Regional Planning Studio
HSPV/LARP

Stephen Curtis
May 2, 2001

DEAD SPACE:
Defining the New Orleans Creole Cemetery
St. Louis I Cemetery, 1789

New Orleans Cemetery Metalwork History and Technology

There are three types of metalwork based on materials and means of manufacture represented in the decorative metalwork in the New Orleans Cemeteries.

. Forged Wrought Iron
. Transitional Fabricated Metalwork
. Cast Iron

Forged Wrought Iron

Wrought iron is a metal composed of pure iron and iron silicate, referred to as "slag". These two components exist together in a purely physical relationship as compared to metal alloys that bond chemically. This unique composition and fibrous or grainy structure it acquires when worked, imparts valuable characteristics to the metal for application in decorative architectural detail. It is very malleable when heated and easy to work, but also retains an unusual toughness and resistance to fatigue. These qualities along with its great resistance to corrosion, its high ability to retain protective coatings and machinability, has for many centuries made it the material of choice for fine exterior decorative metalwork.[1]

In this report, a deliberate differentiation is made between the material that is "wrought iron" and its traditional method of working or hot forging and the popular indiscriminate reference to "wrought iron" as a type of decorative work in metal, without particular reference to the material and means of working. This distinction is particularly important to make because of the unique qualities of the material and the high level of skill required to take advantage of its assets. The popular understanding of the term "wrought iron" is an abstraction based on a distorted understanding of methods and materials, which invariably leads to inappropriate and destructive interventions.

The earliest metalworking technology originally brought by the French with the founding of New Orleans in 1718 by Jean Baptiste LeMoyne, Sieur de Bienville was the hand forging of wrought iron. Forging, or the forming of heated wrought iron with hammer and anvil was used to produce the first ironwork in the St. Louis I Cemetery, mostly surviving in the form of simple crosses. It involved the change in the section of the wrought iron bar stock and the use of other age-old blacksmithing techniques such as hot splitting, swaging and forge welding. Forged wrought iron work was produced on a small scale, involving seldom more than two at a time sharing one forge. It is generally distinguished by fine, crisp lines and edges, as compared to the often more ornate, but less refined cast iron production.

---

[1] James Aston, *Wrought Iron: Its Manufacture, Characteristics and Applications*, Pittsburgh, PA: A. M. Byers Company, 3rd Edit, 1941, p. 1

Starting with the Renaissance, additional fine hand wrought detail in sheet metal was often included in high style work using repoussage techniques developed in France. This provided fluid three-dimensional shapes of mostly organic subject matter such as leaves and flowers. Little of this, however, was ever executed and even less survived in the humid New Orleans climate. What has survived is the product of later technologies, small decorative cast iron and subsequent cast zinc elements, starting in the 1850s, replacing the more highly skilled and labor-intensive work in sheet metal. Because of its thin section and tendency to trap water, sheet metal was more prone to corrosion than zinc.

Transitional Fabricated Metalwork

Iron deposits were discovered in the early days of French colonial occupation of Louisiana. However, it wasn't until the late 18th century with the English invention of the "Dry Puddling" process for the production of wrought iron[2] that significant wrought iron production got under way in Pennsylvania. New Orleans was seen as a viable market for the raw material, shipped down the Ohio and Mississippi on floating vessels of all kinds.[3] Some limited wrought iron and cast iron production started in New Orleans around the turn of the 18th century, but much was also being imported from England and later from Sweden and other domestic sources as early as 1806 as raw material and finished products.[4]

Local climatic factors and changing technology and taste brought on a transitional period in metalwork in the early cemeteries of New Orleans, which combined traditional methods and materials with new ones to produce a distinctive hybrid of expression in metal.

Certain small decorative cast iron elements found their way into the designs of the cemetery work by the 1830s[5]. These were mostly supplanted in the 1850s with finer detailed and less expensive decorative zinc elements, cast separately or often directly on a wrought iron structure and then attached to a fabricated wrought iron frame. In one popular design, zinc rosettes were cast directly onto a fabric of wrought iron doubling as clamps holding the fabric together.[6] This transitional period of expression in metal saw the slow demise of hand forging. Wrought iron bar stock was available in most any dimension and was increasingly being used "as-is" without change in section. The stock was given form with the use of jigs and all the parts put together or fabricated with traditional assemblages often mimicking those used in woodwork, such as the dovetail and mortise and tenon.

