

# The Story of the Chi Phi Bridge

*Jonathan Rawls, PD'85*

The full story of the infamous “Chi Phi Bridge” of Chicago, begins with this article in the 1889 edition of *The Chi Phi Quarterly*:

## A CHI PHI BRIDGE

It may be of interest to Chi Phis to know that there is a “Chi Phi” bridge in the city of Chicago.

To the general public the structure is known as the Dearborn Avenue Viaduct and Bridge. It is in the very heart of the city and consists of several spans and a bridge having a total length of six hundred feet. It is entirely the design of a “Kiffie” engineer in the Bureau of Engineering of the Chicago Department of Public Works and he managed to work a Chi Phi monogram in the scroll-work ornamenting the portal or street entrance of a 250 foot span.

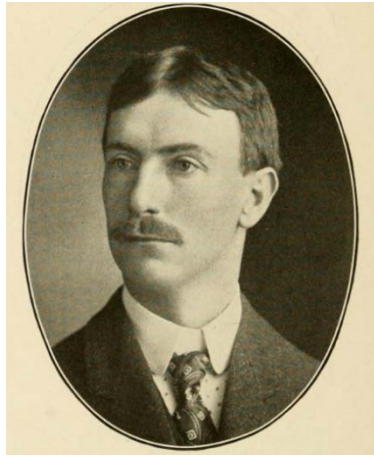
The monogram is five feet high by four and one-half feet wide. When the ornamentation was designed, it was not expected that the bridge company would turn out a very close imitation of the design, as that part of bridge work is usually made in conformity with the facilities at hand and the convenience of the contractor, but when the iron arrived at the site it proved to have been cast in very close execution of the original design and when placed in position Chi Phi was very clearly outlined, much more so than shown in the illustration.

Brothers crossing the Dearborn Avenue Viaduct will therefore have only to glance above them to see the monogram of our order standing out clearly, and we hope imperishably, before the world.

Jules E. Roemheld, Theta '88

This article was submitted by Jules Roemheld, Theta 1888 (Rensselaer Polytechnic Institute) for the *Quarterly*, but in his modesty, he failed to mention, he was the actual engineer at the City of Chicago Bridge Department who designed the ornamental ironwork into the overall design.

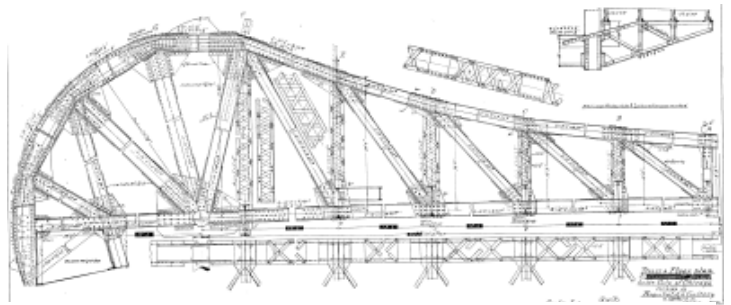
Brother Roemheld was born in Chicago in 1865, and attended RPI where he joined Chi Phi, being initiated as a sophomore in 1885. Upon graduation, he landed a job as a draftsman and later an assistant engineer in the Bridge Department in the City of Chicago – later rising to the position of Chief Engineer of the Department from 1896 to 1898.



