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**The Photographic Turn: Architecture, Truth, and Modern Vision in France  
1840-1900**

presented by

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Date: November 17, 2017



The Photographic Turn: Architecture, Truth, and Modern Vision in France  
1840–1900

A dissertation presented

by

Peter Sealy

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**Abstract**

Using the case of photography, my dissertation explores truth as a malleable practice that attempts to reconcile architecture’s growing interest in subjective qualities (especially space, movement, and the fragmentation of the architectural object) with its desire to be grounded in objective, evidentiary discourse. Using a survey of French architectural publications, I have charted photography’s rise to pre-eminence in architecture’s shifting representational landscape. Mediations of the photographic image—especially through engraving—and analogous relationships with other media such as plaster casting and iron construction provide key focal points, as do changing attitudes towards perspectival representation and the emergence of a “photo-sopic” form of modern vision.

Together, my five thematic chapters reveal the practitioner’s apparently conflicted desire, on the one hand, to underscore the quality of truthfulness in the architectural photograph, and, on the other, to allow for the creative deployment of the subjective architectural imaginary. The first two chapters explore the construction—in multiple media—of a new photographically inflected expectation of what a truthful, accurate and useful image should be. While the first charts the deployment of photography’s supposed indexical guarantee across a wide range of architectural practices, the second details the multiple remediations needed for photographs to live up to their ontological promise. The

third chapter considers the relationship between early architectural photography and existing codes of architectural representation, documenting the French appetite for images combining mensural accuracy with spatial sensibility. The penultimate chapter relates the emergence of a radical series of spatialized images in the French architectural press around 1870. Belonging to an era in which theorists had begun to interpret architecture dynamically, these “photo-sopic” images dissolve buildings into fragmentary fields of visual experience to be grasped by a moving subject. The final chapter refocuses the analogy between iron architecture and photography upon the fraught question of materiality, for both media were seen as overly industrial and frighteningly immaterial.

While architectural practice may strive for ideals, it is supported by carefully calibrated mediations, accepted license, and productive fictions furnished by representations. While the ideal of truth remains elusive, the spectacle of its assertion in practice is not only possible but also profoundly powerful.

## **Table of Contents.**

vi	Acknowledgements
x	List of Figures
1	Introduction
11	Chapter 1. Infinite Detail: Photography, Restoration, and the Fragment
72	Chapter 2. Engraved Translation: After a Photograph, Before Photography
128	Chapter 3. The Elevation in Perspective: Mensural Accuracy and Spatial Sensibility
156	Chapter 4. Scopic Images and Mobile Subjects: The Photograph in Perspective
156	Chapter 5. Material Facts, Immaterial Fictions
230	Conclusion
237	Figures
406	Bibliography

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## Figures

### Chapter 1

- 1.1. François-Alphonse Fortier, Staircase of the François Ier Wing of the Château de Blois (built towards 1520), restored in 1847 by M. Duban, c. 1853. Calotype. In *Revue générale de l'architecture et des travaux publics* 14 (1856): plate 21. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.R484.
- 1.2. Hippolyte Bayard, "Château de Blois, view of the François Ier staircase," August 1843. Daguerreotype. Collection Société française de photographie (coll.SFP) frSFP\_0024im\_0323\_DG.
- 1.3. William Henry Fox Talbot, The Haystack, probably 1841. Salted paper print from paper negative. In William Henry Fox Talbot, *The Pencil of Nature* (London: Longman, Brown, Green, & Longmans, [1844–46]), plate 10. Metropolitan Museum of Art 1994.197.2 (5). Gift of Jean Horblit, in memory of Harrison D. Horblit, 1994. Digital image downloaded under a Creative Commons Zero license from the Metropolitan Museum of Art website.
- 1.4. William Henry Fox Talbot, View of the Boulevards at Paris, May 1843. In William Henry Fox Talbot, *The Pencil of Nature* (London: Longman, Brown, Green, & Longmans, [1844–46]), plate 2. Salted paper print. J. Paul Getty Museum 84.XM.478.8. Digital image courtesy of the Getty's Open Content Program.
- 1.5. Baron Jean-Baptiste-Louis Gros, View of the east façade of the Propylaea, Acropolis, Athens, Greece, 1850. Full-plate daguerreotype. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CCA PH1982:0603.
- 1.6. The 'Frenchman' [Cavalier Iller], Venice. The Grand Canal. Casa Foscari, c. 1845. Daguerreotype. Collection K. & J. Jacobson P 89. In Ken Jacobson and Jenny Jacobson, *Carrying Off the Palaces: John Ruskin's Lost Daguerreotypes* (London: Quarritch, 2015), 279 catalogue No. 129. Photograph by Peter Sealy.

- 1.7. John Ruskin and the “Frenchman” [Cavalier Iller], Venice. The Grand Canal. Palazzo Loredan, c. 1845. Daguerreotype. Collection K. & J. Jacobson P 86. In Ken Jacobson and Jenny Jacobson, *Carrying Off the Palaces: John Ruskin’s Lost Daguerreotypes* (London: Quaritch, 2015), 279 catalogue No. 279. Photograph by Peter Sealy.
- 1.8. Nicolas Marie Paymal Lerebours, Notre Dame, Paris, 1839 or 1840. Full-plate daguerreotype. Oxford Museum of the History of Science 8996s3.
- 1.9. William Henry Fox Talbot, Lacock Abbey, 1845. Salted paper print. In William Henry Fox Talbot, *The Pencil of Nature* (London: Longman, Brown, Green, & Longmans, [1844–46]), plate 19. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture PH1985:0382.
- 1.10. Édouard Baldus, Casts from the Place Napoléon & du Carroussel and Cour Carrée, 1857 or earlier. Salted paper print. In Édouard Baldus, *Réunion des Tuileries au Louvre 1852–1857* (Paris: Chardon aîné, 1857). Photograph from Malcom Daniel, *The Photographs of Édouard Baldus* (New York: Metropolitan Museum of Art; Montreal: Canadian Centre for Architecture, 1994.), 115, figure 89.
- 1.11. Édouard Baldus, Nouveau Louvre, c. 1868. Héliogravure. In Édouard Baldus, *Palais du Louvre et des Tuileries: Motifs de Decorations tires des Constructions executées au Nouveau Louvre et au Palais*. J. Paul Getty Museum 84.XM.415.7. Digital image courtesy of the Getty's Open Content Program.
- 1.12. Édouard Baldus, The Pavillon Sully, Louvre, Paris, between 1852 and 1857. Salted Paper Print. In *Réunion des Tuileries au Louvre 1852–1857* (Paris: Chardon aîné, 1857). J. Paul Getty Museum 84.XO.735.3.2.19. Digital image courtesy of the Getty's Open Content Program.
- 1.13. Édouard Baldus, Louvre (Façade on the Quai), c. 1868. Héliogravure. In Édouard Baldus, *Palais du Louvre et des Tuileries: Motifs de Decorations tires des Constructions executées au Nouveau Louvre et au Palais*. J. Paul Getty Museum 84.XO.610.87. Digital image courtesy of the Getty's Open Content Program.

1.14. Édouard Baldus, Grand Dining Room of the Minister of State, between 1853 and 1860. Albumen silver print. In “Photographies d’après les Modèles composés et exécutés en pierre, bois, bronze, fonte de fer et carton-pierre pour le Palais des Tuileries et du Louvre de 1853 à 1860 par Émile Knecht sculpteur.” Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal PH1986:0777:038. Photograph by Peter Sealy.

1.15. Louis-Émile Durandelle, Apprentice Leaning on Plaster Casts Taken from the Frieze of the Grand Salon, Château de Bercy, 1860 or 1861. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal PH1979:0469:020. Photograph by Peter Sealy.

1.16. Louis-Émile Durandelle, Plaster Casts Taken from the Château de Bercy, 1860 or 1861. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal PH1979:0469:014. Photograph by Peter Sealy.

1.17. Charles Garnier, Section through the Auditorium, 1880 or earlier. Engraving. In Charles Garnier, *Le Nouvel Opéra de Paris*, vol. 1, *Planches* (Paris: Ducher et Cie., 1880), plate 25. Albumen silver print. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal MAIN M 4868. Photograph by Peter Sealy.

1.18. Louis-Émile Durandelle, Streetlamp from Exterior Sidewalk, 1876. Albumen silver print. In Charles Garnier, *Le Nouvel Opéra de Paris, Bronzes* (Paris: Ducher et Cie., 1876), plate 8. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal PH1979:0162.01:008.

1.19. Louis-Émile Durandelle, View of a keystone and tympanum of the lower part of the Ticket Lobby, c. 1868. Albumen silver print. In Charles Garnier, *Le Nouvel Opéra de Paris, Sculpture ornementale* (Paris: Ducher et Cie., 1876), plate 12. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal PH1979:0162.04:012.

- 1.20. Louis-Émile Durandelle, Column capital from the Circular Vestibule, 1875 or earlier. Albumen silver print. In Charles Garnier, *Le Nouvel Opéra de Paris, Sculpture ornementale* (Paris: Ducher et Cie., 1876), plate 25. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1979:0162.04:037. Photograph by Peter Sealy
- 1.21. Paul Robert, Musée de Sculpture comparée: 16th century gallery, ca. 1895 or earlier. Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée: (Palais du Trocadéro)*, vol. 4, *XVIIe siècle* (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 83. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy.
- 1.22. Unknown Photographer of the Monuments Historiques, The Saint-Mihiel Sepulchre, Restitution, After the Trocadéro's Casts, 1911 or before. In Paul Denis, *Ligier Richier: L'Artiste et son oeuvre* (Paris: Berger-Levrault, 1911), plate 37. University of Toronto Robarts Library NB553 .R5 D3. Digital image downloaded from the Internet Archive.
- 1.23. Paul Denis, The Entombment, (Current State) Saint-Mihiel, Église Saint-Étienne, 1911 or before. In Paul Denis, *Ligier Richier: L'Artiste et son oeuvre* (Paris: Berger-Levrault, 1911), plate 36. University of Toronto Robarts Library NB553 .R5 D3. Digital image downloaded from the Internet Archive.
- 1.24. Paul Robert, La Mise au Tombeau by Ligier Richier from the Church of Saint-Étienne at Saint-Mihiel (Meuse). Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée: (Palais du Trocadéro)*, vol. 4, *XVIIe siècle* (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 62. Phototypie. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy.

1.25. Paul Robert, Château de Blois: Ornament above a Door from the François Ier Staircase at the Château de Blois, ca. 1895 or earlier. Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée: (Palais du Trocadéro)*, vol. 4, *XVIIe siècle* (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 46. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy

1.26. Unknown Photographers, possibly Séraphin-Médéric Mieusement, Paul Robert and/or Neurdein frères, Plate Showing the Ensemble of the Monuments from which the Sculptural Fragments reproduced in the Previous Plates were taken, ca. 1895 or earlier. Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée: (Palais du Trocadéro)*, vol. 4, *XVIIe siècle* (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 84. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy.

1.27. Séraphin-Médéric Mieusement, Chimney Friezes and Ornament above a Door, Grand Staircase, Château de Blois, 1884 or before. In Anatole de Baudot, *La Sculpture française au moyen âge et à la Renaissance*, vol. 2 (Paris: Des Fossez et Cie., 1884), "Renaissance," plate 17. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M M5468; ID:85-B5844. Photograph by Peter Sealy.

1.28. Séraphin-Médéric Mieusement, Trumeau and Corbels under the Statues of the Main Portal, Amiens Cathedral, 1884 or before. Héliogravure. In Anatole de Baudot, *La Sculpture française au moyen âge et à la Renaissance*, vol. 1 (Paris: Des Fossez et Cie., 1884), "XIIIe siècle," plate 5. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M M5468; ID:85-B5844. Photograph by Peter Sealy.

## **Chapter 2**

2.1. Mausoleum of the Orleans Family, 1845. Engraving. In *The Builder* 3, no. 122 (7 June 1845): 270. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83.



- 2.2. St. Peter's and the Castel Sant'Angelo in Rome, between 1839 and 1842. Engraving. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 1, plate 38. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M 8132. Photograph by Peter Sealy.
- 2.3. Unknown Photographer, View of Rome, Castel Sant'Angelo and St. Peter's Basilica, c. 1839. Daguerreotype. George Eastman House, Rochester NY: Collection number 76:168:153. In Janet Buerger, *French Daguerreotypes* (Chicago: University of Chicago Press, 1989), 35 figure 32. Photograph by Peter Sealy.
- 2.4. Niagara: Horseshoe Falls, between 1839 and 1842. Engraving. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 1, plate 3. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M 8132. Photograph by Peter Sealy.
- 2.5. Hugh Lee Pattinson, The Horseshoe Falls, 1840. Daguerreotype. Newcastle University Library Special Collections DAG/4.
- 2.6. Nicolas Marie Paymal Lerebours, Notre Dame, Paris, 1839 or 1840. Full-plate daguerreotype. Oxford Museum of the History of Science 89963.
- 2.7. Façade of Notre-Dame-de-Paris, between 1839 and 1842. Engraving. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 2, plate 21. Bibliothèque nationale de France RESG-G-9 (2).
- 2.8. A Bas-relief from Notre-Dame, between 1839 and 1842. Engraving produced from a daguerreotype using the Fizeau process. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 2, plate 24. Bibliothèque nationale de France RESG-G-9 (2).

- 2.9. House built on rue St. Georges by M. Renaud, between 1839 and 1842. Engraving produced from a daguerreotype using the Fizeau process. Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 1, unnumbered plate. Bibliothèque nationale de France RESG-G-9 (1).
- 2.10. London in 1842, Taken from the summit of the Duke of York's column [The "Colosseum Print"], 1843. Engraving. In *Illustrated London News* 2, no. 36 (8 January 1843). Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.I444.
- 2.11. Eugène-Emmanuel Viollet-le-Duc, Second Day of Champigny, 1871. Watercolor. École nationale supérieure des Beaux-Arts PC 63523 bis-1. Image copyright Beaux-Arts de Paris, Dist. RMN-Grand Palais / Art Resource, NY.
- 2.12. Roger Fenton, Valley of the Shadow of Death, 1855. Salted paper print. J. Paul Getty Museum 84.XM.504.23. Digital image courtesy of the Getty's Open Content Program.
- 2.13. Current state of works on the Nouvel Opéra: carriage entry, covered ramp and third gridiron, above the stage. After the photographs by MM. Delmaet and Durandelle. Engravings. In *L'Illustration* 55, no. 1407 (12 February 1870), 113. Harvard University Widener Library PFr 229.1 F (5E).
- 2.14. Louis-Émile Durandelle, Construction of the Nouvel Opéra, Paris, c. 1870. Albumen print. École nationale supérieure des Beaux-Arts Ph 7449.
- 2.15. Current state of works on the Nouvel Opéra: Corrdior and secondary staircase. Drawing by M. Pignard. Engravings. In *L'Illustration* 55, no. 1408 (19 February 1870), 148. Harvard University Widener Library PFr 229.1 F (5E).
- 2.16. Louis-Émile Durandelle. Construction of a staircase at the Paris Opéra, c. 1870. Albumen print. École nationale supérieure des Beaux-Arts Ph 269.

- 2.17. Louis-Émile Durandelle, Iron Girders of Stage Flytower, 1868. Albumen print. École nationale supérieure des Beaux-Arts Ph 3810.
- 2.18. Louis-Émile Durandelle, Construction of the Nouvel Opéra, Paris, The “Phantom of the Opéra” and workers on the roof, 1869. Albumen print. École nationale supérieure des Beaux-Arts Ph 270.
- 2.19. Construction of the Flytower roof. Engraving. In Charles Nutter, *Le Nouvel Opéra* (Paris: Librairie Hachette et Cie, 1875), 66. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal I.D.Y. 87-B6590. Photograph by Peter Sealy.
- 2.20. Louis-Émile Durandelle, Flytower cornice and frieze, between 1865 and 1872. Albumen silver print from glass negative. In Charles Garnier, *Le Nouvel Opéra de Paris, Sculpture ornementale* (Paris: Ducher et Cie., 1876), plate 40. Metropolitan Museum of Art 1995.9. Purchase, The Horace W. Goldsmith Foundation Gift, through Joyce and Robert Menschel, 1995. Digital image downloaded under a Creative Commons Zero license from the Metropolitan Museum of Art website.
- 2.21. Sculpting the cornice, 1875. Engraving. In Charles Nutter, *Le Nouvel Opéra* (Paris: Librairie Hachette et Cie, 1875), 52. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal I.D.Y. 87-B6590. Photograph by Peter Sealy.
- 2.22. Photographer’s Voiture near Old Water Reservoir, Rue Lamarck, Paris, 24 March 1884. Albumen silver print. In “Construction Views of the Basilica of Sacré-Coeur, Paris,” unpublished album (1879–90). Collection Canadian Centre for Architecture, Montréal PH1991:0061:001-165. Photograph by Peter Sealy.
- 2.23. Fiacre Near Old Water Reservoir, March 1884. Engraving. In *Bulletin de l’Oeuvre du voeu national au Sacré-Coeur de Jésus* 9 (June 1884): 431.
- 2.24. The old gare Saint-Lazare. Suburban vestibule and Normandy line vestibule. After M. Durandelle’s photographs. In *L’Illustration* 91 no. 2344 (28 January 1888): 57. Collection Canadian Centre for Architecture, Montréal PER W.I446.

- 2.25. Durandelle, Gare Saint-Lazare: St-Germain crescent: departures 1887. Albumen print. Collection Musée d'Orsay PHO 2000 9 8. Image courtesy RMN.
- 2.26. Durandelle, Gare Saint-Lazare: Normandie departures, baggage hall, stairs to waiting rooms, 1887. Albumen print. Collection Musée d'Orsay PHO 2000 9 7. Image courtesy RMN.
- 2.27. Reconstruction of the gare Saint-Lazare. Demolition of the old façade. After M. Durandelle's photograph. Engraving. In *L'illustration* 91, no. 2344 (28 January 1888): 56. Collection Canadian Centre for Architecture, Montréal PER W.I446.
- 2.28. The University Museum, Oxford. Engraving. In *The Builder* 17, no. 844 (9 April 1859): 252. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83.
- 2.29. Royal Exchange Assurance Offices, Pall Mall. Engraving. In *The Builder* 49, no. 2219 (15 August 1885), 220. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83.
- 2.30. Unknown photographer, Royal Exchange Assurance Offices, 29 Pall Mall, London, c. 1885. Mounted sepia photoprint. RIBA Collections RIBA14224.
- 2.31. Cloisters Recently Discovered at Wurzburg. Engraving. *The Builder* 45, no. 2114 (11 August 1883): 182. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83. Photograph by Peter Sealy.
- 2.32. Priapus à gaine (after a photograph by M. Franck.) Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 12. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 2.33. Sculpted panel (15th century). Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.

- 2.34. Sculpted panel (16th century) (after a photograph by M. Franck.) Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 32. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 2.35. House of Mr. Charles Fleury, architect, Rouen. Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 34. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 2.36. Phare du Cordouan at the mouth of the Gironde. After a photograph by Terpereau. Engraving. In *Revue générale de l'architecture et des travaux publics* 35 (1878), plate 47. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 2.37. Alphonse Terpereau, Phare du Cordouan, c. 1870. Albumen paper print from a glass negative. Collection Médiathèque de l'architecture et du patrimoine, Charenton-le-Pont, France 0084/033/E051 PH099468.
- 2.38. Specimens of the Domestic Architecture of the United States of North America. House in New York, Ware and Van Brunt, architects. House in Chicago (Illinois), Burnham and Root, architects. Engraving. In *Revue générale de l'architecture et des travaux publics* 43 (1886): plate 11. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 2.39. Unknown photographer, possibly Albert Lévy, Ware and Van Brunt, Residence 38th St. near Madison Ave, New York NY, c. 1883. Photograph. In *Albert Levy's Architectural Photographic Series* 1, no. 147. Art Institute of Chicago Architecture Photograph Collection RBA Digital File name 59270.

- 2.40. Specimens of the Domestic Architecture of the United States of North America. House in Boston (Massachusetts), Carl Fehmer, architect. House in Chicago (Illinois). Engraving. In *Revue générale de l'architecture et des travaux publics* 43 (1886): plate 10. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 2.41. Albert Lévy, Carl Fehmer, 191 Marlborough Street, Boston MA, c. 1885–95. Photograph. In *Albert Lévy's Architectural Photographic Series* no. 31, 33. Art Institute of Chicago Special Ryerson and Burnham Libraries Book Collection 779.4 L66a no.31, 33.
- 2.42. Burges House (London): The Two Façades—Garden and Street. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate. 47. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.
- 2.43. Tower House, Melbury Road, Kensington, London: Street Front, 1880s. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate. 6 RIBA Library Photographs Collection RIBA7220.
- 2.44. Tower House, Melbury Road, Kensington, London: Garden Front. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 5. RIBA Library Photographs Collection RIBA7219.
- 2.45. Burges House (London): Entrance Hall. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate. 49. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.
- 2.46. Tower House, Melbury Road, Kensington, London: View of Entrance Hall. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 7. RIBA Library Photographs Collection RIBA106714.
- 2.47. Burges House (London): Library. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate 50. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.

- 2.48. Tower House, Melbury Road, Kensington, London, 1880s. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 12. Victoria and Albert Museum, National Art Library.
- 2.49. Burges House (London): Dining Room. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate 51. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.
- 2.50. Tower House, Melbury Road, Kensington, London: The Dining Room, 1880s. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 8. RIBA Library Photographs Collection RIBA7221.
- 2.51. Burges House (London): Bedroom. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate 52. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.
- 2.52. Tower House, Melbury Road, Kensington, London: the Mermaid Bedroom (William Burges' bedroom), 1880s. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 26. RIBA Library Photographs Collection RIBA7228.
- 2.53. Henri Labrouste, Perspective drawing of the Bibliothèque Sainte-Geneviève. Engraving by Jacques-Joseph Huguenet. In *Revue générale de l'architecture et des travaux publics* 11 (1853): plate 31. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.
- 2.54. Louis-Auguste et Auguste-Rosalie Bisson (Frères), Façade of the Bibliothèque Sainte-Geneviève in 1852. Salted paper print probably coated with albumen, on mount. Académie d'Architecture 492.
- 2.55. L'École française, Athènes. Engraving. In *La Semaine des constructeurs* 1, no. 26 (6 January 1877): 307. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.S45. Photograph by Peter Sealy.

2.56. John Ruskin, Arch from the Façade of the Church of San Michele at Lucca. Engraving. In John Ruskin, *The Seven Lamps of Architecture* (New York: John Wiley 1849), plate 6. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:88-B4360. Photograph by Peter Sealy.

2.57. Unknown photographer, possibly John Ruskin. San Michele, Lucca, Detail of façade. Daguerreotype. Ruskin Library Collection Lancaster, UK RF Dag 69.

2.58. John Ruskin, Iron Work of Bellinzona. Engraving. In John Ruskin, *The Two Paths: being lectures on art, and its application to decoration and manufacture, delivered in 1858–9* (London: Smith and Elder, 1859), frontispiece & plate 13. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:85-B12852. Photograph by Peter Sealy.

2.59. Unknown photographer, possibly John Ruskin. Window and Balcony [Bellinzona]. Ruskin Library Collection, Lancaster, UK RF Dag 110.

2.60. John Ruskin, Tracery from the Campanile of Giotto, at Florence. Engraving. In John Ruskin, *The Seven Lamps of Architecture* (New York: John Wiley, 1849), plate 9. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:88-B4360. Photograph by Peter Sealy.

### **Chapter 3**

3.1. Charles Nègre, The Little Rag-Picker, 1851. Collotype. Museum of Modern Art Photography Department 482.1964.

3.2. Charles Nègre, Cloître Saint-Trophime cloister, east gallery, ca. 1852. Salted paper print from a paper negative. Musée d'Orsay PHO 1981 6.

3.3. Charles Nègre, Detail of Tympanum and Lintel Sculpture, Saint Trophime, Arles, France, 1852. Salted paper print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1984:0712.



- 3.4. Charles Nègre, Avignon, Palais des Papes, west side, 1852. Salted paper print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1986:0547.
- 3.5. Charles Nègre, View of West Façade of St. Trophime, Arles, France, 1852. Salted paper print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1978:0207.
- 3.6. Charles, Nègre, Saint-Gilles-du-Gard: The West Façade of the Church, 1852. Two salted paper print (or negatives), joined. Previously, Collection André Jammes, Paris. In James Borcoman, *Charles Nègre, 1820-1880* (Ottawa: National Gallery of Canada, 1976) 142, plate 87. Photograph by Peter Sealy.
- 3.7 Example of an Elevation perspective. Temple of Athena Nike, Athens. Engraving. In Charles Blanc, *Grammaire des arts du dessin*, 8<sup>th</sup> ed. (Paris: Renouard, 1889), 77. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W8808; ID:85-B8215. Photography by Peter Sealy.
- 3.8 Eugène-Emmanuel Viollet-le-Duc, Elevation perspective of the central belltower of Dormans. Woodcut engraving. In Eugène-Emmanuel Viollet-le-Duc, *Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle* (Paris: Bance; A. Morel, 1854-68) 3:333. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN 0005619. Photograph by Peter Sealy.
- 3.9. Leopoldstadt public laundry, Vienne (Austria). Elevation perspective. Engraving. In *Nouvelles Annales de la Construction* 1, no. 8 (1855): plate 31, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.
- 3.10. St. Pierre primary school, Cologne (Prussia). Perspective view. Engraving. In *Nouvelles Annales de la Construction* 18, no. 208 (1872): plate 18, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.

- 3.11. Parc des Buttes Chaumont. Bridge on the rue Fessard. Elevation at 0.0133 per 1m. Engraving. In *Nouvelles Annales de la Construction* 13, no. 145 (1867): plates 3-4, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.
- 3.12. *Hôtel de Ville. Type No. 1*. In *Nouvelles Annales de la Construction* 14, no. 174 (1869): plate 23. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.
- 3.13. Cottage, Veules-en-Caux (Seine-Inférieure). (Scale. 1/100) Main elevation. Engraving. In *Nouvelles Annales de la Construction* 35, no. 413 (1889): plate 25, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.
- 3.14. Collège Carnot, Fontainebleau. Fig. 3. Façade on the courtyard. Engraving. In *Nouvelles Annales de la Construction* 40, no. 470 (1894): plates 7-8, fig. 3. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.
- 3.15. Exposition Universelle of 1889. Dôme Central. Glyptographie. In *Nouvelles Annales de la Construction* 35, no. 416 (1889): plates. 36-37, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.
- 3.16. Church of Saint-Louis, today Saint-Paul, rue Saint-Antoine, Paris. Engraving. In *Le Magasin Pittoresque* 14 (1846): 105. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.M33. Photograph by Peter Sealy.
- 3.17. View of the Château de Maisons, built by François Mansart. Engraving. In *Le Magasin Pittoresque* 16 (1848): 172. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.M33. Photograph by Peter Sealy.

- 3.18. Arras, Hôtel de Ville in its original state. Engraving. In *Le Magasin Pittoresque* 9 (1841): 225. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.M33. Photograph by Peter Sealy.
- 3.19. Félix Duban, Customhouse and Tollhouse, 1823. Drawing In Arthur Drexler, ed., *The Architecture of the École des Beaux-Arts* (London: Secker & Warburg, 1977), 146.
- 3.20. Louis-Ambroise Dubut, Public granaries [façade elevation], 1797. Ink and watercolor on cloth-faced paper. École nationale supérieure des Beaux-arts de Paris PRA 115-2.
- 3.21. Édouard Baldus, View of the Porte Saint-Denis, facing north or south, Paris, France, c. 1852. Albumen silver print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1980:0220.
- 3.22. Édouard Baldus, Petit Trianon: Garden façade. Héliogravure. In Édouard Baldus, *Palais de Versailles: Motifs de décorations* (Paris: E. Baldus, c. 1870–77) plate 96. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M 7621. Photograph by Peter Sealy.
- 3.23. Édouard Baldus, Façade on the Parc. Héliogravure. In Édouard Baldus, *Palais de Versailles: Motifs de décorations* (Paris: E. Baldus, c. 1870–77) plate 98. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M 7621. Photograph by Peter Sealy.
- 3.24. Édouard Baldus, *Baies d'attique au dessus de la Salle des Fêtes: Place Lobau*. Héliogravure. In Théodore Ballu and Édouard Deperthes, *Reconstruction de l'Hôtel de Ville de Paris* (Paris: Librairie centrale d'architecture, 1884), plate 55. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:94-B14. Photograph by Peter Sealy.
- 3.25. Édouard Baldus, Cour des bureaux. Héliogravure. In Théodore Ballu and Édouard Deperthes, *Reconstruction de l'Hôtel de Ville de Paris* (Paris: Librairie centrale d'architecture, 1884), plate 40. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:94-B14. Photograph by Peter Sealy.

- 3.26. Édouard Baldus, The Imperial Library of the Louvre, Paris, c. 1856–57. Albumen silver print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1976:0080.
- 3.27. Hector Lefuel, Study for the façade of the Pavillon Sully, 1857. Archives nationales, Paris 64 AJ 424 69 bis.
- 3.28. Édouard Baldus, The Pavillon Sully, Louvre, Paris, between 1852 and 1857. Salted Paper Print. In *Réunion des Tuileries au Louvre 1852–1857* (Paris: Chardon aîné, 1857). J. Paul Getty Museum 84.XO.735.3.2.19. Digital image courtesy of the Getty's Open Content Program.
- 3.29. Agence d'Hector Lefuel, Cour du Carrousel elevation of the north gallery of the Tuileries, 1859. Archives nationales, Paris 64AJ 514\* pièce 8. Photograph by Guillaume Fonkenell.
- 3.30. Édouard Baldus, Tuileries Palace, Paris, 1855. Galerie Michèle Chomette, Paris. In Malcolm Daniel, *The Photographs of Édouard Baldus* (New York: Metropolitan Museum of Art; Montreal: Canadian Centre for Architecture, 1994 164 plate 38.
- 3.31. Anonymous, First political execution by guillotine, place du Carrousel, 1792. Paris, Musée Carnavalet G. 22084.
- 3.32. Collaborator of Lefuel, Grands Guichets, perspective taken from the Seine side, c. 1864–66. Drawing. Paris, musée du Louvre, Archi7 ; 64AJ592pièce3.
- 3.33. Agence d'Hector Lefuel, Grands guichets, Orthogonal elevation, Seine side, 1864. Drawing. Paris, musée du Louvre Archi1; 64AJ592pièce7.
- 3.34. Édouard Baldus, Toulon, 1861 or later. Albumen silver print from wet collodion glass plate negative. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1981:0816:069.

## Chapter 4

- 4.1. Emmanuel Brune, Main staircase of a sovereign's palace, longitudinal section. Perspective. India ink on paper. École nationale supérieure des beaux-arts PRA 232-3.
- 4.2. Bibliothèque Sainte-Geneviève, Paris. Ground floor plan and transversal section. Rez-de-Chaussée & Coupe Transversale." In Charles-Pierre Gourlier et al., *Choix d'édifices publics*, vol. 3 (Paris: L. Colas, 1825-50), plate 387. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture MAIN M 5366. Photography by Peter Sealy
- 4.3. Untitled. Engraving. In Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture données à l'École polytechnique*, vol. 1 (Paris: the author, Year X [1802]–Year XIII [1805]), plate 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE NA2520.D8213 (0007169). Photograph by Peter Sealy.
- 4.4. Nicolas Marie Paymal Lerebours, Notre Dame, Paris, 1839 or 1840. Daguerreotype. Oxford Museum of the History of Science 89963.
- 4.5. Joseph Alphonse Adhémar, Notre Dame de Paris, 1859. Engraving. In Joseph Alphonse Adhémar, *Traité de perspective linéaire* (Paris: Armand Colin & Cie, 1880): plate 79. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal. MAIN M NA2710.A4 1880. Photograph by Peter Sealy
- 4.6. Édouard Baldus, Notre-Dame Cathedral, 1850–59. Albumen silver print. J. Paul Getty Museum 84.XP.218.20. Digital image courtesy of the Getty's Open Content Program.
- 4.7. South Front of York Minster. Engraving. In F.W. Mills, *Photography for Architects* (London: Iliffe & Son, 1890). British Library f.37 08909.
- 4.8. Percier and Fontaine, "The Library at Malmaison," 1812. Drawing.

- 4.9. Paul-Marie Letarouilly, View of the Capitol buildings from the Tarpeian Rock. Engraving. In Paul-Marie Letarouilly, *Édifices de Rome moderne, ou, Recueil des palais, maisons, églises, couvents, et autres monuments publics et particuliers les plus remarquables de la ville de Rome*, 3 vols. (Paris: Typographie de Firmin Didot frères, 1840–57), plate. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M NA44.L645.A63 1840. Photograph by Peter Sealy.
- 4.10. Félix Duban, Paris, View of the church of the Madeleine, 1836–37. In *Album du Duc d'Orléans* (1837). Watercolor. Image courtesy Kupferstichkabinett der Staatlichen Museen zu Berlin—Preussischer Kulturbesitz.
- 4.11. Grand Opéra de Paris (Competition of 1 February 1861). Project of Mr. Tétaz, Project of M. Haller. Engraving. In *Revue générale de l'architecture et des travaux publics* 19 (1861): plate 27. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 4.12. Eugène-Emmanuel Viollet-le-Duc, Opéra, Paris. Académie impériale de musique. View of the building and its surroundings, project, 1861. Photo (C) Ministère de la Culture—Médiathèque du Patrimoine, Dist. RMN-Grand Palais / image RMN-GP.
- 4.13. Édouard Baldus, Church of Saint-Germain l'Auxerrois, 1854-57. Albumen silver print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1983:0199:011.
- 4.14. Louis-Auguste et Auguste-Rosalie Bisson (Frères), Façade of the Bibliothèque Sainte-Geneviève in 1852. Salted paper print probably coated with albumen, on mount. Académie d'Architecture 492.
- 4.15. Henri Labrousse, Perspective drawing of the Bibliothèque Sainte-Geneviève. Engraving by Jacques-Joseph Huguenet. In *Revue générale de l'architecture et des travaux publics* 11 (1853): plate 31. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.

- 4.16. Labrouste, sheet of preliminary plans and sketches for Bibliothèque Sainte-Geneviève, ca. 1839. Drawing. Bibliothèque Sainte- Geneviève, Paris.
- 4.17 Unknown central Italian painter, Ideal City, c. 1480–90. Painting. Galleria Nazionale delle Marche, Palazzo Ducale di Urbino.
- 4.18. Emanuel de Witte, *Interior of a Protestant, Gothic Church, with a Gravedigger in the Choir*, 1669. Oil on panel. Rijksmuseum, Amsterdam SK-A-4054.
- 4.19. Bisson frères, “Pivoting panel [*vantail*] of the Saint Marcel portal, called Sainte Anne portal, 1853. Albumen silver print. In *Monographie de Notre-Dame de Paris* (Paris: A. Morel, 1853): plate 1. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal, PH1980:0039:008.
- 4.20. Bisson frères, West façade, 1853. Albumen silver print. In *Monographie de Notre-Dame de Paris* (Paris: A. Morel, 1853). Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal, PH1980:0039:001.
- 4.21. Hôtel du journal *le Figaro*, rue Drouot, at Paris. Perspective view of the main façade. Engraving. In *Revue général d’architecture et des travaux publics* 31 (1874): plate 48. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.
- 4.22. Ministère de l’Agriculture, du Commerce et des Travaux publics, at Paris. Interior perspective view. In *Revue générale de l’architecture et des travaux publics* 29 (1872): plate 47. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.
- 4.23. Ministère de l’Agriculture, du Commerce et des Travaux publics, at Paris. Interior perspective view. In *Revue générale de l’architecture et des travaux publics* 29 (1872): plate 48. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.

- 4.24. The University Museum, Oxford. Engraving. In *The Builder* 17, no. 844 (9 April 1859): 252. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83.
- 4.25. Vestibule (théâtre de la Gaité). Engraving. In Felix Narjoux, *Paris, monuments élevés par la ville, 1850-1880* (Paris: Vve. A. Morel et Cie., 1880-83). Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal MAIN M 2103.
- 4.26. Old Hôtel de Ville, at Bourges. Engraving. In *La Construction moderne* 8 (1892-93): plate 39. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.C668. Photograph by Peter Sealy.
- 4.27. Property of M. W. ..., at Suresnes (Seine). Bird's eye view of the main buildings. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869-71): fig. 116. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.
- 4.28 Property of M. W. ..., at Suresnes (Seine). Perspective view from the garden. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869-71): fig. 97. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.
- 4.29. Property of M. W. ..., at Suresnes (Seine). Dining room (looking towards the winter garden). Engraving. In *Gazette des architectes et du bâtiment* 7 (1869-71): fig. 43. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.
- 4.30. Property of M. W. ..., at Suresnes (Seine). Library. Perspective. In *Gazette des architectes et du bâtiment* 7 (1869-71): fig. 90. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.



- 4.31. Property of M. W. ..., at Suresnes (Seine). Library. Perspective. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–71): fig. 91. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392.
- 4.32. Halle aux blés, Paris. Engraving. In Joseph Alphonse Adhémar, *Traité de perspective linéaire* (Paris: Armand Colin & Cie, 1880), plate 76. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal. MAIN M NA2710.A4 1880. Photograph by Peter Sealy
- 4.33. Villa Honoré at Trouville-sur-mer. M. Devrez, architect. General perspective. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–70): 283. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.
- 4.34. Unknown photographer, Villa Sidonia c. 1868. Photograph. Musée de Trouville. In Culot, Maurice and Nada Jakovljevic, eds. *Trouville* (Liège: Mardaga, 1989), 449. Photograph by Peter Sealy.
- 4.35. Villa Honoré, Trouville-sur-mer. M. Devrez, architect. Perspective of the porch. Engraving. *Gazette des architectes et du bâtiment* 7 (1869–70): 302. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392.
- 4.36. Unknown photographer, Villa Honoré at Trouville, detail of the façade on the rue Croix. Photograph. Musée de Trouville, Gift of M. and Mme d'Allaines, 1989. In Gilles Plum, *Villas balnéaires du second empire: Trouville, Deauville et Côte Fleurie* (Cabourg: Éditions Cahiers du Temps, 2001), 72. Photograph by Peter Sealy.
- 4.37. Villa Honoré, Trouville-sur-mer. M. Devrez, architect. Perspective (north façade). Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–70): 323. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy

4.38. Unknown photographer, Villa Honoré at Trouville, detail of the façade on the rue Demain, between 1867 and 1870. Photograph. Musée de Trouville, Gift of M. and Mme d'Allaines, 1989. In Gilles Plum, *Villas balnéaires du second empire: Trouville, Deauville et Côte Fleurie* (Cabourg: Éditions Cahiers du Temps, 2001), 71. Photograph by Peter Sealy.

