

HISTORIC AMERICAN ENGINEERING RECORD

CHICAGO SKYWAY TOLL BRIDGE, TOLL PLAZA AND SERVICE BUILDING

HAER No. IL-145-A

Location: 8801 S. Anthony Ave., Chicago, Cook County, Illinois.

USGS Quadrangle: Lake Calumet, Illinois-Indiana (7.5-minute series).

UTM Coordinates: 16/453000/4620275

Dates of Construction: 1956-1958.

Designer: Consoer, Townsend & Associates (Chicago).

Fabricator: Egger Iron Co. (Chicago), toll booth canopies.

Builder: Kenny Construction Co. (Skokie, Illinois).

Present Owner: City of Chicago.

Present Use: Toll collection facility, administrative offices, and maintenance headquarters for Chicago Skyway Toll Bridge system.

Significance: The Chicago Skyway toll plaza is an important eastern gateway to the city. The roadway sits atop an administrative and maintenance building, a uniquely compact arrangement dictated by its urban site. In their International-style architectural expression and interior program, the toll plaza and service building reflect their designers' vision of a truly modern highway. This self-sufficient complex once included a police station as well. Other features, novel at the time of construction, included automatic toll collection, a heated-slab snow-melt system in the toll plaza, and salt hoppers filled from the roadway above.

Historian: Justin M. Spivey, January 2001.

Project Description: The Chicago Bridges Recording Project was sponsored during the summer of 1999 by HABS/HAER under the general direction of E. Blaine Cliver, Chief; the City of Chicago, Richard M. Daley, Mayor; the Chicago Department of Transportation, Thomas R. Walker, Commissioner, and S. L. Kaderbek, Chief Engineer, Bureau of Bridges and Transit. The field work, measured

drawings, historical reports, and photographs were prepared under the direction of Eric N. DeLony, Chief of HAER.

Introduction

The toll plaza complex is an integral part of the Chicago Skyway toll bridge system, but historically significant for reasons all its own.¹ As a portal structure across this important eastern approach to Chicago, the toll booth canopy is quite literally a gateway to the city. The entire complex's appearance, and more importantly its operational features, reflect confidence in a future of automobile travel on limited-access highways. The road was no longer a static structure: it was a machine that required de-icing in the winter, and policing and maintenance year-round. In this particular case, the machine also collected user fees to pay for its construction and operation, and needed an administrative staff to oversee these functions. Recognizing this, and constrained by a small urban site, the Chicago Skyway's designers consolidated under one roof what had heretofore been located in separate structures along a toll highway. Furthermore, they devised novel automatic devices to simplify snow removal, maintenance, and toll collection. The Chicago Skyway toll plaza complex is a unique integration of toll highway support functions, surrounded by modern architectural expression suited to its function as the city's eastern gateway.

Seen from the air, the Chicago Skyway toll plaza looks like many others in its overall layout. Three westbound lanes come off the Calumet River bridge, widen to eleven lanes under a toll-booth canopy, and neck down to three lanes on the other side.² The eastbound lanes do the same in the opposite direction, with their toll booths offset to the northwest so the curves of merging lanes nestle into each other, reducing the plaza's overall width. Several features found upon closer examination, however, distinguish this toll plaza as unique. Until recently, one could see four covered openings in the median between the two canopies. Trucks dumped de-icing salt through these openings into hoppers below. (Salt accelerated deterioration of the concrete roadway in this area, which has since been replaced with a solid concrete slab.) Finally, two long structures in the median, to the northwest and southeast of the canopies, can be seen from the air. Their function might not be obvious from above, at least until one sees a vehicle enter or leave. These long structures cover ramps into a service building that lies beneath the roadway.

¹ For a history of the entire Chicago Skyway system, see Justin M. Spivey, "Chicago Skyway Toll Bridge," HAER No. IL-145, Historic American Engineering Record (HAER), National Park Service, U.S. Department of the Interior.