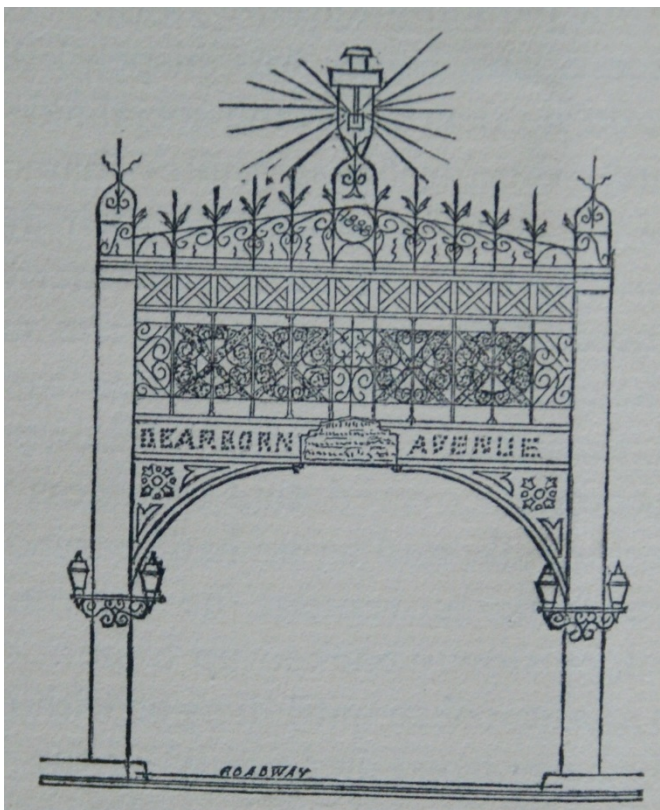
**Brother Roemheld**

After leaving the City payroll in 1898, he went into the contracting business with John T. Gallery until 1907, when he organized his own firm, Roemheld Construction Company. In 1914, he merged his company with the Great Lakes Dredge & Dock Company, where he remained until his retirement in 1939.

During his tenure with the City he was responsible for a number of notable accomplishments, in particular, the design of a special bridge type known as the “Chicago type bascule.” Due to his connections in the City Departments, he was fairly successful in obtaining contracts for several major bridges built over the Chicago River, and, he also designed a number of other related inventions including a method to empty railcars using the bascule bridge concept, and a special method to anchor floating piers and caissons during the construction of bridges – both of which were patented. Later, he was enlisted as a consultant in the building of the Golden Gate Bridge. He passed away in 1947.

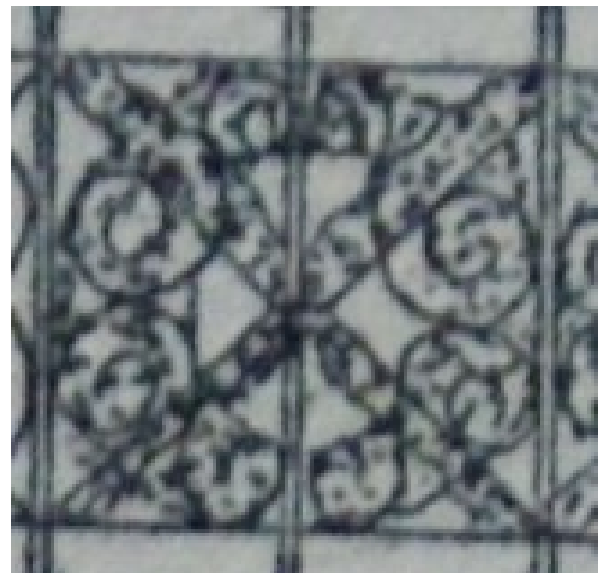


**Two of the prominent and historical bridges designed by Roemheld following break out with his own company: the North Halsted Street Bridge, built in 1909, and the West Division Street Bridge, built in 1903 - one of the oldest surviving functional bascule bridges in North America.**



**Left, drawing of the entrance to the bridge showing the placement of the ornamental ironwork.**

**Below, close-up detail of the Chi Phi monogram designed into the bridge**



## ***And now on to the story of the Chi Phi Bridge....***

The river crossing at Dearborn street has a long history. In fact, the very first movable bridge in Chicago was built at this location in 1834. That particular bridge was a double-leaf type similar to today's modern bridges, but the limitations of the early technology available produced a "generally hated bridge." This is reflected in accounts of its demise in 1839, when, on the morning after the Chicago Town Council decided to remove it, the townspeople arrived before daylight to demolish the bridge themselves.

