

# Delineating the Detail: The Communication of Architectural Particulars, 1750-1872

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**ABSTRACT:** In contemporary architectural practice, the notion of the architectural detail is complex and contentious. For many, 'details' are synonymous with the smallest scale of construction's resolution. Others believe them to be a building's 'minimal units of signification' and essential to the production of architectural meaning. And still others see the term as interchangeable with ornamentation. While there have been recent and notable contributions to the architectural detail's theorization, the longer history of its etymological evolution and changing meanings in practice has yet to be written. As a means of clarifying our contemporary understanding of the meaning of the practice of detailing, this study intends an overview of one piece of this proposed history, exploring the dynamic relation between architectural details and their delineation in 18th and 19th century France and the United Kingdom.

The word "detail" stems from the French *de tailler*, meaning "to cut up into pieces", which would evolve into the cognate *déetail* by the 18th century. The term referred to the 'cutting' of architecture into a collection of significant fragments, a process accomplished primarily via drawing as a means of both development and communication. This practice, however, would be brought to bear on an increasingly complex collection of things as designers responded to the emergence of new social, disciplinary, and technological conditions by the mid-19th Century. From issues of fire-protection to prefabrication and the growing rift between architects and engineers, the stage would be set for the haze of our contemporary understanding of detail.

By analyzing a collection of delineated details from a series of critical moments from the late 18th to mid 19th centuries, this paper seeks to give a conceptual account of the practice of detailing as derived from an understanding of its shifting meanings in the history architectural discourse and practice.

**KEYWORDS:** detail, drawing, ornament, construction, communication

## INTRODUCTION

In contemporary architectural practice, the notion of detailing is often thought synonymous with the smallest scale of a building's design—an activity involving the configuration of relationships between the work's most basic constructive components. In this context, the detail becomes the construction detail, and it is not uncommon for an architect to select such a detail from a stock of standard configurations, or at least to use one such configuration as basis for developing one's own solution to a constructive problem. Others, such as Marco Frascari, have claimed that details are architecture's "minimal units of signification" and, as such, essential to both "the construction and the construing" of architecture.<sup>1</sup> On this view, the activity of detailing pushes beyond mere practicality and aims to communicate or express. Still others have decried the detail as a fetish, and called for an architecture with no details at all.<sup>2</sup> In such a case, the detail would disappear completely, or so they would claim, in order to privilege the reading of a building's form as a seamless whole. And in popular sources, picture books and mass-market periodicals, the terms detail and ornament are used more-or-less interchangeably, a notion that may in fact have the longest history.

To be sure, the concept of the architectural detail is complex and contentious, without clear consensus on either its precise definition or even the necessity of its inclusion within the architectural project. While there have been recent and notable contributions to the architectural detail's theorization, the longer history of its etymological evolution and changing meanings in practice has yet to be written.<sup>3</sup> This study intends an overview of one small piece of this proposed history, exploring the dynamic relation between architectural details and their delineation in 18th and 19th century France and the United Kingdom.

## 1.0 ORIGINS

In his 1819 *Architectural Dictionary*, Scottish architect Peter Nicholson offered a relatively early definition of detail in architecture: “the delineation of all the parts of an edifice, so as to be sufficiently intelligible for the execution of the work.”<sup>4</sup> In other words, for Nicholson “details” were drawings of various building elements from which craftsmen could work. This claim is problematic, for in pre-modern times many building elements that would properly be considered details were not always drawn (or even properly designed) but rather simply produced by craftsmen. And yet, the connection between detailing and drawing is indeed critical, and it can be illuminated by looking to earlier uses of the term.

The word “detail” stems from the French *de tailler*, meaning “to cut up into pieces”. One of the earliest appearances of this term in architectural discourse can be found in Philibert de L’orme’s *Nouvelles inventions pour bien bastir et a petits fraiz* (1561), where he repeatedly uses the term “ *pierre de taille*”, meaning “cut stone”.<sup>5</sup> Here, in a usage close to its etymological origin, one finds two important implications of the meaning of the practice of detailing. On one hand, detailing involves some act of cutting, and on the other, the production of cut stone is somehow bound to this practice. The precise character of these relationships becomes more clear over the next two centuries.