² Only eight lanes are currently used in either direction; more on this below.

Preliminary designs prepared by engineering consultants DeLeuw, Cather & Company (DLC) set down the basic form of the Skyway toll plaza complex.³ In this proposal the toll booth canopies and service building appeared as simple rectangular structures, obviously awaiting further refinement. After the city of Chicago approved the project, DLC sub-contracted detailed design tasks in seven sections. Chicago engineering firm Consoer, Townsend & Associates was responsible for the fourth section, from South Elliott Avenue to South Colfax Avenue, which included the toll plaza. The toll booth canopies and service building as built show considerable architectural refinement in their design and exhibit many distinguishing features of the International style, although it is unclear whether they are the work of an independent architectural firm.⁴ Kenny Construction Company of Skokie, general contractor for the fourth section south of 87th Street, including the toll plaza, began work in October 1956 and finished in January 1958. The contractor installed toll collection equipment from Grant Money Meters and toll booths from Taller & Cooper, both of which have since been replaced. Original toll canopies, fabricated by Egger Iron Company of Chicago, still remain.⁵

Service Building

The service building is the heart of the Chicago Skyway complex, containing its offices and maintenance facilities. The service building's street address is 8801 South Anthony Avenue, where it presents a brick, limestone, and glass facade to the southwest. Parallel to the Anthony Avenue facade at either end, concrete retaining walls form the Skyway's elevated embankment. Traffic visible above reminds the street-level viewer that this is not a free-standing structure, but one tucked beneath an elevated toll highway. The building's basement, ground story, and mechanical loft all lie beneath the roof formed by the toll plaza roadway. (Henceforth "ground" refers to the original surface at Anthony Avenue, not the elevated embankment.) Nonetheless, the service building's facade attempts to fit in among the neighborhood's predominantly twentieth-century structures.

The facade's asymmetrical composition, smooth wall surfaces, and cantilevered flat roof are all hallmarks of the International style, introduced to Chicago via German architect Mies van der Rohe.⁶ Such architectural refinement may reflect the Skyway engineers' concern for the service building's visual impact on the residential neighborhood in which it is located.

³ DeLeuw, Cather & Co. (hereinafter cited as DLC), "Report on Calumet Skyway Toll Bridge, City of Chicago: Engineering Studies and Estimates" (Chicago, Nov. 1954), figs. 6 and 34, Municipal Reference Collection, Chicago Public Library, Chicago, Ill. (hereinafter cited as MRC).

⁴ Research for this report did not uncover documents indicating whether Consoer, Townsend & Associates retained an architectural consultant for the toll plaza complex design.

⁵ DLC, "Calumet Skyway Toll Bridge Progress Report," No. 36 (1 Feb. 1958): 9, 14, MRC; R. C. Hamm, "Calumet Skyway Toll Bridge," *Civil Engineering* 29, No. 3 (Mar. 1959): 163.

⁶ Virginia and Lee McAlester, *A Field Guide to American Houses* (New York: Alfred A. Knopf, 1994), 469.

Furthermore, it may be a response to what architectural historian Peter Collins called the “rupture” between architecture and engineering, resulting in “numerous popular criticisms leveled against the engineers’ own work on aesthetic grounds.”⁷ The service building could have been cast as an unadorned garage-like structure (as in DLC’s preliminary design), but its designers instead chose to express its administrative function with a variety of building masses and a transparent facade.⁸

A tower, reaching above the toll plaza level toward the southeast end, dominates the facade’s asymmetrical composition. Stretching four stories above ground, the vent stack, sheathed in limestone on its southwest face, forms a focal point. The stack’s perpendicular faces carry aluminum sans-serif lettering, CHICAGO SKYWAY TOLL BRIDGE, against a brick background.⁹ A flagpole is mounted near the south corner. The remainder of the tower reaches a height of three stories above ground. The top story contains a supervisor’s booth overlooking the toll plaza at roadway level. Descending stairs are visible behind the glass curtain wall, between the stack and a blank limestone wall on the southeast facade. The cantilevered roof slab has the same thickness as the wall, and appears to pierce the vent stack. To the left of the stack, a similar glass curtain rises above the principal entrance. This window functions primarily as the display case for a two-story-high blue mosaic tile panel above the vestibule’s inner door.

