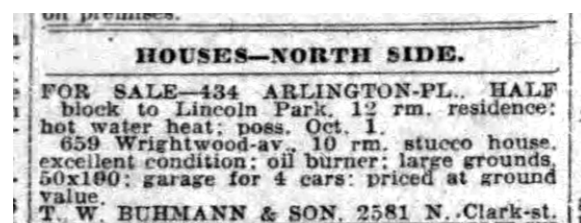


Fig. 2 Chicago Sunday Tribune, 1926 [3]

It was peppered by single-family estate homes built out of a combination of detached wood frame houses and masonry row-houses equipped with party walls readying these insular blocks for future adjacent (joined) party wall construction. Fig.

1 shows the row house to the east of the current museum building, with the original wood-frame home still standing at 659, on the west, circa 1880–90s. When marketed on 19 September, 1926, the then approaching 50-year old home was noted as being in “excellent condition.”

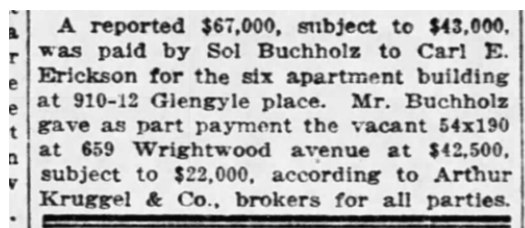


Fig. 3 *Chicago Daily Tribune*, 1928 [5]

### B. Marketing the Lot for a Quick Sale

L. Messinger found that a permit was pulled on 659 Wrightwood Ave. to “Wreck 2 Sty. Frame 25 ft.” on 16 November, 1926 [4]. Eighteen months later, on 15 March, 1928, classifieds document that the lot at 659 Wrightwood was vacant and used as a partial payment to a Mister Carl E. Erickson. It must be noted that across the street and down the block in an easterly direction, a fraternal association of Swedish people was eventually to form and dwell within their own building.



Fig. 4 Ad in *The Economist, Chicago, U.S.A.*, 3 January, 1920 [8]

### C. Municipal Permitting Process as Historian

Records stored [6] at the state school’s archive, the Richard J. Daley Library on the University of Illinois Chicago campus, unearthed by L. Messinger, serve as a complete guide to the new 39-unit apartment building. Owner, Mr. A. Kruggel employed Chicago architect Roy France to design a three-story (plus partial-basement) masonry apartment structure whose construction cost was estimated to be \$100,000 (equivalent to \$1.425 million today) on 6 December, 1928. No photographic records have been found documenting the construction process of the building; however, during excavation for a new deeper basement, over two dozen empty clear glass milk bottles were uncovered. It is suspected that due to the era of Prohibition (1920-33), these “milk” bottles may have contained some other alcoholic substance drunk by the workers as a reward for their hard days’ labor (however this is pure speculation) [7].

“Bowman Dairy Company Chicago” is boldly embossed, arcing across the lower neck of various bottles, of multiple

capacities, excavated relatively intact from compacted wet sand on the site. The dairy indeed did exist first in St. Louis, Missouri in 1874, and then exclusively in Chicago by 1891. The *Encyclopedia of Chicago* reports that by the mid-1930s, over 3,000 employees enabled the enterprise to thrive [9].



Fig. 5 Lang soda water, Bowman milk and Borden’s large milk bottles, all unearthed from the site during excavation

A few beautiful ice-blue aqua soda bottles were also found, some still with an un-rusted zinc plated metal internal spring-plug stopper, partially lodged in the top (sans rubber washer)—a C.G. Hutchinson sealing patent of 1879. They were embossed with “F.C. Lang & Co. Chicago,” which were issued between 1885–87 from the re-organized soda water company (post-departure of his brothers), founded by immigrant Frederick Lang, born in Germany in 1839 [10]. It is presumed the mineral-water contents of these bottles were drunk by either: workmen building the previous early 1880s wood-frame home on the site, or by the actual occupants of the home, which existed from the early 1880’s until demolition in the early winter of 1926. This wood-frame home stood on the site for only about 45 years.