## Chapter 5

5.1. Charles Marville, Pavilion 2 of the Halles Centrales (the “Fort de la Halle”), 1866. Albumen print. Musée Carnavalet CARPH000536.

5.2. Charles Marville. “Rue des Prouvaires, from Rue St. Honoré, Paris (1<sup>st</sup> arrondissement),” 1868. Photograph. Bibliothèque historique de la Ville de Paris. © Charles Marville/BHVP/Roger-Viollet.

5.3. Halles Centrales, Paris: View of the southwest pavilion under construction, 1856. Photolithograph. In *Revue générale de l'architecture et des travaux publics* 14 (1856): plate 41. Collection Centre Canadien d'architecture/Canadian Centre for Architecture, Montréal PER W.R484.

5.4. Louis-Émile Durandelle, Construction of the Nouvel Opéra, Paris. Albumen print. École nationale supérieure des Beaux-Arts Ph 3674.

5.5. Louis-Émile Durandelle, Tour Eiffel, Paris, 1888. Albumen silver print. Collection Centre Canadien d'architecture/Canadian Centre for Architecture, Montréal PH1987:0362.

5.6. Glass Roof, Bon Marché Department Store, Paris. Photograph. In Sigfried Giedion, *Building in France, Building in Iron, Building in Ferro-Concrete* (Santa Monica: Getty Institute for the History of Art and the Humanities, 1995) 117. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal ID NA2599.8.G454; ID:95-B2187.

5.7. Apartment Building, rue du Général Henrion Berthier, Neuilly. Gustave Gridaine, architect. Albumen silver print. In Albert Lévy, *Les Constructions nouvelles: Maisons de rapport, hôtels privés: album photographique* (Paris: E. Ducher, c. 1895), plate 26. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1981:0234:001-035. Photograph by Peter Sealy.

5.8. Église Saint-Sulpice—Northern Tower and Façade. Chalgrin and Servandoni, architects.

Phototypie. In Paul Planat, *Le Style Louis XVI: recueil de motifs choisis d'architecture au XVIIIe siècle* (Paris: Librairie de la construction moderne, 1905), plate 37. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M 7582. Photography by Peter Sealy.

5.9. École Militaire—Chimney and Mirror of the Marshall's Salon. Phototypie. In Paul Planat, *Le Style Louis XVI: recueil de motifs choisis d'architecture au XVIIIe siècle* (Paris: Librairie de la construction moderne, 1905), plate 54. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M 7582. Photography by Peter Sealy.

## **Introduction.**

This dissertation charts the rise of our modern photographic regime in nineteenth-century France. Using the case of photography, it explores truth as a malleable practice that attempts to reconcile architecture's growing interest in subjective qualities (especially space, movement, and the fragmentation of the architectural object) with its desire to be grounded in objective, evidentiary discourse. Mediations of the photographic image—especially through engraving—and analogous relationships with other media such as plaster casting and iron construction provide key focal points, as do changing attitudes towards perspectival representation and the emergence of a “photo-scopic” form of modern vision. In seeking to elicit architecture's changing relationship to truth in this period, the following chapters delve into what Stephen Bann has termed the “lure of the real,” revealing the practitioner's apparently conflicted desire, on the one hand, to underscore the quality of truthfulness in the architectural photograph, and, on the other, to allow for the creative deployment of the subjective architectural imaginary. In actuality, the former frequently and ably supported the latter.

How architects used photographs, what books and magazines said about the photographs they printed, and how the photographs' supposed im-medicacy was constructed, deployed, and necessarily re-mediated are the subjects of this dissertation. It is my claim that the potency nineteenth-century architects and theorists discovered in the photograph—its indexicality, its faithful translation of detail, its mobile vantage, cropping, and atmosphere, and its potential for visual serialization—is a symptom of their broader engagement with the concept of truth.

While case studies from several of geographic locations are considered, France provides my predominant focus. Beyond its centrality to architectural debates in the nineteenth-century, architectural representation in France was highly constrained by the *École des Beaux-Arts*' proclivity for orthogonal views, providing a clear register for moments in which photographs responded to predominant visual codes, and also for the moment in which a properly photographic visual regime began to re-shape those codes.

While a wide variety of material has been studied for this dissertation, popular and specialized publications are the most significant. Using the library collection of the Canadian Centre for Architecture in Montréal as an archive, I have made a wide survey of French nineteenth-century illustrated publications, looking both for the presence as well as the absence of photographs within their pages. I have also sought the hidden presence of photographs as sources for other media. This ongoing survey of treatises, dictionaries, monographs, pattern books, magazines and unpublished albums has been complimented by similar research at the *Bibliothèque nationale de France* in Paris, the *British Library* in London and the *Francis Loeb Library* at Harvard University. In parallel with studying published images, I have attentively charted the textual claims made on their behalf in captions, accompanying articles

and even in unillustrated texts. Photographic prints, architectural drawings, archival documents, and other unpublished material have also supported my understanding of the photograph's place within nineteenth-century visual culture.

Throughout I have endeavored to piece together disparate evidence, weaving thematic narratives across long temporal periods. The first chapter, "Infinite Detail," charts the discursive deployment of photography's indexical guarantee across a wide range of architectural practices, from the restoration of historic monuments to the propagation of historicist eclecticism. It traces the construction of this guarantee through assertions of the photograph's lack of mediation and quasi-equivalence to the building itself. The camera, it was frequently claimed, was an infallible laborsaving device that freed representations from the twin blights of human error and laziness. Often, photographs were said to exceed human acuity, and photography played a major role in establishing the accurate transcription of detail as the standard by which the truthfulness of architecture and its representations should be adjudged within the nineteenth century's historicizing currents. However, as soon became clear, this constructed ontology of the photograph as an idealized standard was one that actual photographs could not meet, at least not in the 1850s.

To what ends were the truth claims embedded in photographs applied? The camera's inexorable rendering of detail made it an indispensable tool for the burgeoning practice of historic restoration in the mid-nineteenth century. Photography was said to guarantee the historical fidelity of the restoration, useful for constraining the architect's own subjectivity and capable of furnishing indisputable evidence of the accuracy of his or her work. However, in actuality photography provided cover for a variety of inevitably inventive practices, revealing objectivity to be a ritual of performed subjectivity. This is especially clear in Eugène-

Emmanuel Viollet-le-Duc's conception of restoration, where photographs offered a series of unimpeachable fragmentary inputs necessary to the development of the restoration architect's empathetic relationship with the monument, which was to be restored to a fictive ideal, and not a precise historical state.

Photography's indexical relationship with its subject matter lead to analogies with other media, especially plaster casting. Such comparisons were sometimes offered as positive certifications of its fidelity. In other instances, photographs were condemned through equation with casts and the supposed absence of artistic liberty from their production. The importance of the analogical pairing of casting and photography is made clear by the publication of numerous albums of photographs of cast ornamental fragments in the second half of the nineteenth century. One of the most frequent forms of photographic representations of architecture at a time when photographic depictions of whole buildings (especially contemporaneous works) were rare in the architectural press, these albums deployed the multi-step indexical processes of casting and photography to stabilize the most expressive and inherently subjective realm of architectural practice. This stabilization was again operative: casting and photography fixed elements of architectural décor not for rote copying (although a further analogy with mass-produced ornament in iron, terra-cotta and *carton-pierre* is inescapable) but rather to perpetuate a living tradition of French ornamentation. As with restoration, the free and self-perpetuating artistic creation embedded within the concept of the *motif* required the careful study of indexical representations.

Through casting and photography, ornament was rent from its original context and freed for productive circulation. This quasi-commodification of the architectural fragment was closely tied to the systems of production in place on building sites, through which questions

of authorship, creative merit and the economics of capitalist building production were negotiated. This photographic focus upon innumerable, if often banal, details as the standard for architectural truth paradoxically aligns a visual regime closely associated with the bourgeois eclecticism of the late nineteenth-century with the *sachlichkeit* version of early Modern architecture in the twentieth.

While the indexical discourse examined in the first chapter propagated an understanding of photographs as unmediated—if often flawed—objects, they required multiple remediations not only to become reproducible in print but also in order to live up to their promise. These transformations are the subject of the second chapter, “Engraved Translations.” In particular, the remarkably widespread practice of using photographs as source images for engravings is studied. While not all engravings made from photographs were so identified, the caption “after a photograph” was a common presence in the pages of the popular and architectural presses in the nineteenth century. This textual assertion guaranteed a representation’s authenticity, while denoting the translation behind its appearance. Often, an accompanying text would provide further particulars concerning an image’s photographic origins, while also surreptitiously detailing the many modifications made in the process of remediation. While the admission of the latter might seem to undermine the truth claims accompanying the former, together they contribute to the construction of the idea of photographic objectivity—in another medium.

Beyond the changes necessitated by the switch from photography’s tonal visual register to engraving’s linework, the differences between source photograph and published engraving testify to the former’s perceived strengths and failings. Engravings corrected the many perceived flaws plaguing early architectural photographs: too deep shadows, blur, and the lack



of hierarchy leading to a confusing excess of information within the image, thereby making clear the double meaning of the word of remediation. By studying engravings made from photographs—with their numerous additions and omissions in the mediatory process—we are better able to understand photography’s appeal to architects as a medium than we would be by merely studying photographs. However, while these corrections reveal a degree of authorial intent usually hidden from photographs and clarify which elements architects prized within images, they often erased the very accidents and defects—in the image and on the building—that were central to photography and architecture’s own reality effects.

Engravings from photographs were produced using a variety of techniques, from tracing to photoxylography. Paradoxically, photomechanical techniques were often used to publish line drawings at a time in which photographs themselves required translation into engraving to be widely reproducible. The complicated image economies and the complex relationships between their actors (architect, photographer, artist-correspondent, illustrator, engraver, author and publisher) belie the Benjaminian notion of a synchronic progression of media forms. The contested division of representational labor frequently yielded hybrid images, with the battle-like spectacle of architectural construction and demolition providing a key example of the challenge of concurrently recording both static and animated objects. Just as the album of photographs of plaster casts set up a multi-stage process of indexical transference, the textual assertions accompanying engravings from photographs often emphasized the reliability of an image’s chain of custody. This was especially crucial for representations of far away subjects, or for images intended to serve as evidence in support of historical ar-

guments. In this latter role, engravings from photographs were crucial to the publication of many of the first global histories of architecture.

While the first two chapters explore the construction—in several differing media—of a new photographically inflected expectation of what a truthful, accurate and useful image should be, the third explores the nineteenth-century French appetite for representations capable of combining mensural accuracy with spatial sensibility. “The Elevation in Perspective” considers the relationship between early architectural photography and existing codes of architectural representation, namely the bias for frontal views evinced by many photographers. While this corresponded to the *École des Beaux-Arts*’ proclivity for orthogonal representation, this chapter demonstrates that it was not the orthogonal elevation but rather a distinct drawing type, the elevation perspective which in fact was most closely approximated by Charles Nègre, Édouard Baldus, and others. While some closely cropped elevation photographs indeed approached the disembodied and all-pervasive vision of the orthogonal elevation, most situate a flattened façade plane within a spatial surround. Aspects of three-dimensionality evident in the foreground, background and sides creep into the center of these images, whose viewpoint is both embodied and highly contingent. The visual penetration latent in these one-point perspectives activates a spatial impulse that is nevertheless co-existent with a remarkable degree of mensural accuracy within these disciplined images.

The distinction between elevation types was closely tied to the question of whether truth lay in perceptible (the objects as it is seen) or abstract reality (the object as it really is). Claims that the orthogonal elevation eliminated errors introduced by human vision were countered by criticisms of the unreal juxtapositions introduced by this drawing type, especially when it served *Beaux-Arts* compositional practice. Consideration of whether repre-

sentational forms depicted or contradicted truthful reality is continued in the penultimate chapter, “Scopic Images and Mobile Subjects.” While the Beaux-Arts preference for orthogonal representation, especially in its prestigious Prix de Rome competition, was reflected in many leading architectural publications, a longstanding French tradition of perspective rendering nevertheless persisted. Following Peter Galassi’s pictorial categorization, this tradition is shown to consist largely of “logical constructions”: images in two-point perspective that represent the architectural object as an integral whole.

It is the emergence of a new visual regime corresponding to Galassi’s second category of “selective depictions” that marks the moment when architectural representation wholly adopts qualities that are uniquely photographic. In France, this occurred around 1870 through a number of engravings published by the *Gazette des architectes* and the *Revue générale de l’architecture et des travaux publics*. Strangely cropped and taken from odd angles, these heavily shadowed views respond to an acute sense of visual curiosity rather than to any desire to present or understand the building as a unified ensemble. These “photoscopic” images dissolve the architectural object into a fragmentary field of visual experience, one that is intended to be explored by a moving subject who wanders through an infinite field of possible views, pausing at moments of heightened visual interest. These representations belong to an era in which many French theorists such as Charles Blanc, Viollet-le-Duc and Charles Garnier began to interpret architecture in dynamic, spatial terms.

Were the engravings at the heart of this new visual regime, so clearly imbued with photographic qualities, in fact generated by photographs? While certain treatises on perspective did show how to construct such images geometrically, sources photographs have been located for many of the engraved “selective depictions” discussed in this chapter. Together

with the examples from the second chapter, they further support the argument for photography's hidden role behind many nineteenth-century architectural representations.

A hidden presence also haunts the final chapter. "Material Facts, Immaterial Fictions" examines a series of fraught debates on the architectural status of iron buildings. While metal's industrial connotations clearly colored its reception, this was largely determined by competing attitudes towards its immaterial proportions, which called into question the relationship between the true and the truthful [*le vrai et le vraisemblable*]. Iron's newness and its dense configuration of industrial matter within structures marked by their thinness, large spans, and general openness contributed to its representational instability. A series of remarkable descriptions of iron buildings in Émile Zola's Rougon-Macquart's novels exemplify the resulting representational instability of the iron building.

Just as photography and casting had been equated through indexical analogies, the former was linked with iron architecture by the poet Charles Baudelaire and the architect Garnier on the basis of their industrial origins, documentary utility and pernicious effect on art. Using Victor Baltard's Halles centrales in Paris as an example, this chapter refocuses the analogy of iron architecture and photography upon the question of materiality. It follows the reception of the iron building through its apogee at the 1889 Exposition universelle in Paris, and its (temporary) eclipse at the 1900 exposition. Noting the powerful presence of photography behind the modernist vision celebrated by Walter Benjamin and Sigfried Giedion, the chapter nevertheless concludes by noting photography's equal utility in the service of *fin-de-siècle* stylistic reactions. The modernity of a photographic visual regime lay in certain

formal qualities, especially fragmentation, far more than in the architectural content of its images.

The conclusion broadly considers the relationship between the truth of representational forms and the equally constructed truth of architecture, finding both to be shifting constructs. For nineteenth-century architects and theorists, truth was a practice—a set of rules set out in advance but far from universal—against which the value of works could be adjudged. While the heteroclit examples presented within this dissertation prevent the assertion of any direct stylistic linkage between architectural and photographic truth, the utility of photography for nineteenth-century architecture’s myriad moralist discourses is evident.

## Chapter 1.

### Infinite Detail: Photography, Restoration, and the Fragment

#### “So complete in appearance, so deceiving in fact”

In 1856, seventeen years after the public announcement of the invention of photography, César Daly's *Revue générale de l'architecture et des travaux publics* became the first architectural periodical to publish a photograph: François-Alphonse Fortier's view of the François I<sup>er</sup> staircase at the Château de Blois (fig. 1.1).<sup>1</sup> Fortier's paper photograph was printed by hand and “tipped in” (glued) onto its support. As France's leading architectural publication, the *Revue générale* was known for the care it took to provide the most precise illustrations possible, usually in the form of lavish steel-plate engravings.<sup>2</sup> The publication of a

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<sup>1</sup> Fortier's print was a calotype, a salted paper print made from a paper negative following the process developed by William Henry Fox Talbot. However, Jean-Philippe Garric has observed that not all copies of the *Revue générale* have the same Fortier print. Several instead feature an albumen print of a perspective view of the staircase, also made by Fortier. See Garric, *Recueils d'Italie*, 228 n. 12. This perspective view is reproduced as illustration 194 in Bergdoll, “Duban et la photographie,” 230.

Fortier's calotype of the staircase at Blois (or a quasi-identical view) had been published three years earlier in Louis-Désiré Blanquart-Évrard's *Souvenirs photographiques*, an 1853 album containing forty-two architectural views, of which seventeen are attributed to Fortier. On the *Souvenirs photographiques*, see Jammes, *Blanquart-Évrard*, 294–304.

<sup>2</sup> On the *Revue générale*'s use of illustrations, please see Lipstadt, “Building and the Book” (1988) and Saboya, *Presse et architecture* (1991).

photograph was a development worth noting. An essay by the architect Henry Sirodot accompanied Fortier's image, making the case that mechanically produced representations could satisfy what he termed "our epoch's need for precision."<sup>3</sup> Sirodot's article reviewed photography's short history, from the rival techniques vying for acceptance since its public unveiling in 1839 to technical improvements made since, and the dominance of photography at the 1855 Universal Exposition in Paris. Although he agreed that photographs seemed preferable to even the most detailed renderings, Sirodot noted that photographs were far from being unmediated images. He wrote, "Even if it is one of the properties of light to reproduce all objects with the most imperceptible details, to trace ornaments in their most inextricable meanders and their most infinite delicacies, we must not forget however that light produces its effects only through the intermediary of an instrument."<sup>4</sup> This instrument required skilled operation so that the "forms and proportions of objects are in no way modified."<sup>5</sup> Here, Sirodot homed in on photography's often-confusing ontology: together, the action of camera, operator, and nature (sunlight) were required to transcribe a building's details accurately—especially its ornament.

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A student of Auguste Guénepin at the École des beaux-arts, Jean-Baptiste Henry Sirodot (1808–72) was a frequent contributor to the *Revue générale*. He replaced César Daly in his functions as Diocesan architect at Albi in 1851 and 1855–58. See "Sirodot, Jean-Baptiste Henry (27 mai 1808 – 17 novembre 1872)," in *Dictionnaire des élèves architectes de l'École des beaux-arts (1800-1968)* [online resource].

<sup>3</sup> "[A]u besoin de précision de notre époque." Sirodot, "Escalier," col. 215.

<sup>4</sup> "Il ne faut pas oublier cependant que si c'est une des propriétés de la lumière de reproduire tous les objets avec leurs plus imperceptibles détails, de retracer les ornements dans leurs méandres les plus inextricables et leurs délicatesses les plus infinies, elle ne produit ses effets que par l'intermédiaire d'un instrument." Sirodot, "Escalier," col. 215.

<sup>5</sup> "[F]ormes et les proportions des objets ne soient en rien modifiées." Sirodot, "Escalier," col. 215.

For Sirodot, the Château de Blois was a doubly appropriate subject for the mechanical gaze. On the one hand, it was an important historical building that photography could document with particular care. On the other, it was a contemporary restoration project by a leading architect who had integrated photography into his actual working process. In 1843, Félix Duban had commissioned daguerreotypes of the ruined château from Hippolyte Bayard to help prepare his project for submission to the Commission des monuments historiques (fig. 1.2).<sup>6</sup> Barry Bergdoll speculates that Duban himself may have photographed the château for this reason as well.<sup>7</sup> These photographs allowed Duban to propose what the *Inspecteur des Monuments historiques*, Prosper Mérimée, termed “incontrovertible restitutions” of the François I<sup>er</sup> wing in which “nothing... has been left to personal whim or artistic invention.”<sup>8</sup> With the restoration underway, Duban continued using photographers to record the work at regular intervals. They also allowed him to supervise the site from afar in two ways: by revealing details that could not be easily seen from ground level, and permitting the architect to follow the project from Paris and intervene when necessary. Furthermore, the images created a historical record of a building that supposedly presented a legible register of French architecture, a museum spanning from the High Gothic to the classicism of François Mansart. Duban made his attitude clear in an 1848 report: “The only value of a

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<sup>6</sup> Made using a direct-positive process (i.e., without a negative), daguerreotypes are singular photographic images formed upon a highly reflective metal plate. Developed by Louis-Jacques-Mandé Daguerre (1787–1851), they became the first publically known photographic process in 1839.

<sup>7</sup> Bergdoll, “Félix Duban,” 14.

<sup>8</sup> “Rien ... n’a été laissé au caprice, à l’invention... restitutions incontestables.” Prosper Mérimée, Rapport sur la restauration du Château de Blois, 20 décembre 1844, Archives du Patrimoine, Carton: Loir-et-Cher/Blois/Château/ Carton 1177/Dossier 1: ‘Bâtiment François Ier, 1843-1854’. Translation from Bergdoll, “Félix Duban,” 13.



work of this nature is to be in the greatest possible faithfulness to the reproduction of what existed and to the complete abdication of the taste of the person directing the work.”<sup>9</sup> In other words, this project depended upon the perceived fidelity of the result.

Sirodot, however, conjoined photography’s supposed truthfulness not with Duban’s disavowal of authorship, but rather with the architect’s active role in bringing about this restoration. As Sirodot explained:

[This] charming creation of the Renaissance’s most flourishing epoch, mutilated and in ruin, has recently regained a new appearance thanks to the magic wand of the great sorcerer, Mr. Duban. Doesn’t the staircase of the Château de Blois have a double claim to inaugurate this new medium of study?

In this specimen [Fortier’s photograph], the ensemble of the monument has been sacrificed a little in order to give its details all the grandeur that the *Revue*’s format allows, for it is particularly upon the multiplicity of details that we draw the attention of artists today...

The finely detailed arabesques which climb across the faces of the buttresses are to be read as easily the fine stonework of their construction. The series of moldings that compose the cornices, the singular connections [*emmanchements*] they present, as well as the ornaments that decorate them are recognizable without hesitation. Paying close attention, and examining with a magnifying glass one can even make out through the shade of the stone and the sharpness of the ribs the parts which go back to the original construction and those which date only to the restoration; The gargoyles, some of the pinnacles, and the charming balustrades that form the suite

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<sup>9</sup> “Le seul mérite d’une œuvre de cette nature consistant dans la plus grande fidélité possible de la reproduction de ce qui existait et dans la plus complète abnégation du goût de celui qui la dirige.” Duban, report signed 15 May 1848, Archives du Patrimoine, Carton 1177 Dossier 1: ‘Bâtiment François Ier, 1843-1854’. Translation from Bergdoll, “Félix Duban,” 18.

of balconies climbing with the staircase [*rampants comme l'escalier*], are restorations, as are the supports placed underneath the niches and the figures they contain, which happily recall the gracious compositions of Primaticcio and Jean Goujon.<sup>10</sup>

In alluding to Duban's "magic wand," Sirodot referenced the sense of enchantment that animated historic restoration in the nineteenth century, a process that the French *Commissions des monuments historiques* sought to raise to that of a science. Indeed, it was precisely the scientific nature of both photography and restoration—the consilience that Sirodot called his "double claim"—that imparted a sense of wonder.<sup>11</sup> Both restoration and photography required a skilled conjurer to set in motion a creative chain producing historical facts. Each could stabilize the living process of history into a series of fragmentary images. In other words, where Duban claimed a truthful restoration aided by the almost unmediated tech-

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<sup>10</sup> "[C]ette charmante création de la plus florissante époque de la Renaissance, qui délaissée, mutilée et tombant en ruine, a repris tout récemment une parure nouvelle sous la baguette magique du grand enchanteur, M. Duban. L'escalier du château de Blois n'avait-il pas un double titre pour inaugurer cette nouvelle voie d'études?"

"Dans ce spécimen, l'ensemble du monument a été un peu sacrifié par le besoin de donner aux détails tout la grandeur que permet le cadre de la *Revue*, car c'est particulièrement sur la multiplicité des détails que nous appelons aujourd'hui l'attention des artistes..."

"Les fines arabesques qui grimpent capricieusement sur la face des contre-forts se lisent tout aussi facilement que l'appareil de la construction. Les séries de moulures qui composent les corniches, les singuliers emmanchements qu'elles présentent, les ornements qui les décorent se reconnaissent sans hésitation. Avec un peu d'attention, en examinant à la loupe, on distingue même, au ton de la pierre, à la netteté des arrêtes, les parties qui remontent à la construction de celles qui se rattachent à la restauration; les gargouilles, une partie des pinacles, les charmantes balustrades qui forment une suite de balcons rampants comme l'escalier, sont des restaurations aussi bien que les supports placés au bas des niches avec les figures qu'elles contiennent, et qui rappellent si heureusement les gracieuses compositions du Primaticcio et de Jean Goujon." Sirodot, "Escalier," col. 215–16. Translation in part from Bergdoll, "Félix Duban," 21.

<sup>11</sup> For Walter Benjamin, the difference between magic and technology was only historic. See Mertins, "Walter Benjamin" (2005), 161–62.

nology of photography, Sirodot saw that the subjectivity lurking behind supposedly exact science was the source of both the project's and the photograph's arresting importance.

Yet Sirodot's praise of the photographic image was balanced with trenchant criticism. Despite the "admirable fidelity of the innumerable details," he could not avoid feeling disappointed: The mind "scrutinizes the shadows too dark for its liking, desperate for a view of the bundle of arabesques from which rises the vault which forms the steps. But is this not asking the impossible?"<sup>12</sup> Photographic images, "so complete in appearance, so deceiving in fact," had promised accurate detail but only delivered shadows, leaving the architect unsatisfied.<sup>13</sup> If a photograph's "completeness in appearance" asserted its tantalizing capacity to offer the unmediated presence of often distant and historicized buildings, then its "deception in fact" testified to the ineluctable and sometimes frustrating partiality of photographic mediation. While many praised the camera for aspiring to a degree of visibility unavailable to the human eye, Sirodot, in contrast, noted how the latter remained a far more powerful tool than the former.

The *Revue générale*'s publication of Fortier's photograph marks an inchoate chapter in the rise of a photographic regime of architectural representation. Sirodot's brief commentary illustrates one of the persistent paradoxes of this new regime: that the idea of photography set a standard that many photographs could not satisfy. Technological developments could

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<sup>12</sup> "[C]herche et voudrait, dans ces ombres trop noires à son gré, voir apparaître le faisceau d'arabesques où s'enroule la voûte que forment les marches. Mais n'est-ce pas désirez l'impossible?" Sirodot, "Escalier," col. 216.

<sup>13</sup> "[S]i complètes en apparence, si trompeuses au fond." Sirodot, "Escalier," col. 216.

offer only an incomplete and temporary solution to Sirodot's dilemma. Although other photographic forms—including already extant daguerreotypes—were better able to capture the “bundle of arabesques,” these could only reveal further layers of details that remained frustratingly obscured.<sup>14</sup> The promise of immediate and unmediated fidelity remained impossible by definition, no matter how much the technology improved.

### **An “express invention”**

As Sirodot made clear, the correct transcription of detail was the first and most important criteria for judging the success of architectural photographs in mid-nineteenth century France. In the case of the *Revue générale*, photography seemed to have failed this test; with one exception in that same year, it never included another photographic plate before it ceased publication in 1890, choosing instead to incorporate photographically captured images of buildings into its corpus as engravings.<sup>15</sup>

However, by no means was Sirodot's disappointment unanimous, and many other commentators responded positively to the depiction of architectural and archaeological detail in early photographs. Among the first to do so was the scientist and republican politician François Arago. In 1839, Arago presented a report to the French Chamber of Deputies arguing that Louis-Jacques-Mandé Daguerre, photography's credited discoverer, should re-

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<sup>14</sup> This issue was to endure into the era of moving pictures. Writing in 1946, the French prophet of neorealist cinema, André Bazin, described cinematic realism, saying that the movie camera was only one tool in a long line of media promising to faithfully transmit an unmediated representation of human action. See Bazin, “Myth.”

<sup>15</sup> The *Revue générale* did, however, use *héliogravure* (a photomechanical process particularly well suited to reproducing line drawings) to produce fifty plates in its final four volumes. As Marc Saboya recounts, forty-eight of these reproduced engravings. See Saboya, *Presse et architecture*, 92.

ceive a state pension for the utility of his invention. Among his many supporting arguments, Arago expounded upon the service daguerreotypes could render to the field of archaeology and the documentation of antiquity, both subjects of contemporary interest to architects. If only it had been invented earlier, Arago claimed, this “exact and rapid” means of reproduction would have proved invaluable to the scholars accompanying Napoléon’s militarily ill-fated but scientifically productive Egyptian expedition.<sup>16</sup> “[H]ad we had photography in 1798 we would possess today faithful pictorial records of that which the learned world is forever deprived of by the greed of the Arabs and the vandalism of certain travelers.”<sup>17</sup> While this quotation demonstrates the casual and systematic racism behind nineteenth-century Europe’s nascent orientalist discourse, it also highlights photography’s privileged role in documenting objects at risk of imminent destruction. Looking back at the Egyptian expedition, Arago lauded photography’s vast labor-saving potential: twenty years of work by a legion of draftsmen to copy hieroglyphics could now be handled by a single man wielding a camera. He then went further, taking aim at the monumental scholarly result of the Napoleonic adventure: *Le Description de l’Égypte; ou, recueil des observations et des recherches qui ont été faites en Égypte pendant l’expédition de l’armée française*, published by the *Imprimerie impériale* (later *royale*) in twenty-three volumes between 1809 and 1829.<sup>18</sup> Arago criti-

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<sup>16</sup> “[E]xact et ... prompt.” Arago, “Rapport,” 38. Translation from Arago, “Report,” 17.

<sup>17</sup> “[S]i la photographie avait été connue en 1798, nous aurions aujourd’hui des images fidèles d’un bon nombre de tableau emblématiques, dont la cupidité des Arabes et le vandalisme de certains voyageurs a privé à jamais le monde savant.” Arago, “Rapport,” 38. Translation from Arago, “Report,” 17.

<sup>18</sup> Arago does not note the *Description de l’Égypte*’s own use of labor-saving devices. To speed up the process of engraving its over eight hundred massive plates, Nicolas-Jacques Conté invented an engraving machine capable of delineating large areas of tone with mechanical perfection. Conté’s machine could accomplish the work of eight months in two or three days. See Taws, “Conté’s Machines,” 256–9.

cized the illustrations this work contained as distorted by human error. Photography could have improved the *Description de l'Égypte* immeasurably: with the use of two or three cameras, “innumerable hieroglyphics as they are in reality will replace those which now are fictional or drawn according to pure convention.”<sup>19</sup> Here, Arago was not only lauding photography’s capacity to speed work and avoid mundane errors of transcription, but also celebrating its potential to protect proper scientific research from stylistic routines.<sup>20</sup>

Fascination with the Arab world had hardly waned from Napoléon’s time to Arago’s, and the Near East was the subject of many of the first photographically illustrated books.<sup>21</sup> The first of this genre was Maxime Du Camp’s *Égypte, Nubie, Palestine et Syrie*, published by Gide et Baudry in 1852.<sup>22</sup> Du Camp had been sent to the Near East on an archaeological mission at the behest of the French *Ministère de l’instruction publique*; he travelled from 1849 to 1851 with the renowned author Gustave Flaubert.<sup>23</sup> Of Du Camp’s 220 negatives,

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<sup>19</sup> “[D]e vastes étendues de hiéroglyphes réels iront remplacer des hiéroglyphes fictifs ou de pure convention.” Arago, “Rapport,” 38. Translation modified from Arago, “Report,” 17.

<sup>20</sup> Photography’s utility to the sciences was one of four themes in Arago’s report, its potential service to archaeology and the fine arts being another. While Arago noted possible applications for photometry, topography, and meteorology, his main argument under this rubric is one of confidence in the serendipitous course of progress: surely unconceived applications of the apparatus would be discovered. It is interesting, however, to note that Arago’s suggested applications concern the recording of phenomena beyond the capacity of human observation. See Arago, “Report,” 21–23.

<sup>21</sup> For example, Salzman, *Jerusalem*, Teynard, *Égypte et Nubie*, and Frith, *Egypt and Palestine*.

<sup>22</sup> For Isabelle Jammes, it is the first significant French book illustrated with photographs, although other Blanquart-Évrard publications without accompanying text, including the *Album photographique de l’Artiste et de l’Amateur* were launched in 1851. See Jammes, *Blanquart-Évrard*, 81.

<sup>23</sup> Prior to setting out, Du Camp had learned Gustave Le Gray’s dry waxed paper-negative process, which failed to produce adequate results. However, in Cairo, Du Camp was introduced to Blanquart-Évrard’s new wet procedure by Baron Alexis de La Grange, who was on his way to take photographs in India. See Jammes, *Blanquart-Évrard*, 82–83.

125 were printed by Blanquart-Évrard's atelier in Lille for inclusion in *Égypte, Nubie, Palestine et Syrie*.<sup>24</sup> The prospectus announcing the publication echoed Arago in claiming:

In spite of their intelligence and their manual skill, engravers and lithographers have been powerless up until now to reproduce monuments with exact fidelity. The daguerreotype alone has managed to translate their slightest details, while conserving the general aspect of the whole. It seizes still life [*la nature morte*] with a scrupulous passivity, while the artist may allow his observation to wander and disturb the true [*déranger le vrai*] by substituting his will or his effects: a substitution which risks altering texts and leading discussions astray.<sup>25</sup>

In the archeological context, then, photography lacked the magical underlay that Sirodot would descry. Rather, it was a trusted and exact improvement over existing methods of transcription and the conventions of artistic representation.

Early on, this seemingly transparent objectivity appeared to suit architecture uniquely well. In an 1852 review of some of the first photographs to be published as part of *Égypte, Nubie, Palestine et Syrie*, the *Encyclopédie d'architecture*'s reviewer (perhaps its editor, Adolphe Lance), noted that Du Camp's album was "composed not of more or less faithful sketches,

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<sup>24</sup> The publication's 125 photographs were delivered in twenty-five fascicules of five prints; each fascicule cost 20 Fr., while individual prints were sold for 5 Fr. On the publication of *Égypte, Nubie, Palestine et Syrie*, see Isabella Jammes, *Blanquart-Évrard*, 79–91.

<sup>25</sup> "Malgré leur intelligence et leur habileté manuelle, les graveurs et les lithographes ont été impuissants jusqu'ici à reproduire les monuments avec une exacte fidélité. Le daguerréotype seul réussit à les traduire dans leurs plus minces détails, tout en conservant l'aspect général de l'ensemble. Il saisit la nature morte avec une passivité scrupuleuse, tandis que l'artiste peut égarer son observation et déranger le vrai en y substituant sa volonté ou ses effets: substitution qui a le danger d'altérer les textes et d'égarer les discussions." The "prospectus" is appended to the Bibliothèque nationale de France's copy of Du Camp, *Égypte, Nubie, Palestine et Syrie* (RES FOL-O3B-73; Digital PDF available on Gallica).

nor engravings or lithographs which are always imperfect, but of photographic drawings of the greatest perfection.”<sup>26</sup> The reviewer further noted that while painters might be bothered by the “scrupulous exactitude with which the tiniest details were reproduced,” architects would appreciate photography’s “rare quality of execution.” “The daguerreotype,” it declared, “seems to have been expressly invented” for them.<sup>27</sup> Architects would find merit in the minute detail that painters would deem distracting or vulgar because architecture had a unique need for precise imaging that stood quite outside academic debates about artistic realism. Where painters searched for effects, architects required documents.

Nowhere is this clearer than in the work of the rising generation of French Romantic architects. In the late 1820s, a group of young designers led by Duban and his friend and colleague, Henri Labrouste, dominated the *École des Beaux-Arts*’ prestigious Prix de Rome. During their Italian sojourns, these architects executed detailed and brightly polychromatic watercolors that were so accurate that the Académie des Beaux-Arts in Paris correctly suspected the romantic *pensionnaires* of using the camera lucida.<sup>28</sup> First patented in 1807 by

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<sup>26</sup> “C’est cet album, composé non de croquis plus ou moins fidèles, non de gravures ou de lithographies toujours imparfaites, mais de dessins photographiques de la plus grande perfection.” [Lance], Review of *Égypte*, col. 67.

<sup>27</sup> “Peut-être que les peintres qui, en général, médisent beaucoup des images daguériennes, ne feront pas grand cas de la scrupuleuse exactitude avec laquelle les plus minces détails sont reproduits dans ces dessins; mais nous sommes certains que les architectes, pour lesquels le daguerréotype semble avoir été tout exprès inventé.” [Lance], Review of *Égypte*, col. 62.

<sup>28</sup> There is some dispute over the form of this conflict between the romantic *pensionnaires* in Rome and their elders at the academy in Paris. In *Designing Paris*, David Van Zanten suggests that Antoine-Laurent-Thomas Vaudoyer, then secretary of the academy’s architectural section, wrote a letter to his son, the *pensionnaire* Léon Vaudoyer, recommending the use of camera lucida (which Van Zanten translates instead as camera obscura, another visual instrument.) Van Zanten’s cited passage from Vaudoyer  *fils*’ response is open-ended as to whether the *pensionnaires* were using this instrument; in it, the young architect principally defends his generation’s “scientific and incontestably superior” working method. See Van Zanten, *Designing Paris*, 6 and 253 n. 19.