To the left of the tower are a bank of aluminum-frame windows looking into offices, a series of doors into the maintenance garage, followed by another bank of office windows, all at the ground level. A limestone belt course separates these openings from a blank brick wall at the loft level above. To the right of the tower is a well open to the basement level below, for the installation and removal of large mechanical equipment.

Inside the service building, reinforced concrete mushroom columns support the toll plaza roadway above. A garage for employee parking and equipment storage consumes most of the Anthony Avenue level, except for an office cluster in the south corner and, in the west corner, conference and storage rooms. The salt hoppers originally occupied the garage’s east corner, but have since been removed. (DLC’s preliminary proposal showed fuel pumps in the service building, but this idea was evidently dropped.¹⁰)

A large general office and the Director of Operations’ private office command the windows in the office cluster. Behind them are a money counting room and vault, and a room (accessible only from the garage) that contained recording devices for the original toll collection system. As of this writing, the latter room was being remodeled to house computers and uninterruptible power supplies for a new automatic toll collection system. The office cluster also contains a lunch room, toilets, and locker rooms for employees. In its early years, the office

⁷ Peter Collins, *Changing Ideals in Modern Architecture* (Montreal: McGill Univ. Press, 1967), 191.

⁸ DLC, “Report on Calumet Skyway Toll Bridge,” fig. 34.

⁹ This read CALUMET SKYWAY TOLL BRIDGE until 1960.

¹⁰ DLC, “Report on Calumet Skyway Toll Bridge, City of Chicago,” fig. 34.

cluster also housed Chicago's Fourth District police station, complete with a holding cell (since converted to a storage room).¹¹ Rooms in the office cluster are separated from the mechanical loft above by a suspended ceiling, except the vestibule and lunch room, above which is the concrete slab floor of the fan room.

On the basement level below the office cluster, a mechanical room contains four modern low-pressure, gas-fired boilers for heat and hot water (replacements of the originals); an electrical supply vault and panels; and a pit with three pumps for the abandoned heated-slab snow-melt system. This system also included a boiler (since removed) to heat oil, which the pumps then circulated through a network of pipes buried in the roadway above. The heated zone extended for a short distance on either side of the toll booths, which then did not have to be plowed or salted during snow storms. Unfortunately the pipes clogged easily, and the system was soon abandoned.

Toll Plaza

Throughout the toll plaza complex, curved and flared surfaces create a streamlined appearance. Nowhere is this more apparent than through the windshield of a passing automobile. Eastbound, the sweeping curve of the guard rail leads up to the supervisor's booth (the only portion of the service building visible from the roadway). The booth looks out over the plaza through a curved facade, emphasizing its role in monitoring the toll collection process. More accurately, the curve is made up of straight segments, each containing an aluminum-frame window with a brick panel below the sill, separated by vertical steel channels painted silver to match the windows. As noted by HAER photographer Jet Lowe, this type of construction might take a cue from the exposed structure and brick in-fill pioneered by van der Rohe on the Illinois Institute of Technology campus.¹²

In either direction, motorists pass under a canopy that shelters the individual toll booths. Asymmetrical hammerhead (T-shaped) columns, constructed of welded steel plate, support the roof. The head of each column slopes upward, with its longer leg turned toward oncoming traffic, creating a forced perspective that emphasizes the angle of the canopy roof. (This flare is repeated in the service building ramps, whose end walls are angled outward toward approaching vehicles.) Atop the canopy roof are prominent pink neon letters with stainless steel frames spelling out CHICAGO SKYWAY TOLL BRIDGE. The letters are so prominent, in fact, that a night-time photograph of the canopy doubled as the title of an article in *Civil Engineering* magazine.¹³ This structure's striking appearance is consistent with its function as the gateway to Chicago for tumpike traffic coming from the eastern U.S.

