Henri Labrouste and Civic Ornament: The Urbanity of the Bibliothèque Ste-Geneviève

MARY MCAULIFFE
University of Michigan

INTRODUCTION

Henri Labrouste's first building, the Bibliothèque Ste-Geneviève (1838-48) is also known as the first major civic building in France to employ exposed iron structural members. This paper sets out to examine the library, and most particularly the interior of the large second-floor reading room, in the context of urban developments in Paris during the 1840's and 1850's. More particularly, I seek to trace some of the contemporary connections between the material iron and the ideal of urbanity. These links are visible, I will argue, in the renovation of codes of civic ornamentation through new materials, most particularly in the design of modest amenities such as street furniture. In beginning to reconstruct the complex urban and architectural coding of the material iron at the time of the library's construction, I have focussed on the Labrouste's early professional practice during the 1830's.

Labrouste was commissioned to design the library in 1838. His earliest sketches show rapid progress towards the final *parti*: a large unified reading room bisected by a spine of iron columns, and supported by a floor of closed stacks at street level. This unusual *parti* has been convincingly related by Neil Levine to Labrouste's student restoration of the *portique* at Paestum almost a decade earlier.[1] By Levine's account, the bisected *portique*, open to the air, acts as the secular culmination of Labrouste's evolutionary narrative, tracing the adaptation by Italian colonists of the Greek temple type to local materials and circumstances. However, a comparison between Labrouste's sectional perspective of his restored interior at Paestum and earliest sections of the library reminds us that despite similar plan morphologies, an extensive transformation has taken place in section: from stone and wooden truss construction to stone and iron, and from trabeated to arcuated forms. By the time his design drawings were approved by the *Conseil des Batiments Civils* in 1843, we can see that the final configuration of the library section is in place - the barrel vaults framed in cast iron arches supported by cast iron columns in the propped double-cantilever arrangement which so impressed Sigfried Giedion.[2] How had Labrouste come to an understanding of the material iron that would inform his first major design? To understanding something of his approach, we must trace his architectural experience during the decade or more between his student experience at the *Ecole des Beaux-Arts* and his finalization of the design strategy for the *bibliothéque*.

THE 1830'S: TWO PERCEPTIONS OF IRON

The 1830's have tended to be regarded by Labrouste's biographers as "wilderness years" during which, as a penalty for the controversies of his student career, use of his undoubted talents within the official cultural apparatus of the French state was delayed. Labrouste's early professional years have been described by commentators such as Henri Delaborde as devoted to "ephemeral decoration" and the "modest functions" of an inspector of construction.[3] Léon Malcotte, in seeming agreement, describes Labrouste's involvement during this period in "inferior work" or "speculative studies."[4] However, although his progress towards a prestigious state commission may have been a little more leisurely than that of his colleagues, Duban, Duc, and Vaudoyer, clearly the broad profile of his activities during these years did not differ fundamentally from theirs. All four participated in an architectural apprenticeship to the building program of the French state. This organized training included an appointment as *inspecteur* of construction on a major building project, and the design of at least one of the annual Parisian festivals, given new impetus under the government of the July monarchy. These two contexts offered Labrouste widely divergent opportunities to encounter the material iron he was to use so prominently later.

Labrouste's responsibilities as *inspecteur* were carried out during the construction of the new building for the *Ecole des Beaux-Arts*, designed by his friend Felix Duban between 1832 and 1838. Here he was afforded the opportunity of expanding the lessons in construction materials and methods offered by his *Ecole* teacher J.-B. Rondelet, with the experience of current French practice in the structural use of iron for large public buildings. The use of iron in framing flooring and roofing systems of many building types had been commonplace for some time, and its advantages in terms of structural efficiency and fire prevention well understood by the early years of the nineteenth century. Rondelet's treatise (1802-3) had included a comprehensive treatment of iron and wooden roof trusses.[5] The French use of iron trusses in large spans back to the work of Victor Louis at the*Théatre Francais* (1786) and F.-J. Bélanger's dome at the *Halle au Blé* (1808-13). However, in the former building of cultural import, the supporting members were covered, whereas in the latter monumental but utilitarian exchange building, they were exposed. This tradition maintained its hold for many decades, as we can see in the encased iron roof construction of Duban's lecture hall for the Ecole des Beaux-Arts, supervised by Labrouste. The young architect's first encounter with structural iron in the course of his duties as *inspecteur* was of a very different order from the contemporary wood-and-iron combination trusses of engineers such as Polonceau, for example.