By the 18th century *de tailler* would become the cognate, *détail*, appearing most frequently in reference to the particulars of a topic described “item by item”, as in one’s “addressing a subject in greater detail.” Though by mid-century, the term began to take on more familiar and architecturally explicit meanings. In his *Cours d’Architecture* (1750), Jaques-Francois Blondel uses the term *détail* extensively, and primarily in relation to particulars of an edifice’s ornamentation. He discusses the articulation of columns on which “channels which are recessed in contrast to the projection of fluting... adorned with jewels, bouquets of laurel, [and] seed”, suggesting “that these details belong more to bronze than marble.”<sup>6</sup> He also dwells extensively on “details of the orders”, concerned largely, and in step with the dominant themes of 18th century architectural theory, with the overall *character* expressed by the orders’ ornamentation.<sup>7</sup> The primacy of this conception of detail in Blondel is underscored by the two volumes of illustrated plates accompanying his text—overwhelmingly, a collection of ornamental details (fig. 1).

As understood from Blondel’s conception of detail and the meaning of its etymological root, the practice of detailing can be said to entail the ‘cutting’ of an edifice into a collection of significant fragments. What these fragments are, as we will see, will depend on designer’s conception of their role in design, those aspects of a work that are deemed properly within the realm of their control, and those features of a building that are thought to necessitate further and more intricate description in drawing to those who will do the constructing.<sup>8</sup> In the mid-eighteenth century France of Blondel, building methods (primarily in masonry or wood) were well known and understood by those who would have constructed buildings, so it was primarily the organization of the plan and character of the ornamental ensemble towards which architects would direct their attention. Said otherwise, prior to industrialization, the practice of detailing was brought to focus primarily on an edifice’s significant ornamental fragments, drawn as a means of envisioning and communicating the particular character of a projected work of architecture. This focus, however, would begin to shift by the late 18th century, a process catalyzed by the industrialization of iron production and the growing place of metals in the construction of buildings.

Indeed, metals like iron and lead had long been used in construction, present in significant quantities even in many ancient Roman works of architecture, but until the late 18th century such metal components typically served auxiliary rather than primary structural functions. Metal cramps were used to tie blocks of masonry together, rods were used to reinforce arches in stone, and fasteners were produced to secure connections in timber.<sup>9</sup> In such cases, these techniques were coordinated and implemented in the process of construction, as a matter of practice, not projected in advance via drawing. In the rare cases that such details of connection were delineated, it was typically a matter of documentation following construction rather than its projection beforehand. Such was not the case, however, in the work of Jacques-Germain Soufflot and Jean Rondelet at the church of Sainte-Genevieve (1758-90) in Paris.

To alleviate structural issues arising from the ambitious scale of the dome that was to top the church, Rondelet developed a complex system of iron reinforcement to be concealed within the building’s relieving arches. In this case, the configuration of materials was drawn in advance of construction. The building was ‘cut’ into significant fragments, particular components drawn in detail, illustrating not only the precise location at which reinforcing elements were to be placed, but even the particular shapes in which iron bars were to be forged and the modes of their interlocks in assembly (fig. 2). While this mode of construction was not wholly without precedent, its implementation in practice was by no means a matter of common knowledge by those doing the constructing, and thus these aspects of the building’s assembly necessitated further description by its designers in drawing.<sup>10</sup> Without the proper resolution and communication of this

information, what was at risk was the building's structural failure. This, an 18th century equivalent of a page of modern 'construction details' arose within a time dominated by the 'ornamental' conception of architectural detail. These two notions would continue to coexist indefinitely, albeit a coexistence of shifting balance.

With the accelerating progress of industrialization at the dawn of the 19th century, new societal needs emerged and building components in iron became more readily available, together, facilitating iron's use at larger scales and in more extensive assemblies. Greater complexity of constructions and more critical structural demands would contribute to the rising prominence of engineers, no longer one in the same with architects. Further, the scientific developments of the Enlightenment and wider adoption of standardized measurement would give rise to an ethos of precision, calculation, and a growing trust in technology. These developments would have a quick and profound impact on the character of the practice of detailing, offering a multitude of new conditions to define and control via drawing and a tension between schools of thought on how to go about doing it.