William Hyde Wollaston, this optical apparatus virtually superimposed viewed scenes on a drawing surface; a draftsman could then simply trace the drawing that appeared. For the academicians, this substitution of a scientific device for the highly trained artistic eye for which the Prix de Rome winners had been honored was shocking. However, for Labrousse and his colleagues, the camera lucida's technical mediation offered no threat to their artistic aims; it was simply a useful mechanical aid for their investigation into the evolution of architectural forms across the ages.<sup>29</sup> Furthermore, it was useless without the presence of a skilled operator, a draftsman capable of correct and reasoned delineation. As Bergdoll has explained, drawing was no longer to be a quest for some idealized, abstract truth codified within the monuments of antiquity. Aided by the camera lucida, the hand was freed to record the particularity of the physical object in its own light.<sup>30</sup>

#### **“A Multitude of Minute Details”**

The camera lucida was equally popular with English voyagers traversing continental Europe on the Grand Tour. While travelling in Italy in 1833, the polymath William Henry Fox Tal-

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Paula Young Lee interprets the letter from Vaudoyer  *fils*  to his father cited by Van Zanten as a direct refutation of the former's use of the camera lucida. See Lee, “Rational Point of View,” 63.

However, in his 1994 essay, “A Matter of Time,” Bergdoll explains that it was Vaudoyer  *père*  who communicated the older generation's concern at the use of a scientific instrument. In *Léon Vaudoyer* (also 1994), Bergdoll gives further detail regarding Léon Vaudoyer's response: the young architect affirmed the *pensionnaires'* use of the camera lucida, but defended this practice on the grounds that it would be useless to anyone but a skilled draftsman. See Bergdoll, “A Matter of Time,” 101 and *Léon Vaudoyer*, 77.

I believe Bergdoll's interpretation in favour of the *pensionnaires'* use of the camera lucida to be correct. Certainly, the widespread use of this instrument by nineteenth-century travellers, including architects is irrefutable, as was the romantic *pensionnaires'* quest to produce more accurate representations of antiquity.

<sup>29</sup> Bergdoll, “A Matter of Time,” 101-102.

<sup>30</sup> Bergdoll, *Léon Vaudoyer*, 77.

bot attempted to use it to produce sketches of Lake Como.<sup>31</sup> While Talbot appreciated the accuracy offered by the device, he could not overcome his own impatience when presented with the camera lucida's impartial display of each minute aspect of the scene. Frustrated by the obligation to manually depict an infinite number of details, Talbot began to experiment with sensitized papers, replacing the draftsman's pencil with the chemical reaction of light upon a prepared surface. In an 1839 lecture to the Royal Society, Talbot described his experiments in "photogenic drawing," a process that utilized paper negatives to yield reproducible, positive prints.<sup>32</sup> Between 1844 and 1846, Talbot published *The Pencil of Nature* in six installments. It is broadly acknowledged as the first commercially published book illustrated with photographs. Its twenty-four calotypes, or salted paper prints, are a manifesto for the possible uses of photography, ranging from facsimile reproductions to urban scenes, and painterly compositions to fragments of buildings.

One photograph from *The Pencil of Nature*, entitled "The Haystack," aptly illustrates the camera's limitless capacity for the registration of detail: every minuscule piece of hay has been faithfully reproduced; the mechanism of photographic representation has neither omitted nor given priority to one piece of information over another (fig. 1.3). In the accompanying description, Talbot states, "One advantage of the discovery of the Photographic Art will be, that it will enable us to introduce into our pictures a multitude of minute details which add to the truth and reality of the representation, but which no artist would take the trouble to copy faithfully from nature."<sup>33</sup> Likewise, in a view of the Boulevard des

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<sup>31</sup> See Talbot, "Brief Historical Sketch of the Invention of the Art" in *Pencil of Nature*, n.p.

<sup>32</sup> See Harding, "Introduction." xix and xl n. 21.

<sup>33</sup> Talbot, "Plate X. The Haystack," in *Pencil of Nature*, n.p.

Capucines taken from the Hôtel de Douvres in Paris in May 1843, Talbot noted the care and attention the camera had given to the depiction of the chimneys atop each building: “The instrument chronicles whatever it sees, and certainly would delineate a chimney-pot or a chimney-sweeper with the same impartiality as it would the Apollo of Belvedere”<sup>34</sup> (fig. 1.4). Against Sirodot’s more nuanced appreciation of photography’s ineluctable mediation, in the view of the majority of commentators, it was precisely this seemingly impartial record of every detail that gave photographs their status as objective facts.

In fact, the photograph often permitted viewers to notice details which otherwise eluded them. For example, the French diplomat Baron Jean-Baptiste Louis Gros, an avid daguerreotypist known as the “Napoléon of the plate,” produced approximately eighty views of the Acropolis and other nearby monuments while in Greece in the 1850s.<sup>35</sup> In an anecdote recounted in the first issue of Europe’s first photography journal, *La Lumière* (1851), the photography critic Francis Wey described the power of Gros’s daguerreotypes to capture detail well beyond the human eye’s capacity for observation. According to Wey, upon

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<sup>34</sup> Talbot, “Plate II. View of the Boulevards at Paris,” in *Pencil of Nature*, n.p.

All of the major buildings visible in this photograph, including Claude-Nicolas Ledoux’s Hôtel Montmorency (1769–71), were demolished to make way for the Place de l’Opéra and the Théâtre de Vaudeville; the Hôtel de Douvres was also demolished.

<sup>35</sup> Baron Gros was given this appellation by the critic Paul Perier. See Buerger, *French Daguerreotypes*, 31.

Sadly, only eight of Gros’s Athenian images are known to exist today. Many of them document ornamental fragments from the Parthenon, perhaps an ironic subject matter given that Gros was in Athens to adjudicate the many disputes then troubling relations between the United Kingdom and the Kingdom of Greece. Among these was the status of the Parthenon Marbles, removed from the temple in 1801–12 by the Earl of Elgin and acquired by the British Museum in 1816. As objects and as representations, Gros’s daguerreotypes speak to the easy portability of cultural fragments within the nineteenth-century rivalry of the great European powers, while also suggesting an alternative to Elgin’s vandalism.

his return to Paris, Gros had examined one of his views with a magnifying glass. Studying the debris scattered in the foreground upon the Acropolis, he discovered an antique figure in sunken relief [*esquissé en creux*] of a lion devouring a serpent. The instrument “permitted the discovery of this precious document, revealed by the daguerreotype, seven hundred leagues from Athens, and restored to it proportions easily accessible for study.”<sup>36</sup> A daguerreotype in the collection of the Canadian Centre for Architecture likely resembles the (unknown) photograph Gros had scrutinized with such serendipitous results (fig. 1.5).<sup>37</sup> If Sirodot still privileged the eye over the camera, for Wey, photography’s capacity to record and reveal unseen detail was its “almost fantastic strength, that it permits the examiner of an architectural drawing to explore it as he or she would explore nature itself, and to make discoveries unnoticed in person.”<sup>38</sup>

In the nineteenth-century imagination, as Labrouste and his colleagues’ use of the camera lucida reflects, history and detail went hand in hand. Roland Barthes famously claims that what guaranteed the authenticity of the historical message—its “reality effect”—in nineteenth-century literature was not only the narrative structure of the text but also its digres-

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<sup>36</sup> “Le microscope a permis de relever ce document précieux, révélé par le daguerréotype, à sept cents lieues d’Athènes, et de lui restituer des proportions aisément accessibles à l’étude.” Wey, “De l’Influence,” 3.

<sup>37</sup> Regrettably, the image to which Gros refers is not currently known. Only eight of Gros’s Athenian daguerreotypes from May 1850 are extant today: Two in the collection of the Canadian Centre for Architecture (of which figure 1.5 is one), two at the Bibliothèque nationale de France, one at the Musée d’Orsay, one at the George Eastman House, one in the Collection Thérond, and a eighth daguerreotype was sold by André Jammes in 1999. See Bajac and Planchon-de Font-Réaulx, *Daguerréotype français*, 349.

<sup>38</sup> “Telle est même la puissance presque fantastique du procédé, qu’il permet à l’examineur d’un dessin d’architecture de l’explorer comme la nature même, et d’y faire des découvertes inaperçues sur le terrain.” Wey, “De l’Influence,” 3.

sions into superfluous description.<sup>39</sup> In *Romanticism and the Rise of History*, Stephen Bann has extended Barthes's conception into the realm of visual representation; the credibility of historical images resides in their saturation by such "structurally superfluous detail."<sup>40</sup> Whether superfluous (as in the case of Talbot's Parisian chimney pots) or essential (in Gros's Acropolis relief), it was the relentless, sometimes overwhelming presence of detail that attracted nineteenth-century architects to photography.

Daguerre and Talbot were not alone in their experiments with what we now know as photography. In fact, twenty-four people came forward during that year claiming that they had invented it. Contrary to other historians, who have focused on verifying or debunking such competing assertions, Geoffrey Batchen has recently argued that the important evidence is the multiplicity of such claims: the many technical experiments, literary descriptions, and hoaxes stemmed from a larger cultural desire for fixed images.<sup>41</sup> Following Michel Foucault's lead, Batchen argues that the late eighteenth and early nineteenth centuries witnessed an epistemic shift: the notion of nature as immutable and unchanging gave way to a newer, historical understanding of the natural world as fleeting and impermanent. This led to a yearning to fix nature's appearance, which in turn motivated a wave of mechanical experimentation that would ultimately result in the invention that is today mainly credited to Daguerre.<sup>42</sup>

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<sup>39</sup> Barthes, "Reality Effect," 11-17.

<sup>40</sup> Bann, *Romanticism*, 56.

<sup>41</sup> Batchen, *Burning with Desire*.

<sup>42</sup> Batchen, "Desire" in *Burning with Desire*, 54-102.

Architecture's own engagement with photography also stemmed from a desire to fix an ephemeral phenomenon. But instead of nature's transformation, it was historical change that had to be resisted. John Ruskin, the Victorian critic and early champion of photography, amassed a significant collection of daguerreotypes during his continental tours. As he declared in a letter to his father, "among all the mechanical poison that this terrible 19<sup>th</sup> century has poured upon men, it has given us at any rate *one* antidote, the Daguerreotype."<sup>43</sup> While Ruskin was a far greater draughtsman than Talbot, he shared the latter's elation at photography's ability to capture detail beyond the artist's own capabilities:

It is such a happy thing to be able to depend on *everything*—to be sure not only that the painter is perfectly honest, but that he *can't* make a mistake. I have got the Palazzo Foscari to its last brick, and booked St. Mark's up, down, and round about."<sup>44</sup>

Like Gros, Ruskin also noted photography's capacity to exceed human acuity, finding "a lot a lot of things in the Daguerreotype that I never had noticed in the palace itself."<sup>45</sup>

In a previous letter to his father a week earlier, Ruskin established a quasi-equivalency between buildings and their photographic representations. The daguerreotype

is very nearly the same thing as carrying off the palace itself; every chip of stone and stain is there, and of course there is no mistake about proportions... It is a noble invention—say what they will of it—and any one who has worked and blundered and stammered as I have done for four days, and then sees the thing he has

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<sup>43</sup> John Ruskin to John James Ruskin, 15 October 1845, in Shapiro, *Ruskin*, 225.

<sup>44</sup> John Ruskin to John James Ruskin, 15 October 1845, in Shapiro, *Ruskin*, 225.

<sup>45</sup> John Ruskin to John James Ruskin, 15 October 1845, in Shapiro, *Ruskin*, 225.

been trying to do so long in vain, done perfectly and faultlessly in half a minute, won't abuse it afterwards.<sup>46</sup>

Ruskin acquired his first Venetian daguerreotypes from “a poor Frenchman... said to be in distress.”<sup>47</sup> Photography collectors Ken and Jenny Jacobson have identified the distressed Frenchman as Cavalier Iller, a photographer about whom little is known, save for his presence in Florence from 1844 until at least 1851.<sup>48</sup> Among those daguerreotypes acquired by Ruskin from Iller in 1845, two in the Jacobsons' personal collection ably illustrate very different approaches to “carrying off” a palace. A view purchased between 4 and 7 October 1845 shows the Casa Foscari from across the grand canal: almost the entirety of the palace can be seen in the paragraph, whose gently angled perspective does little to trouble the reading of the palace's proportions (fig. 1.6). Another view, this time of column capitals of the Palazzo Loredan, shows a more fragmenting attitude to appropriating a Venetian monument (fig. 1.7). In this daguerreotype, “every chip of stone and stain” is indeed legible, but any sense of the capital's proportionate relationship to the whole has been expediently sacrificed in this view made from a first floor balcony.

This latter view does however follow Ruskin's later injunction in the preface to the second edition of *The Seven Lamps of Architecture* (1855), in which he invited amateur photographers to record the details of select Gothic cathedrals in England and France. While Ruskin

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<sup>46</sup> John Ruskin to John James Ruskin, 7 October 1845, in Shapiro, *Ruskin 220*, letter no. 142.

<sup>47</sup> John Ruskin to John James Ruskin, 7 October 1845, in Shapiro, *Ruskin 220*, letter no. 142.

<sup>48</sup> Jacobson and Jacobson, *Carrying*, 35–40.

felt that a landscape photograph was merely an “amusing toy,” he countered, “One of early architecture is a precise historical document.”<sup>49</sup> Ruskin instructed

that this architecture should be taken, not merely when it presents itself under picturesque general forms, but stone by stone, and sculpture by sculpture; seizing every opportunity afforded by scaffolding to approach it closely, and putting the camera in any position that will command the sculpture, wholly without regard to the resultant distortions of the vertical lines; such distortion can always be allowed for, if once the details are completely obtained”<sup>50</sup>

Ruskin’s attitude to photography would vary over his lifetime, his ultimate deception at the medium’s influence standing counter to his early enthusiasm.<sup>51</sup> However, his initial positive response, and continued use of photography to various ends may be easily explained. First of all, the jewel-like qualities of the daguerreotype—small, hard to obtain, and largely irreproducible by photomechanical means—lent it a precious status far from the cheapness of the mass-produced engravings Ruskin frequently derided.<sup>52</sup> Secondly, as Thordis Arrhenius has noted, photography offered Ruskin a means of arresting—at least at the level of the singular and original representations offered by the daguerreotype process—the nineteenth-

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<sup>49</sup> Ruskin, “Preface,” xxxii.

<sup>50</sup> Ruskin, “Preface,” xxxii.

<sup>51</sup> On Ruskin’s lifelong engagement with photography, see Arrhenius, “Authentic,” Burns, “Topographies,” Hanson, “Carrying,” Harvey, “Ruskin,” and Jacobson and Jacobson, *Carrying*. I am grateful to Professor Stephen Wildman of the Ruskin Library, Lancaster University, for his assistance with numerous queries regarding Ruskin’s use of photography.

<sup>52</sup> Peter Sinemma notes Ruskin’s sadness at the loss of human artistry brought about by the mechanical reproduction of engravings. This was somewhat balanced by the popular engraving’s potential utility as a pedagogical tool. See Sinemma, *Dynamics*, 138–145.



century's disintegrative forces.<sup>53</sup> A conservative impulse clearly underlay his early enthusiasm for photography, one that conflates the study of history with a melancholy celebration of its destructive powers.

Ruskin celebrated the patina of nature at work on human labor over time and despised much nineteenth century restoration—including efforts like Duban's—because it artificially erased the historical reality of old buildings. For Ruskin, there was no ideal state to which a monument could be restored; photography could only record its particulars before they disappeared. Paradoxically, the authenticity of these recordings lay in their capacity to register the beautiful yet destructive course of time upon the built surface in all of its intricacy.<sup>54</sup> Ruskin thus gave photography a role he denied to architecture. Whereas a detailed photograph could approximate the thing itself, the restorative hand of the architect could only substitute an impoverished and inauthentic simulacrum. Duban, on the other hand, asserted that photography and architecture—and particularly restoration—were structurally alike. Both had the capacity to arrest or remake what had been lost, and the objective authority of the photograph reinforced the objective claims of the architect. Sirodot recognized something that eluded both Ruskin and Duban: that a photograph, no matter how detailed, could never perfectly approximate the thing itself. Moreover, photography had less of a claim to truth than it first appeared. In all cases, however, these commentators agreed on photography's ability to capture nuance and detail in a hitherto-impossible resolution.

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<sup>53</sup> Arrhenius, "Authentic," 70.

<sup>54</sup> Arrhenius "Authentic," 70, 79–80.

### “A permanent justification”

While Ruskin opposed photography’s use for restoration, others like Duban and Viollet-le-Duc used the technology as a productive tool in its service. In France, restoration projects were among the first works of architecture to make use of photography. In 1848, Viollet-le-Duc and Prosper Mérimée recommended the production of daguerreotypes for the restoration of cathedrals in the official guidelines they prepared for the governmental Service des Édifices Disocésains.<sup>55</sup> This was followed by the Commission des Monuments historiques’ *missions héliographiques*, which sent five photographers on journeys across France in 1851 to record the state of the national patrimony.<sup>56</sup> The growing role of photography in restoration was confirmed by the *Encyclopédie d’architecture*, which declared, “It is no longer admissible in our day to draw up a restoration project for a building without having a photograph before your eyes.”<sup>57</sup> Viollet-le-Duc—himself a collector of photographs of French cathedrals—presented several of Henri Le Secq’s views of cathedrals in Amiens, Chartres, Reims, and Paris to the Comité Historique des Arts et Monuments in spring 1851.<sup>58</sup>

For Viollet-le-Duc, restoration was a modern concept built upon the newly analytical approach to history developed in the second quarter of the nineteenth century. As he made clear in his 1866 entry for “Restoration” in the *Dictionnaire*, neither “exact facsimile” nor

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<sup>55</sup> Bergdoll, “A Matter of Time,” 105.

<sup>56</sup> On the *missions héliographiques*, see Néagu, *Mission héliographique* and Mondenard, *Mission héliographique*.

<sup>57</sup> “Il n’est plus permis aujourd’hui de faire un projet de restauration d’édifice sans avoir sous les yeux une photographie.” “Vues photographiques,” col. 16. Translation from Neil Levine, “Template,” 309.

<sup>58</sup> Bergdoll, “Félix Duban,” 19 and “A Matter of Time,” 105.

“literal reproduction” were to be the architect’s goal.<sup>59</sup> Eschewing any rote formula that would allow an architect to approach each building in the same way, the restorer must seek a unique *rappport* with every project, channeling the original architect’s intent and establishing an empathetic relationship with the monument itself.<sup>60</sup> The result would be a reanimated edifice “in a finished state, which may in fact never have actually existed at any given time”<sup>61</sup>—that is, an idealized iteration of the building’s most essential aspects apart from any historical accident. Thus made even more like itself than it had ever been, the building could achieve a kind of transcendent life.

In this light, Viollet-le-Duc’s enthusiasm for photography lay in its medium-specific access to truths or essences that would otherwise escape the historical gaze. Photography presented the architect with a surfeit of detail, nuance, and expression that allowed him or her to fully internalize the building’s individuated “temperament” its dynamic structural logic. In other words, photography permitted an almost mediumistic transfer from the spirit of a monument to the mind of the architect. Moreover, photography provided proof that such a transfer had in fact occurred. As Viollet-le-Duc wrote at the end of “Restoration,” photography:

has the advantage of making possible an exact and irrefutable presentation of a building in any given state; it provides documentation that can continually be re-

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<sup>59</sup> “*fac-simile*,” “reproduction littérale.” Viollet-le-Duc, “Restauration,” 15 and 32. Translation from Viollet-le-Duc, “Restauration,” 197 and 223.

<sup>60</sup> On the empathetic relationship between Viollet-le-Duc and medieval buildings, see Bressani, *Architecture*, 7, 35–36, and 120–21.

<sup>61</sup> “[L]e rétablir dans un état complet qui peut n’avoir jamais existé à un moment donnée.” Viollet-le-Duc, “Restauration,” 14. Translation from Viollet-le-Duc, “Restauration,” 195.

ferred back to, even after the work of restoration has covered over some of the damage that came about as the building was falling into ruin. Photography has also motivated architects to be even more scrupulous in the respect they must accord to the smallest remaining fragment of an ancient disposition; it has enabled them to come to a more exact appreciation of the structure of a building; and it has provided them with a permanent justification for the restoration work they carry out. It is impossible to make too great a use of photography in restoration; very often one discovers on a photographic proof some feature that went unnoticed on the building itself.<sup>62</sup>

Photography could thus document the monument awaiting the restorer's touch as well as justify his or her intervention. It could also record traces even a keen eye might overlook, in the same way that spiritualists often claimed to see ghostly presences on film. In Viollet-le-Duc's mind, every minuscule piece of debris and every possible fragment of a ruin must be properly examined and interpreted for the restoration to be successful—a Herculean task that photography alone made practicable.<sup>63</sup> Within Viollet-le-Duc's conception of restora-

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<sup>62</sup> “En effet, lorsque les architectes n’avaient à leur disposition que les moyens ordinaires du dessin, même les plus exacts, comme la chambre claire, par exemple, il leur était bien difficile de ne pas faire quelques oublis, par exemple, de ne pas négliger certaines traces à peines apparentes. De plus, le travail de restauration achevé, on pouvait toujours leur contester l’exactitude des procès-verbaux graphiques, de ce qu’on appelle des *états actuels*. Mais la photographie présente cet avantage, de dresser des procès-verbaux irrécusables et des documents que l’on peut sans cesse consulter, même lorsque les restaurations masquent des traces laissées par la ruine. La photographie a conduit naturellement les architectes à être plus scrupuleux encore dans leur respect pour les moindres débris d’une disposition ancienne, à se rendre mieux compte de la structure, et leur fournit un moyen permanent de justifier de leurs opérations. Dans les restaurations, on ne saurait donc trop user de la photographie, car bien souvent on découvre sur une épreuve ce que l’on n’avait pas aperçu sur le monument lui-même.” Viollet-le-Duc, “Restauration,” 33. Translation from Viollet-le-Duc, “Restauration,” 225.

<sup>63</sup> “une suite de déductions logiques dans une voie fausse” Viollet-le-Duc, “Restauration,” 33. Translation from Viollet-le-Duc, “Restauration,” 226. In “The Life of Stone,” Martin Bressani has explored the physiognomic unity—drawn from Cuvier’s anatomical theories—between part and whole in Viollet-le-Duc’s conception of an ideal cathedral.

tion, the evidentiary value of the photograph was not its establishment of the restoration as an exact copy of the ruin. Rather, its value was its documentation of meticulous research, irrefutably recording the fragmentary inputs that had rationally led to only one possible design solution.

In 1842, over two decades before he authored the *Dictionnaire* entry for “Restoration,” Viollet-le-Duc and his partner Jean-Baptiste Lassus made the earliest recorded use of photography in architectural practice. As part of their restoration of the Cathedral of Notre-Dame, Viollet-le-Duc and Lassus purchased three daguerreotypes produced by the optician and photographic pioneer Noël-Marie Pymal Lerebours, and a larger number by the engineer-optician Kruines.<sup>64</sup> Lassus shared Viollet-le-Duc’s enthusiasm for photography: for him, the daguerreotype was “this marvellous discovery of our era, this admirable technique that obliges light itself to reproduce the image of objects and to fix them on a metal plate, on glass or on paper.”<sup>65</sup> An extant daguerreotype view of Notre-Dame by Lerebours, purchased by Ruskin and dating from 1839 or 1840, gives an idea of what the plates acquired by the French architects may have looked like (fig. 1.8).<sup>66</sup> Jacques-Germain Soufflot’s arched opening in the central tympanum, the vacant gallery of kings, and the absent spire are im-

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<sup>64</sup> See Christ, “Mérimée,” 644-47.

<sup>65</sup> “[C]ette merveilleuse découverte de notre époque, ce procédé admirable qui force la lumière même à reproduire l’image des objets et à la fixer sur une plaque de métal, sur du verre ou du papier.” Leniaud, *Lassus*, 99. Translation from Bergdoll, “A Matter of Time,” 105. Leniaud cites N.a.f. 24021, fol. 297, “notions élémentaires de perspective” as the source of this statement. Leniaud and Bergdoll both note that Lassus also had daguerreotypes made of the central portal at Chartres to record this disintegrating monument.

<sup>66</sup> Ken Jacobson and Jenny Jacobson deduce that John Ruskin acquired this daguerreotype, along with another, through French intermediaries in the spring of 1840. Currently in the collection of the Oxford Museum of the History of Science, Ruskin believed them to be the first daguerreotypes to arrive in England. See Jacobson and Jacobson, *Carrying Off*, 2, 216-17 n9, and 300 n220.

mediately apparent, as is the contest between omnipresent detail and obfuscating blemishes on the daguerreotype's mirrored surface.

The photograph's special ability to record the past lay in its status as an "objective" record—one of those "irrefutable transcriptions and documents" (presumably unmarred by subjective interference) that Viollet-le-Duc so highly praised. While drawings are authored, providing a "stylized" view of the world, photographs produced themselves quasi-automatically. In his Royal Society lecture of 1839, Talbot declared that his ancestral seat, Lacock Abbey (fig. 1.9), had been the first building "that was ever known to have drawn its own picture."<sup>67</sup> In 1852, the *Encyclopédie d'architecture*'s review of Du Camp described photographs as images "in which nature herself has taken up the brush."<sup>68</sup> Photographs were seen as documentary evidence almost on par with visual access to the building itself; the action of the mechanical apparatus obscured subjective presence in ostensible favor of the object's own agency to produce its representation. However, Sirodot's parallel insistence on the necessity of both Fortier's camera and Duban's restorative impulse—"the intermediary of an instrument" and "the great sorcerer"—reminds us that while photography's appeal to nineteenth-century architects lay in its apparent immediacy, this discursive construction could never entirely hide its multiple mediations.<sup>69</sup> Here Sirodot's "double claim" takes on an additional significance. Not only were photography and restoration both bol-

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<sup>67</sup> Quoted by Talbot in "Plate XV. Lacock Abbey in Wiltshire," in *The Pencil of Nature*, n.p." Talbot claimed to have first photographed Lacock Abbey in 1835.

<sup>68</sup> "[O]ù la nature est venue se peindre elle-même." [Lance], Review of *Égypte*, col. 62. Translation from Bergdoll, "A Matter of Time," 99.

<sup>69</sup> Sirodot, "Escalier," col. 215.

stered by claims of objectivity, but they were also both underlain by highly subjective approaches. This is nowhere more apparent than in Viollet-le-Duc's own work, which was controversial from the first. Although he saw photography as an indispensable tool for authentic restoration, others have viewed early photographs of Notre-Dame before Viollet-le-Duc's intervention as priceless evidence of lost authenticity. As the architectural historian Yvan Christ notes, "Thanks to primitive photography, many of [the cathedral's] most authentic details (*traits*) have been preserved for the use of real archaeologists."<sup>70</sup>

In France, the interest in historical architecture and the concomitant ascent of photography were both at odds with the rigid academic framework that had guided building design and artistic representation alike for generations. Labrouste's attempt to unravel the development of architecture over time, for instance, was in direct opposition to the neoclassical conception of the past as an ahistorical repertoire of canonical models. The French classical tradition was concerned with appearance: for architects such as Jacques-François Blondel (1705–77), the veil of apparent truthfulness (i.e., things looking the way they were expected to look) was far preferable to the naked presentation of things as they were.<sup>71</sup> In the tempestuous political and aesthetic situation following the French Revolution, the architect and theorist Antoine-Chrysostome Quatremère-de-Quincy sought to re-found classicism upon a basis of productive fictions: Laugier's archetypal primitive hut may not have been a his-

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<sup>70</sup> "Grâce à la photographie primitive, nombre de ses traits les plus authentiques ont été préservés à l'intention des vrais archéologues." Christ, "Mérimée," 646.

<sup>71</sup> Picon, *French Architects*, 181; Bressani and Grignon, "Henri Labrouste," 712–13.

Neil Levine gives the example of the front pediment of Soufflot's Church of Ste-Geneviève (now the French Panthéon) synecdochically represented an idealized classical structure, while the church's actual structure—with its iron tie rods and flying buttresses—was quite different. See Levine, *Modern Architecture*, 61–69.

torical object, but it was a necessary and enabling fiction for contemporary architectural production.<sup>72</sup> Against Quatremère-de-Quincy's academic defense of normative ideals, Labrouste's succeeding generation of Romantics were tempted by what Stephen Bann has described as the "lure of the real."<sup>73</sup> As Martin Bressani and Marc Grignon argue, this was by no means a proto-functionalist abandonment of rhetorical fiction for objective fact.<sup>74</sup> Instead, as exemplified by Victor Hugo's *Notre-Dame-de-Paris* (1831) and Labrouste's *Bibliothèque Sainte-Geneviève* (1843–51), it involved the construction of fictional worlds in which a new relationship to the real could develop, combining historical facticity with projective illusionism.

These romantic hybrids of realism and fantasy created a modern sense of historicity fueled by historical facts. History was now a new science that would shed light on architecture's complex evolution. Whereas neo-classical academic doctrine had been well served by orthogonal drawings that illustrated idealized forms, the new inquiry into architectural development required the more comprehensive form of historical record that photography ostensibly provided.<sup>75</sup> With its mimetic ideology, neoclassical doctrine required models. In contrast, romantic architecture required motifs: fragmentary expressions of historical reali-

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<sup>72</sup> Bressani and Grignon, "Henri Labrouste," 714; Levine, *Modern Architecture*, 73.

<sup>73</sup> Bann, *Romanticism*, 40.

<sup>74</sup> Bressani and Grignon, "Henri Labrouste," 716.

<sup>75</sup> James Ackerman makes a similar claim relating to the nineteenth-century "battle of the styles": classical revival architects tended to prefer measured drawings, while photographs better served medieval revivalists. See Ackerman, "On the Origins," 116, 118.



ty capable of metamorphosis into new manifestations of a living historical tradition.<sup>76</sup> What is perhaps most interesting about the eclecticism that would dominate the École des Beaux-Arts in the second half of the nineteenth century is that it combined these two approaches so well: Jean-Nicolas-Louis Durand's functional planning went hand-in-hand with the historically meaningful recomposition of ornamental motifs.<sup>77</sup>

### **Monumental fragments: photography and casting**

Perhaps photography's most important mediation of the architectural object—and its greatest service to the new, historicist conception of architecture—was through the camera's ability to fragment the monument. As Charles Rosen and Henri Zerner have argued, the fragment—and later fragmentary vision—was a crucial element in the rise of romantic aesthetics.<sup>78</sup> In France, this interest in the architectural fragment can be traced to Alexandre Lenoir's attempt to salvage pieces of the historical past from the rending violence of the French Revolution.<sup>79</sup> His Musée des Monuments français opened in the convent of the Petits-Augustins in Paris in 1795. (Fittingly, this structure would later become home to the École des Beaux-Arts, home to its own collection of architectural fragments.) Lenoir's museum displayed funerary monuments, busts, and other decorative fragments rescued from the demolition of religious and royal structures in the wake of 1789. In Lenoir's arrange-

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<sup>76</sup> On the nineteenth-century shift from model to *motif*, and especially César Daly's conception of the latter, see Bressani and Sealy, "Opéra Disseminated," 212–14.

<sup>77</sup> Picon, "From 'Poetry of Art'," 44.

Robert Elwall has demonstrated how a similar close relationship developed between photography, historical precedents, and eclectic architecture in the United Kingdom. See Elwall, *Photography Takes Command*.

<sup>78</sup> Rosen and Zerner, *Romanticism*.

<sup>79</sup> On objects as targets of revolutionary violence, and the representation of destruction, see Naginski, "Object."

ment, each item was pulled from its original context in many ways: the architectural whole to which the fragment had belonged was ignored in favor of galleries arranged according to chronology.<sup>80</sup>

The camera's nature as a device for framing—and often cropping—objects, combined with its perceived capacity to generate factual historical documents, motivated photographic catalogues of architectural ornament. Photography could document an infinite lexicon of fragmentary architecture, facilitating its transfer from the jumble of history to the productive realm of utility. Architects avidly collected photographs of historical monuments as sources for creative appropriation in the present. Nineteenth-century eclecticism, with its specificity and particularity, was thus fueled by photographic circulation.<sup>81</sup> Yet it is noteworthy that architects—at least up until the final decades of the nineteenth century—usually shied away from photography as a means of reproducing and publicizing their own buildings. Where they did allow such photographs to be published, architects typically limited them to close-up views of ornament. This was the case with the publications accompanying the two great monumental buildings of Second Empire Paris: the Nouveau Louvre and the Nouvel Opéra, each of which the subject of a systematic photography campaign and major publications almost exclusively featuring tightly scoped views of ornament. Such images freed decorative motifs from their built context so they could circulate as fragments, productively increasing architecture's formal lexicon to include not only historical but also

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<sup>80</sup> On Lenoir and the Musée des Monuments français, see Poulot, “Musée,” and Stara, *Museum*.

<sup>81</sup> This was equally the case with pattern book and catalogues issued by industrial manufacturers of ornament. See Dobraszcyk, *Iron*.

historicist motifs. This approach also extended the authority of history to contemporary architects and their work.

Photography's double utility for both historical restoration and historicist eclecticism is demonstrated in the expansion of the Louvre, which began in 1852. Its architect, Louis Visconti (1791–1853) was a natural choice to craft this most symbolic of monuments into the seat of Bonapartist bureaucratic control because he had already designed Napoléon I's tomb at the Invalides. However, his design for the Louvre came secondhand: the massing was largely identical with that of the Palais du peuple, an unbuilt project Visconti had proposed under the Second Republic. This easy substitution suggests that the principal category of differentiation between a republican monument and an imperial one was to be found at the level of ornament rather than spatial planning or construction techniques. A student of Percier and an initiate in the traditions of French architecture, Visconti swore to uphold the Louvre's original forms. "The character of the new architecture will be religiously borrowed from the Old Louvre. All its details have been cast and architecture will abdicate all fanciful invention to conserve the monument's initial character."<sup>82</sup> Beyond this rote promise to respect the Louvre's traditional forms, Visconti's statement shows the role that plaster casts could play as guarantees of stylistic truthfulness (fig. 1.10). So long as the architect and his sculptors were guided by the tradition embodied by these fragments, the new Louvre would continue in its original role as the protector of France's architectural heritage.

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<sup>82</sup> "Le caractère de la nouvelle architecture sera emprunté religieusement au vieux Louvre. Tous les détails sont déjà moulés et l'architecture fera l'abnégation de tout amour-propre pour conserver à ce monument son caractère initial." Visconti, *Description du modèle*, n.p..

Visconti's death in 1853 saw Hector Lefuel appointed to oversee the Louvre's completion. While he could do little modify the form of the Louvre's new pavilions, which were substantially complete, Lefuel made his mark through his eclectic program of ornamentation. Whereas Visconti had sought to render the new portions of Napoléon III's Louvre indistinguishable from the old, Lefuel attempted to differentiate Napoléon's period from that of the old regime. Both Malcolm Daniel and Barry Bergdoll has described the role played by photography in Lefuel's supervision of the Louvre *chantier*.<sup>83</sup> At the request of Minister for State Achille Fould, Lefuel arranged to have the photographer Édouard Baldus document the construction works beginning in 1855. Baldus's photographs permitted Lefuel to exercise a remarkable degree of control over the ornamentation of the Louvre, despite the enormous size and complexity of the project. Bergdoll has described this process:

Each of the figurative sculptors was required to submit a small-scale model in clay or plaster; this accepted, the sculptor could proceed to a full-scale plaster model which could be tested in a mock-up of the building before carving was finally approved. Baldus's photograph of each model was kept with the individual sculptor's dossier as a reference once the full-scale plaster model was returned to the sculptor's studio. Lefuel thus had at hand a faithful image of every sculpture.<sup>84</sup>

This is photography at its most documentary, considered for bureaucratic purposes as the equivalent of the material, three-dimensional sculpture itself (fig. 1.11). An account book for sculptural ornament from the construction of Marseilles Cathedral in the 1870s provides a

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<sup>83</sup> Daniel, "Stone by Stone," and Bergdoll, "A Matter of Time.," 111-15.

<sup>84</sup> Bergdoll, "A Matter of Time," 115.

good illustration of the sort of control photography could afford.<sup>85</sup> If Visconti had seen the cast as evidence of his faithful respect for the glorious annals of French history, for Lefuel such forms of indexical representation functioned quasi-contractually, validating and then restraining the sculptor's creative agency under the aegis of the architect.

Baldus's campaign also had a pedagogical goal. The Louvre was not only a symbol of France's majesty, but also an exemplar for the nation's artists and architects, and its ornamental motifs were meant to be copied all over the empire. Hence, there was a very practical need for photographic records of this ornament. Fould explained the decision to photograph the archive of plaster casts from the construction of the Nouveau Louvre:

In the interests of art and in order to conserve for history these models which number more than 800, executed for the sculptures which will adorn the new Louvre, I have ordered the architect to have them reproduced by photography ... These models ... could be sent to the principal design schools in the departments where the labouring class is instructed; they will be even more useful given the fact that most of these models are inspired by the most beautiful epoch of architecture, which gives great pride to France.<sup>86</sup>

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<sup>85</sup> A page of the account book, which is held in the Archives nationales, Paris, is reproduced in Bergdoll, "A Matter of Time," 116 fig. 90.

<sup>86</sup> "Dans l'intérêt de l'art et afin de conserver à l'histoire les modèles au nombre plus de 800, qui ont été exécutés pour les sculptures du nouveau Louvre, j'ai chargé l'architecte d'en faire la reproduction par la photographie ... Ces modèles ... pourront être adressées aux principales écoles de dessin des départements ou s'instruit la classe laborieuse; ils y seront d'autant plus utiles que la plupart de ces modèles sont inspirés de la plus belle époque d'architecture dont s'en orgueillit la France." "Rapport d'Achille Fould, ministre d'état, sur les travaux de Louvre," *Moniteur universel, Journal officiel de l'Empire français*, 18 February 1856, 1. Translation from Bergdoll, "A Matter of Time," 117.

In fact, Baldus's Louvre photographs were reproduced in two important publications. The first was a luxurious state publication, *Réunion des Tuileries au Louvre*, issued in 1858 to mark the inauguration of the Nouveau Louvre (fig. 1.12). Containing over five hundred images in four volumes, only thirty-six sets are believed to have been printed. These were sent to principal rulers of Europe, as well as to major French libraries. Between 1869 and 1875, Baldus himself oversaw the second publication, the three-volume *Palais du Louvre et des Tuileries*. Containing over three hundred plates of héliogravures (photographic prints directly incorporated into the print run rather than tipped in), these volumes enjoyed a wide circulation across France. Only one view shows a complete elevation of the Nouveau Louvre; the rest form a catalogue of decorative fragments, from both interior and exterior, recorded through the photography of plaster casts (fig. 1.13).