Different again was the contemporary tradition of employing iron in Parisian streets, relevant to another part of Labrouste's official duties: his role as a festival designer and urban *ornamentiste*. Between 1836 and 1839 Labrouste came to the aid of his brother Théodore in designing ornamentation for the Perronet's Pont de la Concorde, including gas lamps of a cast iron base and bronze lanterns (designed using antique candelabra as models) and cast iron

kerb edges. Many variations of these lamps were developed, involving the resolution within the base of the lamp of both admission for the gas pipe feeder and structural fixing to the existing stone bridge. Labrouste designed gilded cast-iron ornaments of floral and shield motifs (ultimately rejected for reasons of cost), which were to be fixed to the side of the bridge with hooks or cramps, without major cutting of the stone. This prohibition on structurally modifying the bridge in any way reminds us of the rigid demarcation between professional territories mandated by the authorities — one in which the architect's role as civic *ornementiste*, adding 'minor' infrastructural amenity to that of bridges and roads,was clearly defined.

URBAN FESTIVALS 1800-1840

The importance of the tradition of ceremonial festivals which had been revived and renewed following the French Revolution cannot be underestimated when in a discussion of Parisian urban improvements during the July Monarchy.[6] Combining elements from earlier religious *fêtes*, nineteenth-century festival culture acted as an officially-sanctioned apparatus of re-education and as a site for the transmission of a new culture. The principal orchestrators of the early post-revolutionary *fêtes* included the painter David and the sculptor Quatremère de Quincy. Employing symbols primarily drawn from ancient Rome, temporary festival structures consisted of outdoor ephemeral free-standing monuments such as columns, obelisks, statues and triumphal arches, constructed in light, temporary materials. These temporary structures provided a re-interpretation of the city and orchestrated the movements of the civic parades included in festival celebrations. Permanent public monuments and markers on parade routes were often extended with ceremonial tents fashioned from rude wood *charpenterie* and covered in fabric. Large gathering-spaces for the citizenry, modelled on antique sports or entertainment types such as the amphitheater, circus, or theater, often acted as the termination of parades and housed a patriotic altar as a center of national ceremonies.

This tradition evolved continuously during Napoleon's reign in the work of Percier and Fontaine, whose work exhibits the common motif of the framed tent, both in temporary festival structures, and in the iconography of their interiors. By now the invisible *charpenterie* under the fabric was given visible support by a framework of thin spears, fasces, flag-poles, or antique columns (the meaning of the word *charpenterie* itself had been extended to including iron framing techniques) in order to reinforce the aspect of military celebration which attended such occasions during the Napoleonic era. This iconographic tradition continued in the festival design work of famed polychromist, architect Jacques-Ignace Hittorff, a pupil of Percier appointed with Lecointe as architect in charge of restoration *fêtes* from 1818 to 1830.

Following the inauguration of the July Monarchy, the temporary ceremony and splendid lighting displays of festival culture began to become integrated with symbols of urban benevolence, involving more permanent phased improvement in lighting and hygiene. Hittorff's public improvements to the *Place de la Concorde* included fountains, columns, railings, and candelabra or *torchères* in the form of slender antique columns. The renovated public square was finally opened to the public during the *Fête de Juillet* of 1838. The square's new civic furniture, although originally conceived in bronze, was eventually fabricated in cast-iron due to its economical cost, covered with an experimental application of bronze paint or "florentining." Hittorff clearly understood the relationship between a more permanent civic ornament and the ephemerality of the festival: much of his early archeological research into polychromy was directed towards the role played by temporary ceremonial celebration in the evolution of more enduring systems of architectural ornament:

> It can no longer be doubted that these transitory festive appurtenances, born thus from inspiration, were the beginning of permanent decoration, which was then carried over to religious monuments and public buildings.[7]

During the 1830's the design of festivals was awarded to a series of different architects, and the position of architect or *inspecteur of fêtes* came to display the talents of recently-returned Rome prize-winners, including Labrouste and his colleagues Duc, Duban and Vaudoyer. Spurred by overtly propagandist role given to the romantic artist by the Saint-Simonists, all four took up this charge with enthusiasm, leaving perhaps the most important permanent monument of this activity in Louis Duc's iron *Colonne de Juillet*, completed in 1834. The control of public spectacle demanded by these official duties was anticipated by the particular kind of civic structures chosen by Labrouste and his contemporaries for study during their student years in Rome: Duc had completed a restoration of the Colosseum for his fourth year *envoi*, while Vaudoyer had studied the urban variation of triumphal arches and city gates. Labrouste himself had studied Trajan's column and the Theater of Marcellus during his early years as a *pensionnaire*. These free-standing columns, triumphal arches and theaters were all urban types recreated temporarily by festival culture, and, in the case of triumphal arches especially, were understood to have originated as temporary ceremonial constructions.