---

[2] Aston, p. 11
[3] Marcus Christian, *Negro Ironworkers of Louisiana, 1718-1900*, Gretna, LA: Pelican Publishing Co. 1972, p. 10
[4] Mary Louise Christovich, "Cemetery Ironwork", in *New Orleans Architecture: The Cemeteries*, Vol. III, (Gretna, LA: Pelican Publishing Co., 1997), p.141
[5] Ann Masson and Lydia H. Schmaltz, *Cast Iron and the Iron City*, New Orleans: The Louisiana Landmarks Society, 1995, p. 3
[6] See survey of the Bergamini Tomb, #012

Cast Iron

Cast iron describes a number of alloys of iron, carbon and silicon, with a carbon content exceeding 1.7% and commonly as high as 3.75%.[7] The most common type and the one used for the casting of decorative elements is gray cast iron. It has a crystalline grain structure with graphite flakes distributed throughout making the metal very brittle.[8] It has been favored for its strength in compression and machinability because of its graphite content when cooled slowly.[9]

The term "cast iron" also describes a manufactured product, which entails a manufacturing process. It is a much less direct forming of material involving more people with a wider number of skills. The production of cast iron requires the whole retinue of a foundry: the designers, wood carvers and pattern makers responsible for making shapes in wood for the mold making process, the founders, who melt and pour and finally the finishers to clean up the rough castings. It is an energy intensive technology, demanding the transport of heavy pig iron and large amounts of fuel required to bring the iron to a molten state for pouring into molds.

Small elements in cast iron had been used in France since the end of the 18th century.[10] Starting in the 1850s wholly cast panels were taking the place of the fabricated work, first mounted in wrought iron frames and then as the technology became more sophisticated in the 1870s and 80s, completely cast systems including posts and gate doors became very popular. Their intricate patterns and machined assemblages would come to dominate the metalwork in the cemetery out pricing the more labor-intensive traditional metalwork.

Cast versus Wrought

Forged wrought iron required a high level of design sense by the craftsman himself and could offer finer, more elegant designs in a material that was tougher and more resistant to corrosion. The forged texture of wrought iron imbues the metal with life by causing a play of light along its subtly modeled surfaces, subconsciously reminding the viewer of the direct personal touch of the artist blacksmith as he shaped the material in its heated plastic state. The ability of wrought iron to be welded at the forge imparted a greater fluidity to the design by fusing connections rather than interposing mechanical assemblages that interrupted the flow. It also gave the work a much greater strength than a design reliant on precarious multiple attachments by rivet, pins or screws.[11] It was the much greater amount of labor and skill required to work wrought iron into traditional forms that eventually priced forged wrought iron out of the market.

---

[7] Arthur M. Schrager, *Elemental Metallurgy and Metallography*, 3rd Edit., NY: Dover Publications, Inc., 1969, p. 56

[8] Oswald A. Ludwig and Willard J. McCarthy, *Metalwork: Technology and Practice*, Bloomington, IL: McKnight & McKnight Publishing Co., 1969, p. 134

[9] Schrager, p. 60

[10] Philippe Faure, *La Ferronnerie d'Art dans l' Architecture des Origines a Nos Jours : 1792-1895, Tome 3*, Dijon: Centre Régional de Documentation Pédagogique de l'Académie de Dijon, 1980, p. 3

[11] Lucien Magne, *Décor du Métal : Le Fer*, Paris : Librairie Renouard, H. Laurens, Editeur, 1914, p. 128

Since the casting existed primarily as a more cost effective technology of production, labor intensive finishing was mostly kept to a minimum. Cast iron can easily be drilled, tapped and threaded for assembly. The level of detail it allowed was a factor of the combined skill of the designers, the pattern makers and finishers. The high carbon content in cast iron makes it brittle and causes it to corrode more readily. The development of effective protective paints, however, greatly helped to control the corrosion associated with cast iron and along with the economies of large-scale production, it came to dominate the industry. The architectural metal work for which New Orleans is now famous is predominantly cast iron.