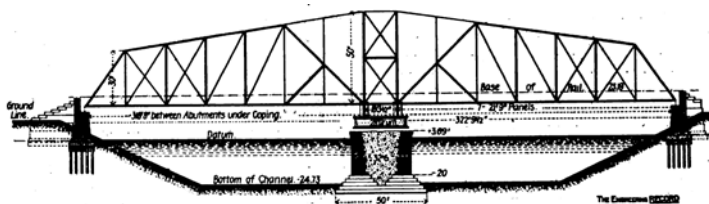


It wasn't until the 1880s that a second bridge was deemed needed for the Dearborn Street crossing, and it is this particular bridge that is the subject of this story. At this particular time, Brother Roemheld had just started working in the Bridge Department and as such, his contribution to the project was limited to the preparation of the viaduct, or the portion of the structure on either side of the bridge proper that would channel the people, horses, wagons etc. onto the bridge. The installation of this new bridge was controversial from the start, due to the congestion that had already been created by so many existing bridges on the Chicago River.

***Below, typical congestion around bridges in the Chicago River; at right, engraving showing the many bridges along the Chicago River in the downtown area***



***Below, architectural drawing showing cross-section of a typical swing bridge as employed on the Chicago River***



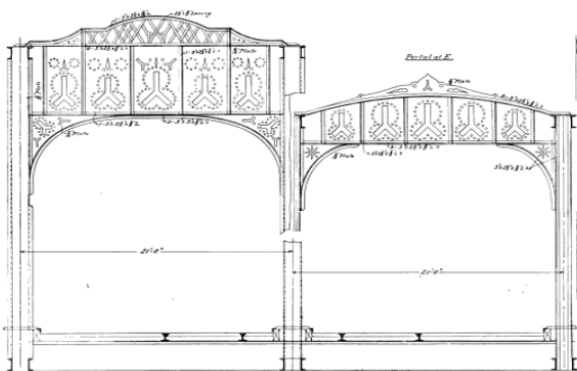
As early as 1880, property owners on either side of the river on Dearborn Street had been lobbying the City Council to install a bridge at that location, to increase travel and access on Dearborn Street. This effort was in direct conflict with the maritime interests who were concerned with the flow of boat and barge traffic through the downtown area, which was essential to the economic engine of the city. An editorial in the *Chicago Tribune* outlined the complexities of the issue:

*The policy of the city, established from the beginning, has been to have a bridge not oftener than at alternate streets. It has not been until within a comparatively short time that even this number of bridges has been constructed. Originally the bridges were floating ones, and were swung to one side, thus affording the least obstruction to the free use of the river by vessels. The adoption of the present system furnished a more serious obstruction to vessels. It is no unusual thing for vessels to be compelled to stop in their course and wait between the bridges; at times there are as many as six or eight vessels arrested in their course, and for the bridges to open, between State and Clark streets. The absence of a bridge at Dearborn street renders this possible; but, if there were a bridge at that point, there would be no room for the vessels to wait, and it would be necessary to keep Clark, Dearborn, and State street bridges wide open to enable the vessels to pass east or west to avoid collision with each other or with one or more of these bridges.*

*To build a bridge at Dearborn street, therefore, is to take from vessels in tow all of waiting between Clark and State streets; and, when a vessel passing up the river crosses the line of State street, the bridges at Dearborn and Clark streets will have to be opened of necessity at the same time, no matter how urgent the travel over the bridges may be. Instead of facilitating travel over the bridges and reducing the crowds of vehicles and foot-passengers detained each time the bridges are opened, the construction of a bridge at Dearborn street will necessitate the immediate opening of the three bridges,-as Clark, Dearborn, and State streets,-because of the want of room between such bridges for a vessel to lay to, and the necessity for such vessel to escape the close quarters by three swinging bridges. In point of fact, the erection of a bridge at Dearborn street will not increase facilities for crossing the river, but will add to the existing obstructions.*

After over eight years of lobby efforts, the City Council finally authorized the bridge, but with an accommodation that they would relocate an existing bridge at Wells Street to the Dearborn Street location. This was done by “floating” the old bridge off its central pivot onto four boats and bringing it down the river - and then setting it upon a new pivot point that had been constructed for it.

It was thought at the time, that such bridges lacked any sort of graceful aesthetics, and so the City engineers were tasked with “dressing them up a bit.”