Further examples of Baldus's Louvre photographs are found in an unpublished album, which is now part of the collection of the Canadian Centre for Architecture in Montréal. Entitled "Photographies d'après les modèles composés et exécutés en Pierre, bois, bronze, fonte de fer et carton-pierre pour le Palais des Tuileries et du Louvre" [Photographs after the models composed and executed in stone, wood, bronze et plaster for the Palais des Tuileries et du Louvre] it contains ninety-six pages of photographs of ornamental details for the Louvre, prepared by the sculptor Émile Knecht between 1853 and 1860. Many images are composites, combining multiple plaster fragments and multiple photographic prints (fig. 1.14). Such an album would have been indicative of the type of photographic records produced during Lefuel's construction administration, and put to later use by the sculptor himself in his portfolio of work on this great monument. It shows the photograph of the cast for what it is: an objective and documentary record of a highly subjective and personal form

of creation, one whose authorship could be asserted by the state, the architect, the sculptor and the photographer.

### **Operatic Motifs**

The nineteenth century saw a continuous rise in the adornment of French buildings, both public and private. While a general taste for classicism persisted, buildings such as Lefuel's Louvre illustrate an eclipse of relatively austere neoclassicism in favor of increasingly lavish eclecticism. If Baron Haussmann's interventions canalized the flows of goods and people through the Second Empire's networked capital, the progressive increase in the sculptural plasticity of buildings erected during the second half of the century served to maintain differentiation within an increasingly homogeneous urban landscape.<sup>87</sup> As Paris recovered from the debacle of 1870 and the conflagration of 1871, these decorative flourishes gained momentum. Under the Third Republic, ornament was a prized commodity available for consumption.

Photographic albums of cast ornament played a key role in feeding the market for ornamental forms. Louis-Émile Durandelle's first known photographic commission provides an early example. Initially designed by François Le Vau, the Château de Bercy on the outskirts of Paris was demolished in 1860 to make way for the Paris-Vincennes railway. The château's owner, the Marquis de Nicolaï, ordered casts made from the fragments of ornament sal-

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<sup>87</sup> François Loyer describes the ornamental "arms race" between public and private buildings in nineteenth-century Paris. As private *immeubles* became more decorated, public buildings had to assert their monumentality through more lavish ornamentation. See Loyer, *Siècle de l'industrie*, 90.

vaged from the edifice.<sup>88</sup> While Durandelle made a few photographs of wood panelling in situ, the majority of his Bercy work was carried out in the yard of the sculptor Rouyer on Place Vauban in late 1860 or early 1861. Durandelle's sold his photographs and also published them in a number of forms. Several publishers, including A. Calavas and Armand Guérinet, issued them in albums; the latter's were produced after the mid-1880s, and some of these were circulated as part of the *Matériaux et documents d'art décoratif* series.<sup>89</sup> The Bercy photographs show the pragmatic origins of Durandelle's striking aesthetic when photographing cast fragments. His approach combined dramatic de-contextualisation with traces of the inevitable contingency of the work site. Photographed in Rouyer's yard, the plaster fragments are arranged on wooden planks; in some cases the atelier's surroundings or one of the sculptor's assistants are clearly visible, lending an improvised aura to these images (fig. 1.15). Many of the photographs include a card bearing Durandelle's particulars, thereby identifying the conditions of their being (fig. 1.16). In others, multiple fragments are juxtaposed cheek-by-jowl, creating an open-ended ornamental jigsaw puzzle for the viewer to reassemble.

Beginning in the early 1860s, a reform movement that sought to remedy the deleterious effects of the mass market upon French workshops and industries arose in the decorative arts. A concerted effort was made to improve national taste by reforming trade education and

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<sup>88</sup> The sale at auction of the detached fragments confirms Antoine Picon's claim that ornament's immeasurable value for architecture lies in its very separability. See Picon, *Ornament*, 37.

<sup>89</sup> On the publication of photographic albums of Durandelle's Bercy photographs, see Baillargeon, "Religious Fervor," 55–56.

Durandelle's Bercy photographs were also used to make engravings, a remedial practice that will be the subject of chapter 2. See Baillargeon, "Religious Fervor," 52–55.



identifying and disseminating models worthy of emulation throughout the country. This was not a question of re-establishing a fixed canon of authorized forms. Rather, it was a quest to channel a living tradition contained within the nation's artistic genius. Periodicals such as *L'Art pour tous* (from 1865, controlled by the engraver Claude Sauvageot) presented both historical and contemporary ornamentation as the symbolic key to architectural development. This notion of ornament guided Victor Ruprich-Robert's *Flore ornamentale*, published between 1866 and 1876. For the architectural historian Jacques de Caso, nineteenth-century ornamental discourse springs from Duban and Jean-Auguste-Dominique Ingres's decorative work at the Château de Dompierre in the early 1840s.<sup>90</sup> In particular, Duban strove emphatically to isolate certain privileged decorative motifs, thereby raising them to the status of emblems. For de Caso, Duban's emphasis on the independent motif can be traced through the work of Henri Labrouste, Viollet-le-Duc, Ruprich-Robert, to Charles Garnier and onwards to its evanescence in fin-de-siècle Art Nouveau.

However, of all the architects working toward an ornamental renaissance in nineteenth-century France, César Daly most lucidly articulated the role of ornament and the architectural motif. In the introduction to his *Motifs historiques d'architecture* (1869), Daly wrote that the architect was not "always subject to the obligation to reproduce." Instead, he or she could "seek in old monuments inspirations, ideas—some *motifs* or themes (as musicians call them)."<sup>91</sup> The *motif* was not put forward for rote copying. Instead, it was subject to metamorphosis, a seed of inspiration that necessarily disappeared in the transformative

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<sup>90</sup> de Caso, "Décor."

<sup>91</sup> Daly, *Motifs*.

process of artistic creation. For Daly, ornament could embody the inner dynamics of a historical tradition within the human imagination.

While Daly rarely resorted to photography in his publications (as we have seen, he was reticent to publish them in his *Revue générale*, and the *Motifs historiques* were illustrated with engravings), his enthusiasm for the medium's role in transmitting a vibrant ornamental tradition is made clear in an 1864 article encouraging French readers to join the newly formed Société de photographie d'architecture, which he felt was "destined to render the greatest services to architects and their natural ally, decorative sculptors."<sup>92</sup> Unlike other artistic societies founded in various European nations, this one, which was set up to distribute photographic prints, had the advantage of "speaking a language understood by all nations without exception: the language of drawing; and speaks it with admirable precision and eloquence."<sup>93</sup> As was often the case in photography's early decades, the medium was evaluated by its ability to speak in a foreign tongue: that of drawing. Here Sirodot and his editor expressed a similar reticence differently. Whereas Sirodot admitted that he was disappointed by photography's failure to fully embody the "precision and eloquence" it promised, Daly penned high praise that was undercut by his reluctance to incorporate photographs within the *Revue générale*. Yet in print, at least, Daly was unstinting. He declared photography to be

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<sup>92</sup> "[À] rendre également d'éminents services aux architectes et à leurs alliés naturels les sculpteurs-ornemanistes." Daly, "Société internationale," col. 254.

<sup>93</sup> "[D]e parler une langue intelligible par toutes les nations sans exception: celle du dessin; et elle la parle avec une admirable précision et éloquence." Daly, "Société internationale," col. 254.

probably the most useful instrument that the science of the century has provided to *art* and to history: with photography, no more incorrect sketches, no more of the reproduced decorative forms without the parallel and complementary instruction given by the nature of materials and their use, for photography presents the building itself with its true effects of light and shadow, with its wood, its stone, its metal, with all that which gives it its truthful signification.<sup>94</sup>

Here Daly, like Sirodot, ultimately located the value of photography in its capacity to capture the nuance of material in addition to the lines of proportion and form—something both interlocutors claimed to be uniquely truthful. Echoing Viollet-le-Duc and others in equating the visual experience of looking at a building and its photograph, Daly continued, “For the architect, beyond a good photograph, there is only the view of the monument itself; but we cannot carry along monuments with us, while photography allows us to keep their living memory.”<sup>95</sup> Beyond this interesting indictment of human recollection, photography is again credited with preserving something animate in its fixed frames.<sup>96</sup>

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<sup>94</sup> “La photographie est peut-être l’instrument le plus utile que la science de ce siècle ait fourni à l’*art* et à l’histoire: avec la photographie, plus de croquis incorrects, plus de ces formes décoratives reproduites sans l’instruction parallèle et complémentaire que fournissent la nature des matériaux et le mode de leur emploi, car la photographie présente l’édifice lui-même avec ses effets vrais d’ombres et de lumière, avec son bois, sa pierre, son métal, avec tout ce qui lui donne sa véritable signification.” Daly, “Société internationale,” cols. 254–55.

<sup>95</sup> “Au-dessus d’une bonne photographie, pour l’architecte, il n’y a que la vue du monument lui-même; mais on n’emporte pas avec soi les monuments, tandis que la photographie en offre toujours les vivants souvenirs.” Daly, “Société internationale,” cols. 255.

<sup>96</sup> Just as many nineteenth-century thinkers grappled with whether photography could preserve living memory, others addressed the parallel question of whether human memory was photographic. As François Brunet recounts, both Henri Bergson and Charles Sanders Peirce rejected such analogies. See Brunet, “Better Example,” 41.

Nowhere is this demonstrated more conclusively than in Charles Garnier's *Le Nouvel Opéra de Paris*, undoubtedly the most ambitious publication on a single building in nineteenth-century France.<sup>97</sup> Comprising eight volumes released between 1875 and 1881, it impressively mirrors the ambition and lavishness of Garnier's monument. The publication comprised two volumes of text, two elephant folios containing one hundred plates of engravings and chromolithographs, and four albums of photographs. As a monograph on a single building authored by its architect, *Le Nouvel Opéra* is simply unprecedented (at least in France) both in its scale and in its abundant use of photographs. While Daly's exact role in this project cannot be established conclusively, his participation seems likely. *Le Nouvel Opéra* was published by Édouard Ducher, a member of Daly's circle who took over publication of the *Revue générale* following Auguste Morel's death in 1869. Ducher's partner was Pierre André, secretary to the *Revue générale*. Correspondence between Daly and Garnier establishes the former's interest in seeing drawings and photographs of the Opéra. Since this significant monument was not published in the *Revue générale*, we may assume that Daly held off in favor of Ducher's venture.<sup>98</sup>

Across its eight volumes, the mammoth *Le Nouvel Opéra* systematically takes Garnier's temple of bourgeois pleasure to pieces. The accumulation of text, engravings, lithographs, and especially photographs present different aspects of the Opéra to different audiences. The text is Garnier's highly personal (and sometimes tongue-in-cheek) defense of his work

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<sup>97</sup> On *Le Nouvel Opéra*, see Bressani and Sealy, "Opéra Disseminated."

<sup>98</sup> On the letter, Bressani and Sealy, "Opéra Disseminated," 216n7. Ducher et Cie. published the a number of architectural books illustrated with photographs, including the *Album de l'ornementation pratique* (1874), Millot, *Chambord*, *Le Nail*, *Château de Blois* and *Mieusement*, *Pierrefonds* (all 1875), as well as several key periodicals.

as architect; the plates present the Opéra as a unified achievement with plans, sections and elevations (fig. 1.17); and the four albums of photographs disassemble the Opéra's forms of ornamental décor according to the artisan class responsible for their fabrication: bronzes, paintings, statues, and ornamental sculptures.<sup>99</sup> While the engravings present the building as a canonical masterpiece within the typology of the grand theatre, the photographs are fragmentary, dismembering the monument to focus on its ornamental components. This focus upon detail is made possible through striking acts of de-contextualization. In the Opéra photographs, wooden planks and black draperies often obscure the monument, which in other cases is edited out through re-touching. In the case of a bronze streetlamp photographed almost a year and a half after the Opéra's public inauguration in 1876, the monument is hidden by a huge white shroud (fig. 1.18). As the streetlamp's silhouette is brought forward and made legible, the ornamental object achieves a heightened and liberated status.

In *À travers les arts*, an 1869 collection of essays, Garnier distinguished between two modes of architectural reception: an immediate, if distracted, overall perception he termed the "first impression," and the "thoughtful impression" provided by a more considered scanning of ornamental details.<sup>100</sup> While the former yielded "collective impressions" for the people, the latter was "only for artists."<sup>101</sup> Thus, *Le Nouvel Opéra* dismantles the unified "first impression" of the built work in order to reconstitute its intellectual and technical

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<sup>99</sup> Together, these four albums contain 115 albumen silver prints, and were the first volumes of *Le Nouvel Opéra* to be published (1875–76). All of the one hundred engravings and chromolithographs are orthogonal representations, save for two interior perspectives.

<sup>100</sup> "[I]mpression première," "impression réfléchie." Garnier, *À travers les arts*, 163.

<sup>101</sup> Garnier, *À travers les arts*.

conception. Photography lent itself to isolating particulars, and so it allowed a more truthful understanding of the monument than even an informed in situ gaze did.

Like many other nineteenth-century architects and theorists, Garnier invested ornament with an evidentiary role. Garnier transferred Hippolyte Fortoul and Léon Vaudoyer's notion of architecture as the "truthful writing of peoples" onto ornament and the mixed fortunes of French political regimes. In a series of articles published in *Le Temps* in 1871, Garnier vehemently argued that the defacing of monuments following political upheavals was unethical—an interesting comment in light of the then unfinished Opéra's status as the great monument to Bonapartist excess.<sup>102</sup> Garnier claimed buildings must be left as unadulterated witnesses to the periods in which they were built. He insisted particularly upon the role of sculptural ornamentation:

Architects who build monuments must consider themselves as the writers of the history of the future; they must indicate in their works the character of the time in which they are working; they must finally, in the name of duty and love of truth, inscribe in their buildings those indisputable signs of the period of their construction ... Thanks to these artistic indications, a monument will one day become the most complete, the most unquestionable page of the historical book, and an eagle, a salamander, better than a literary dissertation, will serve to put confused historians or archaeologists back on track.<sup>103</sup>

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<sup>102</sup> For a brief period, the republican slogan *liberté, égalité, fraternité* was painted on the Opéra's façade in 1872, but subsequently removed.

<sup>103</sup> "Les architectes qui construisent les monuments doivent se considérer comme les écrivains de l'histoire future; ils doivent indiquer dans leurs œuvres la caractéristique du temps où ils produisent; ils doivent enfin, par devoir et par amour de la vérité, inscrire dans leurs édifices ces signes indiscutables de la période de la construction ... Grâce à ces indications artistiques, un jour un monument deviendra la page la plus complète et indiscu-

Buildings communicate through ornament. Against Victor Hugo's famous *ceci tuera cela* [this will kill that], Garnier asserted that ornament is a far more effective communicator than the written word. Here the photograph occupied the best of both worlds. As printed media, it achieved the status of the book, and as a special documentary format that approached equivalency with the building itself, it retained the authority of architecture.

Garnier's articles in *Le Temps* slide between two definitions of the word monument: the historic relic of a past epoch on the one hand, and a significant achievement from the present day on the other. The fraught political situation of the early 1870s may have forced Garnier to present the Opéra as a historical monument *avant-la-lettre*. Photographically, this meant inscribing it within a tradition of monographs on historic buildings such as Ducher et Cie.'s contemporary *Châteaux historiques* series. It is worthwhile to note that photographic records of old buildings were far more common than those depicting new works until late in the century. In other words, Garnier's photographic publication of the Opéra's ornament was, at least in part, an immediate recasting of a *historicist* achievement as *history*.

Yet whatever his need to justify the continued presence of gilded eagles and inscribed N's upon his masterpiece, Garnier's far greater concern was aligned with Daly's: the perpetuation of an evolving tradition of French classicism through ornament. Just as Viollet-le-Duc saw irreproachable photographic evidence as the key for an empathetic and transformative connection with the historic monument, photographs of ornament provided irrefutable rep-

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table du volume historique, et un aigle, une salamandre, mieux que des dissertations littéraires, serviront à remettre dans la voie les historiens et les archéologues égarés." Charles Garnier, "Reconstruction," n.p.

resentations that nevertheless demanded creative—and not mechanical—appropriation in order to perpetuate a tradition. As Martin Bressani and I have argued, photographs are more difficult for architects to copy than measured drawings of details, which can be simply be traced off the page. It is tempting to think that Garnier, working in tandem with Daly and Ducher, recognized photography's paradoxical resistance to easy reproduction in the daily practice of the architect. The photograph offered not a pattern book but an inspiration for the artistic imagination.

Among the four photographic albums published as part of *Le Nouvel Opéra*, of greatest interest is the volume dedicated to the building's decorative sculptures. The largest and most architectural of the four, this album depicts plaster models used to guide the final carvings (fig. 1.19). After construction, these were usually destroyed, leaving the photographs as the sole records, not only of details perhaps invisible far up upon the Opéra's façades, but also of the hidden process of invention behind their becoming.

While the publisher Daly saw architects and sculptors as natural allies, Garnier often found himself at loggerheads with sculptors over questions of authorship. As Mead relates, well-known sculptors including Louis Villeminot, Knecht, and others worked from Garnier's drawings to prepare plaster models of decorative sculptures.<sup>104</sup> These are the models, as photographed by Durandelle, that largely populate this album. The plaster models were intended to guide the carving of the definitive pieces, which were to be carried out either on the building itself, or, as was the case with most column capitals, in specially constructed

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<sup>104</sup> On the economic relationship between Garnier and his decorative sculptors, see Mead, "Renaissance of Classicism," 399–401 and *Architectural Empathy*, 175.



sheds on the building site. While the sculptors believed that their authorship of the plaster models—the first three-dimensional instantiation of a desired motif—earned them the right to execute the definitive pieces, Garnier disagreed. Anxious to control costs given the political pressures resulting from the Opéra’s massive and constantly increasing budget, he opened the execution of the building’s ornament to competitive bidding. In so doing, he reduced the final realization to an act of technical duplication. Thus, Knecht prepared the plaster cast of the column capital for the circular vestibule, a photograph of which appears in *Le Nouvel Opéra* (fig. 1.20), but the marble contractor Henraux, who underbid him by 812,50 v 1650 Fr per capital, made the final carving. In an undated letter to the sculptors Houguenarde and Jules Corboz, Garnier accepted their status of artists until such point as the model was completed; afterwards, he asserted, they were merely contractors, for the sculptors themselves often had their work executed by sub-contractors.<sup>105</sup> Thus, photography was implicated in fragmenting, and indeed commodifying, what had previously been a monolithic and opaque creative sculptural process in much the same way as it was integral to the anatomization of the building itself. In both cases, and at both scales, greater agency accrued to the architect as a result.<sup>106</sup> Moreover, this redistribution of newly separated components was justified with photography and casting’s claims of indexical fidelity.

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<sup>105</sup> Garnier’s letter is conserved at the Bibliothèque de l’Opéra, Paris in the Fonds Garnier as Pièce 133. It is cited in Mead, “Renaissance of Classicism,” 400 and 1011 n69 and *Architectural Empathy*, 175 and n138.

<sup>106</sup> Striking acts of de-contextualization supported this process of photographic fragmentation. In the Opéra photographs, wooden planks and black draperies often obscure the monument, which is in other cases is edited out through re-touching. In one photograph of a bronze streetlamp from May 1876—almost a year and a half after the Opéra’s public opening—the effort to de-contextualize this piece of ornament is again striking. Here it is not a matter of bracketing the confusing tumble of the construction site; rather a huge white shroud hides the entire completed Opéra, taking Garnier’s reticence to publish photographs of the completed monument to an extreme. See Bressani and Sealy, “Opéra Disseminated,” 310–11.

## The Cast Index

The photographs of casts by Baldus, Durandelle, and others are indexical in multiple senses of the word.<sup>107</sup> As the film theorist of photography Mary Ann Doane reminds us, indices are both the physical trace and the indication of the tracing act; the pointing finger is distinct from the footprint.<sup>108</sup> The cast is a physical impression of its mould, which in turn is an index of either an artist's model or a historical monument. Photographic prints of such fragments index not only the cast itself, but also the effects of light upon it, and the chemical process of converting a negative into a positive print. Even beyond this, however, the photograph also indexes a series of overlaid subjectivities that many contemporaries (with the exception of Sirodot) overlooked: the artist's, the architect's, the client's, the photographer's, and the viewer's.

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<sup>107</sup> Claude Baillargeon notes that Durandelle's photographs of the Château de Bercy "can be seen as two-tier indexical representations, that is to say traces of traces transferred from the ornament to the cast and from the cast to the photograph." Baillargeon, "Religious Fervor," 51.

<sup>108</sup> Doane, "Indexicality," 6.

In the twentieth century, the French critic André Bazin linked casting and photography with neorealist cinema in his essay, "Ontology of the Photographic Image" (1945). For Bazin, it was not human agency, but instead a mechanical process that mediates between the originating object and its photographic (and, by extension, cinematographic) reproduction. Bazin specifically linked photography to the death mask, suggesting a direct correlation between photography and casting. See Bazin, "Ontology."

One of the principal tenets espoused by theorists who claim we have entered a "post-photographic" era is that the previous "photographic" era was constructed upon the indexical qualities of the photograph. Such attempts to recover indexicality as a constituent fact of (pre-digital) photography inevitably draw upon Charles Sanders Peirce's semiotic theory. However, as François Brunet justly argues, it is a mistake for us to too closely associate analogue photographs with Peirce's category of the Index. For Peirce, the photograph was not a subject to be theorized in depth, but rather an example of contemporary importance that demonstrated the productive overlap of the terms of his triad: after all, photographs are capable of resembling (the icon), symbolizing (the symbol) and pointing all at once (the index). See Brunet, "A Better Example."

As a further complication, Antoine Picon has demonstrated that ornament is architecture's most subjective means of expression and the realm in which it finds its greatest political and social agency.<sup>109</sup> So it is perhaps fitting that this most expressive, emotive, and fluctuating realm would invite the most precise, and ostensibly objective, forms of representation. Yet, in photography, and especially in photographs of cast ornament, objectivity quickly revealed itself as simply a different form of performed subjectivity. Moreover, precisely because photographs are indexical, "fixing" the details they record, they rapidly became a means for exerting the architect's subjective authority on the most unruly aspect of architectural production. Ornament marks a boundary between theory and craft.<sup>110</sup> Likewise, the album of plaster casts occupies a liminal position between the architect's treatise and the artisan's pattern book. Amplifying the cast's fragmentary nature with the camera's selective vision, such photographs highlight the architect's subjective genius while directly addressing artisanal audiences. The cast and its photograph mediate between two idealized extremes: the architect as autonomous artist and the ornamental sculptor. The latter was sometimes imagined as a free worker, encouraged to betterment through the study of inspirational models, and other times as a simple laborer, ordered to copy without license.

Casting itself was well established as a profitable practice in nineteenth-century France. While it was an ancient process, used by artists and connoisseurs throughout history, casting had gained a particular poignancy at the time of the revolution. At a moment of unprecedented upheaval, it was suddenly important to preserve traces of bodies that had seemed

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<sup>109</sup> Picon, *Ornament*, 12.

<sup>110</sup> Picon, *Ornament*, 73.

immutable only a short time before. Alexandre Lenoir founded the Musée des Monuments français at the same time as Madame Tussaud began her project of casting the likenesses of aristocrats summoned to their grizzly fate by the tumbrel. It was also at this time that casts were first made from the collections of the Musée du Louvre, to be sent across France for didactic purposes. Later in the century, such objects would become a significant source of revenue for the museum, a development Florence Rionnet describes as part of the nineteenth century's wider appetite for sculptural ornament.<sup>111</sup> In the Second Empire, ornament became increasingly dissociated and eclectic in its application, approaching an encyclopedic catalogue of formal possibilities. This was especially the case in academic settings; the École des Beaux-Arts had already established a centrally located Musée des études based on a collection of plaster casts in 1834. The concept of ideal museums filled entirely with casts took hold across Europe, reaching its apogee in 1867 with the "Convention for Promoting Universally Reproductions of Works of Art for the Benefit of Museums of All Countries" signed by fifteen European crown princes at Henry Cole's behest. As Mari Lending notes, this document "implicitly theorizes plaster casts as a true architectural mass medium, as well as envisioning a museum without walls."<sup>112</sup> The photographic album of plaster casts would serve a similar pedagogical function with the added benefit of easier portability.

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<sup>111</sup> From 1901 on, the Louvre's catalogues of casts featured photography. See Rionnet, *L'Atelier*, 76.

<sup>112</sup> Mari Lending, "Traveling Portals," in Thordis Arrhenius, Mari Lending, Wallis Miller, and Jérémie Michael McGowan, eds., *Place and Displacement: Exhibiting Architecture* (Zürich: Lars Müller, 2014), 199.

Among those calling for a museum of casts was Viollet-le-Duc, whose plans would be posthumously realized with the opening of the Musée de Sculpture comparée in 1882.<sup>113</sup> Roland Recht notes that the museum's epistemological model was Cuvier's comparative anatomy, its historiographical model was Winckelmann's *History of Art*, and its aesthetic model was photography.<sup>114</sup> Recht draws several helpful comparisons between casting and photography: both plaster casts and photographs clarified the form of the original, removing patina and emphasizing contour while excising context in the aid of comparative study. Yet photography's capabilities went beyond those of the cast alone. While the cast, like the photograph, could isolate the specimen at hand, it could also reconnect a particular piece of ornament to its original architectural setting. As Viollet-le-Duc himself argued,

In order for such a museum to be complete and really set up for study, views or partial drawings of the monuments from whence these sculptures were extracted need to be exhibited near them, an easy task thanks to the archives of the Monuments historiques and to the possibility of procuring photographs of these buildings or portions of buildings.<sup>115</sup>

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<sup>113</sup> Viollet-le-Duc set forth his proposal in two reports, "Musée de Sculpture comparée appartenant aux divers centre d'art et aux diverses époques" [11 June 1879] and "Musée de la Sculpture comparée" [12 July 1879], autograph copies of which are held by the Bibliothèque nationale de France, Fol V pièce 1784 and 1785.

On the Musée de sculpture comparée, see Recht, "Moulage."

<sup>114</sup> Recht, "Moulage," 52.

<sup>115</sup> "[P]our qu'un semblable musée soit complet et réellement installé pour l'étude, il faudrait que des vues ou relevés partiels des monuments d'où seraient tirées ces sculptures fussent exposés près d'elles, ce qui serait facile grâce aux archives des Monuments historiques et à la possibilité de se procurer des photographies de ces édifices ou portions d'édifices." Eugène-Emmanuel Viollet-le-Duc, "Musée de Sculpture comparée appartenant aux divers centre d'art et aux diverses époques" [11 June 1879] and "Musée de la Sculpture comparée" [12 July 1879], cited in Therrien, *Histoire de l'art*, 90.

Photographs were indeed incorporated into the displays at the Musée de Sculpture comparée so that the white plaster fragments could be appreciated as part of larger, photographically reconstituted wholes (fig. 1.21).<sup>116</sup>

Photographs also allowed for polemical interpretation of the casts; this was the case with the reproduction of Ligier Richier's sixteenth-century sepulcher from the Church of Saint-Étienne in the Lorrainian town of Saint-Mihiel. A Protestant, Richier had fled to Geneva in 1560, leaving the major components of his sculpture to be installed by others. In the opinion of the museum's director, Camille Enlart, the eventual arrangement of the thirteen figures in this depiction of Christ's entombment was iconographically illogical. Therefore, "This cast, which reproduces faithfully this interpolation, was re-arranged according to the logical and original composition. A photograph was taken of this restoration; exhibited next to the monument, it allows one to compare."<sup>117</sup> This photograph of Enlart's reconstitution was published in a 1911 monograph on Richier's work alongside a view of the figures as they appear in the church (figs. 1.22 and 1.23). The placement of the centurion (left) and the two gambling soldiers (right) in the foreground at the tomb's entrance are the most evidence

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<sup>116</sup> Axel Gampp claims that photographs were even better suited than casts to meet the requirements of Viollet-le-Duc's ideal museum. Describing the set of 1600 photographic postcards of the Musée de sculpture comparée's collection produced by the Neurdein frères in the early 1900s, Gampp argues that the ease with which these portable documents could be arranged and re-arranged permitted a flexibility that the museum's static displays did not. See Gampp, "Plaster Casts," 515–16.

<sup>117</sup> "Le moulage qui reproduit fidèlement cette interpolation avait d'abord été agencé l'ordonnance logique et primitive, et de cette restitution il a été faite une photographie qui, exposé près du monument, permet de comparer." Enlart, *Musée*, 117–18.

Enlart and the curator Jules Roussel state that two photographs were in fact displayed: one of the sepulcher in situ in the church, the other of this speculative re-configuration. See Enlart and Roussel, *Catalogue*, 176–77.

changes in Enlart's re-arrangement. While Enlart's language insists upon the indexical fidelity of the cast to its original, his scenario shows casting and photography to be tools of manipulation, allowing for the didactic exhibition of alternative possibilities.

This belief in the cast's faithfulness was often pushed to the point of equivalency. In the preface to their 1892 *Catalogue raisonné* of the Musée de sculpture comparée, the curator, Louis Courajod, and the archivist and inspector of the Monuments historiques, P. Frantz Marcou, claim there is no difference between casts and originals. Justifying the lengthy catalogue entries devoted to "simple casts," the authors state,

When it comes to sculpture, we thought there was no distinction to be made between the work itself and its reproduction. For the history of art, a cast, which cannot be suspected of interpretation, has all the scientific value of the original and as a result deserves to be examined with the same interest.<sup>118</sup>

Here, not only is the cast innocent of narrative inflection, but it also achieves parity with the original under the auspices of that most objective measure: science.

Enlart himself mused that the cast was perhaps more valuable than the original—in part because it was less likely to be stolen! While patina gave "an inimitable beauty to the ensemble of monuments," it

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<sup>118</sup> "[S]imples moulages," "on a pensé qu'il n'y avait pas, en matière de sculpture, de distinction à faire entre l'œuvre elle-même et sa reproduction; c'est aussi que, pour l'histoire de l'art, un moulage, qui ne peut être suspect d'interprétation, a toute la valeur scientifique d'un original et mérite, par suite, d'être examiné avec le même intérêt." Courajod and Marcou, *Catalogue*, iii.

The *Catalogue raisonné* was illustrated with photographs, leading the reader to surmise that this indexical equivalency between original and copy extended also to the representations in the published volume.

only brings out certain details at the cost of disfiguring many others, altered by flows of soot and marked by moss. To the contrary, the clear and uniform tone of plaster makes the model readable and restores to the work the aspect it was given by the artist's hands. We can thus say that the cast is sometimes more exact than the original.<sup>119</sup>

If for Ruskin the photographic registration of patina was something to be celebrated, for Enlart the marks of time upon an original worked against the requirements of stylistic comparison and were therefore to be excised from representations. Precision remained the order of the day, but it was the precise reproduction of certain qualities—mainly form—that was required, and not the exact transcription of material or durational properties.

The Musée de sculpture comparée's library held a large photographic collection of views of monuments produced by Mieusement, his successor Paul Robert, and the Neurdein frères; these were sold as prints and also published in an album by Armand Guérinet, the *Bibliothèque du Musée de sculpture comparée*.<sup>120</sup> Yet, the museum also produced and sold photographs of casts for which it had images of the original monument. While for Gampp this duplication confirms the superiority of casts over originals, it may also be understood as part of a complex representational web.<sup>121</sup> This overlapping multiplicity of didactic forms is

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<sup>119</sup> "L'aspect des moulages diffère parfois des originaux qui ont la patine du temps. Celle-ci donne à l'ensemble des monuments une inimitable beauté, mais ne fait valoir certains détails qu'en en défigurant beaucoup d'autres, qu'altèrent des coulées de suie ou des taches de mousse. Au contraire, la tonalité claire et uniforme du plâtre rend lisible le modelé et restitue à l'œuvre l'aspect qu'elle avait au sortir des mains de l'artiste. On peut donc dire que le moulage a parfois quelque chose de plus exact que l'original." Enlart, *Musée*, 3.

<sup>120</sup> While the album is undated, dates marked on certain negatives indicate that some of the photographs were taken in 1892.

<sup>121</sup> Gampp, "Plaster Casts," 513.



made clear by the museum's most impressive publication. Edited by Marcou and published in the 1890s, the five-volume *Album du Musée de sculpture comparée* contains 357 photographic plates, printed by *phototypie*, or collotype, a high-quality printing process using a gelatin-coated plate. Almost all of these are photographs of plaster casts made by Mieuxement and Robert: included is a view of the first seven figures from Richier's Saint-Mihiel sepulcher (fig. 1.24).<sup>122</sup> However, each of the chronologically categorized volumes also includes a single photograph of the museum gallery corresponding to that epoch (see fig. 1.21 above), as well as multiple plates of small views of the monuments from which the casts were made. The fourth volume, dedicated to the fifteenth century, therefore contains views of both cast fragments from the François Ier staircase at Blois—the “bundle of arabesques” that Sirodot vainly sought in Fortier's photograph four decades earlier—and a close-up of the lower half of the staircase from which these casts were made (figs. 1.25, 1.26).

#### **“Imitations without a choice”**

Besides Courajod and Marcou, many other commentators also accorded casts and photographs a similar status. As Claude Baillargeon notes, in the mid-nineteenth century, “it was not uncommon ... to view photographic images as casts of reality.”<sup>123</sup> The archaeologist Adolphe-Napoléon Didron, for example, claimed that photography offered “mathematically exact reproductions, in fact, casts” of sculptural details.<sup>124</sup> However, this association was not always positive. In *Flore Ornementale*, Ruprich-Robert condemned casting and photog-

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<sup>122</sup> While this first group was cast in 1895, the other figures were executed in 1899–1900.

<sup>123</sup> Baillargeon, “Religious Fervor,” 52n80.

<sup>124</sup> “[L]a reproduction mathématiquement exact, le moulage par ainsi dire.” Didron, “Photographie,” 65–66. Translation from Baillargeon, “Religious Fervor,” 52n80.

raphy together; both offered only crass realism as a poor substitute for creative invention.<sup>125</sup> As with Viollet-le-Duc (with whom he disagreed on the appropriateness of flora for monumental decoration), Ruprich-Robert saw photography as a source of material information necessary to—but in no way a replacement for—artistic impulse. The same was true of archaeology; what photography could reveal of nature, this latter field could elucidate from the past. Through archaeology and photography, the artist could “learn from the truthful principles in so many masterpieces; but in no case can these materials take the place of his or her initiative, his or her own feeling... strongly supported by useful information, he or she must make art, become him or herself a creator, and not a realist.”<sup>126</sup>

Likewise, in his history of the (lack of) legal status afforded to both casting from nature and photography by French law, Quentin Bajac has noted the common and negative association of these two procedures. If some asserted the equivalency—or even the superiority—of the cast vis-à-vis the original, others used photography as an analogy to categorically refute such claims. For Hippolyte Taine, a cast was not equivalent to an original statue, nor were photographs the equal of paintings; even if they were of some use to it.<sup>127</sup> The scandal around Jean-Baptiste Clésinger’s salon statue *La Femme piquée par un serpent* (1847), which

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<sup>125</sup> Ruprich-Robert, *Flore Ornementale*, 124.

Ruprich-Robert also abhorred carving machines, such as Thomas Brown Jordon’s 1845 invention, which could mechanically reproduce identical pieces of ornament. See Ghoche, “Symbolic,” 259.

<sup>126</sup> “[L]’artiste ... entouré de matériaux tels qu’il n’en avait jamais eu, peut s’aider des véritables principes contenus dans tant de chefs-d’œuvre; mais, en aucun cas, ces matériaux ne doivent prendre la place de son initiative, de son propre sentiment... fortement appuyé par d’utiles renseignements, il doit faire de l’art, devenir lui-même un créateur, et non un réaliste.” Ruprich-Robert, *Flore ornementale*, 123.

<sup>127</sup> Bajac, “Procédés compromettants,” 78.

had surely been made through casting, was telling. For Eugène Delacroix, Clésinger had produced only “sculptural daguerreotypes.” As Bajac summarizes: “Conjoined in opprobrium, the two procedures are guilty of the same crimes: mechanical, rendering only appearance, the surface of things, deprived of the anima and the style which characterizes the veritable work of art; their adherence to the real condemns them to be only ‘imitations without a choice.’”<sup>128</sup>

Of course, the status of photographs and casts as “imitations without a choice” was precisely what lent them their value as indexical representations. This automatic fidelity allowed photography to fulfil the documentary role that Charles Baudelaire and others had assigned to it, and it permitted casting to serve as part of the production of ornament at an industrial scale. However, as the Opéra photographs seen in light of Daly’s conception of the motif indicate, the indexicality attributed to photography and casting paradoxically allowed these mediations to support ornamental traditions that sought to transcend imitation. The photographic albums of Garnier’s *Le Nouvel Opéra* provide an example of this within the increasingly eclectic traditions of French classicism, which had developed largely through the École des Beaux-arts. Anatole de Baudot’s 1884 *La Sculpture française au moyen âge et à la Renaissance* provides a counter example from the medievalist-rationalist tradition promoted by Baudot’s mentor, Viollet-le-Duc, in opposition to the Beaux-arts.<sup>129</sup> One of a

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<sup>128</sup> “Unis dans l’opprobre, les deux procédés sont coupables des mêmes crimes: mécaniques, ne rendant que l’apparence, la surface des choses, privés de l’anima et du style qui caractérise la véritable œuvre d’art; leur adhérence au réel les condamne à n’être que des ‘imitations sans choix’.” Bajac, “Procédés compromettants,” 81.