Fig. 6 An uncovered milkman delivery door, leading to center communal corridor. This has been sealed over for decades

The original 39-unit apartment building when constructed accommodated the latest architectural passages to allow the safe and easy delivery of goods to each resident. During the demolition process gypsum board was removed along with

original lath and plaster which veneer-coated many bearing masonry as well as non-bearing wood stud walls. Along four floors of common center-hallways (see Fig. 18), milkman delivery doors were found, all sadly empty, reminiscent of the days when bottled milk arrived daily to all those who paid their subscription to the dairy delivery company. Bowman, “the largest home-deliverer of milk in the world” incurred major losses in the early 1960s which “forced the company out of the dairy business” [11]. What Fig. 6 also shows is the great extent that many portions of the building’s walls were built somewhat ad-hoc with a hybrid combination of both load-bearing Chicago common brick (beige-yellow) and ribbed pink hollow clay tile.

#### D. Determining Occupancy Dates

Determining the original initial date of occupancy for the apartment building, one would assume, would be easy through a general search of Chicago apartment classifieds. Thus far, such a calendar has not been decisive. Instead, a death notification published by the *Chicago Tribune*, on 14 January, 1931, proves that a Mr. Al Carney died of pneumonia (at Columbus hospital) and used to live at 659 Wrightwood. The length of the 33-year old man’s stay remains unknown [12], and hence, the date the first inhabitant of the apartment building has not been ascertained. It is assumed a generally acceptable move-in window of July through December 1930, would give about an 18-month window of time to construct the building, which could have been finished by about July of 1930 or a few months later.



Fig. 7 Front faced of Wrightwood 659, pre-interior demolition

### III. AN ARCHITECT FINDS SOUTHERN FORTUNE

Messinger’s research revealed a previously unknown connection to an architect, the aforementioned Mr. France. Rarely mentioned in Chicago texts, Roy F. France was a Midwestern boy, born in Hawley, Minnesota, and “studied at the Armour Institute of Technology (1905-06) and the Chicago Technical School.” The Armour Institute was the forerunner to the author’s alma mater, Illinois Institute of Technology, and changed its banner to its current namesake, IIT, in 1940. According to web site MiMoOnTheBeach, (which stands for MiamiModern...), France “and his wife took a train trip to

Florida in 1931 and enjoyed it so much that they settled permanently in Miami Beach.” France, who lived to be 84 years old (1888-1972), “designed dozens of prominent Art Deco and Postwar Modern oceanfront hotels... on Collins Avenue such as the National (1677), Saxony (3201), Sovereign (4385), and Casablanca (6345) hotels” [13]. Such a diversion south to *deco*-Florida is hardly expected when standing on Wrightwood Avenue viewing a very proper Indiana limestone and dark maroon-red wire-cut brick façade, topped with a traditional triangular pediment complete with acroterial vases (Fig. 8) possessing masonic flame-tip tops; all of which Ando mandated be restored and re-cut with identical matching limestone detailing.



Fig. 8 Original limestone vase; replica was made verbatim

### IV. OCCUPANT DEMOGRAPHIC HISTORY

An incredible daily newspaper archive provides the scholar with the most intriguing repository representing a cross-section of Chicagoans who lived, loved, and died within 659 west Wrightwood Avenue. A peppering of history includes an assessment of alimony against a dairyman absentee father, awarded to a corresponding female occupant with baby in 1932. A female inhabitant searched for her brother, lost in Butte, Montana in 1935. That same year a lover leapt from a first floor window and broke his leg after trying to escape when the woman’s (only four week-estranged) husband suddenly returned home to 659. In 1937, a lady took an overdose of sleeping tablets and survived, after being discovered for falsely claiming to be the daughter of Crown Prince Rudolph of Austria. By 1939, at the height of the great depression in America, the building was advertised as a “High class modern bldg.” renting for \$42.50 a month for a two-room apartment [14], (\$748 dollars today). In 1943, a FBI vice ring investigation into prostitution named a series of defendants, who were later freed, including a Harold Stamper, 27, who lived at 659 [15]. On a more somber note, “a supervisor for the Illinois Bell Telephone company... Miss Edith Stoner of 659 Wrightwood avenue... died at Wesley Memorial hospital, following a surgery,” in 1945 [16].