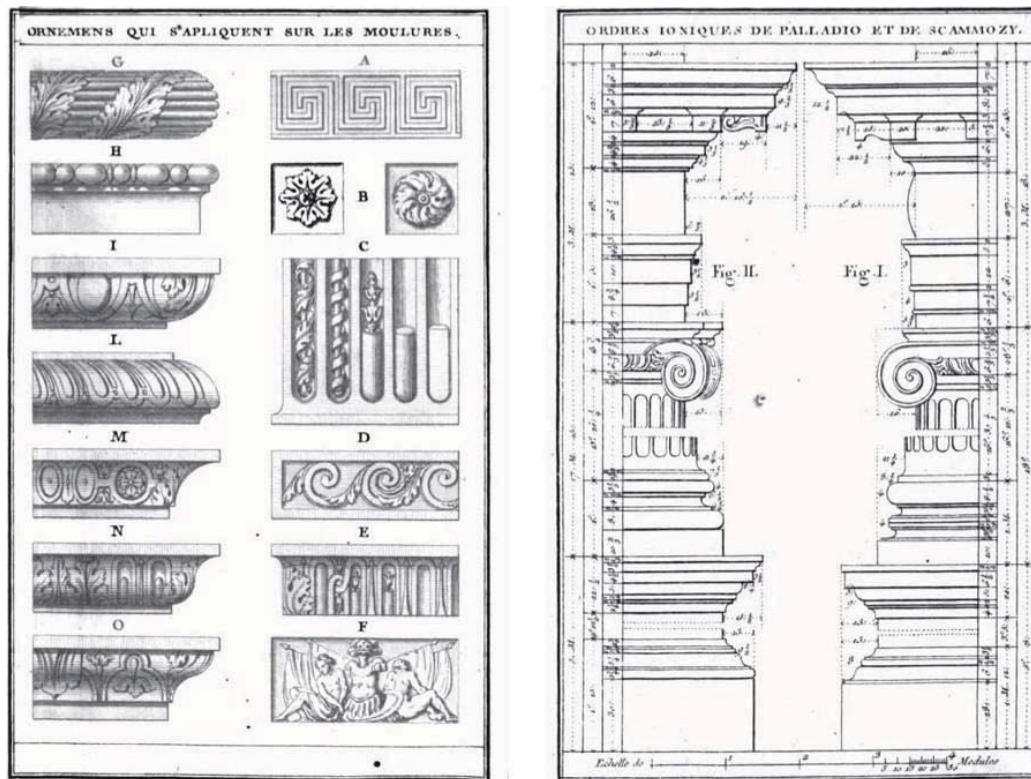


Figure 1: Two pages of the illustrated plates accompanying Blondel's *Cours*. (Source: Blondel, 1750)

## 2.0 ASSEMBLIES

The last decades of the 18th century bore witness to a rash of deadly fires within specific sorts buildings—theatres in France and mills in England. Before the advent of electricity, the interiors of theatres were lit by flame and productions often included pyrotechnic effects, an environment rife with possibilities for structural combustion. The situation was worse yet in cotton mills as, with the industry's mechanization, the timber structures of buildings housed machinery powered by coal and steam which were enveloped in a highly flammable atmosphere, "full of fine fibers of cotton and... the vapor given off from the oils used to lubricate the machinery," an explosive combination.<sup>11</sup> In these situations, iron was a material with certain appeal, as it offered a greater degree of fire resistance, especially in the proper configurations with other materials.