¹¹ Robert Erkenswick, Director of Operations for Chicago Skyway Toll Bridge, interview by author, Aug. 1999.

¹² Jet Lowe, HAER photographer, conversation with author, 3 Aug. 1999.

¹³ Again, the letters spelled out CALUMET SKYWAY TOLL BRIDGE until 1960; see Hamm, "Calumet Skyway Toll Bridge," 162.

The toll plaza's original layout had twenty-two lanes, numbered from 1 to 11 (right to left facing traffic) eastbound and from 12 to 22 (also right to left facing traffic) westbound. Although all twenty-two lanes carried traffic when the Skyway opened in 1958, only sixteen currently do. Low traffic volume during the Skyway's early years did not require so many lanes, but even with today's heavier traffic, more efficient methods of toll collection have made the six extra lanes permanently obsolete. Landscaping covers lanes 9 through 11, and 20 through 22 serve as a parking lot, although the canopies remain overhead both areas.

Beneath each row of toll booths is a tunnel, accessible from spiral staircases behind the booths for lanes 4, 6, 8, 15, 17, and 19. Each tunnel connects with the service ramp, by which toll booth attendants can arrive at and leave their posts. The attendants no longer use the restrooms located at the mid-point of each tunnel; instead, they must walk all the way to the service building. The tunnels not only provide a safe passage for the attendants, but also simplify the addition and removal of utilities. Open racks against the tunnel walls carry pipes for the abandoned snow-melt system and conduits for electrical and communication lines. The toll plaza's designers, working at the dawn of the computer age, may have anticipated that technological progress would require frequent changes to electrical and electronic systems. This built-in flexibility, in fact, has allowed the Skyway to weather two replacements of its toll collection system without any modification of the toll booth canopies.¹⁴

Photographs of the Skyway toll plaza, taken at the dedication ceremony on 16 April 1958, show overhead signs restricting truck and bus traffic to lanes 1-3 and 12-14. The remaining lanes, for automobile traffic, were equipped with overhead neon signs displaying either AUTOMATIC or ATTENDED, depending on whether an employee occupied the booth.¹⁵ Under the original scheme of toll collection, each of the sixteen passenger car lanes was equipped with a basket into which drivers deposited twenty-five cents. Even in attended lanes, the attendant only made change; the driver still had to deposit the coins him- or herself.¹⁶ Apparently this arrangement was intended to reduce theft by attendants. The coins dropped into lock-box in a cabinet beneath each lane. At the end of each shift, the attendant descended into the tunnel to retrieve his or her vault. In addition to the attendant's own key, the supervisor also had to deactivate a remote electronic lock in order for the attendant to remove the lock-box from the cabinet. The lock-box, with money still secure inside, then had to be carried to the vault in the service building.¹⁷

¹⁴ Installation of the new automatic toll collection system, however, will require reconstruction of the toll plaza roadway. The roadway is currently sloped downward toward the toll booth islands, which contain storm drains. Because the new system will have equipment in the roadway to gather information about vehicles, the roadway must now be re-shaped to carry water away from the islands, according to Frank Brinskelle, engineer with Bureau of Bridges and Transit, Chicago Department of Transportation, interview by author, Aug. 1999.

¹⁵ Photographs collection, Office of the Director of Operations, Chicago Skyway Toll Bridge, Chicago, Ill.

¹⁶ DLC, "Calumet Skyway Toll Bridge," *Bulldozer* 9, No. 7 (Oct 1957): 7.

¹⁷ DLC, "The Calumet Skyway," *Bulldozer* 10, No. 4 (Sep. 1958): 34.