LABROUSTE'S CÉRÉMONIE OF 1840

When Labrouste worked on his ornamental projects during the 1830's the presence of this tradition, of which the erection of Hittorff's adjacent project on the *Place de la Concorde* was but one example, would have been clear to him. (Indeed, a long series of decorative precedents for his own work, completed for the same site, includes work by both Percier and Hittorff.) And when Labrouste's own labors on the bridge finally came to some sort of fruition in 1840, it was in the context of a ceremony for the return of Napoleon's ashes to Paris. The bridge lay on the itinerary of the ceremonial parade, and in that year, Labrouste was appointed with Visconti as co-organizer of the civic parade preceding the installation of the ashes at the *Invalides*, and was ultimately awarded the *Légion-d'Honneur* for his work. A prototypical plaster model of the final lamp standard was produced in February 1840, and 28 candelabras, cast by *atelier* Muel, were finally erected on site at the end of the same year. This was a highly edited and modest realization of Labrouste's many previous proposals, various versions of which had included funerary chimneys, columns and statues, all in cast-iron. As part of the urban composition of the parade, they took their place among his other designs - for the funeral chariot, boat (*catafalque*), the decoration of the *Champs-Elysée*, and the *cour d'honneur* and *dais* at the entrance to the *Invalides*. César Daly in his review of the parade complimented the organizers' inclusion of sculpture in the *fête* ceremony, allowing the occasion to provide employment to artists in addition to the usual " tapisseurs, doreurs et charpentiers."[8] The funeral chariot was surmounted by a bronze shield supporting the coffin, held aloft by maidens, and surrounded by fabric and garlands. The *dais*, a tent of black silver-bordered fabric studded with gilded bees, was supported by spears, and two antique funerary chimneys (reminscent of earlier unbuilt designs for more elaborate versions of the bridge candelabra) formed a portal emitting blue smoke visible to the crowd. Labrouste's elevation drawings show the nature of these structures, leaning on the *grillage* of the *Invalides*, with an invisible *charpenterie* of wood and a visible one of cast-iron vertical 'spears' over which the fabric was draped.

This period of *colifichets* and *ephemera* was a formative one for Labrouste: the fabrication of these experimental protypes took place in the years between 1838 and 1840, during the crucial early stages of the design of his first major public commission, the Bibliothèque Sainte-Geneviève. Working with what Daly termed "the latest in urban furniture" Labrouste gained important experience here in the

cast-iron fabrication of free-standing elements of urban decor. Daly, reporting on the ceremonies for the *Revue Générale*, cited Labrouste's adept manipulation of the mechanisms of theatricality in his design of the ceremony.[9] In addition to extending his study of Roman urban types, the ephemerality of the *fête* also forms the context for Labrouste's initial practice as a "stage-designer" of festival and street furniture, and for his first experiments as an independent architectural fabricator. Although allegedly wishing to free his students "from the livery of Percier's art," Labrouste's decorative program here shows many similarities to the tradition of festival ornament, including that of Percier and Fontaine.[10] His dependent structures are made of wood, fabric and cast-iron: the last in particular now operating in the context of a more permanent civic ornament: the cast-iron totemic amenities of the Parisian street.

IRON AND THE READING ROOM

In Labrouste drawing of the library's reading room section, approved in 1843, we see, on either side of the central line of columns and joined to them by lacy ornamented cast-iron brackets, two pitched ceilings supporting a truss which completes the external roof profile. A.L. Roussel and (more significantly) his partner Francois Calla (perhaps the most well-known manufacturer of ornamental cast-iron at the time) were appointed fabricators of the library's ironwork in 1846. Between 1846 and 1848 Calla worked with Labrouste to extend the arched brackets to full arched spanning members with top and bottom chords joined by cast-iron ornament. Over the visible framwork of cast iron, a vaulted lattice of wrought-iron rafters, purlins and struts, hidden in the roof cavity, supported the the pitched roof covering itself, which was made of zinc. From the outset, Labrouste had used the separate traditions of using iron with which he was familiar — standard unseen sections, and visible ornamented cast iron — integrating them into a mutually supportive structure. The invisible but extensive latticework of the ceiling assists in imparting rigidity and lightness to the visible arched members, and gives the structure the balance and lack of thrust on the outside walls which Giedion so admired.