In 1782, the Parisian architect Anjo developed a 'fireproof' flooring system known as *poteries et fer*, a layered system of iron beams, clay pots, and plaster. A different fire-proofing system using sheet metal,

brick, and plaster to protect timber structural members was developed in 1792 by the English engineer, William Strutt, and the system was implemented in industrial buildings in the towns of Derby and Millford. Systems such as these benefited from delineation in detail, as the correct assembly and configuration of their components was absolutely critical to their proper function (fig. 3 and 4). Not unlike 18th century techniques for ornamental detailing, these drawings were a means of both projection and control of the constructed outcome, however, they illustrate a shift in motives behind the building's being 'cut' into fragments. While the former mode of detailing aimed to control of a work's character via *visible decoration*, a primarily aesthetic pursuit, the latter techniques aimed chiefly at controlling aspects of *building performance*, a more strictly technical objective, and one of relative *invisibility* in the finished product. Once again, new constructive methods have always posed a challenge in assembly, and in these particular cases of fireproofing construction, the proper configuration of *layers* within assemblies was of the utmost importance. This is not to say that layered construction was a new phenomenon, but rather to suggest that it would be of increasing import in construction from the 19th century onward and, thus, more and more the object upon which the practice of detailing would be brought into focus.

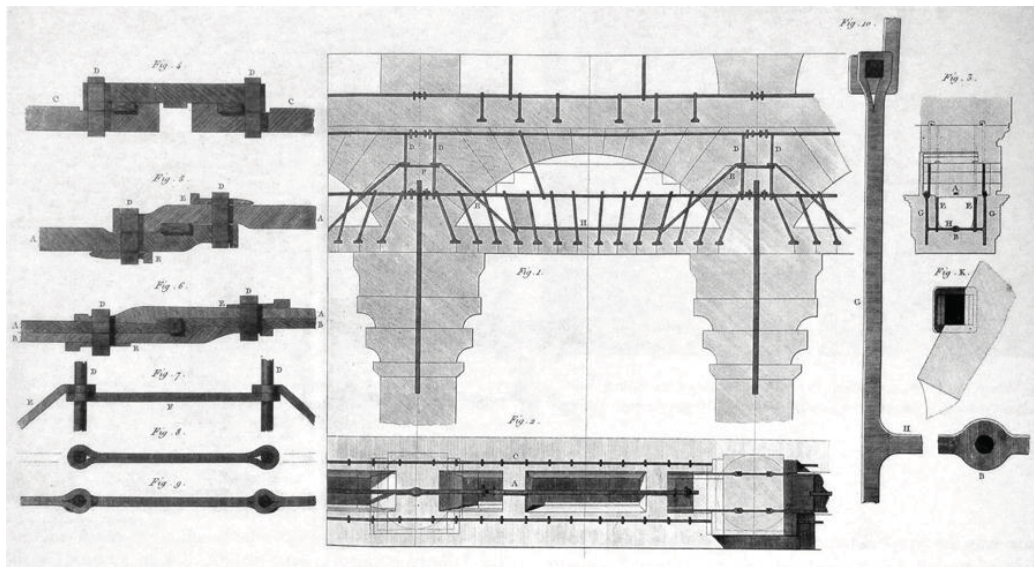


Figure 2: Jean Rondelet's details for the reinforcement of the *Sainte-Genevieve* portico (Source: Rondelet)