**Sketch of typical ironwork for bridge portals**



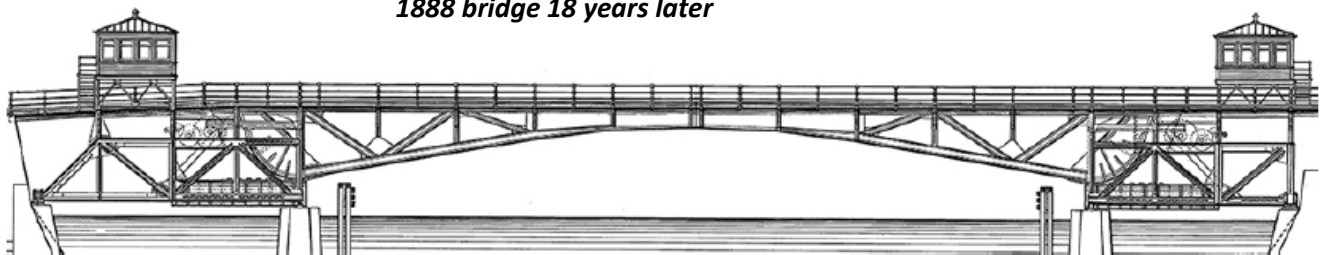
**Wells Street Swing-Bridge, from an 1873 photo**

It is in this capacity as a draftsman, that Brother Roemheld would be able to use the skills he learned in college at Rensselaer. As you can see from the photos at right, there was ample opportunity to wield artistic license to make what some regarded as “ugly structures” into a slightly more elegant edifice.

Later, in his own company, he continued the use of his skills in designing symbols to be used in Chicago’s bridgework, most notably, what became known as the “Chicago Municipal Device.” This was a symbol that was derived from a contest in the Chicago Tribune in 1892 and he adopted it in several of the later bridges he designed in the Chicago area. The symbol is a depiction of the merger of the three branches of the Chicago river.



*Above, two views of a typical Chicago Bridge viaduct in 1888, note that this structure is completely separate and before the connection to the actual bridge span. These funneled pedestrians and vehicles in an orderly manner onto the bridge, where policemen were stationed to close the street when the bridge was to be opened. At right, the “municipal device,” an example of the type of ornamentation included on such bridge work. Below, the new bridge, also designed by Roemheld, that replaced the 1888 bridge 18 years later*



*Elevation Drawing of the 1907 Scherzer rolling-lift bridge at N. Dearborn St. (Courtesy of CDOT, Division of Engineering)*

The Memorial Endowment Fund  
**The Chi Phi Fraternity**

The Memorial Endowment Fund Committee  
DANIEL D. CRAFT, Chairman, 40 North Dearborn Street, Chicago, Ill.  
MATTHEW D. BELLEY, Grand Delta, 1014 North 84th Street, Philadelphia, Pa.

*Great Lakes  
Dredge & Dock Co.*

Mr. Jules F. Roemheld, *Theta '88*  
Chicago, Ill.

July 16, 1923

My Dear Brother Roemheld:

Some time ago I received a request from Dr. Theodore B. Appel, the Historian and Keeper of the Archives of the Fraternity, in which he asked me to investigate for him and acquire all the facts possible with reference to a tale that has been going the rounds for these many years.

The story is this, that back in the '90s one of the bridges spanning the Chicago River had worked into the ornamental iron work the monogram Chi Phi, thru the ingenuity of one of our members who was at that time in the bridge engineering game here in Chicago.

If I am correct in my belief, you were in the City of Chicago bridge engineering department at this time and I believe that you had a hand in this.

Will you kindly call on your memory for the facts in this connection and put down on paper as near as you can remember, the circumstances surrounding this episode, telling where the bridge was located, when demolished (if), giving dates if possible, etc. If you should happen to have any photographs they would be deemed interesting and valuable.

Dr. Appel is preparing a history of the Fraternity and is constantly on the lookout for items of historical interest such as this one.

Will you kindly do the needful and send it to me at your earliest convenience.