Although the original toll collection system has since been abandoned in favor of cash drawers carried by attendants, vestiges remain in the tunnels below. For instance, where the tunnel under the eastbound booths descends a staircase to the service ramps, one finds a pair of steel rails once used to slide the lock-boxes down. These reminders will likely remain after yet another update of toll collection technology. As of this writing, a project is under way to install an automatic toll collection system that will record trips made by regular Skyway users, then charge their accounts accordingly.

Skyway Oasis

Signs on the Skyway inform motorists of the “Skyway Oasis,” currently a McDonald’s restaurant in the median southeast of the toll plaza. Because of its short length, the Skyway’s designers did not plan for the food and fuel facilities that could be found on longer American toll highways.¹⁸ From opening day, however, a visitor information trailer occupied the median southeast of the plaza.¹⁹ Realizing that lease payments would boost revenue, Chicago negotiated with Fred Harvey and with American Oil (later Amoco) in 1966 to provide a restaurant and gas station in the median. Lease agreements proposed by the City Council extracted 10 percent of restaurant sales, and what was effectively a tax on gasoline and motor oil.²⁰ The median, which had not been designed with services in mind, provided cramped quarters for the restaurant and gas station. The Harvey’s restaurant building, designed by John A. Mayes Associates, stood on a scant 36'-0" by 59'-8" footprint. Nonetheless, there was enough room for the tourist information center to move from its trailer to the restaurant.²¹ Because the Skyway is the gateway to Chicago from the eastern turnpikes, dispensing information to tourists has remained an important function throughout its existence. Guests at the dedication ceremony, held 14 June 1967, came from the city’s tourist and convention offices as well as highway agencies, indicating that both hoped to benefit from the project.²² Tourist information is still available at the McDonald’s restaurant that replaced Harvey’s in 1991. The Amoco gas station evidently closed that same year, and was

¹⁸ Cf. DLC, “Skyway Toll Bridge System 1995 Annual Report” (Chicago: 1996), 2-2, Bureau of Bridges and Transit, Chicago Department of Transportation, Chicago, Ill.: “The original geometric layout of the eastern end of the toll plaza area did not contemplate the construction of a restaurant in that area.” The term “oasis” is also used to identify rest areas on the Illinois Toll Highway Authority’s toll roads.

¹⁹ This trailer appears in photographs of the Skyway dedication ceremony; see photographs collection, Office of the Director of Operations, Chicago Skyway Toll Bridge, Chicago, Ill.

²⁰ Chicago, City Council, *Journal* (19 Dec. 1966): 8239-48.

²¹ John A. Mayes Associates, “Food Facility and Tourist Information Center, Chicago Skyway,” drawing (14 Feb. 1967), office files, Chicago Skyway Toll Bridge, Chicago, Ill. See Chicago, City Council, *Journal* (19 Dec. 1966): 8244, for a clause relating to the tourist information center.

²² Chicago Skyway Toll Bridge, “Dedication of Skyway Service Area,” program, 14 June 1967, office files, Chicago Skyway Toll Bridge, Chicago, Ill.

demolished to make way for a larger restaurant.²³ Former westbound toll lanes 20 through 22 provide additional parking for the new building.

Conclusion

The Chicago Skyway's toll plaza complex retains much of its original appearance, except for the McDonald's restaurant and new toll booths installed in 1995. That the toll plaza and service building still serve their intended functions is a testament to their forward-looking design and built-in flexibility. The variety and compact arrangement of support functions remains unusual among modern American toll highways. Most significantly, architectural expression throughout the Skyway toll plaza complex (but especially in the original toll booth canopies that remain today) is commensurate with the Skyway's role as Chicago's eastern gateway for the motor age.

²³ James Hartray, "Chronology of Major Skyway Milestone Events," typescript, 2 Mar. 1999, 3, office files, Chicago Skyway Toll Bridge, Chicago, Ill.

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