<sup>129</sup> Intriguingly, a copy of the second edition of *La Sculpture française*—also published in 1884—in the collection of the Canadian Centre for Architecture (MAIN M5468; ID:B5844) was previously owned by the American architect Daniel Burnham (1846–1912), planner of the “White City” at the 1893 World’s Columbian Exposition in Chicago and proponent of the classicizing City Beautiful movement in the United States.

number of significant late-century works on French sculpture—especially its architectural applications—*La Sculpture française* contains 120 plates featuring approximately four hundred decorative motifs photographed by Séraphim-Médéric Mieusement, the photographer attached to the Commission des monuments historiques. Printed using héliogravure, Mieusement’s photographs are almost all extreme close-ups, permitting a close examination of the chosen details. While some photographs were identifiably taken on site, with others it is impossible to say whether the image depicts a fragment of the actual monument or its plaster casts; in some cases, curtains have been used to focus attention upon the detail. Mieusement’s close-up view of the ornament above a door from the François Ier staircase at the Château de Blois provides a likely example of an in situ photograph (fig. 1.27). A comparison with Paul Robert’s view of a cast of the same detail in the *Album du Musée de Sculpture comparée* (fig. 1.25) reveals subtle differences in the fidelity of the reproduction to the original, especially the absence of several minor details from the cast. While Mieusement’s in situ photograph does offer a clear depiction of the “bundle of arabesques,” this is obtained at the cost of any sense of its incorporation into the staircase as an ensemble.

In his preface to *La Sculpture française*, Baudot affirmed, “A new art cannot be born and develop without the support of tradition,” a tradition which for him went far beyond canonical classical models.<sup>130</sup> He claimed that to learn from France’s medieval monuments, ornamental sculptors required courses on the architecture of the Middle Ages and collections of methodically classified casts to study. In the meantime, works such as *La Sculpture fran-*

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<sup>130</sup> “[U]n art nouveau ne peut naître et se développer sans le secours de la tradition.” Baudot, *Sculpture française*, 3.

*çaise* could bridge the gap. Following the Commission des monuments historiques' own example, *La Sculpture française* is organized first by chronological period and then subdivided by geographic region. Materials, climate, and local traditions all introduced regional differences that supported this scheme. The transitory period from 1190 to 1240 inaugurated one of *La Sculpture française*'s four chronological sections. For Baudot, this was a time in which "artists definitively renounced the imitation of the past, to use nature as a model instead" for ornament and statuary.<sup>131</sup> This statement identifies a paradoxical moment in Baudot's view of the past. The proto-Gothic rejection of Gallo-Roman models—i.e., the imitation of historically sanctioned forms—in favor of natural influences provides a historical example worthy of emulation in the nineteenth century, which saw itself as a transitory epoch in search of new stylistic avenues for development in a world of changing material, economic, and cultural contexts.

Like *La Sculpture française*, nature itself offered a wide and varied repository of forms. As with Daly's understanding of the motif, these were available not for direct copying but rather for creative development through observation followed by adaptation. In examples from around the year 1200, animals

Appear with a singular naturalism but without servile imitation; their movements are real, but their proportions are sometimes accentuated almost to the point of exaggeration and their bodies soften so as to fit within their frames to provide the needed silhouette ... in fauna as in ornamental flora, artists have shown themselves to be innovators but have also created a complete art which has freed itself from the

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<sup>131</sup> "[P]endant laquelle les artistes renoncent définitivement à l'imitation du passé, pour recourir à la nature." Baudot, *Sculpture française*, 18.

past and affirms itself further each day with its elevated thought, science of effects and quality of execution, which brings it rapidly to the most perfect purity.<sup>132</sup>

Close-up photography offered a means of adjudging the means through which this impressive development was achieved, but also risked ruining it by bringing the human eye much closer than had ever been intended (fig. 1.28). Referring to sculptures on Amiens Cathedral's main façade, Baudot observed,

Seen from up close, the figures in the Galerie des rois seem strange, even grotesque, and the ornament rough, but this exaggeration of movement and these abrupt effects are deliberate. They reveal a great spirit of observation and a just feeling for effects in the artists of this period.<sup>133</sup>

Here the clarification was needed to guide the viewer's gaze: only with careful explanation would the innovative genius of the stone carvers, who had produced truthful effect through deliberate deformations, become apparent. Perhaps in light of their inaccessible position high up upon the cathedral's façade—and therefore beyond the photographer's power to take a close-up—or from a desire not to confuse the viewer with their imperfection, Baudot did not include a photograph of the Galerie des rois in *La Sculpture française*.

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<sup>132</sup> “[A]vec un naturalisme singulier mais sans imitation servile; les mouvements sont vrais, mais les proportions sont accentuées parfois même jusqu’à l’exagération et les corps s’assouplissent de façon à se renfermer dans un cadre déterminé, à fournir une silhouette voulue ... les artistes, dans la faune comme dans la flore ornementale, se montrent innovateurs mais créent un art complet qui s’est affranchi du passé et qui s’affirme chaque jour davantage avec une élévation de pensée, une science des effets et une exécution qui l’amènent rapidement à la pureté la plus parfaite.” Baudot, *Sculpture française*, 18–19.

<sup>133</sup> “Vues de près, les figures de la galerie des rois paraissent étranges, grotesques même, l’ornementation grossière, mais cette exagération de mouvements, ces effets heurtés, sont voulus, et ils accusent, chez les artistes de cette époque, un grand esprit d’observation et un sentiment juste des effets.” Baudot, *Sculpture française*, 22.

Observing that it was hard to distinguish between the different schools during this transitory period, Baudot noted that for

whomever wishes to seize these delicate nuances, it is indispensable to study on the monuments, above all to draw and then to compare; there is nothing more inviting and instructive than this study and this research which will be facilitated, we hope, by this methodically constructed collection, however insufficient it may presently be.<sup>134</sup>

Not only does this statement conflate Mieusement's photographs with actual contact with the monument, it also encourages the conscientious student to go beyond passive visual reception and learn by drawing from photographs as if executing a *plein air* sketch.

While text and image are kept quite separate in *La Sculpture française* (the former being confined to the front of the volume), Baudot commented upon their interrelationship in his preface. The plates, "obtained with all the fidelity which photography gives," are accompanied by "precise indications on the scale of the motifs and the positions which they occupy within their frames, as well as on the nature of the materials employed."<sup>135</sup> While the truthfulness of the photograph is accepted as self-evident, text is required to provide further information on size, context, and materiality. This textual supplement may have augmented the accuracy of *La Sculpture française*'s contribution to the historical record. How-

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<sup>134</sup> "[Q]uiconque veut saisir ces nuances délicates, il est indispensable d'étudier sur les monuments, de dessiner surtout et de comparer ensuite; rien de plus attrayant et de plus instructif d'ailleurs que cette étude et que cette recherche qui seront facilitées, nous l'espérons, par ce recueil méthodiquement fait, quelque insuffisant qu'il soit encore." Baudot, *Sculpture française*, 19.

<sup>135</sup> "[O]btenuës avec toute la fidélité que donne la photographie," "indications précises sur l'échelle des motifs et sur la position qu'ils occupent dans les cadres qui les renferment, ainsi que sur la nature des matériaux employés." Baudot, *Sculpture française*, 4.

ever, the productive appropriation of the motif by architects in fact depended instead upon the photograph's ability to render the fragment available for re-sizing (through exaggeration if necessary), re-contextualizing, and re-mediation. Paradoxically, the free artistic creativity that signified a living decorative tradition required the careful study of indexical copies—just as Viollet-le-Duc's restoration architect needed to study all the details of a monument before proceeding.

Alina Payne has argued that the nineteenth-century historicist mania for ornament sublimated into twentieth-century architectural modernism's passion for the object, be it cutlery, furniture, or a building. In so doing, she situates the roots of an architecture that claimed to be fundamentally anti-ornamental in a cultural locus that was both eclectic and receptive of decoration. While ornament may seem to mark the most profound breach between the predominant architectural styles of the nineteenth and twentieth centuries, it was also the paradoxical site of a profound discursive continuity.<sup>136</sup> Whereas previously ornament had provided architecture with a locus for self-reflection, this "function of mediation" was now shifted to the object.<sup>137</sup>

As Payne observes, while modern architecture could assimilate the columnar orders into its discourse (for they were structural), and, with only slightly more difficulty, could handle geometric or abstract patterns of decoration, it wanted nothing to do with floral ornamentation.<sup>138</sup> Yet, in Baldus and Durandelle's photographs of cast ornament, we find an almost

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<sup>136</sup> Payne, *Ornament to Object*, 21.

<sup>137</sup> Payne, *Ornament to Object*, 21.

<sup>138</sup> Payne, *Ornament to Object*, 16.



purified expression of the qualities Payne uses to define objects: “That class of man-made products that are (potentially) mobile, even portable, hence of a scale and physical integrity that permits circulation and removal from a specific site.”<sup>139</sup> This shift in the location of architecture’s own discursive field from ornament to object is fundamentally a question of detachment: the ornament is removed from the building, transformed into an object, and then allowed to circulate freely, still within the architect’s control but now outside of architecture’s. The starkness of the photographs examined above is unmistakable: ornament is rent from a building to which—in the case of preparatory plaster models—it may never have been attached. No longer part of a unified whole combining structure and décor, surface and relief, it is now a mobile fragment belonging more to certain wide-ranging economic, pedagogical, and ideological ambitions than to any specific site.

While the objecthood of the cast—and its photograph—are undeniable, an even stronger affinity exists between these photographs of ornament and the early modernist vision that would reach its apogee in the first decades of the twentieth century. From the modernist point of view, the future objective “building art” would have to be extracted from the everyday production of industry and engineering; it could not derive from the supposedly toxic morass of the nineteenth century’s “style architecture[s].” This focus upon the *sachlichkeit* details of bicycles and bridges, which Walter Benjamin extended to the technologically mediated slices of the city visible from the Eiffel Tower and other technical wonders, was conceived in opposition to the bourgeois eclecticism of the nineteenth century. However, in its relentless focus upon the particulars of the commodified world of the everyday, this mod-

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<sup>139</sup> Payne, *Ornament to Object*, 16.

ernist vision is in fact well aligned with the nineteenth century indexical insistence upon the accurate rendition of detail, so ably transcribed through photography. By making the fidelity of historical detail into one of the ultimate measures of architectural truth, Duban, Sirodot, Viollet-le-Duc, Lefuel, Garnier, and others paradoxically laid the table for Hermann Muthesius and Sigfried Giedion.

## Chapter 2.

### Engraved Translations: After a Photograph, Before Photography

#### “After a Photograph”

On 7 June 1845, the leading English architectural periodical, *The Builder*, published a woodcut engraving of the Orléans family mausoleum at Dreux, in Normandy, drawn by R. Barrow and engraved by C. D. Laing (fig. 2.1). The image is a perspectival view, taken from the right side of the building’s entrance, as the sepulchral monument, designed by Pierre-Bernard Lefranc, neared completion. The accompanying article declares, “Our engraving was made from a Daguerreotype plate, obligingly placed at our disposal by Professor [Thomas Leverton] Donaldson at the moment he received it from France.”<sup>1</sup> This textual certification of the image’s provenance identifies it as the earliest known example of a photographic image within the pages of an architectural periodical. This statement testifies to the photograph’s portability and to the ease and rapidity with which this very French

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<sup>1</sup> [Godwin], “Mausoleum,” 270. An architect chiefly renowned as an educator and administrator, Thomas Leverton Donaldson (1795-1885) co-founded the Royal Institute of British Architects and later served as its president. See Blutman, “Father.”

In an 1860 lecture to the Architectural Photographic Association in London, Donaldson lauded photography’s lack of mediation. Unlike paintings, the beauties grasped by a viewer in a photograph (which Donaldson praised as “truthfulness itself—the absolute fact”) necessarily “exist in the objects themselves” and were not introduced through the skill and imagination of an artist. See [Donaldson], “Photography,” 93.

building—a monument for the then ruling family—had traversed the English Channel on its silvered support. It also bears witness to two other facts: the value of the photograph (that it should be mentioned at all), and its resistance to direct incorporation onto the printed page: with the exception of Hippolyte Fizeau’s inchoate experiments with photogravure, there was no other way to reproduce and publish a daguerreotype in the 1840s. For the author of the short text accompanying the engraving, probably *The Builder*’s founding editor George Godwin, the image raised more questions than it answered: “We should be glad to obtain some accurate particulars of its construction and dimensions, and to learn the character of its details.”<sup>2</sup>

*The Builder*’s Dreux engraving marks the beginning of a tradition of incorporating photographs into architectural publications through engraving. While photographs as photographs were largely excluded from the printed page due to costs and technical limitations, engraved images made from photographs were common. Such translations were partially a matter of technical expediency—especially prior to the invention of the halftone process in the 1880s—but much more was at stake in these acts of remediation. Hybrid images such as *The Builder*’s Dreux engraving raise numerous issues regarding the specificity of distinct media, the qualities attributed to early photographs, and the criteria by which images were adjudged useful for architects.

We do not know the precise technique used to prepare the Dreux engraving, nor has the original daguerreotype obtained by Donaldson and given to Godwin been located. The engraving’s photographic provenance therefore rests upon the accompanying article. Such textual identifications were common and engravings made from photographs sometimes

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<sup>2</sup>[Godwin], “Mausoleum,” 270.

bore the caption “after a photograph” [or its French equivalent, “*d’après une photographie*.”]. With the rise of an illustrated press—as well as specialist publications—the credibility of images as witnesses to places and events became an important matter, one that resided partly in the affirmation of their origins. “From our correspondent in,” “from a sketch made by,” or, more importantly for our present enquiry, “after a photograph” were textual guarantees of the circumstances of an image’s genesis that were nevertheless external to the image itself. While the first two examples stake a claim that the illustrator was an eyewitness to the scene he or she is depicting, the latter goes further, establishing the source image as irrefutable. Here, the photograph’s discursive status as an unmediated and inherently truthful—if often flawed—image is deployed in support of the engraving’s veracity. “After a photograph” and its related textual affirmations—in all their brevity—removed the image from the realm of an artist’s impressions and grounded it in photography’s special “truth value.”

The perceived immediacy of photographic images separates engravings labeled “after a photograph” from artworks made (and identified as having been made) “after nature.” The latter’s association with *in situ* recording implied a realist bent absent from much academic painting; however, the artist’s subjective intervention was presumed in a way the photographer’s was not. In *Flore ornementale*, Victor Ruprich-Robert notes, “Studies painted after nature [*d’après la nature*] are necessarily more or less imprinted with the particular accent of their author, they contain something other than what is present in the original, while photography [is] the brutal truth [*la vérité brutale*].”<sup>3</sup> For Ruprich-Robert,

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<sup>3</sup> “Les études peints d’après la nature sont nécessairement plus ou moins empreintes d’un accent particulier à leur auteur, elle contiennent autre chose que ce qui est dans l’original, tandis que la photographie, avec quelques-uns de ses merveilleux résultats matériels, étant la vérité brutale, doit être simplement considérée comme un moyen de plus pour aider l’artiste dans ses inspirations; c’est là, vis-à-vis de lui, sa seule et unique mission.” Ruprich-Robert, *Flore ornementale*, 123.

this was photography's fatal weakness. This distinction between artistic and photographic renderings provides a frame through which we may grasp the cleavage in subjective agency between images in which the artist added his or her own imprint, and those in which the supposedly unmediated photograph was translated through engraving—often with the addition of *post-facto* corrections.

Not all engravings from photographs were textually acknowledged. In many cases, the genitive link between photograph and engraving must be established internally, through the information contained within the image itself. Such visual comparisons are tricky, since the translation of photograph into engraving involves both correspondence (so that the former may be read, in its absence, as the source for the latter) but also divergence (the decision to remediate the image having been driven by a desire to alter it in some manner). Such visual attributions necessarily require the continued existence—and discovery—of the source photograph. I contend, and will establish in chapter four, that a significant number of published engravings, which cannot be so identified either textually or visually at present, were in fact made from photographs. My focus in this chapter, however, is squarely upon examples where the translation from photograph to engraving has been definitely established.

How were photographs re-mediated into engravings? As Claude Baillargeon observes, prior to the invention of the halftone process, illustrators had three ways of producing drawings for reproduction from photographs: direct tracing, the use of a pantograph or squaring grid (especially useful if the photographic image had to be re-sized), or freehand sketching.<sup>4</sup> In the case of *The Builder*, as Ruth Richardson and Robert Thorne note, at first, an illustrator

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<sup>4</sup> Baillargeon, "Religious Fervor," 270.

visually copied photographs onto the zinc-whitened surface of a woodblock, which would then be engraved. Later, the illustrator's role was superseded by the collodion process, which allowed photographic images to be printed directly on the block, ready for the engraver's hand.<sup>5</sup> Such photomechanical techniques in the production of engravings (often called "photoxylography" or "photography-on-the-block") became common in the 1870s.<sup>6</sup> While photoxylography obviated the need for intermediary drawings in the translation of photographs to engravings, it was—ironically—also used to reproduce original drawings, which were photographed for engraving.<sup>7</sup> A further complication arises from the photomechanical reproduction of drawings made from photographs. In 1877, *La Semaine des constructeurs* published drawings of the construction site for the forthcoming 1878 Exposition universelle in Paris made from photographs by Albert Fernique. H. Toussaint's drawings from Fernique's photographs were then photomechanically engraved by Fernique for printing in *La Semaine des constructeurs*' pages.

Even after the development of the halftone process in the 1880s, which enabled photographs to be reproduced as such, engraving was often combined with photography to produce hybrid illustrations. For example, Ernest Clair-Guyot developed techniques of

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<sup>5</sup> Richardson and Thorne, "Introduction: Part II," 22.

<sup>6</sup> Baillargeon, "Religious Fervor," 270–71 and *passim*.

<sup>7</sup> See Woods, "Photograph as Tastemaker."

W.H. Smith describes the *Illustrated London News*' use of photography "on the wood" (a form of photoxylography) to transfer images for engraving, be they drawings or photographs. See Smith, "Early Days," 11.

photoxylography in 1891 for *L'Illustration*, in which the photographic print was retouched by hand and then chemically transferred to the block for engraving.<sup>8</sup>

Reflection upon Viollet-le-Duc's remarkable graphic oeuvre, the draftsman, engraver, and disciple Claude Sauvageot regretted that the nine or ten thousands woodblocks prepared by the master for his illustrated publications had not been preserved. Considering the published engravings from these blocks to be inferior, Sauvageot noted

If an artist of Viollet-le-Duc's calibre emerged in the future, it would now be possible to conserve his or her woodblock drawings. It would suffice to photograph them in their exact dimensions onto other woodblocks. The engraver would then work upon these photographic reproductions.<sup>9</sup>

While Sauvageot's statement confirms the utility of photoxylography, its use in his imagined instance would have obviated the need for Viollet-le-Duc to draw upon the woodblock at all, eliminating the very objects Sauvageot wished to see preserved.

The above examples make clear that while photography threatened to upset existing economies of image-production—for example, replacing the illustrator—what is most striking is the degree to which it could be accommodated within them. While many engravers would certainly have seen photography as a threat, for others it was a plentiful source of images awaiting translation. In his many excellent studies of representation in

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<sup>8</sup> Clair-Guyot, "Un demi-siècle." On *L'Illustration*'s use of the halftone process and the persistence of manual interventions within such images, see Gervais, "Photographies de presse?"

<sup>9</sup> "Si un artiste de la valeur de Viollet-le-Duc venait à se présenter encore, il serait maintenant possible d'en conserver les dessins sur bois. Il suffirait de les photographier dans leurs dimensions exactes sur d'autres bois préparés à cet effet, et le graveur exécuterait sur la reproduction photographique." Sauvageot, "Viollet-le-Duc," 83.



nineteenth-century France, Stephen Bann has grappled with Walter Benjamin's famous teleology, articulated in his "Work of Art" essay, which treats successive technical advances as epochal shifts that rendered previous forms obsolete.<sup>10</sup> Bann injects a needed degree of nuance into this narrative, noting its failure to account for the diversity of practices that evolved in response to new technological developments. After all, lithography and burin engraving thrived following the invention of photography.

Bann never directly addresses engravings made after photographs, but his work does provide a framework for understanding such practices. Of special interest is his presentation of the French art critic Philippe Burty's 1863 concerns that improvements in photographic technology were increasingly setting an impossible standard for "literal accuracy," which engraving could not satisfy.<sup>11</sup> Burty's statement reveals the developing conflict between a previous representational economy in which engravers interpreted academic paintings and a new condition in which realist painting and photography were linked—at least by a quest for detail. However, it elides the extent to which photography's reputation for accuracy was in fact actualized through engravings.

As we have seen in the previous chapter, great claims were made by figures such as John Ruskin and Eugène-Emmanuel Viollet-le-Duc for architectural photographs' capacity faithfully and clearly to transcribe the details of a building: Ruskin's "every chip and stain" and Viollet-le-Duc's "exact and irrefutable presentation."<sup>12</sup> However, early architectural

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<sup>10</sup> See Bann, *Parallel Lines* and *Distinguished Images*.

<sup>11</sup> Burty, "Gravure." See Bann, *Distinguished Images*, 7.

<sup>12</sup> John Ruskin to John James Ruskin, 7 October 1845 in Shapiro, *Ruskin*, 220, letter no. 142. Viollet-le-Duc, "Restauration," 33. Translation from Viollet-le-Duc, "Restauration," 225.

photographs often failed to justify these suggestions of quasi-equivalence between a building and its representation. More often than not, the architectural details so crucial for nineteenth-century stylistic analysis were lost to dark shadows or blurry indistinctness. Sirodot's 1856 declaration that photographic images were "so complete in appearance, so deceiving in fact" serves as an explanation for the necessity of their remediation through engraving.<sup>13</sup>

As John Guillory has observed in his history of what he terms the "media concept," acts of remediation are incredibly fruitful for our understanding of distinct media.

It is much easier to see what a medium does—the possibilities inherent in the material form of an art—when the same expressive or communicative contents are transposed from one medium into another. Remediation makes the medium as such visible.<sup>14</sup>

It is my claim that by studying engravings made from photographs, we are better able to understand photography's appeal to architects as a medium than we would by merely studying photographs. Specifically, we are able to see which qualities associated with photographs were most valued, and which effects were deemed to require correction, bringing to mind the more common usage of the term "remediation."

Guillory succinctly demonstrates that the modern "media concept" arose in response to the proliferation of new technologies that could not be assimilated to existing artistic

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<sup>13</sup> "[S]i complètes en apparence, si trompeuses au fond." Sirodot, "Escalier," col. 216.

<sup>14</sup> Guillory, "Genesis," 324.

regimes.<sup>15</sup> While Stephen Bann's arguments warn of such technological determinism—for photography was at first reasonably well incorporated into existing representational paradigms—Guillory's general thesis holds.<sup>16</sup> As he states, a concept of medium had been desired for some time; wanted but absent, it emerged under the pressure of new technologies in the nineteenth century. The media concept transformed earlier, pre-modern arts into media themselves, shifting their focus away from mimetic representation towards accurate communication.<sup>17</sup> This was a major issue for architects, especially those grappling with decaying neoclassical theories of mimetic representation as the social and political structures that had underwritten its aesthetic theories collapsed.<sup>18</sup> The proclivities of the generation of French romantic architects led by Henri Labrouste and Felix Duban for accuracy in representation and the clear communication of history's positive facts belong to this epistemic shift. Therein lay their interest in mechanical aids to representation such as photography, but also the disappointment felt by Sirodot and others. As Guillory observes, media makes possible communication, but also its failure, and it is in failures of communication that medium becomes visible.<sup>19</sup> This is the case with the need to remediate early architectural photographs through engraving.

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<sup>15</sup> Guillory, "Genesis," 321. Elsewhere in the same article, Guillory shifts his claims away from a technologically determined outcome in favor of a linguistic shift towards communication. See *ibid.*, 326. Guillory also notes the coincident rise of spiritualism and the personage of the "medium" in the late nineteenth century. As communication became increasingly a matter of distance to be overcome through technology, its extension to include the realm of the dead is hardly surprising. See *ibid.*, 347–48.

<sup>16</sup> See Bann, *Parallel Lines* and *Distinguished Images*.

<sup>17</sup> Guillory, "Genesis," 346–47.

<sup>18</sup> Bressani and Grignon, "Henri Labrouste," 713–14.

<sup>19</sup> Guillory, "Genesis," 334, 339.

In their 1999 study of the remediation as it related to digital media, Jay David Bolter and Richard Grusin expound upon what they term remediation's "double logic": media seek to disappear (immediacy) at the same time as they are multiplied (hypermediacy).<sup>20</sup> This was especially the case with nineteenth-century photographs, which seemed transparently to offer "the thing itself" but in fact required remediation into engraving not only for reproducibility, but also to correct their flaws: too deep shadows, blurriness, etc. This frequent recourse to engravings from photographs, an act of double mediation intended to correct the deficiencies latent in early photography, shifted focus from photography's failings onto its idealized potential.

### **Early Excursions**

Among the first, inchoate, publications made with engravings taken from photographs, the most significant is Noël Marie Paymal Lerebours's *Excursions daguerriennes: Vues et Monuments les Plus Remarquables du Globe*, which featured a great number of architectural views. Only a few months after Arago's announcement of Daguerre's process in January 1839, Lerebours equipped a group of photographers to bring back daguerreotypes from Italy, Greece, Palestine, and further afield, as well as France. These were mostly wealthy amateurs, excited to make use of this latest invention on their travels. Contributors included Horace Vernet, Jules Janin, and the Franco-Canadian potentate Pierre Joly-de-Lotbinière. Other images made their way to Lerebours through intermediaries. The London-based French chemist, glass merchant, and photographer Antoine Claudet, who

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<sup>20</sup> Bolter and Grusin, *Remediation*. While Bolter and Grusin claim to have coined this usage of the term remediation, Guillory attributes it instead to Marshall McLuhan.

first introduced the daguerreotype method in the United Kingdom, sent many images across the channel to Lerebours.

From their over 1,200 images, Lerebours published a series of 111 mostly aquatint engravings between 1840 and 1842; the unused plates were sold in the photographer's Parisian shop or distributed to other dealers, including Claudet. In most cases, the chosen daguerreotypes were destroyed in the tracing process, leaving us unable to compare Lerebours's published aquatints with their photographic sources. However, there are four likely exceptions. As Janet E. Buerger discovered, Lerebours's view of St. Peter's Church and the Castel Sant' Angelo (fig. 2.2) matches almost exactly a photograph in the collection of the George Eastman House in Rochester, New York (fig. 2.3).<sup>21</sup> A comparison of the two images—once we account for the fact that the photograph is reversed—reveals the engraving's remarkable fidelity to the daguerreotype; however, we notice the latter's lower horizon, which Buerger claims was to avoid overexposure due to too much sky, as well as the addition of the figures in the foreground.<sup>22</sup> While their insertion may be a picturesque conceit to alleviate the emptiness of early daguerreotypes, Lerebours claimed that such personages were drawn from sketches made *in situ*.<sup>23</sup> Such an assertion of drawing's documentary accuracy, however, runs counter to his praise for the daguerreotype's "undoubted precision," thanks to which "places will not any longer be reproduced from drawings that are always more or less modified by the taste and imagination of the

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<sup>21</sup> Buerger, *French Daguerreotypes*, 33–36. An almost identical daguerreotype in the Newcastle University Library Special Collections also corresponds to this engraving.

<sup>22</sup> Buerger, *French Daguerreotypes*, 33, 36.

<sup>23</sup> Lerebours, "Avis de l'éditeur," in *Excursions daguerriennes*, n.p.

painter.”<sup>24</sup> Nachum Tim Gidal has observed that the view of the portal of the Cathedral of Notre-Dame in Paris shows what is perhaps the earliest depiction of a daguerreotypist at work, while most of the figures in another image of the Porta Ripetta in Rome appear to belong to the original photograph, and not to have been a later addition of the engraver.<sup>25</sup>

This is also the case with the figures in a view of the Horseshoe Falls at Niagara Falls engraved by Frédéric Salathé (fig. 2.4). This was made from an 1840 daguerreotype taken by the British metallurgical chemist Hugh Lee Pattinson while on a business trip to North America (fig. 2.5).<sup>26</sup> Pattinson’s photograph of Niagara Falls is likely the first taken on Canadian soil. While it was long believed that the figure in the foreground had been added for picturesque effect, the discovery of the original daguerreotype in 1996 in the Newcastle University Library Special Collections confirms the presence of the figure, probably Pattinson himself, in the image’s foreground. The tones of Salathé’s engraving are far more equal than the harsh contrast of Pattinson’s photographs. The engraving is crisper and more legible than the daguerreotype. Blemishes and indistinct areas on the photograph are almost indistinguishable from the hazy atmosphere, which is constrained on the engraving to the area immediately beneath the falls. It is likely that Claudet acted as an intermediary between Pattinson and Lerebours; his daguerreotype may well have been traced in

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<sup>24</sup> “Grâce à la précision soudaine du Daguerrotypage, les lieux ne seront plus reproduits d’après un dessin toujours plus ou moins modifié par le goût et l’imagination du peintre.” Lerebours, “Avis de l’éditeur,” in *Excursions daguerriennes*, n.p.

<sup>25</sup> Gidal, “Lerebours’,” 64–65. Gidal is referring to vol. 1, pl. 40, Port Ripetta, Rome and vol. 2, pl. 22, Portal of Notre-Dame, Paris in Lerebours, *Excursions daguerriennes*.

<sup>26</sup> Having decided not to invest in a silver mine in the United States, Pattinson journeyed to what was then Upper Canada (today Ontario) to visit relatives. On Pattinson’s travels and his views of Niagara Falls, see Garrett, “Canada’s First.” Garrett’s article was published prior to the discovery of the original daguerreotype.

Claudet's London shop, with Pattinson retaining the original photographic plate. The tracing would have been sent to Paris, where Salathé engraved it for publication.<sup>27</sup>

The fourth case where an original daguerreotype source for an engraving in the *Excursions daguerriennes* remains is Lerebours's photograph of the Cathedral of Notre-Dame in Paris acquired by John Ruskin (fig. 2.6). The engraving offers a slightly wider view angle, allowing for the composition of a more picturesque scene through the inclusion of people populating the *parvis* in front of Notre-Dame (fig. 2.7). The engraving also clarifies the form and details of the buildings in front of and behind the cathedral. The fragmentary slice of Germain Boffrand's eighteenth-century Hôpital des Enfants-trouvés in the foreground is rendered with far greater distinction. The same is true of the remaining portion of Jacques-Germain Soufflot's neoclassical sacristy, the rest of which had been destroyed in February 1831. With its seeming lack of mediation, Lerebours's photograph may offer a more authentic documentation of the degraded monument's appearance, but the clarity of the engraver's marks, remediating the daguerreotype's imperfections, offer a more legible record of the cathedral's current state on the cusp of its restoration.

While most of the views in the *Excursions daguerriennes* required the mediation of an engraver, three were produced using Hippolyte Fizeau's electrotype process, which chemically transformed the daguerreotype plate into an engraved matrix suitable for

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<sup>27</sup> This theory of Claudet as intermediary is supported by the presence of two Lerebours daguerreotypes discovered alongside Pattinson's Niagara Falls views in the Newcastle University Library. These are views of St. Peter's and the Castel St. Angelo, and the Port Ripetta, both in Rome and both possible source daguerreotypes for plates in the *Excursions daguerriennes*.

printing. Buerger asserts these were the first photogravures in a major publication.<sup>28</sup> An image of the tomb of the virgin at the Cathedral of Notre-Dame in Paris, reminiscent of Baldus's later photogravures of the Louvre's ornament, displays the image's photographic quality but also its limitations (fig. 2.8). The image seems to capture too much, especially the scratches and other degradations in the stonework. While for Ruskin this was photography's greatest promise, these interruptions compete with the carved Bible scene for the viewer's attention.

Another plate made using Fizeau's process depicts a house built in Paris's rue Fontaine-Saint-Georges by the architect Édouard Renaud (fig 2.9).<sup>29</sup> Declaring the house's roof to be the "richest" in all Paris, S. Henri Berthoud's accompanying text notes that a "beautifully carved antefix was supposed to complete the roof," but "sadly was not executed."<sup>30</sup> Berthoud easily explained the presence of these uncarved decorative details on the engraving: "If the reader sees it ... this is because the daguerreotype was taken from the architect's drawings exhibited at the Louvre, and it was then transformed into a plate engraved by Mr. Fizeau's admirable procedure."<sup>31</sup> Beyond its allusion to the haphazard

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<sup>28</sup> Buerger, *French Daguerreotypes*, 40.

<sup>29</sup> This unnumbered plate appears in a copy of the first volume of the *Excursions daguerriennes* at the Bibliothèque nationale de France (RESG-G-9 [1]), but is absent from many other copies of this tome, including the Canadian Centre for Architecture's (CAGE M 8132).

<sup>30</sup> "Un antéfixe gracieusement découpé devait compléter cette toiture, et n'a malheureusement point été exécuté." S. Henri Berthoud, "Maison élevée à Paris, rue Fontaine-Saint-Georges," in Lerebours, *Excursions daguerriennes* vol. 1, n.p.

<sup>31</sup> "Si le lecteur le voit sur la gravure, c'est que l'épreuve daguerrienne a été prise sur les dessins que l'architecte avait exposés au Louvre, et que l'épreuve daguerrienne *elle-même* a été transformé en planche, gravée d'après l'admirable procédé de M. Fizeau." S. Henri Berthoud, "Maison élevée à Paris, rue Fontaine-Saint-Georges," in Lerebours, *Excursions daguerriennes* vol. 1, n.p.



nature of human vision, Berthoud's declaration highlights one of the great ironies of architecture's photographic mediation in the nineteenth century. As Robert Elwall has demonstrated, drawings were often far easier to reproduce photomechanically than photographs themselves. As he notes, such techniques "allowed the original artist direct access to the printed page."<sup>32</sup> While Fizeau's reproduction of a daguerreotype could capture areas of tone in the original drawing, the more common photolithographic methods for reproducing drawings could need. In Elwall's opinion, this led to an impoverishment of architectural drawing, since heavy ink lines had to be prioritized over delicate tones.<sup>33</sup>

### **"Truth-to-Nature," Truth of the Illustrator**

Discourses surrounding photography in the nineteenth century are often linked to the rise of mechanical objectivity in the sciences because the camera produced images supposedly free of subjective interference, although the full ontological implications of such claims were often muddled (Was the photograph the thing itself? Had it been drawn by the sun, or by nature?). In their study of the history of objectivity, Lorraine Daston and Peter Galison describe nineteenth-century scientists' deliberate attempts to remove the subjectivity embedded in previous epistemic models: scientific objectivity emerges out of a fear of error caused by human interference.<sup>34</sup> The willful self threatened the validity of scientific knowledge and its deliberate suppression undid the previous analogies between scientific and artistic labor. While artists expressed their subjectivity, scientists had to restrain theirs.

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<sup>32</sup> Elwall, *Photography Takes Command*, 28.

<sup>33</sup> Elwall, *Photography Takes Command*, 28–29.

<sup>34</sup> Daston and Galison, *Objectivity*.

Architects straddled this divide, especially since their engagement with history was considered to be scientific. As we saw in the previous chapter, their use of supposedly objective representations supported the deployment of the architect's subjective imagination in practice.

As Daston and Gallison make clear, objectivity is a concept with a history, one that is not the same as truth's. The latter is far older, and is not a corollary to the use of objective methods.<sup>35</sup> As a precursor to the rise of (mechanical) objectivity circa 1850, Daston and Gallison posit an earlier, enlightenment epistemology: "truth-to-nature." Under this regime, which was predominant in the eighteenth and early nineteenth centuries, scientists (and artists, we might add) sought to produce "reasoned images" in support of underlying types against the idiosyncratic particularities of any given instance. An unseen but always present archetype generalizes any particular representation. "The type was truer to nature—and therefore more real—than any actual specimen."<sup>36</sup> A similar belief was at the heart of neoclassical doctrine in art and architecture, as espoused by Antoine Chrysostôme Quatremère-de-Quincy and others. Daston and Gallison posit objectivity as a deliberate attempt to suppress the subjectivity embedded in truth-to-nature; it emerges out of a fear of error caused by subjective interference. The use of the camera lucida and later photography by Viollet-le-Duc and others excised one form of artistic subjectivity—academicist idealization—while it permitted another to flourish: a practice of restoration based upon the

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<sup>35</sup> Daston and Galison, *Objectivity*, 51.

<sup>36</sup> Daston and Galison, *Objectivity*, 60.

empathetic channeling of the forces of historical development, themselves divivable from the fragments of the past.

However, while early photographs were held to offer irrefutable visual facts, the concerns raised by Sirodot and others testify to the need for manual intervention to transform these into useful and productive knowledge. Without seeking to restore earlier models which privileged archetypes over particular examples (such as Daston and Galison's "truth-to-nature"), many were those who claimed that the trained—albeit subjective—observer was better placed to produce useful knowledge than the mechanical apparatus. As Jimena Canales relates, the transit of Venus across the sun in 1874 and 1882 led to major arguments on the validity of mechanical representation within the western scientific community.<sup>37</sup> Given that the next transit would only occur in 2004, scientists' hopes to use the event to resolve numerous quandaries rested squarely upon the accurate recording of the precise moment of apparent contact between Venus and the sun. Great hopes were placed in photography, yet the photographic images of the transits were beyond disappointing; they were useless. Rival countries had used different devices that produced non-comparable images, while individual photographs yielded imprecise information. While the failings of photographic observation in 1874 did produce a certain push for the international standardization of mechanical recording techniques in 1882, their principal effect was a re-investment of faith in the human observer and his or her ability to translate an optical event into an accurate, useful sketch.

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<sup>37</sup> See Canales, "Moments of Contact," in *Tenth of a Second*, 87–116.