Calla, who had taken over his father's well-known iron business in 1835, shared Labrouste's interest in and experience with cast-iron street furniture. During the early years of his leadership, his firm had collaborated with several architects on projects of urban importance, including Hittorff's fountains and rostral lamps of the *Place de la Concorde*. At the time of his involvement with the design of the Bibliothèque Ste-Geneviève, his work had been prominently illustrated as the foremost contemporary example of ornamental ironwork in Charles Eck's celebrated survey of the use of iron and ceramic materials in contemporary French construction, *Traité de construction en poteries et fer à l'usage des batiments civils, industriels et militaires*, published in 1836.[11] Devoting one section of his text to new urban works and Hittorff's recent project in particular, Eck commented on the fortuitous conjunction of the expanding system of Parisian gas lighting and cast iron,"in which cast-iron candelabras played a necessary and picturesque role."[12] Here he gave Calla's firm full credit, recounting a visit to his factory where he was impressed not just with the imposing nature of the iron pieces it contained, but with their artistic and ornamental qualities. Eck's list of the pieces he had seen in production in Calla's foundry included huge antique statues, architectural fragments, candelabras and moldings of all kinds, all presented as examples of the artistic potential of new materials and methods of construction.

The range of scale and applications noted by Eck in his visit to Calla's factory is in many ways a function of the peculiar position of the material cast-iron at the time, surprising, perhaps, to a twentieth-century observer conditioned by the typology of rolled steel sections and clear distinctions between the structural and ornamental use of metal. During the early nineteenth century the industry of casting did not discriminate in a major way between iron and bronze, for instance, or between the "sculpture" of a statue, column, railing, or fountain and the "structure" of a column or beam. Hittorff used cast iron as an economical alternative to bronze in his public works at the *Place de la Concorde*. Calla's entry in the *Dictionnaire de Biographie Francaise* reinforces Eck's observations regarding the range of work in taken on by his firm and conveys this blurring of distinctions between "la fonte d'ornement" and structural applications nicely: included in the firm's productions are pavement edgings, gas lamps, turning platforms for locomotives, urban fountains, locomobiles, machinery, and the *charpenterie* for the Bibliothèque Ste-Geneviève (Calla's first and most prominent building project).[13] The significance during these years of a tradition of iron fabrication emerging from the vernacular cast furniture of chimney, stove, railings, free-standing columns and temporary structures, for the devlopment of constructional ironwork - given that all shared the same process and space of manufacture - should not be underestimated.

With Calla as a collaborator, Labrouste's joined the two separate iron traditions with which he was familiar — invisible spanning standard members and visible ornament — in his structural proposition for the library's reading room. The particular process he employed in this combination lay in the extension of his 'found' freestanding urban column — the candelabra/gas light — to the credible double-cantilever arched vaulted arrangement spanning the room. Here crucial differences of emphasis between architectural and engineering practice are relevant. Whereas engineering thinking often proceeds in a "top-down" direction, considering the structural efficiency and legibility of spanning members, then tracking the gravitational forces exerted by 'floating' horizontal spans to the ground, architecture often works from the ground up: from a columnar standard (visible in the tradition of the orders) and a plan organization to a credible method of spanning that would seem improvized to the structural specialist. The process undertaken by Labrouste in extending his experience with the urban column to the span of a public interior recapitulates the methodology of his archeological training, where the proposal of a hypothetical roof structure from an analysis of columnar fragments formed the usual basis of the restoration of antique monuments. In an exercise which recapitulates the process of 'restoration' he had undertaken at Paestum, as much as the configuration of the *portique* plan, Labrouste extended the repertoire of free-standing urban amenities such as columns and lamps found within in the masonry shell of the city, to the provision of a *couverture* for a monumental and urban(e) public interior.