A 42-year old nurse, resident of 659 Wrightwood, was indicted for assisting a doctor on an abortion for a 15 year old girl in 1951. The “dean of the information booth of Mayor Daley’s Office of Inquiry and Information... William Russell, 659 Wrightwood av.,... answers an average of 1,700 questions

a day,” made the newspaper in 1959 [17]. In 1972, a female Asian-American student living at 659, in the Medical Arts Department at the University of Illinois Medical Center, was featured with her self-portrait model. The next year a concerned mother living at 659 filed a class-action Federal District Court lawsuit against “the Illinois Departments of Public Health and Public Aid to fully implement a free federal children’s diagnostic health and dental program” [18].

The most macabre and violent crime to have taken place, on the sidewalk just due west beyond 659, was reported in 1982: the building’s superintendent was shot by an unknown gunman who had just attacked a woman in the vestibule of 659. Mr. Sherwin Bundza, 26, “a 6-foot 3-inch (1.75 meter tall) ex-Marine whose nickname was ‘Shorty,’ ...[was hit in the abdomen, shot to death after he blocked an assault on a woman” [19].



Fig. 9 665 West Wrightwood Avenue, prior to demolition [20]



Fig. 10 South-facing loading dock door opens up to east-west alley

The demeanor of the neighborhood slowly proceeded on an upward trajectory of improvement as shared economic prosperity, the '90s (during the Clinton administration) bypassed high urban crime rates of the 1980s. The owner of this apartment to museum/gallery conversion project purchased an old solitary row house with flanking side lots quite a bit earlier in 1983; Tadao Ando did not get involved with designing the residential property for him and his partner until 1993 [21]. The actual apartment building was acquired in 1997 (it had been listed on the open real estate market in both 1992 and 1994) and remained occupied until the last lease expired naturally in its due course at the end of June, 2013. Environmental Cleansing Corporation (ECC) took control of the empty building and commenced complete interior demolition of all non-bearing wood-stud frame walls, ceilings and fixtures shortly after the building was vacated, in the fall of 2013. Their work took

approximately one full year to complete. Norcon, the general contractor, entered onto the site in the fall of 2014, and remained through the fall 2018 when they finished the Tadao Ando-designed project.

## V. SEARCHING FOR THE ORIGINS OF MULTIPLE MASONRIES

### A. Sanitary Alley Access

Unlike the island of Manhattan, Chicago possesses a designated place for trash storage and pick-up: the alley. Chicago has its famous grid and perhaps more infamous alleyways. For example, in 1934, Chicago gangster John Dillinger was shot and killed during an attempted Federal arrest in the alley adjacent to the Biograph Theater, about 0.4 miles or 0.64 km away from Wrightwood 659 gallery [22]. Paving the surface of the alleyways of this area of the Lincoln Park neighborhood, one can find a prolific amount of named bricks sporadically dotting the former paths of horses and carriages:



Fig. 11 “METROPOLITAN CANTON, O. BLOCK”

Proudly brandishing their logo in all-capital sans serif letters, this alley-way, solid brick paver from Canton, Ohio, may confuse the proud Chicagoan, who instantly may ask, “Why are bricks from Ohio lining the alleyways of the greatest city in the Midwest?” The answer to this query does not arrive with any degree of immediacy.

According to *brickfrog blog*, Metropolitan Paving Brick Co. was formed in 1902 after the merger of two Stark County, Ohio brick companies who were both using major Clarion shale outcrops as their source of raw materials for brick-making. Eventually Metropolitan was absorbed into what is well-known today as Belden Brick Co. (which itself was founded in 1885).