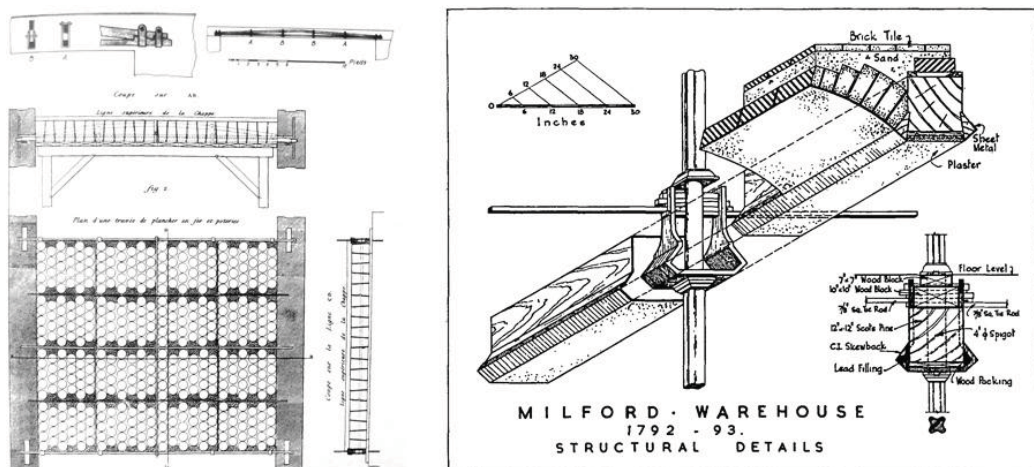
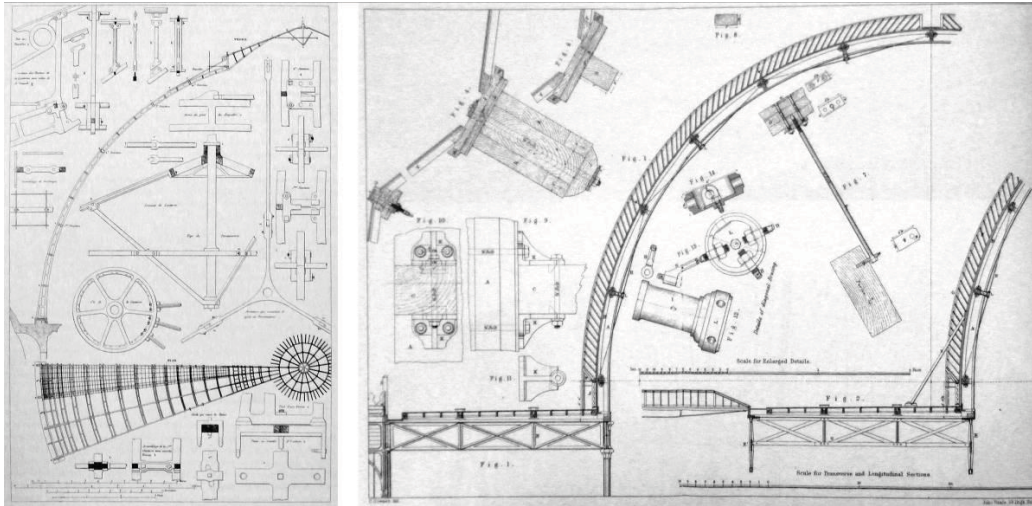


Figure 3 and 4: Ango's *poteries et fer* (left) and Strutt's system of fireproofing (right). (Sources: Ango and Strutt)

Another path forged for the practice of detailing during this time concerned the construction of roof structures in iron. In 1811, the French architect François-Joseph Bélanger and engineer François Brunet designed a dome of cast iron, wrought iron, and copper for the Halle au Blé, the wheat market in Paris. The structure was of unprecedented complexity and, in fact, was the first example of a wide-spanning iron roof.<sup>12</sup> Naturally such a project would necessitate precise description, both as a means of producing the many components and for instruction as to how they should be assembled (fig. 5). Here detailing again gravitates towards the technical, and this is particularly notable, as the structure's design was a collaborative effort between an architect and engineer, two discreet individuals and no longer a single master builder. Further, the two issues here presented—the production of components and their assembly directed via delineated details—would continue to be developed in both France and the United Kingdom, largely for utilitarian structures and often through the combined efforts of engineers and architects. This process would reach a high point at London's 1851 World's Fair in the design and construction of the Crystal Palace.

The commission for the Crystal Palace was won by a competition design by Joseph Paxton in collaboration with engineer and friend William Barlow. While there was nothing particularly novel about most of the parts that made up the great exhibition hall—many of its elements had been pioneered in the glass and iron conservatories of the 1830's and 40's—the scale and speed of construction and its process of production were wholly unprecedented. The scheme was predicated on the design of a few critical details, bringing together a relatively limited set of prefabricated, mass produced components to be assembled systematically on site (fig. 6). Here, the significant fragments that were the object of the practice of detailing were few, but their effect great. This powerfully instrumental set of construction details was designed in conjunction with an engineer, Charles Fox, and it embodied a modern technical-industrial ethos of precision and efficiency. Construction in iron was shifting the balance, at least to some degree, from ornamental to technical modes of detailing, but the relationship between these two poles would grow more complicated yet.