Engravings made from photographs straddled both worlds. They partook of mechanical objectivity, and yet corrected its failings, constructing an idea of the ideal, objective photograph in another medium. The process behind the production of these images is revelatory of the multiple levels of mediation required to produce seemingly unmediated imagery. This was made clear by an article accompanying the first engraving made from a photograph to be published in the popular press, the *Illustrated London News*' (*ILN*) 1843 Colosseum Print.<sup>38</sup> Commissioned by the *ILN*'s founder Herbert Ingram, this generously sized (91 cm x 133 cm) print depicted London in two views, north and south, taken from atop the Duke of York's Column in Pall Mall (fig. 2.10). To begin, Ingram commissioned Claudet to make a series of daguerreotype views from atop the column, which he did over the course of several days in 1842.<sup>39</sup> Once they had been produced, the photographer descended from his perch, but his images clambered back up the column, this time in the company of an artist, Mr. Henry Anelay. Laying them end-to-end in the two series that would compose the published engraving, Anelay produced preparatory sketches. Another artist, George Frederick Sargent, then transferred Anelay's drawings onto a set of over sixty small wooden blocks made from Turkish boxwood.<sup>40</sup> Ebenezer Landell and his

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<sup>38</sup> The first image from a photograph to appear in the French press occurred on 26 August 1843, when *L'Illustration* published a view made from a daguerreotype of the fort of Saint-Jean-d'Ulloa in Vera-Cruz, Mexico. In the German states, the first engravings made from photographs in the popular press were the construction of photographs of Hamburg's Altona Station published by the *Illustrierte Zeitung* on 10 September 1845. The source photographs for these are extant in the collection of the Altonaer Museum (1406a-d).

<sup>39</sup> Sadly, Claudet's daguerreotypes have been lost, perhaps in the making of the Colosseum Print or in the fire that consumed his studio in 1868.

<sup>40</sup> George Frederick Sargent (1811–64) described himself in census documents as an “artist on wood.” His career was not financially successful, and he was declared insolvent in 1843. The *Illustrated London News* itself misspelled his surname as “Sargeant”; many secondary sources mistakenly give his initials as “C. F.” I am

workshop of eighteen assistants then engraved these blocks. Finally, the woodblocks were pieced together and stereotyped (a form of electrotyping), yielding a copper plate suitable for the final print run.

The *ILN* frequently advertised its forthcoming “Colosseum Print” during its first half-year of existence, clearly impressing upon its readers the print’s “undoubted fidelity and truth,” for it was “in plain terms, a Mirror of the Metropolis.”<sup>41</sup> The print possessed “an accuracy of detail never before equaled in panoramic art.”<sup>42</sup> Critically, however, in this precocious moment of experimentation with a new means of image-making, built upon the camera’s potential as a guarantor of accuracy, the *ILN* lets slip a passing yet telling hint as to its limitations. In a text accompanying the key to the monuments depicted in the Colosseum Print, the *ILN* notes that as Anelay made his drawings from atop the column, he “filled in from nature” those “small deficiencies [sic]” that plagued Claudet’s plates.<sup>43</sup> For while the photograph permitted the creation of a new kind of image, one that (it was claimed) could not be anything but truthful, it nevertheless required the artist’s corrections not only to overcome its then limited reproducibility, but also to fulfill its ontological promise.

### **Battlefields**

While publications such as the *Excursions daguerriennes* and popular periodicals such as the *ILN* and *L’Illustration* did not address a specifically architectural public, their significant

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grateful to Charles Hind, Chief Curator and H.J. Heinz Curator of Drawings, RIBA British Architectural Library, for his assistance in uncovering Sargent’s biographic details.

<sup>41</sup> “Colosseum Print,” 390.

<sup>42</sup> “Colosseum Print,” 390.

<sup>43</sup> “London,” 545.

influence upon the visual economy of nineteenth century architectural practice must not be discounted. The nineteenth century saw a widespread explosion in the production of and demand for images across all fields of knowledge, from cheap illustrated novels to scientific atlases. The *ILN*, *L'Illustration*, and their competitors commonly touched upon architectural subjects, reporting on current building projects, publishing images of monuments as part of tourist accounts from across Europe and further afield, and often opening their pages to current artistic debates through articles from specialists. With their impressive circulations, the depictions of buildings within such publications cannot but have come to the attention of architects. As Jean-Michel Leniaud claims, "*L'Illustration* probably constitutes the most important bank of architectural images in the nineteenth century: we can see to what extent it was able to concomitantly support information and the imaginary."<sup>44</sup>

In July 1848, *L'Illustration* published views of the Saint-Maur-Popincourt barricade erected during the insurrection in late June of that year.<sup>45</sup> One depicted the barricade prior to its assault by the National Guard, the other the scene in the aftermath of the battle. The images' captions state the two woodcut engravings were made from daguerreotypes produced by M. Thibault; Thierry Gervais has identified the originals in the collection of

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<sup>44</sup> "*L'Illustration* constitue probablement la plus importante banque d'images d'architecture au XIXe siècle: on mesure à quel point il put être conjointement support de rêve et d'information." Leniaud, "Introduction," 11. Leniaud is excited by the untapped potential that periodicals offer for the study of nineteenth-century architectural history, which he hoped to re-establish using quantitative methods. He therefore finds the textual discourse within periodicals to be tiresome in its ideological repetition; however, he finds the study of peripheral matters, such as table of contents, advertisements, page layout, and illustrations to be of pressing interest. See *ibid.*, 8.

<sup>45</sup> "Insurrection," 276.

the Musée d'Orsay.<sup>46</sup> The before/after pairing makes apparent the fact that while photography was ideally suited to recording the static state prior to and immediately after an event, it could not at this point in its technical development capture the insurrectionary violence live. Gervais notes that *L'Illustration* rarely used photographs to produce images of events, preferring instead to rely upon sketches made by its correspondents and artists.<sup>47</sup> Counter to its modern association with the ability to extract an instant from the flow of time (the “click,” to use Robin Kelsey’s formulation) photography in the nineteenth century was most useful for documenting subjects that were not time-sensitive: photographic portraits taken years earlier were frequently used to produce engravings to accompany obituaries, for instance.<sup>48</sup>

Gervais argues convincingly that *L'Illustration*'s new breed of news journalism transformed facts into “consumable events.”<sup>49</sup> A temporal immediacy, often coinciding with increasing geographic distance, transformed the absorption of knowledge in its page, in turn putting pressure upon image-makers. If an event could not be depicted in a timely fashion or with sufficient visual interest, it could not be included in the weekly magazine. In turn, one may invert Gervais’s formulation to claim that through its wide circulation and careful

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<sup>46</sup> Gervais, “D’après photographie,” 68–69. The photographs are Thibault, “La barricade de la rue Saint-Maur-Popincourt avant l’attaque par les troupes du général Lamoricière, le dimanche 25 juin 1848 and “La barricade de la rue Saint-Maur-Popincourt après l’attaque par les troupes du général Lamoricière, le lundi 26 juin 1848” (Musée d’Orsay PHO 2002 4 1 and PHO 2002 4 2).

<sup>47</sup> Gervais, “D’après photographie,” 74–76. Gervais notes photography would often be used to depict a site before or after a conflagration, while sketches were used for the disaster itself.

<sup>48</sup> On the “click” and its spatial partner, Rosalind Krauss’s formulation of the “crop,” see Kelsey, “Photography, Chance,” 17.

<sup>49</sup> Gervais, “D’après photographie,” 67.

discursive construction of its journalistic role, the popular press was able to transform impressionistic images of titillating events such as natural disasters, shipwrecks, and assassinations, into established facts.<sup>50</sup> As exemplified by *L'Illustration's* views of barricades in 1848, war offered the nineteenth-century press its ultimate event to describe and depict. While battle paintings formed a long-established genre in academic circles (one thinks of Meissonier's horses), the Crimean War (1853–56), the American Civil War (1861–65), and the Franco-German War (1870–71) joined various domestic insurrections (especially 1848 and 1871) and colonial adventures in providing canonical fodder for the nascent illustrated press.<sup>51</sup>

Architects also shared in this visual lust for military spectacle. Viollet-le-Duc, himself tirelessly involved in the Franco-German War as a lieutenant-colonel in the French Army's Corps auxiliaire du genie (from November 1870, the Légion du génie auxillaire de la garde nationale), produced a series of ten watercolor and gouache paintings of battle scenes from the conflict.<sup>52</sup> Rather bizarrely, given the bloodshed and national humiliation they depict, Sauvageot claims they are “charming.”<sup>53</sup> However, it is another measure of praise used by Sauvageot in the chapter he devotes to these paintings in *Viollet-le-Duc et son oeuvre dessiné*

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<sup>50</sup> On the role of images in the construction of historical facts, see Bann, “Metamorphoses of Joan of Arc,” in *Romanticism*, 45–59.

<sup>51</sup> On war photographs' publication history, see Addleman-Frankel et al, *Dispatch*. I am grateful to Howard Shubert for bringing this publication and its related exhibition to my attention.

<sup>52</sup> On Viollet-le-Duc's fervent military service in 1870–71, see Bressani, “At War,” in *Architecture*, 451–64. Bressani focuses upon Viollet-le-Duc's action within the conflict, as opposed to his drawn representations of it.

<sup>53</sup> “[C]harmantes.” Sauvageot, *Viollet-le-Duc*, 72. One image [École nationale supérieure des Beaux-Arts, Paris, France PC 63520], reproduced in Bressani, *Architecture*, 455 figure 13.1, shows a dead soldier.



(1880) that requires further explanation. In describing a painting of the second morning of the battle of Champigny, which took place on 2 December 1870, Sauvageot praised the exactitude of the master's representation of the French Army's first futile attempt to break out from its besieged capital (fig. 2.11). "The prairie, the houses in the village, and the combatants themselves are of a photographic truth [*une vérité photographique*]." <sup>54</sup>

This statement can certainly be read as further confirmation of photography's well-established status as the standard against which the accuracy of all other graphic media was judged in the nineteenth century. As such, it is hardly an unexpected formulation of praise for the painting's reputed accuracy. Whatever photography's supposed failings in practice, it provided a conceptual ideal, useful for praising (or damning) superbly detailed artworks. However, Sauvageot's use of this photographic metaphor is surprising, given *The Second Day of Champigny's* generally hazy aspect, the visibility of its artist's facture, and its distant viewpoint, which leaves little room for the close-up detail so key to what Stephen Bann has termed the "photographic paradigm" in painting. <sup>55</sup>

However, what is even more paradoxical in Sauvageot's citation is the fact that Viollet-le-Duc's painting had not been made *in situ* at Champigny amidst the carnage of those bloody days. Instead, Viollet-le-Duc produced his ten war views during the Paris Commune in

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<sup>54</sup> "[L]a prairie, les maisons du village, les combattants eux-mêmes sont d'une vérité photographique." Sauvageot, *Viollet-le-Duc*, 73.

<sup>55</sup> Bann, *Parallel Lines*, 124. Bann uses Charles Blanc's criticism of the "excessive importance to small truths, small things" [*une importance excessive aux petites vérités, aux petites choses*] in Horace Vernet's *Prise de la Tour de Malakoff, 8 Septembre 1855* (1857) as an example of this paradigm in operation. See Blanc, *Grammaire*.

spring 1871.<sup>56</sup> Sauvageot recounts Viollet-le-Duc's working method during those tumultuous weeks, which he spent at the castle of Pierrefonds (whose restoration by Viollet-le-Duc was another monumental act of Napoleonic folly) mainly working on his *Mémoire sur la défense de Paris* (1871). Sauvageot claims the production of these paintings served as a distraction, or even a means of forgetting the terrible events Viollet-le-Duc had witnessed. However, given the architect's belief in drawing's instantiating power, they rather form an integral part of his project to recount and analyze the debacle, which would haunt him for the remaining years of his life. Working from quick pencil sketches and written notes taken during the battle, and "his prodigious memory of forms and facts," Viollet-le-Duc

made, in some cases almost a year later, these scenes of war and devastation he had witnessed. To each, he succeeded in giving such a truthful character [*un si grand caractère de vérité*] that war veterans and battle painters alike (the whole public, to be more exact) were struck by this exactitude, surprised and amazed, on the other hand, to see an architect, a writer shining in the first rank of the one of the most difficult branches of art.<sup>57</sup>

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<sup>56</sup> The ten paintings are held in the collection of the École nationale supérieure des beaux-arts (ENSBA) in Paris; many sources, including the ENSBA catalogue, date them to 1870, and they do bear pencil or ink marks giving the date of the action they depict (which took place that year). However, Sauvageot's account (his textual descriptions match the paintings exactly) confirms their production in 1871, i.e. after the end of Franco-German hostilities, and during the Communard insurrection.

While the ENSBA catalogue names Mme Robert Lafond as a previous owner of the paintings, Sauvageot, writing in 1880, places them in the possession of Alexandrine Sureda, Viollet-le-Duc's secretary and constant companion during his final years. See Sauvageot, *Viollet-le-Duc*, 71–74.

<sup>57</sup> "[S]a prodigieuse mémoire des formes et des faits"; "exécuta, à près d'un an de distance parfois, ces scènes de guerre et de dévastation qu'il avait vues, auxquelles il avait assisté, et à toutes il réussit à donner un si grand caractère de vérité que les gens de guerre comme les peintres de batailles (le public entier, pour être plus exact)

Sauvageot's recounting suggests that "photographic truth" was not always a question of indexical presence, but rather a publically adjudged standard to be satisfied through supreme artistic skill, to which memory and in-situ documentation could contribute.

In fact, while Viollet-le-Duc's delayed working method was typical of battlefield painting, it was by no means opposed to the standards of war photography in the mid-nineteenth century, which was largely restricted to recording the effects of conflict. Disintegrating corpses, discarded armaments, and the smoldering ruins of military fortifications and civilian buildings provided the most common testimony to the destructive carnage of battle, itself beyond early photography's recording capacity. Battlefield photography in the mid-nineteenth century was a largely a matter of after-the-fact recollection, composition, and reconstruction, the latter evidenced by Alexander Gardiner's staged photographs of the American Civil War.<sup>58</sup> Even the most famous war photographs have been plagued by claims they had in fact been composed by the photographer: this is the case of Roger Fenton's haunting 1855 *Valley of the Shadow of Death* (fig. 2.12). This scene contains no action, only its aftermath. A long controversy has emerged as to whether Fenton in fact re-arranged the cannonballs littering the road to produce a more dramatic image; the inconclusive evidence

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ont été frappés de cette exactitude, surpris et émerveillés, d'autre part, de voir un architecte, un écrivain briller au premier rang dans une des branches difficiles de l'art." Sauvageot, *Viollet-le-Duc*, 72.

Massillon Rouvet, Viollet-le-Duc's secretary during the war, notes that he made his preparatory sketch for *The Second Day of Champigny* at the "front line ... his back to a burnt house" ["*C'est ... au premier rang, que Viollet-le-Duc, adossé à une maison incendiée, a dessiné le croquis pour l'aquarelle*"], and repeats Sauvageot's description with its photographic compliment. See Rouvet, *Viollet-le-Duc*, 87.

<sup>58</sup> Even as war photography moved closer to the front lines in the twentieth century, it nevertheless retained its capacity for staging images. For example, the American architect and set designer Norman Bel Geddes produced elaborate models of land and sea battles during the Second World War, which were photographed for publication in *Life* magazine and exhibited at the Museum of Modern Art in New York. Bel Geddes saw these models as "a new form of picture journalism." See Cohen, *Architecture in Uniform*, 325–29 and 346–51.

presented by Ulrich Keller, Susan Sontag, Gordon Baldwin, and Errol Morris confirms only the frequently disputed ontological status of war photography.<sup>59</sup>

### **The Architectural Event**

If war offered the popular imagination its ultimate event in the nineteenth century, then construction and demolition enjoyed an analogous position for architecture within the pages of magazines such as *L'Illustration*. Haussmann's Paris offered no shortage of such spectacles for the popular press to record, and photography again played a crucial yet peculiar role in this. As was noted in the first chapter, Charles Garnier did not include any of Louis-Émile Durandelle's construction site photographs (as opposed to his views of ornament) in *Le Nouvel Opéra de Paris*. This decision, in keeping with the visual codes expected of an architectural monograph of that time, is slightly at odds with the narrative, polemical nature of its two volumes of text. Garnier went to great length to answer his many critics, often dwelling upon decisions taken during the Opéra's construction. Furthermore, as Christopher Curtis Mead has discovered, Garnier claimed in his annual building report for 1865 that photographs were taken "every time important changes occurred at the building site."<sup>60</sup> Within the pages of *Le Nouvel Opéra*, only engravings of the finished

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<sup>59</sup> Fenton produced two photographs of *The Valley of the Shadow of Death*. One, in the Gernsheim Collection at the Harry Ransom Centre, University of Texas at Austin, shows the road clear of cannonballs. A second image, in the collection of the J. Paul Getty Museum, Los Angeles, and reproduced here as figure 2.12, shows many cannonballs on the road. Errol Morris has gone to great length to refute Susan Sontag's assumption (based on a claim by Ulrich Keller) that the second photograph was clearly staged by Fenton, who directed the placement of the cannonballs. See Morris, "What Came First," Keller, *Ultimate Spectacle* and Sontag, *Regarding*, 53–54.

<sup>60</sup> "[T]outes les fois que quelques changements importants survenaient dans le chantier." See Mead, *Architectural Empathy*, 139 and 300 n. 13. The original report, entitled "Rapport sur les travaux pendant l'année 1865" and dated 19 January 1866, is conserved at the Archives nationales, Paris, in série AJ/13 531.

monument and photographs of its ornamental details were deployed to support visually Garnier's arguments.

However, Durandelle's construction photographs did reach a wider audience through engravings in the popular press. On 12 and 19 February 1870, *L'Illustration* published three engravings under the title *Present State of Works at the New Opera*. These depict the Opéra's carriage entry, the interior of the flytower, and a lower corridor, all visibly under construction. In each case, the source photograph for the engraving is extant, allowing for comparison. For the carriage entrance, the dark shadows obscuring the pier in the photograph's left foreground and the vaulting above have been lightened in the engraving, allowing the texture of the stonework to be added (figs. 2.13 and 2.14). A few stray pieces of wood have been added to populate the engraving's foreground. The same lightening of shadows and addition of construction ephemera has been performed upon the third image, showing a corridor and secondary stairwell. In both cases, the photograph's stark contrast of light and dark, which renders the Opéra as a cavernous excavation from monolithic stone, have been tempered through a nuanced attempt to make a construction site better resemble itself (figs. 2.15 and 2.16).

This performance of construction is properly seen in the second view, in which workmen positioned upon wooden scaffolding now animate this engraving of the flytower's vacant structure (figs. 2.13 and 2.17). Their presence suggests either an act of inventiveness on the

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This decision (to have the photographs taken, but not to publish them) may be seen as respecting Charles Baudelaire's famous stricture that photography could serve as "the secretary and note-taker for whomever, in his or her profession, requires absolute material exactitude" [*"le secrétaire et le garde-note de quiconque a besoin dans sa profession d'une absolue exactitude matérielle"*]. Baudelaire, "Salon de 1859," 328.

part of the illustrator, or a secondary visit to sketch the work in progress. This latter possibility hints at an interesting division of labor between the photographer, who could capture structure in the absence of people, and the illustrator, who was trained to record workers in action. The frequent absence of laborers from photographs of the spectacle of construction is also interesting in light of the camera's position as a laborsaving threat to the established economy of popular image-making.<sup>61</sup>

Durandelle's photographs were also used as the basis for many of the engravings in Charles Nutter's *Le Nouvel Opéra*, a popular history published at the time of the monument's inauguration in 1875.<sup>62</sup> Among the many engravings clearly made from Durandelle's photographs is a view of workers gathered on the Opéra's flytower roof under construction (figs. 2.18 and 2.19). Those workers who downed tools and kept perfectly still feature clearly in this posed photograph, and in Nutter's engraved transcription of it. The precariousness of their poses atop the unfinished roof testifies to the dexterous agility needed to perform such rooftop labor, which the camera cannot yet record them performing. The dignified stillness of the photograph is disturbed, however, by a single wraithlike blur in its lower right foreground. Has a workman walked in front the camera during its exposure? In *L'Illustration's* Opéra views, construction workers absent in the source photograph were added to the engraving; here the operatic phantom has been

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<sup>61</sup> Robin Kelsey notes photography's invention followed that of other laborsaving machines, such as the lawn mover, sewing machine, and reaper in the 1830s. See Kelsey, "Photography, Chance," 18.

Whom exactly was threatened by photography's laborsaving potential has been considered at length in Bann, *Parallel Lines* and also in Levine, "Template," 308–9.

<sup>62</sup> Charles Nutter was the pseudonym of Charles Truinet, the Opéra's archivist.

omitted from the engraving. Once again, the photograph has been altered, its presumed imperfections corrected in another medium.

While the authors of the Opéra's decorative statues and paintings are credited by name in the atlases of photographs *Le Nouvel Opéra*, the stone-carvers who produced the monument's riotous ornamental sculpture are left anonymous. Nor is their presence seen in those photographs by Durandelle selected by Garnier for inclusion in this publication—with one telling exception. In a view of the ornamental decoration of the frieze and cornice crowning the Opéra's flytower, Durandelle has captured two figures at the end of the tunnel-like perspective enforced by the narrow scaffolding (fig. 2.20). While a dark figure sits contemplatively, a pipe-smoking stone-carver in light-toned attire is seen in profile. His raised left arm positions a chisel against the massive frieze, while his partially hidden right arm wields a mallet. His distinctiveness suggests not necessarily a posed image—although this is quite possible—but instead the deliberate, thoughtful action needed to apply the finishing touches to this impressive work of decorative stonework.<sup>63</sup> The stone-carver's unobtrusive presence in the photograph gives sense to the other thirty-nine plates in the *Sculptures décoratives* atlas: both as the carver of the decorative sculpture that translated Garnier's vision of an eclectic classicism into a material reality, and as an indication of one potential audience for this volume. Both laborer and intended spectator find themselves represented through the worker's appearance within a class of imagery from they are otherwise absent. A plaster cast, serving as a model for the massive frieze, can be glimpsed

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<sup>63</sup> The subtleties of these figures are lost in the engraving Nutter published from this photograph in his *Le Nouvel Opéra*: in it, the dark figure no longer looks resignedly downwards, but instead returns the camera's gaze, while the active power of the stone-carver's right arm is not reproduced (fig. 2.21).

at the extreme right edge of the photograph. Its mediatory presence indexes not only the original artistic impulse of Garnier and the artistry of an ornamental sculptor, but also the economic conflict between them, for as we have seen in the first chapter, it is quite possible that the stone-carver in the photograph did not produce the cast. The promised guarantee of indexical translation embedded within the image masks an economic system that imposed multiple intermediaries upon artistic production.

What of the photographer? Durandelle's long collaboration on the building site, and his authorship of the photographic images in *Le Nouvel Opéra*, went unacknowledged by Garnier within its pages, although his name is printed upon the photographic plates. However, Claude Baillargeon has speculated as to Durandelle's ability to inscribe his presence within his photographs for other projects. A single mustached, barrel-chested figure can be seen in Durandelle's views of the Sacré-Coeur, Eiffel Tower, and Galerie des Machines under construction.<sup>64</sup> Baillargeon convincingly argues that this figure is Durandelle, now sufficiently established to stand in front of the camera, while his assistant and later successor, Albert Chevojon, takes the photograph. In one instance, Durandelle went even further, placing his photographer's van within the frame.<sup>65</sup> However, this quest to assert an indexical presence on the part of an artisan whose role in the production of images was often left unacknowledged was to prove futile. In this case, Durandelle's assertion of his presence only provided a basis for further transformation. A photograph taken on 25 March 1884 shows Durandelle and a woman standing in the middle ground by

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<sup>64</sup> Baillargeon, "Message in a Bottle," in "Religious Fervor," 111-24.

<sup>65</sup> See Baillargeon, "Rhetoric," 116.



the rue Lamarck; his van can be clearly seen on the right, with his name written in large letters on its side (fig. 2.22). When Hubert Rohault de Fleury published a gillotype engraving from this photograph in the *Bulletin du Voeu national* in June of that same year, the photographer and his companion were transformed into bourgeois tourists visiting the construction site, while Durandelle's van was made into the fiacre that had brought them out to Montmartre (fig. 2.23). In producing popular images of the Sacré-Coeur, Rohault de Fleury was far more interested in enabling his readers' virtual tourism than he was in recognizing the man whose images made such fantasies possible.<sup>66</sup>

The frenzy of demolition that marked nineteenth-century Paris offered a frequent spectacle of the architectural event at its most war-like. Of the four engravings of the reconstruction of the Gare Saint-Lazare published by *L'illustration* on 28 January 1888 and 20 April 1889 and attributed to Durandelle, three are static documentations. Two show interior views of the old station (fig. 2.24), while a third captures the station's new façade on the Place du Havre, designed by the architect Juste Lisch. The original photographs for both of the interior views are in the collection of the Musée d'Orsay in Paris (figs. 2.25 and 2.26).

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<sup>66</sup> Baillargeon has thoroughly documented the use of engravings made from photographs of the Sacré-Coeur construction site for propaganda purposes. See Baillargeon "Religious Fervor" and "Rhetoric." In particular, Baillargeon discovered an album in the collection of the Canadian Centre for Architecture in Montréal [PH1991:0061:001-165] of Durandelle's Sacré-Coeur photographs. Ink markings by Hubert Rohault de Fleury, secretary general of the building project, indicate the changes to be made as these photographs were engraved for the Sacré-Coeur's fundraising organ, the *Bulletin du voeu national*. These modifications were made to show the basilica as it would appear once finished; in particular, donors' arms and epigraphs are shown carved into the stonework.

Often, different modifications were made to suit different audiences. An engraving from a photograph of St. Peter's Chapel in the crypt for the secular *L'illustration* emphasizes this space as an impressive feat of construction, while the *Bulletin du voeu*'s illustration from the same print shows pilgrims celebrating mass.

Remarkable for their fidelity to their source photographs, the engravings differ mainly in their omissions of the ghostly traces of light which mark Durandelle's prints, especially that of the Suburban vestibule. In the case of the bench on far leftmost edge of this photograph, the blurry splotches caused by the brief presence of a seated traveller appear to have been transferred to the engraving.<sup>67</sup>

A fourth view, also labeled "after M. Durandelle's photograph" raises a fascinating series of questions as to the nineteenth-century's hybrid economy of popular image-making. This engraving depicts the demolition of the old station's façade, built by the architect Alfred Armand and the engineer Eugène Flachet between 1842 and 1853 (2.27). Teams of laborers in the image's lower left-hand corner are shown in the process of pulling it down. Keeping in mind the limitations imposed by Durandelle's equipment, it is doubtful that the photographer succeeded in capturing this event *en cours*.<sup>68</sup> Did he document a pause, a moment of stasis within the larger event? This seems unlikely given the position of the laborers and the precarious balance of the leftmost fragment of the façade—which hardly seems 'posed'—and in fact no source photograph matching the engraving has been located. Rather, the destructive energy of the demolition work is echoed on the surface of this engraving, where the taught lines pulling at the old façade draw two visual registers

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<sup>67</sup> I am grateful to Pierre-Édouard Latouche for sharing his observation of these ghostly traces with me.

<sup>68</sup> Regarding a photograph (and subsequent re-mediated engraving) of the dedication of the Sacré-Coeur's Upper Church in 1891, Baillargeon notes Durandelle's difficulty in recording events. Durandelle regularly used large view cameras, "ideal instruments for architectural studies and all-encompassing views, but rather ill-suited and unwieldy for topical matters of a journalistic nature." Durandelle worked with large glass plates, and there is no evidence that he ever experimented with hand-held cameras. See Baillargeon, "Religious Fervor," 286–87.

together: architectural photography and popular illustration.<sup>69</sup> Durandelle's photograph likely would have supplied a view of the façade before demolition, as well as the forms of the neighboring buildings. The illustrator, who would likely have witnessed the demolition, would have then been responsible for animating this scene with the action of the laborers and the precariously balanced position of the façade at the moment prior to its collapse.

### **Historical Evidence and Chains of Custody**

If the popular press incorporated photography into its image-making economy as a means of complementing the illustrator's ability to depict events in a timely fashion, the architectural press was able to go further. Relying on photographic documentation sent from around the world, engravings from photographs played a crucial part in the imagery of leading architectural periodicals in France and the United Kingdom, as well as in many of the first global histories of architecture. *The Builder* published engravings made from photographs of both British and foreign buildings. British examples included two engraved views of Deane and Woodward's Oxford Museum as it neared completion in 1859. The first of these, delineated by Benjamin Sly and engraved by John Smith Heaviside, is particularly striking, given its slight angle and tight cropping, suggesting a highly photographic survey of the building that is unlike any architect's sketch or drawing (fig. 2.28). The accompanying article declares, "The new Museum is approaching completion, and we publish in our present number two views of the exterior, from photographs of the actual building."<sup>70</sup> Here the text serves to assure the reader that *The Builder's* illustrations faithfully reproduce the

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<sup>69</sup> I am grateful to Professor Thierry Gervais for sharing his interpretation of the hybrid nature of this image with me.

<sup>70</sup> "University Museum," 252.

building itself, and not its representation.<sup>71</sup> This claim of an unmediated presentation of a building runs counter to other instances in which *The Builder's* imagery presented an idealized, as opposed to real, representation of a building. As Ruth Richardson and Robert Thorne have documented, *The Builder's* engravings not only bestowed a graphic equivalency upon projected and built works; they also sometimes presented ultimately unfinished buildings in a finished state, as well as restorations of medieval buildings and towns.<sup>72</sup>

Another example of an engraving made from a photograph is an 1885 view of G. Aitchison's Royal Exchange Assurance Offices in Pall Mall, London (fig. 2.29). The level of detail present in the engraving is astonishing, and it at first glance appears to be a photograph. Once again, the confirmation of its origins is textual: "The illustration is engraved by Mr. J. D. Cooper from a photograph taken for the purpose."<sup>73</sup> This quotation asserts the photograph's importance as a source for Cooper's image while noting that its existence is wholly dependent upon its capacity to be subsumed into the engraving's chain of production. What appears to be the original photograph (taken by an unknown photographer) is available for comparison in the RIBA Library Photographs collection (fig. 2.30). Beyond the identical viewpoints, the position of several open doors and windows confirms the link between the two images. The engraving, however, is able to deploy a careful modulation of lights and darks without losing any detail into pure black or white, as

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<sup>71</sup> Richardson and Thorne, "Introduction," 21 and 25-26.

<sup>72</sup> Richardson and Thorne, "Introduction:" 25-26.

<sup>73</sup> "Royal Exchange," 220.

was the case in the photograph. The engraving's greater legibility, coupled with the fact that the photograph was expressly produced to make the engraving, leads us to question the latter's autonomy as an image. However, the photograph's special nature is clearly felt in the published image: externally in the text, but also inside the image. The engraving's angled viewpoint, tight framing, prominent shading, and astonishing level of detail combine to produce an image that reads—at least at first glance—as if it were itself a photograph.

Captions also served to explain—and authenticate—the journey of images from far-flung countries to *The Builder's* London offices, and thence to its readers' armchairs. An 1863 engraving of Balzan's great gateway to the Ottoman Sultan's new palace on the Bosphorus was thus described:

The capitals and the foliage at the base are of metal, bronzed: the rest of the structure is, we believe, of marble: the gates themselves are of cast iron. The drawing we have engraved was made from one of the admirable photographs produced by Mr. F. Bedford while professionally accompanying the Prince of Wales in his Oriental tour.<sup>74</sup>

As with *The Builder's* Dreux engraving, the text shows the author's relative uncertainty regarding the particulars of a foreign building whose appearance can nevertheless be definitively presented thanks to the qualities of its original photograph and its engraved translation. In other cases, the architect provided *The Builder* with more certain information. In 1881, two engravings of Charles Garnier's theatre in Monte Carlo appeared in its pages. *The Builder* thus acknowledged the source of its images: "Our illustrations are

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<sup>74</sup> "Gateway," 388.

engraved from documents kindly lent by M. Garnier expressly for the Builder, aided by some excellent photographs, placed at our disposition by M. Durandelle, photographer.”<sup>75</sup> In 1883, *The Builder* published two images of the newly rediscovered cloisters of Wurzburg Cathedral in Germany (2.31). The lower image sweeps across three bays of the cloister from a shallow angle, while the upper provides a close-up view of a column and pier. Just as the accompanying article takes care to describe this marvelous discovery, it also explains the circumstances of the production of these two engravings:

Some of our readers may have learned by the newspapers of the opening up of an interesting cloister at Würzburg, heretofore built into a solid wall and quite invisible. The wall is now pulled down, and the cloister is exposed. Through Major Call, R[oyal] E[ngineers], who was then staying there, Mr. R. Herbert Carpenter obtained photographs of the ancient work, and from these Mr. Brewer made for us the careful drawing we have engraved.<sup>76</sup>

The soundness of the engraving’s provenance is established by this relating of the sequence of hands through which it had passed. From an officer of the British Army by good fortune on the scene (Call), to a Gothic-revival architect (Carpenter), and finally to an artist expert in German architectural history (Brewer), these photographs yielded a “careful drawing” in which *The Builder*’s readers could place the highest confidence. While it took the removal of a wall to render the cloister visible *in situ*, this chain of trustworthy and knowledgeable custodians revealed it to the British architectural public. The photographer’s anonymity—one might say irrelevance—to the image’s chain of custody in

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<sup>75</sup> “Theatre of Monte Carlo,” 647.

<sup>76</sup> “Cloisters,” 179.

this instance is telling. While the photographer's name was sometimes given as part of the textual guarantee of an engraving's photographic origins, his or her presence was not essential. It was never the unseen agent behind the camera that mattered, but rather the felt presence of the photograph behind the engraving that mattered. To serve its role, the photograph had to present itself to the greatest extent possible as unmediated.

Ease of dissemination across great distances—thanks to reproducibility and physical portability—is commonly and correctly assumed to be one of photography's great advantages.<sup>77</sup> However, the case of *The Builder* adds a level of complexity to this story, for it was not usually photographic prints that travelled to the journal's offices in London, but rather electrotypes. The use of these metal casts made from engraved woodblocks protected the original engraving and allowed for its reproduction across large print runs, and freed images for easier circulation.<sup>78</sup>

*The Builder* also noted the role played by photography in broadening the scope of architectural histories, such as James Fergusson's *A History of Architecture in All Countries from the Earliest Times to the Present Day* (1862-1867). As it observed, "Such a work, of course, would have been impossible for anyone except in modern days, when increased

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<sup>77</sup> However, Jennifer Roberts notes that with the arrival of telegraphy in the nineteenth century, artists such as Asher Durand responded to a new informational reality in which images moved slower than words. See Roberts, *Transporting Visions*.

<sup>78</sup> As related by Ruth Richardson and Robert Thorne, examples of *The Builder*'s use of electrotypes acquired from abroad include José Severini's stunning engraving of the Palace of St Telmo in Seville after a photograph by Senor Laurent (vol. 40, no. 1980 [15 January 1881]: 68) and Arturo Carretero y Sanchez's engraving of the Cloisters of the Royal Convent of the Huelgas, also from a photograph (vol. 41, no. 2030 [31 December 1881]: 822). See Richardson and Thorne, "Introduction" 28.

facilities from all part of the world, enable a writer in his study to survey architecture ‘from India to Peru.’”<sup>79</sup> As Robert Elwall has noted, Fergusson’s historical method was predicated upon photography: the comparative analysis in his *History* “simply would not have been conceivable without photography.”<sup>80</sup> Elwall asserts that a large proportion of its over 1500 wood engravings were made from photographs, including John Thomson’s views of Cambodia and Felice Beato’s of China.<sup>81</sup>

In addition to his use of photographs in his practice of historic restoration, Viollet-le-Duc also used photography to support his many historical publications. As Roland Recht observes, Viollet-le-Duc acknowledged his use of photographs and casts to produce his engravings of statuary from the cathedrals of Chartres and Reims published in his *Dictionnaire raisonné de l’architecture française du XIe au XVIe siècle*.<sup>82</sup> In the entry for “sculpture” in the *Dictionnaire raisonné*, he declared, “Wherever possible these drawings are made from casts in our possession, or from photographs.”<sup>83</sup> Later, he explained, “The plates accompanying this article were all drawn either from casts with the camera lucida, or after photographs, or from the originals with the aid of the camera lucida. We make this observation because several people have claimed—in good faith—that we give to medieval

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<sup>79</sup> *The Builder* vol. 50 (16 January 1886): 113.

<sup>80</sup> Robert Elwall, “James Fergusson,” 403. Lauren M. O’Connell has made a similar assertion regarding Eugène Emmanuel Viollet-le-Duc’s tireless literary production, which also used photographs as a frequent source. See O’Connell, “Viollet-le-Duc,” 141.

<sup>81</sup> Robert Elwall, *Photography Takes Command*, 27; Robert Elwall, “James Fergusson,” 403.

<sup>82</sup> Roland Recht, “Moulage,” 46.

<sup>83</sup> “Autant que possible ces dessins sont faits sur des moulages que nous possédons, ou sur des photographies.” Viollet-le-Duc, “Sculpture,” 117n2.



statuary a beautiful character that it does not possess.”<sup>84</sup> As with his several comments elsewhere in the *Dictionnaire raisonné* praising photography, Viollet-le-Duc is asserting the photograph’s value as an indexical imprint, akin to casting and *in situ* observation, free of subjective manipulation.

If photography provided Viollet-le-Duc with factual evidence to fuel his interpretations of medieval France, it also allowed him to write about geographically distant cultures. As Lauren M. O’Connell has discovered, Viollet-le-Duc prepared *L’Art russe* (1877) using as album of photographs sent by Viktor Butovsky, the publication’s principal Russian sponsor.<sup>85</sup> Photographs were also central to Viollet-le-Duc’s earlier introductory essay to Désiré Charnay’s *Cités et ruines américaines*, an 1862 album of photographic views from Mesoamerica (1862). Viollet-le-Duc admitted that his arguments were drawn from careful study of Charnay’s photographs. As O’Connell notes, “Photography becomes this history’s primary source, and insights gleaned from photographs are used to confirm or correct information provided by texts.”<sup>86</sup> In this instance, photography was deployed as evidence in support of a dubious, racialized theory that the ancient monuments of the Yucutan had been built by a Semitic people who had migrated from central Asia.<sup>87</sup> In an

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<sup>84</sup> “Les planches jointes à cet article ont toutes été dessinées soit sur des estampages, à la chambre claire, soit d’après des photographies, soit sur les originaux, de même à l’aide de la chambre claire. Nous faisons cette observation, parce que, de bonne foi d’ailleurs, quelques personnes ont prétendu que nous donnions à la statuaire du moyen âge un caractère de beauté qu’elle ne possède pas.” Viollet-le-Duc, “Sculpture,” 149n1.