Therefore the course of Labrouste's design for the reading room ironwork, we see the influence of his previous urban candelabra designs on the cast-iron profile of the central spine columns. The central structural spine was surrounded in early drawings by standard gas lights at the periphery of the room, in front of the bookcases. Placed opposite each main column, and integrated with a surround of cast-iron railings guarding the stacks, these lighting fixtures would have made the connection between the central columns and street lighting very clear. They were later lowered by Labrouste to the main reading level of the room and integrated with the long library tables. The ornamental cast-iron floral arabesques and shields of the *Pont de la Concorde* ornaments now take up residence as a permanent, integrally-cast part of the arches, and its circular shape is echoed in the shield cover-plates over the pin joints at the base of each arch.

CONCLUSION

There is much that remains to be said about the internal ornamental program of ironwork, furniture and painting in the remainder of the library. The role of structure and material in orchestrating the entire experience of passage from the Parisian street (via the arcadian bower of the lobby) up to the urban interior of the reading room, open in the evening and lit (as David van Zanten has reminded us) by the

same gas lighting system employed in exterior open spaces, is crucial. The conciousness of temporal sequence and its performance, applied to both the experience and design of a work of architecture, is a key facet of the work of Labrouste and his colleagues. From their earliest student days, their work shares an interest in the evolution of more permanent artifacts from those of ephemeral ceremony, in the processes by which the rituals of a culture are commemorated in the durability of architectural ornament, and in the development of architectural interiors to shelter formerly temporary or open-air events. It is a particular design orientation, which, as we have seen, was shared by the system of education and culture to which they belonged, and encompassed a particular conjunction of historical and material concerns. Therefore Labrouste's extended study of the *processes* of signification and commemoration was enabled and even encouraged by the duties of his early career. The highly orchestrated sequence of duties assigned to him even seems to present a performance of such processes, as he moved from the design of urban and festival furniture to that of a large building. Iron is completely implicated in this research, and Labrouste's employment of this material in his first building is neither insignificant nor subsumed under the *aegis* of structural rationalism. It is only as deeply implicated in the full range of urban and architectural questions of his time that Labrouste's participation in a "culture of iron" can be fully appreciated.

NOTES

[1] Neil A. Levine, "The Book and the Building: Hugo's Theory of Architecture and Labrouste's Bibliothèque Ste-Geneviève," in *The Beaux-Arts and nineteenth-century French Architecture*, ed. R. Middleton (Cambridge, MA: MIT Press,1982), pp. 138-74. See also Neil A. Levine, "The Romantic Idea of Architectural Legibility: Henri Labrouste and the neo-Grec," in *The Architecture of the Ecole des Beaux-Arts*, ed. A. Drexler (Cambridge, MA: MIT Press,1977), pp. 325-416.

[2] Sigfried Giedion, *Building in France, Building in Iron, Building in Ferro-Concrete* (Santa Monica, CA: The Getty Center, 1995).

[3] Henri Delaborde, "La Vie et les Ouvrages de Henri Labrouste," *Encyclopédie d'Architecture*, 2 série, Vol 7 (1878).

[4] Léon Malcotte, "La Jeunesse d'Henri Labrouste," *La Construction Moderne* 9, Vol 69 (Sept 1953), pp. 326-9.

[5] Jean-Baptiste Rondelet, Traité théorique et pratique de l'art de batir, (Paris: 1802-3).

[6] For analysis of festival culture during the July monarchy, see Chu and Weisenberg, eds., *Visual Culture under the July Monarchy* (Princeton: Princeton University Press, 1994).

[7] Jacques Ignace Hittorff, quoted in Donald D. Schneider, *The Works and Doctrines of Jacques Ignace Hittorff, 1792-1867: Structural Innovation and Formal Expression in French Architecture 1810-1867*, Ph.D. Dissertation, Princeton University, 1970, pp. 261-2.

[8] César Daly, "Travaux de décoration pour la cérémonie de la translation des cendres de l'Empereur," *Revue Générale de l'Architecture* 2, (1841), col 47.

[9] Ibid.

[10] Levine, "The Book and the Building..,"op cit, quote from J. Guadet, p. 330.

[11] C.L.G. Eck, *Traité de construction en poteries et fer à l'usage des batiments civils, industriels, militaires* (Paris: 1836).

[12] Ibid.

[13] Entry, "Calla, Christophe-Francois," *Dictionnaire de Biographie Francaise* (Paris: Libr. Letouzey et ane, 1956).