**Figures 5 and 6:** Details from Halle au Blé (left) and the Crystal Palace (right). (Sources: Belanger/Brunet and Paxton/Fox)

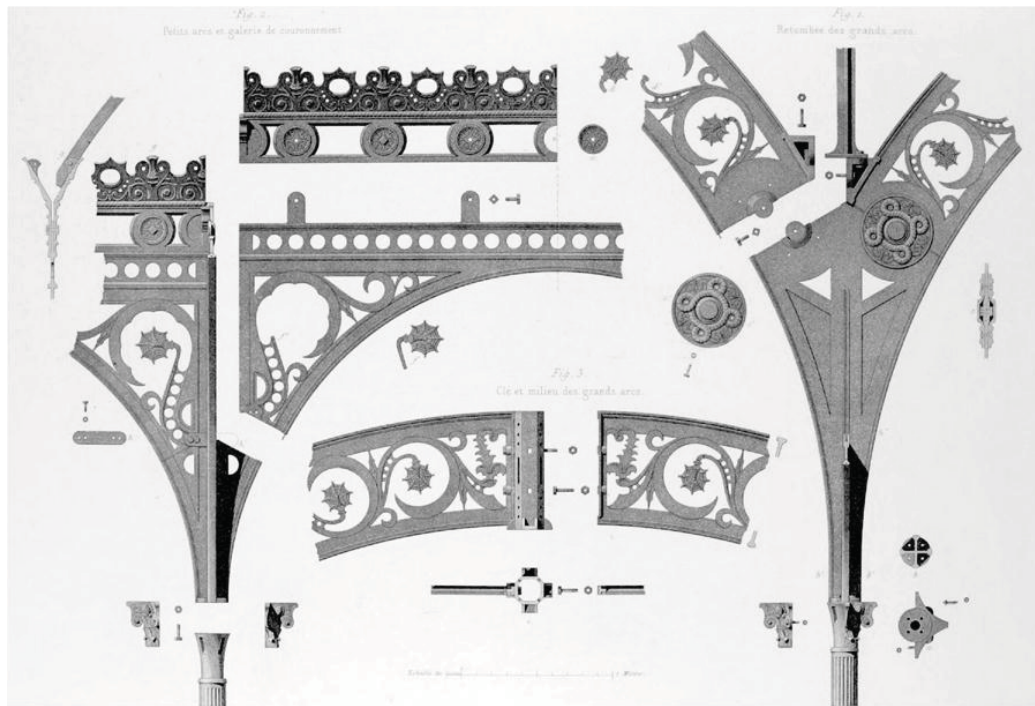
### 3.0 CONFLATION

While these various developments in the technology of construction were unfolding, the older ornamental traditions in detailing still had many adherents amongst architects. This seems clear as can be told from the practice of the *École des Beaux-Arts* "analytique", an ensemble in drawing of a project's ornamental fragments intended to convey the character of a work of architecture via the sum of its disembodied and recomposed parts, utilized in the training of architects well into the 20th century. This is also implicit in the wide practice in France and the UK of architecture in various classicist traditions. Thus, the detailing practices of the 19th century can be roughly characterized as a gradient, with constructive/technical detailing at one end and ornamental/aesthetic at the other, a crude dichotomy between the ethos of the engineer and that of the architect. But one will immediately realize that such an opposition is problematic, as technical and aesthetic concerns in detailing have almost always been bound to one another, even completely conflated in