<sup>85</sup> O’Connell, “Viollet-le-Duc.” The album is in the Collection of Médiathèque de l’architecture et du patrimoine in Charenton-le-Pont, France.

<sup>86</sup> O’Connell, “Viollet-le-Duc,” 142.

<sup>87</sup> Phyllis Lambert and James Ackerman note that August Salzmann’s 1854 photographs of Jerusalem were intended as evidence to validate the archaeologist Félicien de Saulcy’s amateur archaeological chronology of the Holy Land. See Pare, “Introduction,” 10 and Ackerman, “On the Origins,” 110.

article in *L'Illustration* anticipating the publication of Viollet-le-Duc's text and Charnay's photographs, H. Lavoix claimed that this theory had been held and Alexander von Humboldt by John Lloyd Stephens, both of whom had explored Mesoamerica. However,

above all, what was missing from the study of the curious problem, were facts, that is to say exact and certain knowledge of the monuments upon which the questions lies, and from which could be found its solution. [Charnay] went to visit the sites, armed with photographic apparatus, and has brought back the curious album which reunites these precious remains. Now it is for science to judge!<sup>88</sup>

While numerous engravings made from Charnay's photographs accompanied Lavoix's article, Viollet-le-Duc supplemented these with his own analytical drawings in his introduction to *Cités et ruines*. O'Connell argues that while photography could provide a (highly accurate) rendering of surface realism, it could not transcend its subservient facticity to explore the physiological forces at work in a building.<sup>89</sup> Once again, Viollet-le-Duc has used photography to glean accurate and indisputable knowledge of a monument, upon which the work of restoration—either on the real building or through the instantiating intermediary of drawing—may be based.

*The Builder* also used engravings made from photographs as evidence in historical debates. An article of 16 October 1875 presented conflicting theories as to the origins of the bell

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<sup>88</sup> “Ce qui manquait surtout à l'étude ce curieux problème, c'étaient les données, c'est-à-dire la connaissance sûre, exacte des monuments sur lesquels la question repose, et de laquelle peut recevoir sa solution. Un voyageur français est allé sur les lieux, armé d'appareils photographiques, et nous rapporte aujourd'hui le curieux album qui rapproche et réunit ces précieux restes. Maintenant que la science juge et prononce!” Lavoix, “Antiquités américains,” 377–78.

<sup>89</sup> O'Connell, “Viollet-le-Duc,” 142–43.

tower at Evesham, in England. While the Reverend Mackenzie Walcott had argued for a fifteenth-century date using documentary evidence, *The Builder* supported the customary sixteenth-century date using the evidence of the “building itself,” which was presented in its pages using a “drawing... made from a fine photograph by Mr. Earl, of Worcester.”<sup>90</sup> In this instance, the building is seen as the definitive source for its own history; in its absence, a representation from a photograph is used to present *The Builder*’s case. Six years later, *The Builder* considered claims made by Russell Forbes that excavations at Pompeii had uncovered an instance of arches springing directly from columns far earlier than presumed. Without taking position on his argument, *The Builder* “had a careful engraving made” from a photograph supplied by Forbes.<sup>91</sup> In both of these cases, the evidentiary capacity of images was linked to the photographic origins. The camera’s contribution was invaluable, yet troubling. While the engraving’s truthfulness was guaranteed by this mention of its photographic source; however, we have seen the extent to which engravings ‘corrected’ the photographs they remediated.

**“We have drawn extensively from this treasure”**

In addition to being the leading organ for the diffusion of French architecture over the fifty-year course of its existence (1840-1890), César Daly’s *Revue générale de l’architecture et des travaux publics* was also known for the sublime quality of its illustrations. As Marc Saboya has argued, Daly’s quest for precision in illustration bordered on the maniacal, prompting

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<sup>90</sup> “Bell-Tower,” 930n.

<sup>91</sup> Forbes, “Excavations,” *The Builder* vol. 41, no. 2005 (9 July 1881): 44.

his decision to make almost total use of steel engraving for the publication's lavish plates.<sup>92</sup> Previously disappointed by black-and-white lithography and aquatint, Daly's regular (and continuous) use of woodcut engravings within the body of the *Revue générale*'s text was precocious.<sup>93</sup> However, woodcut lacked the fine and precise traits needed for the quality of architectural rendering sought by Daly. Only the burin, carving into the steel plate (at great difficulty), could offer Daly a true translation of what he had earlier termed architecture's own "real effect" ["effet réel"].<sup>94</sup>

In the previous chapter, we noted Daly's enthusiasm for photography, as well the *Revue générale*'s status as the first architectural journal to publish photographs with its view of the François Ier staircase at Blois in 1856. Daly championed the use of photography by architects, famously declaring its quasi-equivalence to the physical monument. This was both a seminal and a unique occasion; never again would the *Revue générale* publish a photograph.<sup>95</sup> Saboya suggests several evident reasons, including the expense and impermanence of many early photographic prints, as well as the opaque shadows that hide so much in the photographic image.<sup>96</sup> Above all, remediation was lacking to make

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<sup>92</sup> Saboya, *Presse et architecture*, 87–89. By Saboya's count, 2,429 of the *Revue générale*'s 2,490 plates were produced using steel engraving. See *ibid.*, 88.

<sup>93</sup> While woodcut engraving had arrived in the French popular press in 1833 in *La magasin pittoresque*, Daly's *Revue générale* was the first publication specialized in architecture to make use of it, doing so from its inception in 1840. As Saboya notes, this fact makes *L'Illustration*'s claim to have done so in its first issue, published in September 1843, rather disingenuous. See Saboya, *Presse et architecture*, 86–87.

<sup>94</sup> César Daly, *La Phalange* (1 July 1838): col. 206. Quoted in Saboya, *Presse et architecture*, 87.

<sup>95</sup> There is one possible but insignificant exception to this absence of photographs from the *Revue générale*: a plate showing antique coins published in 1877 reproduces what appear to be photographs of coins using héliogravure. See "Architectural types of antique coins," in *Revue générale* vol. 34, plate 2.

<sup>96</sup> Saboya, *Presse et architecture*, 90–92.

photographic images useful for architects. As Saboya states, “In order for a plate to be useful for the architect, it must be precise but it must also translate, by certain effects available to engravers, the artist’s own thought.”<sup>97</sup> Whereas for Sauvageot and others, photography was a means to avoid the errors of translation introduced by intermediary’s, in Saboya’s opinion, the engraver’s thoughtful intervention was essential for Daly. It is this need for translation as a means of restoring “the artist’s own thought” — his or her subjective genius for conception and appreciation—in the name of productive utility that best explains not only Daly’s hesitance regarding the publication of photographs as photographs, but also his occasional use of steel engravings made from photographs. While the total number of images identified as being produced in this manner is miniscule out of the *Revue générale*’s 2,490 total plates, they are nevertheless revelatory of photography’s place within the larger architectural visual economy.

The *Revue générale*’s first acknowledged engravings made from photographs appeared in 1872; six of the sixty-two plates that year were produced in this manner. Of these six acknowledged plates, three were from photographs taken by Franck (1816–1906), best known-for his photographs of the Commune and the subsequent ruins of Paris from 1871.<sup>98</sup> César Daly admired Franck’s reproductions of important private collections, declaring, “A visit to his house is a pleasure for those who appreciate beautiful photographs of ancient art

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<sup>97</sup> “Pour qu’une planche soit utile à l’architecte, il faut qu’elle soit précise mais qu’elle traduise aussi, par certains effets auxquels ont recours les graveurs, la pensée de l’artiste.” Saboya, *Presse et architecture*, 92.

<sup>98</sup> “Franck” is the pseudonym adopted by François-Marie-Louis-Alexandre Gobinet de Villecholles. *L’Illustration* used his photographs to produce engravings on many occasions in the 1860s, 1870s, and 1880s.

objects.”<sup>99</sup> One engraving shows a marble statue of Priapus, discovered in Tarragona, Spain (fig. 2.32). The statue once belonged to Franck himself; Daly qualified his photograph as “excellent.”<sup>100</sup> In an article praising—at some length—the engraver Jacques-Joseph Huguenet for his “unrivaled talent” and unmatched commitment to precision, Daly acknowledged that his engraving of a wood panel sculpted in the fifteenth century was made “after an excellent by photograph by M. Franck” (fig. 2.33).<sup>101</sup> Later that year, the *Revue générale* published another engraving, this time by Clergé, from a Franck photograph of a sculpted panel from the sixteenth century, which had been exhibited at the 1867 Universal Exhibition in Paris (fig. 2.34). Whereas Huguenet’s engraving carefully maintains the soft grain of the wood, as well as the few blemishes upon his panel’s surface, Clergé uses a far less delicate cross-hatching technique. While both engravings soften the photograph’s likely dark shadows, only Huguenet’s more delicate engraving yields a strong effect of modulation in relief. A brief descriptive text suggests that Franck’s contribution to the *Revue générale*’s image-making may have exceeded these three cases: “The panel represented in our plate no. 32 is borrowed Mr. Franck’s rich photographic collection, from which we have already mined many drawings.”<sup>102</sup> Three other plates from 1872 were also produced from photographs. A double-plate engraving depicting an iron gate designed by

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<sup>99</sup> “Une visite chez lui est une fête pour ceux qui aiment les belles photographies d’objets d’art anciens.” Daly, “Panneau,” col. 11n1.

<sup>100</sup> César Daly, “Figure antique,” cols. 50–51.

<sup>101</sup> “La représentation qu’en donne la Revue est exécutée d’après une excellente photographie de M. Franck.” César Daly, “Panneau,” col. 11.

<sup>102</sup> “C’est à la riche collection photographique de M. Franck, où nous avons puisé déjà plusieurs dessins, que nous empruntons le panneau représenté dans notre pl. 32.” “Panneau sculpté (XVe siècle),” col. 193.

Baudrit in light perspective bears the caption “after a photograph.” Likewise, a view of the architect Ch. Fleury’s “habitation” in Rouen was credited to “Bassy sc. (after a photograph).” The plate, which also contains a plan view, features a large perspective of the main façade, taken from a slightly elevated and off-center viewpoint (fig. 2.35).

In 1878, the *Revue générale* published an engraving of a lighthouse at Cordouan at the mouth of the Gironde estuary; the view is labeled “after a photograph by M. Terpereau” (fig. 2.36).<sup>103</sup> A pupil of Franck, Alphonse Terpereau (1837–97) established his practice in Bordeaux in 1865; *L’Illustration* produced engravings made from his photographs on many occasions. The photograph from which the *Revue générale*’s engraving was produced is in the collection of the Médiathèque de l’architecture et du patrimoine in Charenton-le-Pont, France, a logical emplacement given Terpereau’s work for the Commission des Monuments historiques and the lighthouse’s status as an historical monument from 1862 (fig. 2.37). Designed by Louis le Foix and erected between 1584 and 1611, the Cordouan lighthouse was in no way a prosaic beacon. With its marbled chapel and royal apartments, it symbolized the monarchy’s presence at this important entrance to French territory. Significantly degraded due to its maritime emplacement, the lighthouse had been restored on several occasions; the engineer Pairier had overseen the latest works between 1850 and 1860. A close examination of the photograph (which was taken in 1870) and the engraving reveal their remarkable resemblance.<sup>104</sup> The rigid figures posing for the photograph have

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<sup>103</sup> The brief article accompanying the engraving in the *Revue générale* makes no mention of the engraving’s photographic origins. See “Phare du Cordouan,” col. 177.

<sup>104</sup> I have accepted the date of 1870 given by Médiathèque de l’architecture et du patrimoine in their online catalogue. The same photograph is also listed in the Réunion des Musées nationaux’s online catalogue with the

been exactly reproduced, as has the level of the low tide and the exposed sandbanks. Beyond a slight cropping, the engraving's most significant modification is atmospheric. The photograph's hazy equivalence of sea, sky, and building gives way to a careful modulation of tone, through the addition of ripples upon the shallow water in the foreground, light shading in the upper sky to convey an effect of distance, and far stronger shadows upon the lighthouse itself. While presenting a far more pronounced spatial modulation, one that suggests a designed object sitting in Cartesian space results, the engraving has lost the atmospheric quality of the seaside photograph. While the photograph succeeds in capturing the lighthouse's significant exterior architectural detailing, the engraving brings it unmistakably to the fore. Pilasters, pediments, and balustrades all pop out from the lighthouse in a significant way.

In the 1880s, at the time when many architectural periodicals were adopting collotype, halftone and other techniques to reproduce photographs directly in their pages, the *Revue générale* avoided their direct use, completing its traditional steel engravings with drawings reproduced by héliogravure. However, the influence of photographs behind its imagery persisted. In 1886, the *Revue générale* published three plates of engravings of American houses, two of which are identified as being made after photographs by Alfred Lévy. A pioneer of photographic publications, in the 1870s Lévy had published thirty-six albums in his *Architectural photographic series*. In 1886, André, Daly and fils published a selection of

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date ca. 1880. To serve as the base for the *Revue générale*'s engraving, the photograph must have been taken prior to its publication in 1878.



images from these in the three-volume *L'Architecture américaine*.<sup>105</sup> Returning to France, Lévy continued to produce architectural photographs, including *Les Construction nouvelles*, published by Ducher (c. 1885–95). In 1906, he began publishing *L'Architecte*, a periodical for Société des architectes diplômés par le gouvernement which was illustrated entirely with photographs, including the photomechanical reproduction of plan drawings.

Of the *Revue générale*'s three plates of American houses from 1886, none directly reproduce photographs from *L'Architecture américaine*. However, two of the three are labeled “*d'après phot. A Lévy,*” and the third shares the other plates' graphic qualities, suggesting a common origin. Of the six houses depicted, the sources photographs for two have been located in the collection of the Art Institute of Chicago. One shows a house in New York City by Ware and Van Brunt; the engraving's tonal range is far subtler (figs. 2.38 and 2.39). The other represents a house in Boston by Carl Fehmer (figs. 2.40 and 2.41).<sup>106</sup> The position of the open front door confirms the photograph as the source for the engraving, to which a child and dog have been added. Daly had long been fascinated by the United States, and had previously travelled to Texas to visit a Fourierist commune. However, his opinion of American architecture was generally one of disappointment, and in the article accompanying these plates he declared “For an American, the traditions of Europe are like

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<sup>105</sup> Very few copies *L'Architecture américaine* exist; one is held by Architektursammlung at the Technische Universität, München. The Avery Library at Columbia University holds an incomplete set. *L'Architecture américaine* was reprinted in 1975 as *American Victorian Architecture*.

<sup>106</sup> While not labeled as such by the *Revue générale*, this 1881 house stands to this day at 191 Marlborough Street in Boston's Back Bay neighborhood.

an orange which he or she manages to press and to exhaust, while waiting to throw away the peel. It is high pressure. The American works quickly [*L'Américain fait vite*].”<sup>107</sup>

If Daly’s photographic publications allowed Daly to introduce his readers to contemporaneous architecture in the United States, it also allowed the *Revue générale* to exhaustively present buildings from across the English Channel. In 1887, the *Revue générale* published an ambitious series of views of William Burges’s Tower House (1881) in London. Of the six engraved plates, one features orthographic plan and section drawings. As Daly intimated in the accompanying article, the other five engravings by G. Garen were produced from photographs: “Mr. Burges’ brother-in-law, Mr. Popplewell Pullan ... has put at our disposition numerous documents and photographs. We have drawn extensively from this treasure.”<sup>108</sup> In fact, the images on the five plates are direct translations from six photographs published in *The House of William Burges*, an 1886 album of forty photographic views of the Tower House. Daly himself praised this publication’s “very beautiful photographs” without mentioning their direct contribution to the *Revue générale*’s

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<sup>107</sup> “Les traditions de l’Europe sont pour l’américain comme l’orange qu’il achève de presser et d’épuiser, en attendant qu’il en rejette l’écorce. C’est de la haute pression. L’américain fait vite” Daly, “Maison américaines,” col. 24.

<sup>108</sup> “Le beau-frère de Burges, M. Popplewell Pullan ... a mis à notre disposition pour cela de nombreux documents et photographies. Nous avons puisé largement à ce trésor ...” Daly, “L’Hôtel de Burges,” col. 164.

Pullan’s diffusion of Burges’s work after the latter’s death in 1881 through many photographic publication is all the more interesting given their conflicting attitudes towards photography. As Robert Elwall recounts, whilst Pullan had earlier insisted in 1861 that architects should travel with compact cameras, Burges instead argued in favor of measured drawings; he disliked photography, and told architects to “measure much, sketch little, and above all, keep your fingers out of chemicals.” *Building News* 7 (1861): 251–252. Cited in Elwall, “‘Foe-to-graphic Art’,” 152 and 154. However, Nicolas Roquet has demonstrated the importance of photography in Burges’s own “staging” of the past: see Roquet, *Life in Costume*.

imagery.<sup>109</sup> These engravings, with their richness of detail, highly spatial qualities, heavy shadows (albeit lessened by the engraver) and abrupt cropping, could hardly be more photographic. The first plate, with its two exterior views, is based upon two photographs (figures 2.42, 2.43, and 2.44).<sup>110</sup> While their fidelity is remarkable, we notice the extent to which the engraving emphasizes Burges's use of brick for his house's façades and the detailing of the windows. The removal of a few tree branches and the addition of a modulated sky add to the building's legibility at the expense of the photograph's atmospheric effect.

An interior view of the entrance hall presents a complex spatial moment from a close-up viewpoint (figure 2.45). Here, the photograph was obviously too bright—perhaps due to a long exposure or the use of an artificial light source—and the engraver has added shadows and again emphasized material surface pattern (figure 2.46) In contrast, the engravings for the library, dining room, and bedroom are all brighter than the photographs (figures 2.47, 2.48, 2.49, 2.50, 2.51, and 2.52.) The abruptness of bright windows and black shadows has been replaced with a more limited tonal range. Together these images show a careful transfer of a complex, highly detailed series of spatial moments to engravings through photography. They bring an English house to the attention of French architects, while making photographs from a publication not likely to interest them—due to its high cost and limited availability in France—readily accessible.

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<sup>109</sup> Daly, "L'Hôtel de Burges, " col. 164 n. 1. Daly did, however, despair at the advertised cost of *The House of William Burges*: £24 4s. (105 Fr.)

<sup>110</sup> An engraving of the same view of the Tower House's street front appeared in *The Building News* in 1880, and was reproduced in Maurice Adams's *Artist's Homes* in 1883, a confirmation of the mobility of visual imagery in the nineteenth century.

Together with Daly's likely involvement in the publication of Garnier's *Le Nouvel Opéra* (1875–81), the above examples of engravings from photographs reveal a clear photographic turn in the *Revue générale*'s engravings in the 1870s and 1880s. This is further confirmed by a series of “photo-sopic” images that will be discussed in chapter four. However, Neil Levine recently discovered an even earlier (albeit unacknowledged) example of a photographic source for an engraving in the *Revue générale*. As Levine has established, Jacques-Joseph Huguenet's 1853 engraving of Henri Labrouste's Bibliothèque Sainte-Geneviève was traced from an 1852 photograph taken by the Bisson frères (figs. 2.53 and 2.54).<sup>111</sup> Levine infers that Labrouste, who signed the plate as its illustrator, commissioned the photograph. Published in the *Revue générale* just when the building had been opened to the public, it is the earliest known example of a photograph of a contemporary building commissioned for publication by its architect, while the engraving is the first known example of a published architectural drawing to be based upon a photograph.

While a thorough examination of Huguenet's engraving and the Bisson frères' photograph reveals that the former was indeed traced from the latter, the two are not identical: while claiming, “Labrouste's drawing follows the photograph exactly,” Levine enumerates the numerous modifications between the engraving and its photographic “template.”<sup>112</sup> Minor details on the library itself have been excised, including a flagpole and temporary oil lanterns at its entrance, as well as three rooftop ventilators. These manipulations point out that while photography may “objectively” capture every detail, it does not provide the

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<sup>111</sup> Levine, “Template,” 306–331.

<sup>112</sup> *Ibid.*, 325.

clearest record of them, because of too-pronounced shadows, perspectival distortions, or simply blur. As Levine notes, “The lack of clarity of detail in parts of the photograph is ironic given the emphasis on the medium’s ‘precision’ and ‘exactitude’ in the photographic discourse.”<sup>113</sup> Without the illustrator’s and the engraver’s touch, many details would have devolved into hazy indistinctness. In preparing the engraving, Labrouste worked to reinforce the library’s linearity and flatness, while distinguishing between its closely layered planes. The engraver’s burin brought forth in almost hyperreal clarity decorative elements such as the authors’ names inscribed upon the façade and the garlands of the lower frieze.<sup>114</sup> Labrouste, moreover, has removed many if not all extraneous details, which, following Roland Barthes’s argument, would be precisely at the source of photography’s “reality effect”: a lamp post, the shadow cast upon by the library’s façade by the neighboring *École de Droit*, not to mention the guard at the library’s entrance, blurry passers-by, and a horse and carriage. The photograph has been slightly cropped, and two splotches on the salted paper print caused by cracking in the glass negative prior to its development have not been reproduced in the engraving.<sup>115</sup> While their omission is rather unsurprising, it highlights the extent to which the engravings transmits an idealized version of the photograph, leaving aside the very flaws that would confirm its existence, for such defaults were clearly part of the early photograph’s own “reality effect.”

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<sup>113</sup> Levine, “Template,” 327.

<sup>114</sup> Levine, “Template,” 327.

<sup>115</sup> Levine, “Template,” 325–26 and 331n50.

For Levine, these modifications work additively, increasing the apparent accuracy of the image: “Labrouste built on photography’s putative strengths to give the image an even greater degree of precision, exactitude, and mechanical definition than the photograph itself provided.”<sup>116</sup> Levine has argued that photography offered a mechanical and seemingly objective depiction of the building in step with Labrouste’s bold decision to leave exposed the mechanics of the library’s great reading room, namely its iron structure. Yet we may also see this as a substitution, in which the engraving’s traditional clarity of line and hierarchy of detail are used to correct the photograph’s inability to live up to the hopes discursively embedded within its claims to mechanical objectivity. The artist must intervene to make it more useful for architects. What has been transferred from the photograph is a first “indexical” imprint, from which Labrouste, who signed as the plate as its illustrator, based his work of distillation and selection.

Other French publications also commented upon the need to correct photographs. Launched in 1876 under Daly’s imprint the weekly *La Semaine des constructeurs*’ engravings were rarely acknowledged as being produced from photographs. One remarkable exception occurs in the issue of 6 January 1877, with a perspective view of M. E. Piat’s École française at Athens [fig. 2.55]. The author of the photograph from which it was made is unknown, but readers were informed that the school’s former director, Émile Burnouf, sent the image from Athens for publication in *La Semaine des constructeurs*. A letter (mainly serving to justify the new school building as a cost savings for the French government) from Burnouf

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<sup>116</sup> Levine, “Template,” 327.

was published alongside the engraving. At the conclusion of his brief missive Burnouf turns to the document that accompanied it:

Finally, on the subject of the photograph which you must use to produce the engraving. This photograph was taken in high summer, when all Attica is yellow; so it is very dark. The mountain [*rocher*] behind the building seems to crush it, although in reality it is several meters distant. The engraver will have to account for this fact and give the mountain a very light grey tone to push it further away.<sup>117</sup>

This brief example drawn from an otherwise unremarkable building testifies to several things: first of all, photography made possible, or at least made easier, the publication of a building relatively far away from metropolitan France. Secondly, the photograph was not considered to be a perfectly satisfactory document: it required correction in order to properly depict what it was meant to show: the school's prominent position on the slopes of the Lycabettus. Finally, Burnouf believed that his adjoined reminder could suffice to remedy the situation: i.e., an imperfect photograph accompanied by textual instruction could produce a remediated engraving, in both senses of the term. In the end, he was only partially correct, for an appended footnote from *La Semaine des constructeurs* declares: "The illustrator has taken this observation into account; however, the background, to be entirely accurate, should be further attenuated."<sup>118</sup>

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<sup>117</sup> "Encore un mot, à propos de la photographie qui doit vous servir à faire exécuter la gravure. Cette photographie a été prise en plein été, quand tout est jaune en Attique; aussi est-elle venue très noire. Le rocher qu'on aperçoit derrière l'édifice semble l'écraser, bien qu'il en soit éloigné de plusieurs centaines de mètres. Il faut que le graveur tienne compte de ce fait et donne au rocher une teinte grise très-douce qui le mette au lointain." Émile Burnouf, "L'École française, à Athènes," *La Semaine des constructeurs* vol. 1, no. 26 (6 January 1877): 307.

<sup>118</sup> "Le dessinateur a tenu compte de cette observation; cependant le fond, pour être entièrement exact, devrait être encore atténué." "L'École française," 307.

### **The “most effective and truthful effects”**

While John Ruskin decried the loss of the engraver’s craft brought about by mechanical reproduction—akin to the threat to the dignity of stone carving posed by machine-made ornament—he appreciated the didactic potential of popular images, and frequently made use of engravings from photographs.<sup>119</sup> Ruskin’s attitude to the engravings for his own publications oscillated between seeking those that reproduced the effects of the daguerreotype and preferring others that corrected its lacunae. In the preface to the first (1851) edition of *The Stones of Venice*, he noted the extent to which his drawing style sacrificed both outline and detail in shaded areas so as to maximize tonal variation. Ruskin acknowledged the resemblance between his “bold Rembrandtism,” which produced the “most effective and truthful effects,” and daguerreotypes. Debates in the early 1850s over photography’s possible status as an art form often revolved around comparisons of its different processes: some critics praised daguerreotypes’ seemingly infinite capacity to record detail, while others lauded the strong chiaroscuro effects common to salted paper prints.<sup>120</sup>

While he denied making outright copies, Ruskin admitted to using daguerreotypes in the preparation of the mezzotints published with *The Stones of Venice* and chided artists for not “perpetuat[ing] some of the beautiful effects which the daguerreotype alone can seize.”<sup>121</sup> Ruskin tells us that James Charles Armytage made an engraving of Venetian windows in

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<sup>119</sup> Sinnema, *Dynamics*, 140.

<sup>120</sup> This debate was especially potent in France in the pages of *La Lumière*. Borcoman, *Charles Nègre*, 15-21.

<sup>121</sup> JRuskin, “Preface to the First Edition,” *Stones of Venice*, 312.



*The Stones of Venice* (1851–53) from two daguerreotypes, although there is also evidence that Ruskin produced separate sketches for the plate, as the daguerreotypes may have proved hard to copy.<sup>122</sup> Across Ruskin’s oeuvre, we find examples of engravings matching—at least partly—daguerreotypes from his personal collection as is the case of a plate showing a single bay of the façade of San Michele in Lucca from *The Seven Lamps* (figs. 2.56 and 2.57). While in the above case the utility of the photograph may have been limited, in others it is clear, as with the 1859 frontispiece to *The Two Paths*, which depicts two balconies in Bellinzona, Switzerland. The upper one is clearly copied from a daguerreotype (figs. 2.58 and 2.59).

A plate showing “Tracery in the Campanile of Giotto, at Florence” in *The Seven Lamps of Architecture* (1849) was also produced from photographs (fig. 2.60). Ruskin regretted that the window’s distance from the ground had rendered it indistinct in the daguerreotype. While he admitted that certain details and surface modulations had been lost, he nevertheless asserted the correctness of the image’s proportions, declaring, “The effect of the whole is as near that of the thing itself, as is necessary for the purposes of illustration for which the plate is given.”<sup>123</sup> This desire simultaneously to present the unmediated photograph as well as its corrected mediation is made clear in a letter from John Ruskin to the engraver John Le Keux, responsible for the illustrations for *Modern Painters*. In their correspondence, Ruskin tells the engraver which combination of daguerreotypes to use for certain engravings, and instructs him

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<sup>122</sup> See Ruskin, *Works* 10:310n2.

<sup>123</sup> Ruskin, “Preface to the First Edition,” *Seven Lamps*, 4–5.

to [put] into the Daguerreotype no more than you can see—giving quite its obscurity and indistinctness, but in doing so ... [you] must err rather by clearing than further obscuring the photograph—but what I want is the photograph exactly.<sup>124</sup>

Up to a point, the daguerreotype's indistinctness was ideal for transmitting artistic vision in *Modern Painters*—but this had to be kept in check, lest it go too far. Above all, the qualities of the photograph must be maintained and improved—certain a challenging task for the engraver.

The examples presented in this chapter reveal photography's paradoxical status as a reproductive medium for architecture in the nineteenth century. While photographs were understood—at least to a certain extent—to be unmediated objects, they required multiple remediations, not only to become reproducible in print, but also to live up to their ontological promise. Nowhere is the photograph's simultaneous appearance as both an immediate and a hyper-mediated image clearer than in its engraved translation. These constructions of idealized photographic images in another medium challenge myths of technological progress that mask the persistent continuity of existing economies of image-making. While photography indeed changed the expectation of what a truthful, accurate, and useful image should be, extant means were crucial to meeting this new standard.

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<sup>124</sup> John Ruskin, letter to John Le Keux, quoted in Dyson, *Pictures*, 32–33. I am grateful to Professor Stephen Wildman for sharing his opinion of this letter with me.

### **Chapter 3.**

#### **The Elevation in Perspective: Mensural Accuracy and Spatial Sensibility**

##### **“Motifs that suit their particular purposes”**

“Henceforth, photography will replace that category of drawing requiring rigorous accuracy.”<sup>1</sup>

So began the painter and photographer Charles Nègre’s description of his photographic journey to the French Midi made between August 1852 and February 1853. Nègre’s emphasis on the documentary value of his work is unsurprising given the prevailing claims for photography’s abundant and accurate capacity to translate detail, which have been explored in the first chapter. Nègre was writing circa April 1853 seeking state sponsorship for his planned publication, *Le Midi de la France*, which was to include approximately eighty photographs documenting the architecture, landscapes, and inhabitants of the south of

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<sup>1</sup> Charles Nègre, “Note” à propos du *Midi de la France, sites et monuments photographiés*, 1853. Archives Nationales, Paris, F21 166, n° 27. Reprinted (in original French and English translation) in Borcoman, *Charles Nègre*, 6–7.

France.<sup>2</sup> Nègre's search for government support provided a further reason to affirm the facticity of his recordings: only two years prior, the Commission des Monuments Historiques had given documentary mandates to the five photographers (including Nègre's acquaintances Édouard Baldus and Henri Le Secq) sent on the Mission héliographique.<sup>3</sup>

However, Nègre's early photographic work was known for prioritizing artistic "effect" [*effet*] over the faithful presentation of detail.<sup>4</sup> Trained in Paul Delaroche's studio, Nègre's photographs prior to 1851 were examples of the painterly "theory of sacrifices," which Émile Littré's *Dictionnaire de la langue française* later defined as the "artifice which consists of neglecting certain details [*accessoires*] in a painting to better emphasize the principal parts."<sup>5</sup> The aesthetic debate around photographs' artistic status (or lack thereof) that played out in the pages of *La Lumière* in the early 1850s often touched upon this subject. In its first issue, the writer and art critic Francis Wey wrote that paper photographs (as opposed to daguerreotypes) justified the theory of sacrifices by "disdaining detail like an

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<sup>2</sup> Nègre's publication was not a success, and only the first two fascicules, comprising five photographs each, were published. See Nègre, *Midi de la France*. On the *Midi de la France* project, see Borcoman, *Charles Nègre*, 32–34 and pls. 34–92 and Heilbrun, *Charles Nègre*, 130–201.

<sup>3</sup> In his letter of 26 June 1851 commissioning each of the five chosen photographers (Édouard Baldus, Hippolyte Bayard, Henri Le Secq, Gustave le Gray, and Mestral), the French Minister of the Interior, Léon Faucher, charged them with "a mission having for its goal to gather a certain number of photographic prints destined to complete the studies undertaken by the architects attached to the Ministry of the Interior, for the restoration of the most precious historic buildings." "[J]e vous ai chargé d'une mission ayant pour but de recueillir un certain nombre d'épreuves photographiques destinées à compléter les études faites par MM. les architectes attachés au ministère de l'Intérieur, pour la restauration des édifices historiques les plus précieux." Médiathèque de l'architecture et du patrimoine 80 / 10 / 53. Cited in Mondenard, *Mission héliographique*, 46.

<sup>4</sup> Borcoman, *Charles Nègre*, 18–21.

<sup>5</sup> "Artifice qui consiste à négliger certains accessoires d'un tableau, pour mieux faire ressortir les parties principales." Littré, "Sacrifice," in *Dictionnaire*, 4:1796.

able master [*maître habile*]... giving here the advantage to form, and there to the opposition of tonal values.”<sup>6</sup> Nègre’s early photographs are largely devoid of intermediate tones. With their background buildings faded and indistinct, Nègre’s portraits of urban scenes such as “The Little Rag-Picker” (1851) merge hazy atmospheric with sharp chiaroscuro (fig. 3.1).<sup>7</sup>

The painter Eugène Delacroix also supported this suppression of overabundant detail, suggesting that its presence in photographs exceeded the human capacity for absorption. Writing in his journal in response to the realist tendency on display at the 1859 Salon, he declared,

The photographs which capture more are those in which the very inability of the process to render things in an absolute way, leaves certain gaps, certain ‘rests’ for the eye, which allow it to concentrate on a restricted number of objects. Photography would be insufferable if the eye was as perfect as a magnifying glass: we would see all the leaves on a tree, all the tiles on a roof, as well as the moss on these tiles, the insects, etc.<sup>8</sup>

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<sup>6</sup> “[D]édaignant le détail comme un maître habile, justifiant la théorie des sacrifices, et donnant ici l’avantage à la forme et là aux oppositions de tons.” Wey, “L’influence,” 3. Translation in part from Borcoman, *Charles Nègre*, 16.

<sup>7</sup> Nègre’s early use of paper negatives and prints played a decisive role in constructing his visual syntax, which blended the appearance or reality and of the medium. As James Borcoman observes, “the fibres of the paper soften definition just enough to emphasize form and at the same time create subtle textures that marry with the fabric of the real world in front of the camera.” Borcoman, *Charles Nègre*, 23.

<sup>8</sup> “Les photographies qui saisissent davantage sont celles où l’impression même du procédé pour rendre d’une manière absolue, laisse certaines lacunes, certains repos pour l’œil qui lui permettent de ne se fixer que sur un petit nombre d’objets. Si l’œil avait la perfection d’un verre grossissant, la photographie serait insupportable: on verrait toutes les feuilles d’un arbre, toutes les tuiles d’un toit et sur ces tuiles les mousses, les insectes, etc.” Delacroix, *Journal*, 744. Translation in part from Scott, *Spoken Image*, 30.

Against claims from Gros, Talbot, Ruskin, Viollet-le-Duc and others praising photographic vision for exceeding human acuity, here Delacroix gave thanks for the limitations of the human eye to which photographers with artistic pretensions should tailor their images. To do so, Nègre often turned to the intermediation of handwork, using pencil to accentuate shadows and soften the presence of background buildings in his urban views.<sup>9</sup> In the previous chapter, we have seen how the mediatory intervention of an artist's hand was used to add, clarify, and bring forward detail so as to make images more useful for architects. Here, within an artistic tradition dominated by painting, the hand suppressed detail in favor of effect.

If a singlehanded drive for painterly effect dominated Nègre's early photographs, by the summer of 1852 his photographs evinced a newfound appreciation of the precise registration of detail upon which the medium's documentary reputation had been built. Delicate halftones began to fill Nègre's photographs with detail and texture, a stylistic shift that roughly corresponds to Nègre's growing interest in photographing buildings from 1852.<sup>10</sup> Nègre set forth his desire to marry documentary fact and painterly effect in his 1853 missive describing the *Midi de la France* project. "I endeavored to combine picturesque interest with the serious study of details so sought after by archaeologists and by painters, sculptors, and architects; artists in each of these categories will find in this collection motifs

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<sup>9</sup> Again, Borcoman notes that Nègre's use of paper negatives was aesthetically decisive, for the texture of pencil shading took on the negative's photographic tones as they appeared on the paper. Borcoman, *Charles Nègre*, 23.

<sup>10</sup> On Nègre's stylistic shift, see Borcoman, *Charles Nègre*, 30. Françoise Heilbrun notes that Nègre had visited Chartres Cathedral in 1851 with Henri Le Secq. The latter's photographs from their visit likely provided Nègre with a "lesson and a model" for his work in the south of France from 1852. See Heilbrun, *Charles Nègre*, 138.

that suit their particular purposes without losing artistic value.”<sup>11</sup> The attempted synthesis of two photographic registers (which Wey and others saw as antithetical) can be seen in his ca. 1852 photograph of the cloister at Saint-Trophime in Arles (fig. 3.2). While not always perfectly legible, a large degree of architectural ornament can be read amidst a composition that plays heavily upon contrasts between light and shadow.

The second clause in Nègre’s declaration, however, suggests instead a parallel approach, in which the photographer would attempt to satisfy each of his intended publics with different images, while nevertheless maintaining certain artistic aspirations. The conclusion to Nègre’s exposé supports this second reading, for in it he expounds upon the type of images he made for architects, sculptors, and painters. While Nègre had produced close-up details for sculptors (fig. 3.3), for members of his own profession he had followed his own preferences:

Whenever I wasn’t obliged to provide architectural precision, I produced picturesque views; if then required, I sacrificed a few details in order to achieve an impressive effect that rendered the monument’s true character and conserved the poetic charm that surrounds it.<sup>12</sup>

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<sup>11</sup> “[J]’ai taché de joindre l’aspect pittoresque à l’étude sérieuse des détails si recherchés par les archéologues et par les artistes, architectes, sculpteurs, et peintres; chacune de ces catégories d’artistes trouvera dans cette collection des motifs qui entreront dans leurs cadres spéciaux sans perdre leurs conditions d’art.” Borcoman, *Charles Nègre*, 6–7. Translation from Bressani and Sealy, “Opéra Disseminated,” 217n30.