These two methods of manufacture were often combined in high style work, especially toward the end of the 19th century; to take advantage of the qualities each had to offer. Certain shapes and detail are produced more economically by casting and in the hands of a skilled craftsman can be finished to a degree that complements the innately finer wrought iron work.

In addition to this work in iron, was the much less prevalent and much more expensive foundry work in bronze, a material that not only produced cleaner, finer and more durable castings, but warranted the extra labor required in finishing, including filing, chasing and polishing. The application of this work came later and is found in the newer cemeteries in New Orleans.

History

The construction of St. Louis I Cemetery was authorized by Royal decree in August of 1789. By 1840 part of the cemetery had been reduced in size to make way for the extension of Tremé Street, which became Basin Street.[12] What remains is the oldest of the New Orleans cemeteries, tombs and metalwork. According to Mary Louise Christovich in her article on New Orleans cemetery ironwork, there is little available information that links either designers or fabricators to specific cemetery ironwork before the end of the 19th century when manufacturers of cast iron enclosures took to either casting in their names or attaching nameplates to their production.[13]

The names of three blacksmiths, all French, were recorded in a census as early as 1726. By 1805, in the Flannery Census, there were four blacksmiths recorded:
William Malus, Jaque Rouly, Pierre Hurteebise and Joachim Courcelle. They were already reflecting a wider ethnicity following the possession of New Orleans by the United States in December of 1803.[14] The St. Louis I Cemetery had been in operation for sixteen years and while there is no proof as yet, these smiths and their immediate predecessors could logically have been responsible for the cemetery ironwork. The first city directory of 1807 published by ironmaster Barthelemy Lafon, again lists William Malus, and the anglicized spellings of “Rouli” and “Urtubuise” with the addition of two

[12] Leonard V. Huber, “New Orleans Cemeteries: A Brief History”, in *New Orleans Architecture: The Cemeteries*, Vol. III, (Gretna, LA: Pelican Publishing Co., 1997), p. 7
[13] Mary Louise Christovich, “Cemetery Ironwork”, in *New Orleans Architecture: The Cemeteries*, Vol. III, (Gretna, LA: Pelican Publishing Co., 1997), p. 139
[14] Juan B. Garvey and Mary Lou Widmer, *Beautiful Crescent: a History of New Orleans*, (New Orleans: Garmer Press, Inc., 9th Ed.), 1998, p. 59

more smiths, Jean Baptiste Wiltz and Devault. The New Orleans Directory of 1822 identifies 32 blacksmiths, again including an A. Malus and Pierre Urtubise along with five newly established foundries.[15] Etienne Courcelle carried the Joachim family's iron business into the 20th century.

Marcus Christian, in his book *Negro Ironworkers of Louisiana, 1718-1900*, documents the extensive participation of slaves and free men of color in the iron working industry in New Orleans. During the French occupation of Louisiana, one documented request from the director of a colony at Natchez in 1762 appealed to France for ironworkers willing to teach their trade to the Negroes.[16] Throughout the French period in New Orleans there existed a system of apprenticeship of slaves in all trades including ironwork. The value of a slave was greatly increased for sale or for hire if he was skilled in a trade.[17]

By 1788 over half the population was non-white; 1,700 persons of color, 21,500 slaves versus 19,500 whites.[18] Blacksmithing or foundry work in a semi-tropical climate must have been particularly brutal for most of the year especially for those of European stock and much of this work, historically fell to the lower classes and those with a higher resistance to extreme heat. Toussaint l'Ouverture led his uprising against the French plantation owners in Saint Domingue in 1791. By 1804, dispossessed French as well as "gens de couleur libres" were coming to New Orleans in large numbers.[19] Many of the free men of color were skilled artisans, but slaves trained as blacksmiths were also brought over by their masters.