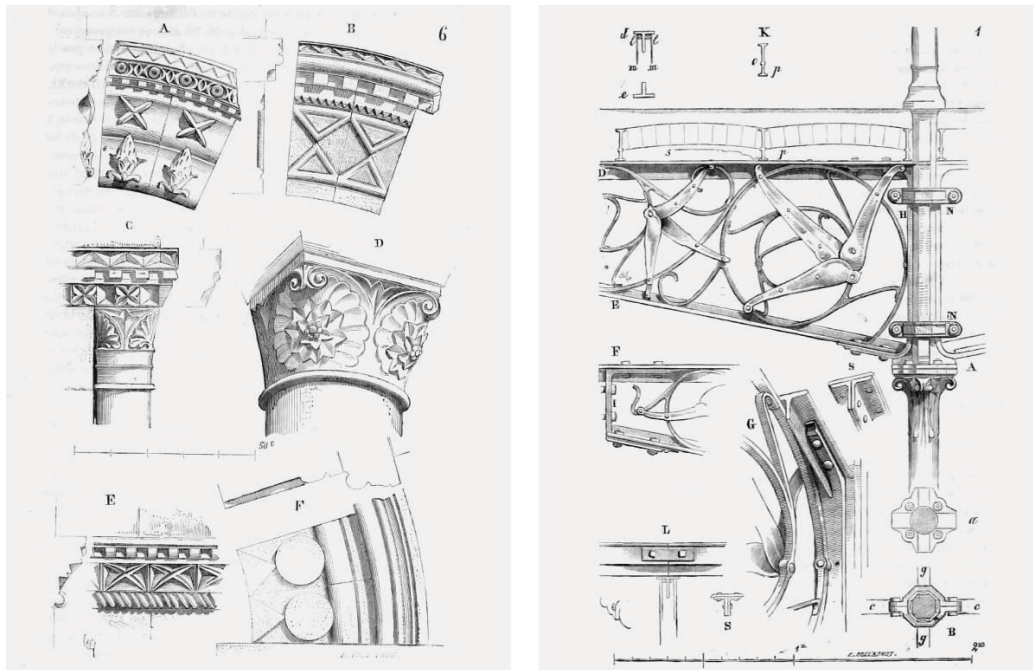
the practice of architects from at least the mid-19th century onward. An example of such a practice can be found in the work of the French architect Henri Labruste, particularly in his designs for the *Bibliothèque Sainte-Geneviève* (1843-50).

Labruste's library is one of the earlier examples of iron-frame buildings typically cited in text books on architectural history, and it constitutes a very refined example of classical, Greco-Gothic ideals applied to new methods of construction in iron. Here, the designer's attention was brought into focus upon a range of significant constructive fragments, treating each with the aesthetic attention and sensibility of a Beaux-Arts architect. In his carefully rendered detail drawings for the library, structural elements are richly articulated with decorative motifs, while also giving ample attention to the clear description of the modes of connection at each significant joint (fig. 7). Here, for the greater part, decoration is not merely applied to structure, but integrated into the members themselves—decoration adds depth to members, lightens them, and reinforces connections at discontinuities. Here, technical and aesthetic concerns are conflated, a slippage between approaches to detailing that would be increasingly common, one that would give rise to several other sub-approaches to detailing.

This evolution of the architect's concerns in detailing is again rendered visible in the theoretical writings of Eugène-Emmanuel Viollet le Duc, particularly via his drawings of details in the first and second volumes of his *Lectures on Architecture* (1863-72). In lecture VII of the first volume, written in 1863, Le Duc refers the reader to a plate of illustrated 'details' in stone, clearly a set of ornamental elements, leaving behind questions of construction and assembly (fig. 8). However in the 1872 second volume, Le Duc refers to a different set of detail drawings, this time of construction in iron which, while clearly possessed of an aesthetic vision, is careful to describe and reveal all modes of connection and joinery as well (fig.9). Le Duc is often characterized as a staunch proponent of the rationalization of construction, an attitude toward building that would carry great currency among the pioneers and forefathers of the modernist movement.