With best regards, I am,

Yours in Chi Phi

*Daniel D. Craft*

*Dr. Appel*

*This letter & the reply attached hereto are sent you in response to your request for information some months ago. If you want more details you can probably get it direct. This might be good for a writeup in the Chronicle. Iowan Chi Phi.*

**Above, Daniel Craft's letter to Brother Roemheld at the behest of Theodore Appel in his preparation for the Chronicles of Chi Phi;**

[Reply to July 16, 1923 inquiry regarding the Chi Phi Bridge]

July 20, 1923

Daniel "Dusty" Craft, Chi 1910 (Dartmouth)  
40 North Dearborn St  
Chicago, Ill

Dear Brother Craft,

Answering yours of the 16<sup>th</sup> re: Chi Phi monogram on one of the City Bridges - am glad to say that "I'm the Guy" and it was like this:

I was fresh out of college and got my first job as a bridge draftsman in the Chicago Bridge Department. In detailing one of the designs, in my enthusiasm for Chi Phi, I succeeded in entwining our emblem as part of the ornamental scroll ironwork of the portals of the Dearborn Street viaduct. And "unbeknownst" to the "powers that were" it went through and became a reality.

It was the source of a great gratification to me to pilot my brothers (and others - jealous cats) over to this bridge and show them this "masterwork."

The structure has recently been removed due to changes in terminals etc. I have no pictures but the tale is true and I am delighted that after all these years I am writing you this letter.

Yours in Chi Phi,

Jules E. Roemheld, Theta 1888 (Rensselaer)  
Great Lakes Dredge & Dock Co.  
Chicago, Ill

Due to the aforementioned issues related to the traffic on the Chicago river, the installation of this particular bridge was controversial from the start. This led to a filing of the "1897 Obstruction Report" in June of 1898 to detail the issues at hand for review by the Army Corps of Engineers, which had jurisdiction over the Chicago River.

The issues with the many swinging bridges in such a short span of the river finally drove a redesign of the river crossings to be in harmony with both the land and maritime interests. As a part of that plan to improve the passage of river traffic, our famous bridge was demolished under mandate from the USACE and in 1907 a new bridge of the "Scherzer rolling-lift type" was installed.

Brother Roemheld was very much involved in the design of that type of bridge, and the position he had placed himself after leaving the City employ, provided him with a steady stream of work for the next 20 years.

Due to the original piece in the *Chi Phi Quarterly* in 1889 this interesting story caught the eye of Theodore Appel as he worked diligently in preparing the *Chronicles of Chi Phi* to memorialize the history of our Fraternity. He elicited a Brother in the Chicago area to track down the story, and so we have the original letter to Brother Roemheld asking about his experience as well as his hand-written reply which is transcribed here, explaining the significance of "the Chi Phi Bridge."

**Left, his reply explaining the back story on the Chi Phi Bridge and how it came to be;**

As we look back over 120 years ago we see that our Brothers were always going the extra distance to promote the Fraternity, in many and unusual ways.

There is no doubt that many similar instances of the weaving of Chi Phi into the public exist, yet to be uncovered in the near future. Some of them subtle and some of them overt, but each of them finds a special place in the heart of our Brothers as they revel in the awe of our fraternity and reflect on the Scarlet and the Blue.

The spirit of Brother Roemheld lives on in the incorporation of the Chi Phi monogram into architectural aspects of buildings. At left, the Chi Phi Monogram is incorporated into the deck railing of the author's vacation home in Savannah, GA



### **References Used**

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Letters and Documents from the Archives of Chi Phi

Encyclopedia of Chicago, City of Bridges

Chicago Tribune Editorial 02-15-1880 on the Dearborn Street Bridge

Chicago Loop Bridges – The Dearborn Street Bridge at 50

1887 Annual Report, Chicago Department of Public Works

Historic Bridges.org; Division Street North Branch Canal Bridge

National Park Service Historic Engineering Record: Chicago Bridges Recording Project

Who's Who in Engineering, 1922-1923

The Chi Phi Chronicles

The Chi Phi Centennial Memorial Volume