Fig. 12 Metropolitan advertisement in *The Clay-Worker*, 1917 [23]

Metropolitan’s “Peak production was in 1923, when [they] shipped 92 million pavers.” Apparently specification scientists in the Federal Government found their brick appealing and

endorsed, “Metropolitan’s ‘Canton, O. Shale’ ...as a standard for quality of paving brick.” Lastly, this durable brick did not emerge from a pollution-less void; 12,000 train car-loads (equating to 72 million bricks) produced a year required some 150,000 tons (136,077 tonnes) of coal to fire the brick [24]. During this era, Pennsylvania was a major source of coal in America.

**B. Competition**

A logical follow-up question emerges: “Were there any active brick-works in Chicago to fill the void of importing bricks from another neighboring state?” The answer to this question is an absolute “Yes, and there were *many!*”



Fig. 13 Commonly found Purington Paver and Purington Block

**C. Purington Progress**

Illinois state pride recognizes a “domestic” producer of paving brick: D.V. Purington Brick Company. Founded in 1890, and whose home is located 196 miles (315 km) west-southwest of Chicago in East Galesburg, Illinois. Purington Brick is considered by many to be the most well-traveled brick—for it can still be found paving some of the old streets of Panama, Paris and Mumbai [25]. Sadly, in spite of the fact the factory started switching from burning coal to burning natural gas for the brick firing process in 1952, President Richard Nixon’s signature, endorsing “Plan No. 3 calling for the establishment of an Environmental Protection Agency,” on 2 December, 1970 [26], eventually led to the closure of Purington in 1974. Smaller brick-making plants were shuttered earlier for similar reasons within the city limits of Chicago. Purington also eventually acquired competitor’s operations in the nearby city of Blue Island (119<sup>th</sup> Street near Rock Island train lines).



Fig. 14 Former window, now blind, south face of Wrightwood 659

**D. Brick-Making near the Municipal Borders**

Just south of Chicago’s current city limits (21 miles or 33.7 km south of Wrightwood 659) lies a hamlet which is called by the name, “Blue Island.” Within about 180 odd-shaped small city blocks one finds in the 2016 census a total of 23,401 inhabitants (largely unchanged since plateauing in about 1930) [27]. One single-family old masonry house is of particular relevance to this study, and that is the home of livery owner, Elmer and Christina Bennett located at 2021 High Street; the home was built in 1878 out of Reusnow bricks, which came from the former Carl Reusnow brickyard plant located just 0.7 miles (1.1 km) to the east of the house, on the northern banks of what today is the Calumet Sag Channel (it closed or was absorbed by a larger operator by 1883) [28].



Fig. 15 Bennett home in Blue Island, built 1878

Long forgotten from the 1850s, Blue Island was the entire nation’s (or world’s, depending upon how wide a net is cast by boastful historians) epicenter of brickmaking hosting “over 20 large brickyards in the area, which transformed clay (abundant in local soils) into a total of nearly 100 million bricks per year.” Furthermore, when mechanization was introduced to save human-powered labor in the brickmaking industry, machines “introduced to Chicago in 1856 by M.O. Walker, allowed the output of individual yards to soar” [29]. The statistics alone are staggering: output increased six-fold to 600 million bricks annually in the 1890s. Production peaked in the 1920s. The emergence of concrete and steel construction advances, along with an abundance of already durably-paved streets, slowed demand.