**Figure 7:** Labruste's Details from *Bibliothèque Sainte-Geneviève*. (Source: Labruste)



**Figure 4:** Le Duc's details in stone (left) and iron construction (right) . (Source: Le Duc)

## CONCLUSION

This essay began with a commentary on the divergent meanings that the term detail carries in discussions about architecture. In the essay that followed, I have tried to describe what I believe are the origins of this contemporary condition in changing practices of drawing architectural “details” in the 18th and 19th centuries. While two contemporary meanings have been discussed—the ornamental and constructive—two other issues mentioned have yet to be fully addressed—the question of architectural meaning and the detail’s supposed disappearance or absence in some architectural works. To risk a possibly oversimplified summary, the question of meaning seems caught between the communicative function of classical ornamentation and the elaboration of construction, an attempt to recover the purpose of the former within the process of the latter. And as suggested previously, the hope to erase the detail from a work of architecture seems more properly an attempt to suppress its expression in order to privilege the reading of the overall form of the work. Whatever the case, it’s clear that while this essay ends in the late 19th century, the story of the detail continues to grow more complex over the course of the 20th century.

With the coexistence of these very different, and even at times contradictory meanings of detail, the real question lies in their similarity. What is it that unites them all as details? One answer would be that their common thread is the *act* that produces them—the *practice of detailing*.

Fundamentally, any practice of detailing begins with the identification of a significant fragment of a work and is followed by its development in relative isolation. What is isolated as a detail is sometimes a matter of necessity or convention while at others an issue of the designer’s priority. In the latter case, the detail’s identification is motivated, and the designer selects a fragment situated at some critical moment within the project, a decision that reveals, at least in some sense, the values of the designer in relation to the work. As we have seen, the mid-18th century architect might have isolated a cornice or the profile of a column capital, while the 19th century engineer might have isolated the riveted connection between two iron supports. In either case, both undertake the same fundamental activity—the design of the isolated particular, shaping it in response to the factors that they identify as valid influences upon its form. In the former case, the architect might have responded to the work’s cultural context, relationship to the body of a viewer, and the character of the larger ensemble. In the latter case, the engineer might have calculated the loads and forces present at the connection and sought to maximize material efficiency. Historically, in either case, the act of drawing has played a critical role.

Because drawing has long been the primary medium of both development and communication in the production of built works, it has also been the primary means of operation for the practice of detailing. This is not to suggest that there can be no detailing without drawing, but merely that in most cases, it is central to the practice. Drawing provides easily for the isolation of the significant fragment and its development in an readily reproducible and communicable format, rendering decisions made visible and intelligible to those who would produce or assemble a given thing. The question that remains is that of the limits of what one might consider a significant fragment to be identified, isolated (if only for a time), developed, and delineated in detail.

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## ENDNOTES

- <sup>1</sup> Marco Frascari, "The Tell-the-Tale Detail" in *VIA7: The Building of Architecture* (1984): 23-27.
- <sup>2</sup> Ben Van Berkel and Caroline Bos, "Sixteen Statements," in *Detail Magazine*, vol. 40, no. 8 (Dec 2000): 1437.
- <sup>3</sup> I have in mind Edward R. Ford's *The Architectural Detail* (2011) and Michael Cadwell's *Strange Details* (2007).
- <sup>4</sup> Peter Nicholson, *Architectural Dictionary* (London: J. Barfield, 1819): 383.
- <sup>5</sup> Philibert de L'orme, *Nouvelles inventions pour bien bastir et a petits fraiz* (Paris: Federic Morel, 1561): 9.
- <sup>6</sup> Jaques-Francois Blondel, *Cours d'architecture* (Paris, 1750) 256.
- <sup>7</sup> Blondel, *Cours*, 266, 285, 299.
- <sup>8</sup> For more on the relationship between design and construction before industrialization see: John Fitchen, *Building Construction Before Mechanization* (Cambridge: MIT Press, 1986).
- <sup>9</sup> For an essay on the early stages of Iron's adoption in construction see: Bill Addis, "The Iron Revolution," in *Before Steel* (Zurich: Niggli, 2010): 33-46.
- <sup>10</sup> Robin Middleton and Marie-Noelle Baudouin-Matuszek, *Jean Rondelet: The Architect as Technician* (New Haven: Yale University Press, 2007).
- <sup>11</sup> Bill Addis, "The Iron Revolution", 38.
- <sup>12</sup> Bill Addis, *Building: 3000 Years of Design Engineering and Construction*, London: Phaidon (2007): 295.