The training these men would have received in the 18th century was from French, then Spanish masters, but one wonders, with the strong tradition of metal working in Africa, what influences may have survived the various moves to which African slaves were subjected. The region in Angola from which many slaves were sent to Louisiana had a long history of ironwork documented by the Portuguese as early as the 15th century.[20] Certain traditional designs may have survived in their work, as they did in quilt work by slave women. Because of the dominance of the European traditions, African influences in America in blacksmithing techniques may be more difficult to trace, though these influences may have been stronger in New Orleans given the greater freedom afforded people of color compared to other areas of the country.

During the Spanish occupation from February 1763 to November of 1803, one blacksmith stands out due to his outstanding work, the Spanish ironworker from the Canary Islands, Marcellino Hernandez. While the Spanish Crown starting in 1777

---

[15] Mary Louise Christovich, "Cemetery Ironwork", in *New Orleans Architecture: The Cemeteries*, Vol. III, (Gretna, LA: Pelican Publishing Co., 1997), p. 140, Note: It is not clear here whether these were iron or brass foundries.
[16] Marcus Christian, *Negro Ironworkers of Louisiana, 1718-1900*, Gretna, LA: Pelican Publishing Co. 1972, p. 14
[17] Christian, pp. 14-15
[18] Juan B. Garvey and Mary Lou Widmer, *Beautiful Crescent: a History of New Orleans*, (New Orleans: Garmer Press, Inc., 9th Ed.), 1998, p. 51
[19] Garvey, p. 55
[20] Christian, p. 13

recruited soldiers and their families from the Canary Islands to help populate and shore up their foothold in Louisiana,[21] Marcellino Hernandez was probably recruited exclusively for his highly valued skills in metalwork, a long-standing tradition of the islands. Work that is clearly attributable to him are the railings of the Cabildo executed in 1795 soon after his arrival and those of the Petit Théâtre du Vieux Carré and those now located at the Correjoles House, (having been moved there), at 715 Governor Nicholls Street. [22] Hernandez left New Orleans near the end of the Spanish period in 1803, but was around long enough to have left a much greater legacy in ironwork in New Orleans. Since the St. Louis I Cemetery was established before his coming, it is reasonable to suppose that he may have also authored some of the ironwork in the cemetery. A careful study of the designs and manufacture so far has not revealed an influence of his, much less a direct authorship. Any work of his in the cemetery may have been lost when the oldest part of the cemetery was obliterated with the construction of Basin Street.

The destruction wrought by two devastating fires in New Orleans, one in 1788 and the other in 1794, must have wiped out a large percentage of the wrought iron work present in the Vieux Carré up until that time. While some wrought iron work may have survived or been recycled, new building ordinances encouraged a new architectural style with more Spanish-American features including heavy wrought iron hardware, gratings and balconies on two and three story brick dwellings.[23] This must have been the heyday of work in wrought iron in New Orleans, a period of about fifty years, until cast iron came to replace it starting in earnest in the mid-19th century.

The early 19th century brought a large immigrant population of Germans and Irish. The Germans in particular had a strong tradition in ironwork and were leaders in the manufacture of cast iron. The Irish were willing to work at the most difficult jobs coming from mostly destitute economic backgrounds. Both must have had a serious impact on the labor market and the dominance in the trade up to that time of peoples of African descent.[24]

The very first foundry in New Orleans started in 1823 as the C. C. Whiteman & Co., but was soon bought out by Jedediah Leeds,[25] with it becoming the Leeds Iron Foundry, by 1825.[26] Foundries set up business primarily to meet the need for machinery for the sugar industry, but branched out into other production to fill down time. It was by the 1850s that architectural cast iron really became popular. The market was satisfied with local production, but also largely with shipments from the North, such as from the Philadelphia foundry Wood & Perot and imports from abroad. The Civil War forced a conversion to wartime production, with some foundry going out of business after and others resuming, but under stiff market conditions. There was a great choice of designs

[21] Gilbert C. Din, *The Canary Islanders of Louisiana*, Baton Rouge, LA: Louisiana State University Press, 1988, pp. 15-17
[22] Christovich, p. 139
[23] Juan B. Garvey and Mary Lou Widmer, *Beautiful Crescent: a History of New Orleans*, (New Orleans: Garmer Press, Inc., 9th Ed.), 1998, p. 50-51
[24] Christovich, p. 140
[25] Christovich, p. 140
[26] Masson, p.3

available to clients in the late 19th century, which could be ordered through local ornamental ironwork shops that would take care of the fabrication, assembly and installation.