Fig. 16 Advertisement for automation. *The Clay-Worker*, 1917

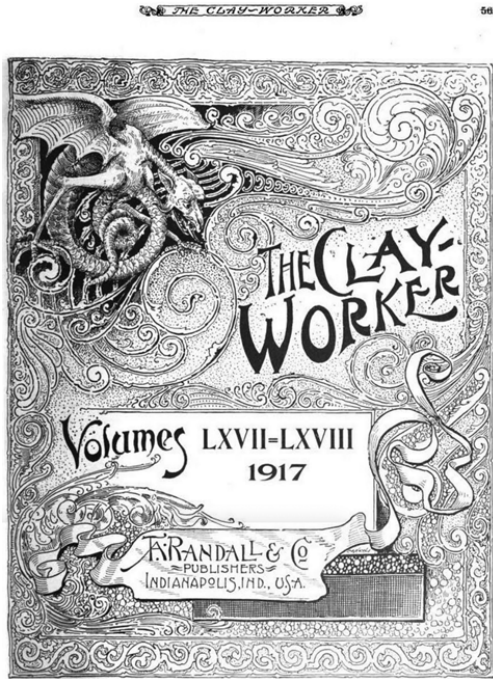


Fig. 17 *The Clay-Worker* trade journal, 1917, with a sublimely beautiful sinuously illustrated proto-art nouveau cover

Due to its termination as an independent brickworks in 1883, we must look elsewhere to find a potential source for Chicago common brick that was supplied to build Wrightwood 659. Closer to the site, due directly west just 7.5 miles (12 km), is located within Chicago's city limits, a giant (rare) hilly complex of shops, strip malls and big box retailers collected together and aptly named "The Brickyard" or "Bricktown Square." All of these mercantile structures, built over several decades, are situated on 66.1 acres (26.7 hectares) of sculpted and re-purposed mining tailings. Much commerce takes place here today in the form of a majority of Spanish-speaking consumers flocking in family groups on weekends; a different type of commercial interest once brought a very different fervor to the site. Over 10 years before the city's first regional mall was built in 1979, a part of Carey Brickyard once was known (1968~69) as "Thunder Mountain:" a winter-time 285' tall (86.8 m) ski hill [30]. Lasting only two seasons, warmer weather shuttered the operation. Brickmaking also eventually became a very rare industry in the city limits, when in 1970, "the EPA (Environmental Protection Agency) closed the last yard"[31]. Other writers indicate Carey lasted until 1980, and "was the last place that made these [Chicago common] bricks" [32].

## VI. PATCHING THE SHELL

Returning to the Wrightwood 659 gallery building, we shall now examine the treatment of the existing perimeter three-wythe Chicago common brick wall. Although the exact origins of this masonry has not conclusively been traced, the presence of so many brick yards, near and far, along with their concomitant mined natural deposits of clay and shale, indicate that the brick did indeed come from an in-state and perhaps

in-municipality source, when construction of this building probably commenced in the early spring of 1929.

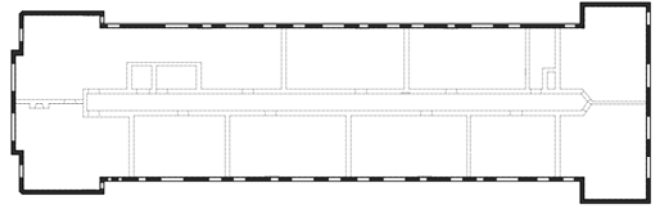


Fig. 18 Second floor plan showing perimeter walls (retained) along with gray interior walls, which were removed. These (former) interior brick bearing full-height, through-floor walls provided lateral wind-bracing and fire-breaks (pre-museum plan is shown)

The focus of this portion of the investigation will now center on what repairs and modifications had to be made to the "shell" in order to prepare it for further utilization, after the internal load-bearing steel frame (see Fig. 19) was installed. What appears like a giant orthogonal armature indeed has a serious set of functions: that is to prevent the outside brick walls from collapsing from erratic wind load, since the original perpendicular brick bearing walls, formerly acting as bracing, have been removed.



Fig. 19 Newly installed structural steel frame. Portion of old brick wall is still visible in the foreground

The extant brick shell, even with windows in-filled with three wythe-thick recycled masonry from the demolition job site, however was not simply ready to form interior gallery walls. Affiliated Engineers Incorporated (AEI) of Chicago was the contracted Mechanical Engineer whose task it was to ensure the interior climate control systems could maintain both stable temperature and humidity conditions within well-defined and absolutely proscribed boundaries, accepted by museums around the world [33]. In order to achieve this in a fickle Midwestern climate, whose outdoor temperatures range over a 133° degrees Fahrenheit (56° Celsius) swing from winter to summer, requires an absolutely tightly sealed envelope. Three wythes of 80-some year old masonry does not accomplish such a goal. Simple patching was at first required (see Fig. 20) to fill in both joist-holes where brick was notched open to receive wood floor/ceiling members; essential points where the weight of the structure and contents were transferred from horizontal

planes to vertical ones.



Fig. 20 The very rough inside face of an existing perimeter three-wythe thick masonry wall, with as-yet-to-be filled joists pockets



Fig. 21 Trial window in-fill mock-ups one and two

Methods by which former window openings were to be filled-in were debated along with full-scale tests demonstrating visual aesthetic effects of different bond patterns. No detail is too small to be left unexamined by Ando! The first decision was to replace the old worn out Indiana limestone window sills with new limestone, which possessed crisp, clean squared-off ashlar edges. Secondly, all new in-fill brick was to be “toothed-in” for the inner two wythes which would become invisible. The outer wythe however would *not* be toothed-in, so that the exterior would retain a distinctive appearance, not masking the former existence of windows. The outside wythe was also *not* built flush or co-planar with the existing face of the exterior wall. Instead, it was in-set about one-quarter of an inch (1/4”) or 6.35 mm, in order to create a substantial shadow line when the sunlight hits the exterior faces of the building at various times throughout the day.

As Fig. 21 demonstrates, the brick bond pattern was also experimented with during the mock-up phase. Bricks were installed using a very high amount of sand to prevent permanent bonding in these trial-assemblies. The window on the left was in-filled with running bond brick; the right with common or American bond brick, with every sixth course composed of a row of turned header bricks. The example on the right (common/American bond pattern) mimics how the

entirety of the wall was constructed (providing additional inherent bonding strength), and was ultimately chosen as the method by which all window openings would be in-filled.



Fig. 22 Southern-facing former window opening, with toothed-in flush in-fill brick; this modification was done sometime prior to the conversion of the apartment building into a museum



Fig. 23 Searching for a matching contemporary brick color

## VII. FRONT FACADE EXTENSIONS

Due to the increase in overall height of the parapet wall, the front street-facing (north) façade behind the roof-top triangular pediment had to be vertically extended. The brick used in this area, true to its historicist stylistic convention, is a deep maroon red color, in straight running bond pattern. Corners of the break-front monumental bay are quoined in groups of six bricks each. Unlike the beige-yellow Chicago common brick used throughout the rest of the building (and easily obtained as salvaged brick), this brick was a more expensive machine wire-cut face brick with narrow-gauge vertical wire-cut grooves in the face. Finding a contemporary-manufactured product that matched this 1930 brick was a challenge; no true color similarity was quite found; the deeper “red” of the two (at the top) was ultimately chosen for the parapet extension (about 6.5 feet or 2 meters).

## VIII. CONCLUSION

In conclusion, Chicago’s rich brick-making tradition yielded a wide variety of products which were incorporated into a speculative apartment building (659 West Wrightwood Avenue), ironically constructed during the onset of the great depression in America. Brick from multiple areas of Illinois contributed to its construction, as well as Ohio, for the paving

of the common municipal alleyway. The (original) 39-unit apartment structure housed an incredible variety of inhabitants (1930–2013) whom both prospered and perished in a neighborhood which has seen a full wavelength of change in fortune and access to economic prosperity. While not a true archeological dig, excavations conducted during the re-construction of a new steel-framed museum building within revealed trace artifacts providing tangible connections to the laboring class who built both buildings that used to stand on the site prior to the Tadao Ando-designed private gallery building insertion. Incredible results were accomplished by a set of talented and accomplished Chicago Union masons to repair, reinforce, extend, and blend—salvaged as well as new brick into the remaining perimeter shell structure, ensuring a long, dynamic lifespan ahead.

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