Influences

The cemetery was established during Spanish rule. The Spanish influence in tomb design can be seen in the use of stacked vaults, which are Spanish in origin. Yet during the Spanish occupation and even later, French stylistic influences, based on classical references persisted and are prominent in the details of the tomb design. These are also present in the metalwork. The French architect J. N. de Pouilly arrived in New Orleans in 1833 with Beaux-Arts schooling and a book of his sketches of all the latest fashions in tomb design from the Père Lachaise in Paris.[27] During his forty-two years of practice in New Orleans, he seems to have single handedly sustained a dominance of French stylistic influence in the city's cemetery architecture. The tombs he was able to have built were predominantly classical in design, a good example of which is the McCall tomb in St. Louis I Cemetery presumably along with its accompanying full metal enclosure. This is the closest anyone has come so far in identifying the designer of specific metalwork in the cemetery.

More research is needed to establish the provenience of the metalwork. After 1803, with the American take over, Anglo-American ways gradually infiltrated the local architecture and there was also a massive influx of goods from the North also influencing metalwork design. However, goods were coming in from all over and what remains to be clarified is which were of European, French, English, Scottish, Swedish and German origin, which were coming down the Mississippi and which were of local production. Catalogs, or pattern books, if they still exist, could help identify the source of cast iron and other ready-made ironwork, such as the ubiquitous fabricated partial enclosures with cast zinc detail.

Other contributions to the design and construction of metalwork in New Orleans that are even less understood are those from the craftsmen of African origin, freemen and slaves and from the later immigrants, primarily Italian and Irish, those groups sharing a Catholic heritage. While there is a preponderance of French names on the tablets in the cemetery, Spanish, English, Irish and Italian names also figure on the rolls and are a constant reminder of the very rich and diversified heritage of New Orleans, making the task for the researcher that much more complex.

[27] Christovich, p. 135

Sanborn Maps for New Orleans

The earliest two sets of Sanborn maps available for study are the 1885 and 1896 maps. Listed below are the metalworking businesses within a one to four block area of the cemetery during those years. As was the case with the stone industry, it is conceivable that metalworking businesses closest to cemeteries, both St. Louis I & II, could have specialized in cemetery work. The city directories and any other directories available since the opening of the cemeteries might reveal earlier names, which could then be corroborated with other evidence for determining who was making the metalwork.

1885	**# Blocks to cemetery**	**Business**
126 Basin St.	1	Blacksmith
273 St. Louis St.	3.5	St. Louis St. Foundry, Thos. Killeen, bet. Clairborn & Robertson
263 St. Louis St.	3	Blacksmith and wagon shop
86 Basin St.	0	Blacksmith and T.E. McCarthy Carriage Fac. (Note: These establishments were across from the cemetery and were between two marble yards)
154 Toulouse St.	2.5	Blacksmith, bet. N. Rampart & Burgundy
134 N. Rampart St.	2	Blacksmith works “Forbes”, bet. Toulouse & St. Peter
138 N. Rampart St.	2.5	B. Smith next to J. Massey wagon factory bet. Toulouse & St. Peter
135 N. Rampart St.	2	B. Smith, bet. Toulouse & St. Peter
143 Burgundy St.	3.5	B. Smith wheelwright, bet. Toulouse & St. Peter
1896		
428 N. Basin St.	0 (across)	Bl. Sm. Bet. St. Louis and Conti, (Note: this is the same location as 86 Basin in 1885 map, the new map was redrawn and the buildings renumbered).
1605 St. Louis St.		(Old) Bl. Sm. & Wagon shop, bet. Robertson & Claiborne, across from St. Louis II
522 Marais St.	2	Bl. Sm., bet. St. Louis & Toulouse
407 Marais St.	1	Tin shop, bet. Conti & St. Louis