<sup>12</sup> “Partout où j’ai pu me dispenser de faire de la précision architecturale j’ai fait du pittoresque; je sacrifiais alors s’il le fallait quelques détails en faveur d’un effet imposant propre à donner au monument son vrai caractère et à lui conserver le charme poétique qui l’entoure.” Borcoman, *Charles Nègre*, 6–7. Translation from Bressani and Sealy, “The Opéra Disseminated,” 217n30.

Nègre's formulation opposes the poetic qualities of picturesque views with the precision required by architects, imposing a clear distinction between professional publics. An 1852 view of the west side of the Palace of the Popes in Avignon illustrates his photographic application of the "theory of sacrifices" (fig. 3.4). The palace's elevation is seen in an oblique perspective and heavy shadows obscure its lateral surfaces. A play of mass and volume under bright sunlight predominates over any reading of detail, either on the building or in its surroundings.<sup>13</sup> As Françoise Heilbrun notes, this is by far the most common type of photograph Nègre produced on his travels to the Midi, and corresponded to his real and persistent preference for picturesque effect over architectural precision.<sup>14</sup>

Fascinatingly, in the above statement Nègre opposes precision and truth in representation. Rather than supporting each other, the former could provide an obstacle to the latter. For Nègre, it is the painter's visual training in the "impressive effect[s]" of the picturesque tradition rather than the camera's capacity for mechanical precision that is best able to capture the intangible ideal of a monument's "true character." Allied with "poetic charm," Nègre's truth lay in a building's visual appearance, as it was perceived by the human eye, and not in architect's over-detailed abstractions.

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<sup>13</sup> As Françoise Heilbrun notes, Nègre's view abruptly cuts the nave of the Cathedral of Notre-Dame-des-Doms. While praising the image's precision, she notes the "strange charm" of its composition and play of light when compared with Édouard Baldus's "austere" 1851 view of the palace, taken from a slightly lower vantage point as part of the Mission héliographique. Heilbrun, *Charles Nègre*, 146. Baldus's photograph is reproduced in *Mission héliographique*, 38 no. 18.

<sup>14</sup> Heilbrun, *Charles Nègre*, 140.



In positing a (painterly) picturesque tradition of perspectival representation in opposition to architects' particular requirements, Nègre also confirmed a long-standing (if far from absolute) division within French architectural circles between perspectival and orthogonal representation. This principally manifested itself through an anti-perspectival bias that would have to be overcome for a fully photographic visual regime to emerge several decades later. The French architectural establishment of the time greatly preferred orthogonal views. It is therefore unsurprising that Nègre would claim in his missive to have made for architects

a general view of each monument with the horizon line at the midpoint of the building's height and the vanishing point at the center. I sought to avoid perspectival distortions, giving the drawings the aspect and precision of an orthogonal elevation.<sup>15</sup>

Nègre mentions three specific photographs taken on his campaign in the south of France as examples of such images. While Nègre's view of the east side of the Palace of the Popes has been lost, his photographs of the west façades of the Church of Saint-Trophime in Arles (fig. 3.5) and the Church of Saint-Gilles in Saint-Gilles-du-Gard (fig. 3.6) are extant. Both date from 1852. Nègre's photographic focus upon the churches' main elevations is abundantly clear in both images. The camera occupies a relatively central vantage point in each view, and the perpendicularity or parallelism of the major lines governing the façades

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<sup>15</sup> “[U]ne vue générale de chaque monument. En plaçant la ligne d’horizon au milieu de la hauteur de l’édifice et le point de vue au centre j’ai cherché à éviter les déformations perspectives et à donner aux dessins l’aspect et la précision d’une élévation géométrale.” Borcoman, *Charles Nègre*, 6–7. Translation from Bressani and Sealy, “The Opéra Disseminated,” 217n30.

has been maintained. Shadows have been minimized and people—a common feature in Nègre’s more picturesque Midi views—do not interrupt the flattened scenes.

### **Elevations: Orthogonal and Perspective**

However, in spite of Nègre’s proclamation, the orthogonal elevation is not the architectural drawing most closely approximated by the above photographs. While common parlance today reserves the term ‘elevation’ solely for orthogonal representations of façades, nineteenth-century French architects recognized two kinds of elevation drawings. Contemporaneous dictionaries distinguish between *l’élévation géométrale*, which used parallel and perpendicular lines to represent a façade orthogonally “without regard to depth,” and *l’élévation perspective*, where oblique lines helped to re-size visible elements in front of and behind a façade, thereby depicting its three-dimensional appearance.<sup>16</sup> As many authors, including Quatremère de Quincy in his 1832 *Dictionnaire historique d’architecture*, and the writer Charles Blanc in his 1867 *Grammaire des arts du dessin*, noted, this division between orthogonal and perspectival elevations dated to the ancient Greek categories of *orthographia* and *scenographia*.<sup>17</sup>

While they agreed on its three-dimensionality, the precise form and definition of the elevation perspective varied greatly between three main sub-types. Blanc claimed elevation

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<sup>16</sup> “[S]ans égard à la profondeur.” Quatremère de Quincy, “Élévation” in *Dictionnaire historique*, 1: 573. Variants of this expression were used in Millin, “Élévation,” in *Dictionnaire des beaux-arts*, 1:512 and Bosc, “Élévation,” in *Dictionnaire raisonné*, 2:131.

<sup>17</sup> Quatremère de Quincy, “Élévation” in *Dictionnaire historique*, 1:573; Blanc, *Grammaire*, 74. Other examples include Millin, “Élévation,” in *Dictionnaire des beaux-arts*, 1:512; Bosc, “Élévation,” in 2:131; and Chabat, “Élévation,” in *Dictionnaire*, 1:315.

perspectives “represent the building from the front and the side.”<sup>18</sup> He illustrated this approach with an engraving of the temple of Athena Nike in Athens (fig. 3.7). This image makes clear that for Blanc, the elevation perspective was simply a two-point perspective organized so that two façades were clearly depicted; neither of which retained any degree of mensural accuracy. As such, it was closer to another kind of perspective drawing, the “logical description,” which will be considered in the following chapter. Eugène Emmanuel Viollet-le-Duc took the same approach in his *Dictionnaire raisonné*. Across its ten tomes, he often uses the term “élévation perspective” to refer to perspective views showing façades, as illustrated by a woodcut engraving of the central clock tower of the church at Dormans (Marne) (fig. 3.8).

The *ingénieur-constructeur* C. A. Oppermann’s *Nouvelles Annales de la Construction* also made use of this same definition on the rare occasions (three times in its first forty-seven volumes between 1855 and 1901) it labeled an image as an “*élévation perspective*” or “*élévation générale perspective*.”<sup>19</sup> An engraved elevation perspective of the Leopoldstadt public laundry in Vienna ably shows two of the building’s main façades in an easily understood composition (fig. 3.9). While such an image clarifies the laundry’s irregular massing (which cannot be readily grasped from the plan or the cross-sections provided), it is not dimensioned, and the viewer’s sense of scale cannot be but approximate. An 1872 view in two-point perspective of the St. Peter’s primary school in Cologne, Prussia, offers

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<sup>18</sup> “[R]eprésente le bâtiment à la fois de face et de côté.” Blanc, *Grammaire*, 74. Blanc’s formulation was echoed by Chabat, “Élévation,” 1:315.

<sup>19</sup> These are: *Nouvelles Annales de la Construction* 1 (1855): pl. 31; 15 (1869): pl. 34; and 18 (1872): pl. 1-2.

one solution to this quandary (fig. 3.10). Labeled as a “*Vue perspective*,” this school’s major horizontal dimensions are indicated on the engraving; strangely, the building’s height, which cannot be measured from a plan, is not.

This dimensioning of otherwise spatial views is also visible on the *Nouvelles Annales*’ 1867 engraving of the bridge across the rue Fessard in the Parc des Buttes-Chaumont in Paris (fig. 3.11). Given the bridge’s angled presentation, the curving roadway, and the diminished size of the background trees, the image appears at first glance to be clearly perspectival. However, it is labeled “*Élévation à 0.0133 p. 1m,*” and a closer inspection reveals that the bridge is shown orthogonally. The plan on the same plate confirms that the bridge’s five longitudinal arches are visible because they are arranged to support a diagonal span. Dimension lines drawn across this span confirm the mensural utility of this intriguing yet ambiguous representational form.

The *Nouvelles Annales* used such images presenting an orthogonal elevation within a perspectival scene on twenty-seven occasions between 1855 and 1901. Often labeled as “*élévation générale*,” “*élévation principale*,” or “*façade principale*,” these engravings offer a second, hybridized type of elevation perspective. Oppermann frequently used this representational form to depict his own projects, doing so eight times between 1869 and 1877.<sup>20</sup> An 1869 engraving of the “*Élévation principale*” for a hôtel de ville design by Oppermann is also captioned with its scale: “*0,005 pour 1m*” (fig. 3.12). Scale is provided in two ways: pictorially, by the promenading figures and street furniture, and mathematically,

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<sup>20</sup> These are: *Nouvelles Annales de la Construction* 14 (1869): pls. 23, 24, 25, 26 and 31; 19 (1873): pl. 35; and 23 (1877): pls. 9 and 10.

by the aforementioned caption. The slope given to the adjacent streets leads to confusion regarding the precise location(s) of the image's vanishing point(s). What is clear, however, is that an orthogonal representation of a façade has been placed into a spatial surround. A later 1889 engraving of a cottage in Veules-en-Caux (Seine-Inférieure) by P. Déchard juxtaposes three elements in a single, picturesque scene (fig. 3.13). The orthogonal elevation is positioned within its bucolic setting; incongruously, a longitudinal section occupies the image's right border, as if it were a neighboring building completing the spatial ensemble.

In a third category of elevation perspectives, both a building façade and its surroundings receded to a common and centrally placed vanishing point, in what was effectively one-point perspective. In such images, the façade maintained a degree of mensural accuracy—at least on one given surface plane—while its plastic modulation (cornice, pilasters, door and window frames, etc.) joined its surroundings in further spatializing the elevation. An 1894 view of Henri Bertsch-Proust's Collège Carnot at Fontainebleau provides an example (fig. 3.14). While the courtyard façade is seen orthogonally, the relationship between the ground floor windows and the arcade behind introduces a spatial depth to the image, which is echoed by the receding façades to the left and right. Architectural photographers operated in the tradition of this category of images when they took head-on views. While there is no evidence of any photographic source for this image, we may compare it with four photographic views of the 1889 Exposition Universelle published by the *Nouvelles Annales*

*de la Construction*.<sup>21</sup> Sylvestre et Cie reproduced these using their patented glyptography method. The view of the Dôme Central provides a standard one-point perspective in which the main façade provides an orthogonal presence at the center of the image, while the lawn and surroundings introduce an element of perspective, which is echoed by certain features on the façade itself (fig. 3.15). Images such as this one should rightly be seen, alongside Nègre’s Saint-Trophime and Saint-Gilles photographs—no matter his claim to have given his photographs “the aspect and precision of an orthogonal elevation” —as representations bound up within the perspectival and not the orthogonal category of elevation drawings.

Although single-point perspective views were a long tradition in French architectural representation, by the nineteenth century the parallel forces of academic doctrine, which distrusted three-dimensional views, and picturesque convention, which favored two-point perspectives, constrained their use. However, the elevation perspective remained a remarkably persistent type in French drawings and publications, perhaps for its ability to mediate between these two competing forces and offer images replete with both spatial ambience and mensural accuracy. The illustrations accompanying Albert Lenoir and Léon Vaudoyer’s “Études d’architecture en France” provide a fascinating case in point. Published between 1839 and 1852 in *Le Magasin pittoresque*, their history of French architecture from prehistory until the revolution was a key disseminator of romantic architectural theory.<sup>22</sup> The choice of this widely read and inexpensive publication aligned

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<sup>21</sup> These are: *Nouvelles Annales de la Construction* 30 (1889): pls. 36–37, figs. 1, 3, and 5; and 31 (1890): pls. 42–43, fig. 1.

<sup>22</sup> Lenoir and Vaudoyer, “Études d’architecture en France.”

with Lenoir and Vaudoyer's historical vision of architecture as the "veritable writing of peoples" [*la véritable écriture des peuples*].<sup>23</sup> Borrowing this maxim from Hippolyte Fortoul's 1841 *De l'Art en Allemagne*, Lenoir and Vaudoyer theorized architecture as a social product testifying to periods of cultural rise and decline.

As Martin Bressani relates, the "Études d'architecture en France" was "the first significant French architectural or archaeological publication to rely entirely on woodcut illustrations."<sup>24</sup> Its 191 images form a heteroclit group, ranging from plans and sections to perspectives and small details. By and large, Lenoir and Vaudoyer's representations correspond to the imagery common in *Le Magasin pittoresque*, with perspectives, of which there were 73, the most frequent image type used. These are balanced by a large number (57) of orthogonal elevations. Most interesting are the fifteen views that combine these two competing representational regimes to varying degrees.<sup>25</sup> In many of these cases, highly spatial scenes are organized so that their principal focus, the main façade of an important monument from the history of French architecture, is shown head-on. The 1846 engraving of Étienne Martellange and François Derand's Church of Saint-Louis on the rue Saint-Antoine in Paris clearly belongs to a picturesque tradition, and the church is shown in faintly perceptible one-point perspective (fig. 3.16).<sup>26</sup> Its seventeenth-century façade looms

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<sup>23</sup> As Barry Bergdoll notes, the phrase is "peppered throughout" the "Études d'Architecture en France." On the "Études d'Architecture en France," see Bergdoll, *Léon Vaudoyer*, 109, 116–17, 129–43.

<sup>24</sup> Bressani, *Architecture*, 242.

<sup>25</sup> These are: Lenoir and Vaudoyer, "Études," *Magasin pittoresque* 9:28, 29, 225, 381; 10:193, 225, 265, 268; 11: 52, 300, 301; 12:156, 380; 14:105; 16:172.

<sup>26</sup> Since 1802, the church has been known as the Church of Saint-Louis Saint-Paul.

over a scene marked by the presence of figures in historical dress, and the viewer's gaze emanates from just above their eye-level.

If the use of one-point perspective provides a ground plane for picturesque peopling in the above example, in others it allowed for a building's façade to be shown in its landscaped setting, as was the case with an engraving published in 1848 of François Mansart's seventeenth-century Château de Maisons (fig. 3. 17).<sup>27</sup> The view shows the château's garden façade emerging from an apparently tilted horizontal plane, with its dry moat, fountained terraces, and surrounding *parc*. Drawn by L. Desmarest and engraved by Louis Brugnot, the image echoes many seventeenth-century depictions, which also use an elevated one-point perspective to show the château's façade in its larger setting.<sup>28</sup> The château's façade planes (which are themselves arranged in perspective) are engulfed within their picturesque surround.

Even more interesting is an 1841 engraving of the Hôtel-de-Ville in Arras in its original state, which could easily be taken for an orthogonal elevation (fig. 3.18). Only the uneven hatching of the ground and sky planes, together with the slight recess of the neighboring buildings, suggest this engraving could be a perspective. As viewers of this image, our position is highly ambiguous. While the perspectival treatment of the ground and sky planes suggest we are occupying a definite viewpoint, the Hôtel-de-Ville's elongated height, with its tower drawn in orthogonal elevation, counters such a spatial localization. Indeed, we are

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<sup>27</sup> Now known as the Château de Maisons-Laffitte.

<sup>28</sup> Louis Brugnot died in December 1845, suggesting that the woodcut had been prepared over two years before its publication in May 1848. See Blachon, "Brugnot, Louis Joseph," in *Gravure sur bois*, 205.



faced with a distinctly nineteenth-century type of representation, one that seeks to combine the precision of archaeological study with a certain contextual awareness.

In fact, the question of viewpoint was central to the distinction between orthogonal elevations and elevation perspectives as it was defined in the nineteenth century. Quatremère de Quincy observed that whereas “we do not subject” the orthogonal elevation “to a fixed viewpoint,” the elevation perspective “represents the building as we see it from a given point.”<sup>29</sup> Nègre’s elevation photographs certainly had a fixed viewpoint: they required either a propitiously situated window, balcony, or rooftop, or else the erection of a scaffold in order to yield their centralized view. A sense of embodiment and of contingency pervades the Saint-Trophime and Saint-Gilles photographs (figs. 3.5 and 3.6). In both instances, the photographer’s vantage is slightly left of center. Minor perspectival distortions are especially present on the right side of the Saint-Gilles print, which was produced by joining two paper negatives. Shadows highlight the portals’ modulation of the façade’s principal plane. Strikingly, the ground, with its steps, iron-grille fence, and suspended canvas sheets, joins the blank sky and the lateral sides of the towers at each end of the façade to spatially frame the elevation. Nègre’s search for orthogonally flattened precision, which succeeds at the image’s center, combines with the exigencies of photographic vision at its edges to produce a sort of evacuated stage set. Conceived in opposition to one type of perspective—the picturesque, painterly view with two or more

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<sup>29</sup> “[On] ne soumet pas ... à un point de vue déterminé ... représente l’édifice tel qu’on le voit d’un point donné.” Quatremère de Quincy, “Géométral,” in *Dictionnaire historique*, 1:661.

vanishing points—Nègre has produced another, this time with a single, central vanishing point aligned with the position of his camera lens.

In the *Grammaire des arts du dessin*, Blanc transformed the orthogonal elevation's wandering viewpoint into an impossibly all-pervasive one. "The architect supposes the spectator's eye placed at right angles to all points at the same time and always at the same distance, a supposition which is evidently contrary to the way human vision works [*à l'action visuelle*]." <sup>30</sup> However, the orthogonal elevation's abstraction (for Blanc, it was necessarily "*un dessin de convention*") and contradiction of human vision did not make it untruthful; the opposite was in fact the case. Visual perception was separate from—and perhaps inferior to—truthful reality. <sup>31</sup> In an orthogonal elevation, the architect was "obliged to ... make manifest the forms [*d'accuser les formes*], not as they will be seen in passing, but as they will be in reality." <sup>32</sup> This discord between apparent and actual appearance justified the development of the two related drawing types, one presenting a building as it was seen and the other depicting it as it was.

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<sup>30</sup> "L'architecte suppose l'œil du spectateur placé à angle droit sur tous les points à la fois et toujours à la même distance, supposition qui est évidemment contraire à l'action visuelle." Blanc, *Grammaire*, 78. Pierre Chabat largely followed Blanc's phrasing in his *Dictionnaire des termes employés dans la construction*. See Chabat, "Élévation," in *Dictionnaire*, 1:315.

<sup>31</sup> Estelle Thibault notes that Blanc's *Grammaire* promotes reasoned judgment above personal taste. Likewise, Blanc believed that ideal principles and not real facts held the answer to debates over architectural polychromy. See Thibault, *Géométrie*, 27, 32.

<sup>32</sup> "Obligé ... d'accuser les formes, non pas telles que les verra en passant, mais telles qu'elles seront en réalité." Blanc, *Grammaire*, 78.

While the orthogonal elevation may access a higher level of truth, the perceptual content of the elevation perspective was still necessary, for as Quatremère de Quincy observes, the former failed to reveal “the effects of projections [*saillies*], and also all those that result from the diversity of viewpoints.”<sup>33</sup> This was a particular problem for Beaux-Arts compositions, with their multiple projecting wings and parallel planes juxtaposed at significant distances. The (orthogonal) elevation drawings for Félix Duban’s 1823 Grand Prix project for a customhouse and tollhouse are highly misleading: a triumphal arch that appears to project from a main block is in fact over thirty meters removed (fig. 3.19). However, as Arthur Drexler observes, this failure of representation was key to Duban’s project in particular and to Beaux-Arts design in general. “A model or perspective would make the relationships easier to understand, but would omit just those juxtapositions, fictitious but conceptually decisive, that are inseparable from the form language of elevation drawings.”<sup>34</sup> Duban utilized the orthogonal elevation’s factual illusoriness to productively convey the conceptual vision underpinning the compositional hierarchies of Beaux-Arts architecture.

Elevation perspectives could also mislead, especially those of the second type, in which a perfectly orthogonal elevation was inserted into a perspectival scene. Louis-Ambroise Dubut’s watercolor elevation for 1797 Grand Prix for Public Granaries provides an example (fig. 3.20). The townscape to the left and right of Dubut’s project is represented in one-

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<sup>33</sup> “[L]es effets des saillies, et encore tous ceux qui résultant de la diversité des points de vue.” Quatremère de Quincy, “Géométral,” in *Dictionnaire historique*, 1: 661.

<sup>34</sup> Drexler, “Engineer’s Architecture,” 34.

point perspective, with those façades parallel to the picture plane in orthogonal elevation, and those perpendicular receding toward separate vanishing points for the left and right groupings. Together with the mountains, sky, and especially the maritime foreground composition, this perspectival landscape spatially and pictorially frames the new granaries. The legibility of Dubut's project would be greatly enhanced if it too was shown in perspective, but it instead relies upon orthogonal conventions. Shading and tonal variation help to communicate the central tower's forward projection framing the middle portion's deep recess, but their spatial position remains unclear without referencing the plan. For Drexler, the watercolor manifests a shift in professional intent away from painterly conventions towards the "ideal accuracy" of the architectural elevation.<sup>35</sup> While no photograph could present a view exactly in such a manner, the orthogonal central focus of Dubut's elevation coupled with its perspectival surround echoes the sort of composition Nègre would produce at Saint-Trophime and Saint-Gilles over fifty years later. Meanwhile, this form of elevation perspective remained in use at the École des Beaux-Arts throughout the nineteenth century.<sup>36</sup>

### **The Elevation Photographed**

As we have seen in the above examples from Charles Nègre, photographers working in France in the 1850s often produced frontal views for architects and related publics.<sup>37</sup> Its

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<sup>35</sup> Drexler, "Engineer's Architecture," 28, 30.

<sup>36</sup> Examples include (page numbers refer to reproductions in Drexler, *Architecture*) Victor Baltard 1830, 173; Bénard 1867, 241; Tony Garnier, 1899, 309.

<sup>37</sup> As Joel Herschman notes, "the elevation flourished" as a subject for French architectural photography between 1839 and 1880. See Herschman, "Part I," 10.

proponents included Nègre, Gustave Le Gray, and later Adolphe Braun; Édouard Baldus was its master.<sup>38</sup> While Baldus experimented with a variety of photographic types, depending on the subject matter he sought to represent, he often chose to depict monuments frontally, doing so on his mission héliographique, in his lengthy documentation of the New Louvre, at historic monuments such as Versailles, and on the construction site of the rebuilt Hôtel-de-Ville in Paris. This decision accorded with Baldus's attention to the precise recording of detail (Jesús Vassallo places him at the origins of the "documentary style" in architectural photography) and his focus on his subject matter at the expense of its surroundings.<sup>39</sup>

Given his proclivity for head-on views, many historians have claimed Baldus's photographs were intended to approximate elevation drawings.<sup>40</sup> Their assertions link the qualities associated with drafted elevations to the stylistic elements of Baldus's frontal photographs: mainly his central, elevated viewpoint and undistorted straight lines.<sup>41</sup> In particular, Joel Herschman comments upon the lengths to which Baldus went to assure proportional fidelity and to prevent perspectival distortion in a photograph of the Porte Saint-Denis in Paris taken no later than 1856 (fig. 3.21). Within the limitations of photography, "Baldus

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<sup>38</sup> Joel Herschman notes the frequent appearance of elevation photographs in Blanquet-Évrard's early photographic publications; the latter "showed a fondness for this type." See Herschman, "Part I," 10.

<sup>39</sup> Vassallo, "Documentary Photography," 16–20.

<sup>40</sup> See Herschman, "Part I," 6, 10; Barry Bergdoll, "Matter of Time," 107; and Vassallo, "Documentary Photography," 19.

<sup>41</sup> One exception is James Ackerman, who accepts that a desire to avoid parallax motivated the choice of elevated viewpoints by photographers such as Henri Le Secq, but rejects the suggestion "that this typical decision was influenced by the orthogonal elevation standard in architectural drafting." See Ackerman, "On the Origins," 114.

has done what he could ... to reproduce the two-dimensional linear, contextless quality of the elevation drawing.”<sup>42</sup> Of course, such a “contextless quality” could only be achieved from a specific point of view, in this case an upper window from across the Grands Boulevards. While the angle of the distant Rue du Faubourg Saint-Denis hides the image’s single vanishing point, the perspectival surround for François Blondel’s monument to the Sun King is unmistakable.

As Nègre’s own declaration attests, these comparisons between drafted and photographic elevations are not necessarily incorrect. However, they miss the perspectival nuance contained in the term “elevation” in French nineteenth-century architectural circles. The clear attempt made by French photographers in the 1850s (and later, in many cases) to represent buildings frontally brings to light the many overlooked distinctions within the elevation as an architectural drawing type. Some photographs can truly be said to approach—if not quite achieve—the orthogonal elevation’s abstract two-dimensionality. However, many elevation photographs are in fact far closer approximations of another, related drawing type: the elevation perspective.

Two photogravures from Baldus’s *Palais de Versailles: Motifs et décorations* (published between 1870 and 1877) illustrate these similar yet contrasting elevation types. A view of the Petit Trianon from the garden succeeds in maintaining the flatness of its neoclassical façade, whose strict regulating lines are undistorted (fig. 3.22). While certain fore- and background elements maintain the image’s orthogonal character (we may think we are

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<sup>42</sup> Herschman, “Part I,” 6.

seeing the blank sky and darkened trees orthogonally, while the grass *parterre* is somewhat abstract), the low steps and receding walkway funnel the viewer's eye towards the façade, revealing the image's perspectival composition. We are faced with a perfect example of the idealized elevation perspective centered around an orthogonal façade. A second photogravure, this time of the main *château's* façade facing the *parc*, provides an almost perfectly orthogonal elevation (fig. 3.23). Here the continuous line of steps and the foreground are almost completely abstract and do nothing to interfere with the façade's orthogonal appearance.

In the 1884 *Reconstruction de l'Hôtel de Ville de Paris: Motifs et décoration extérieure*, Baldus took this close cropping to a further extreme. In his view of the attic bays above the Salle des fêtes, the viewer is given a close-up presentation of Ballu and Desperthes' ornamental motifs (fig. 3.24). Highly acontextual, the image could have been cropped from anywhere on the building. Baldus produced images such as this one with either a long-focal-length lens or through tight cropping.<sup>43</sup> Its orthogonal perfection comes at the expense of being able to depict a complete elevation: in its rigorous two-dimensionality, it offers instead a precise study of details. As viewers, we are analyzing a pattern, not spatially apprehending a building. In another closely cropped view, this time of a façade on the Cour des bureaux, Baldus's control of the pilasters' vertical rectitude is impressive (fig. 3.25). The black voids (particularly striking in photogravure) of the Hôtel-de-Ville's empty interior seen the

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<sup>43</sup> Joel Herschman makes this technical observation regarding a Baldus photograph of the entry pavilion to the Imperial Library at the New Louvre (fig. 3.26). See Herschman, "Part I," 10.

through the windows in the above images add a haunting quality while emphasizing the photographed façade's mask-like flatness.

Even in the above examples, signs of three-dimensionality could not be entirely excised. Inevitably, many window frames and ledges add a certain degree of depth to the Cour des bureaux photograph, as does a truncated chimney above. These faults open a slight representational distance between the elevation photograph and the (drafted) orthogonal elevation to which it could be compared. Often, however, photography's limitations as a producer of orthogonal elevations only added to its equation with drawings. Skillfully managed, the inevitable signs of three-dimensionality in an elevation photograph approached those means used to express depth within the nineteenth-century Beaux-Arts orthogonal graphic tradition. In praising Baldus's tightly framed view of the entry pavilion to the Imperial Library at the New Louvre (ca. 1855–57), Herschman notes that Baldus produced a photograph whose transparent shadows produce an effect akin to that “created by thinned washes of ink in elevation drawings of the period”<sup>44</sup> (fig. 3.26). The danger posed by heavy shadow to the legibility of ornamental detail in photographs was considered in Chapter 1, as well as the sense of disappointment this could engender. The remarkable transparency of shadow in Baldus's elevation photographs does indeed allow for a clear reading of the Louvre façade's decorative forms, effectively obviating these concerns. Herschman also reads the incongruous presence of the horse-cart as an indication of scale,

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<sup>44</sup> Herschman, “Part I,” 10.



which we may compare to the common inclusion of a graphical scale in engraved elevation perspectives in French publications.<sup>45</sup>

In an 1857 study for the Pavillon Sully (originally de l'Horloge), Lefuel followed Beaux-Arts convention of using transparent shadows to explore the façade's plastic modulation (fig. 3.27). Certain elements (the sculpture breaking the pediment, the clock, and the central archway) provide focal points on this orthogonal elevation, but a tinge of abstraction pervades. That same year, Baldus photographed the completed pavilion (fig. 3.28). His view indeed provides a remarkable approximation of Lefuel's orthogonal elevation. In fact, many of the differences between the two images are the result of changes made as the projected façade was built: the broken pediment was dropped and the large windows to either side of the main archway were left open. By carefully controlling his exposure, Baldus preserved the legibility of Lefuel's detailed ornament. Almost no details are lost in shadow, nor do perspectival distortions trouble the image to any significant extent. Even the contingencies of Baldus's raised vantage point support the photograph's orthogonal qualities: a row of trees blocks the (horizontal) foreground, as if seeking to extend the façade's vertical reach to the bottom of the image. However, one of the great compositional strengths of Baldus's Pavillon Sully photograph is its failure to reproduce perfectly an orthogonal elevation. The glimpses we are afforded into the Pavillon Sully transform the façade into a permeable screen, through which the building's three-dimensional depth emerges. As viewers, we are made equally aware of the elevation as decorated surface and the building as spatial enclosure.

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<sup>45</sup> Herschman, "Part I," 10.

Just as perspective inevitably crept into Baldus's elevation photographs, the same occurred in examples from Lefuel's otherwise orthogonal elevation drawings.<sup>46</sup> An elevation of the planned northern gallery to connect the Tuileries to the Louvre provides a fascinating example (fig. 3.29). Produced near the end of 1859, this drawing shows the proposed wing in orthogonal elevation. To the right, the single line indicating the ground plane rises to mark in section the form of the pavilion against which the gallery was to abut. To the left, the northern extremity of the Tuileries is seen in perspective and in shadow, transforming the drawing into a tentative three-dimensional construction. Lefuel used this hybrid format in at least two other drawings for the same ensemble, all made in late 1859.<sup>47</sup> In these drawings, the architect's pencil traces the gallery's forms both "as they will be seen in passing" and "as they will be in reality."

This change in register between an orthogonal elevation and its spatial surroundings is given a historical dimension in two views of the Tuileries Palace. In Baldus's 1855 photograph, the palace's eastern façade is shown from across the cour du Carrousel. The Tuileries' flatness is juxtaposed with the silent construction site of the new Louvre in the foreground (fig. 3.30). Baldus's solution to the problem of representing building construction as an event by photographing the worksite at a time (likely on a Sunday) when no work was taking place evacuates any action from the scene. However, the image presents

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<sup>46</sup> Lefuel and his *agence* often produced two-point perspective renderings; this subsection confines itself to an analysis of his use of perspective in his elevation drawings.

<sup>47</sup> These are (page numbers refer to reproductions in Fonkenell, *Palais des Tuileries*): Arch. nat. 64 AJ 514\*, pièce 15, 185 no. 261; Arch. nat. 64 AJ 514\*, pièce 18, 186 no. 265. I am grateful to Guillaume Fonkenell for sharing his research on Lefuel's Tuileries drawings with me.

a clear contrast between the representational stasis of the Tuileries' historic façade and the dynamic transformation of the Louvre under the Second Empire. If Baldus's photograph visually unites the material used to construct Napoléon III's additions with their longstanding neighbors, an engraving from the French Revolution dramatically opposes the façade's capacity to statically represent historical meaning with the dynamic depiction of an historical event. In an anonymous 1792 view of an execution in the Place du Carrousel, an orthogonal representation of the Tuileries' façade looms over the epoch-rending scene (fig. 3.31). While the Arc de Triomphe du Carrousel (constructed 1806–08) is positioned slightly to the left of center in Baldus's photograph, here it is the guillotine itself that occupies this same position. The building silently witnesses the executioner holding aloft the severed head, a gesture that could equally be read metaphorically as a threat to the royalist symbolism attached to the Tuileries' dome.<sup>48</sup>

A watercolor by Lefuel's *agence* of the architect's project for the Grands Guichets dating from 1864–1866 offers a full elevation perspective (fig. 3.32). The three archways forming the Guichets are seen from a new and enlarged Pont du Carrousel in a view of part of the Louvre's southerly Grande Galerie. The image has two central focal points: one a classical presence, the other a modern aperture. In the center of the façade, Antoine-Louis Barye's bronze bas-relief of an equestrian Napoléon III (since removed to the Château de Compiègne) inscribes the emperor's image into the Louvre's decorative tableau of French majesty. While Barye's sculpture shows the emperor in light relief against a shallow niche, the central archway of the Guichets below provides a sort of focal void that the new

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<sup>48</sup> On the royalist symbolism of domes in the French architectural tradition, see Rabreau, "Basilique," 67.

networks of commerce and circulation to penetrate the representational heart of the Bonapartist state which had initiated them. The Guichets de Rohan (also to be enlarged in Lefuel's scheme) can be seen across the cour du Carrousel through this opening. Together, the new bridge and the roadway connecting these two portals were to link the planned Avenue de l'Opéra with the Left Bank, creating a major north-south axis.

These twin focal points can also be seen in an orthogonal elevation drawing of the same façade, made by Lefuel or his *agence* before 1870 (fig. 3.33). In this rather austere drawing, the side view of the emperor on his horse is juxtaposed with the front and rear presentation of two horse-drawn vehicles traversing the Guichets; all are dwarfed by the size of the façade. The elevation perspective is more lively, and better communicates how the foreground bridge and the northern pavilions in the background join the southern wings in a dynamic urban arrangement. However, rather than emphasize the circulatory power of this metropolitan choreography, the peopling of Lefuel's drawing instead re-states its classicism. Only a few bourgeois *flâneurs* populate the representation of what was to be a crucial axis in the Hausmannian network. The elevation perspective's single vanishing point is occupied by a pier in the proposed Pavilion de Rohan, confirming the ambiguity between solid and void, monument and network at the heart of the New Louvre's representational project.

It would have been difficult, if not impossible, for Baldus to reproduce this elevation perspective photographically, for Antoine-Rémy Polonceau's original 1834 Pont du Carrousel (which Lefuel's new bridge was to replace) was imperfectly aligned with the Grand Guichets, a default that was finally corrected in 1939 with the erection of the present bridge. Two photographs in Baldus's *Réunion des Tuileries au Louvre* show the Guichets de

Rohan, but these are oblique views in which the viewer cannot see through the archways.<sup>49</sup> Another Baldus image, this time of a railroad station, offers a more unambiguous representation of the imperial project's networked modernity and the elevation photograph's inherent three-dimensionality (fig. 3.34). Taken around 1861, Baldus's photograph shows the architect Laroze's newly completed station at Toulon.<sup>50</sup> The building is photographed symmetrically in an elevation perspective view that functions also as a diagrammatic cross-section, situating the glazed train shed between two masonry station houses. Baldus made this photograph, which artfully captures the endless possibilities opened by the growing railroad network in Second Empire France, as part of an 1861 album commissioned by the Compagnie du Chemin de Fer de Paris à Lyon et à la Méditerranée (PLM).<sup>51</sup> The image's visual construct of three parallel railway tracks passing through a central void in the station's "railway" façade to reach an infinite vanishing point explicitly accepts the perspectival nature of the elevation photograph. The viewer scans the architectural elevation as his or her gaze penetrates its flatness. That Baldus's forward-facing frame of vision would not be available to railroad passengers only reinforces the sense of a new technologized reality instantiated through photography, which nevertheless

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<sup>49</sup> These are (numbers in parentheses refer to plates in *Réunion des Tuileries au Louvre* vol. 1, *Décor de la façade nord, sur la cour Napoléon*) "Le pavillon de Rohan, palais du Louvre, Paris en 1857" (pl. 7) and "Guichet du pavillon de Rohan, palais du Louvre, Paris en 1857" (11).

<sup>50</sup> The Canadian Centre for Architecture dates this photograph "1861 or later," while the J. Paul Getty Museum gives "about 1861" for its production. Little information is available on the station itself, which was destroyed by fire in 1868. See Poupardin, "Bâtiments voyageurs," 68, 71. Poupardin incorrectly dates the Baldus photograph "towards 1850."

<sup>51</sup> Malcolm Daniel notes certain images of Marseille in the Chemins de Fer de Paris à Lyon et à la Méditerranée album could be seen as illustrations of Michel Chevalier's Saint-Simonian "Système de la Méditerranée." See Daniel, "Édouard Baldus," 82. On the album itself, see Daniel, "Photographic Railway Albums."

overlapped with well-established graphic traditions. With its central vanishing point, Baldus's photograph respects longstanding traditions of architectural representation, yet it could easily be a still frame from an 1890s phantom ride film.<sup>52</sup> All that is missing is the locomotive motion needed to drive a mechanical succession of images in order to activate the latent penetration of space implied by Baldus's composition.

Elevation photographs navigate between the Beaux-Arts preference for orthogonal representational forms and the camera's natural tendency to capture perspectival depth, producing photographic versions of elevation perspective drawings. Beyond providing a welcome hybrid of orthogonal and perspectival forms, elevation photographs responded to a wider desire in nineteenth-century French architectural circles for representations that could combine mensural accuracy with spatial sensibility. Through a careful and contingent disciplining of the camera's gaze, photographers such as Nègre and Baldus adeptly synthesized aspects of divergent pictorial traditions, from the measured drawing to the experiential view. The images they produced corresponded to existing graphic techniques while pointing the way towards a truly photographic visual regime in architectural representation.

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<sup>52</sup> A common genre for early cinematographers, "phantom rides" documented railway journeys. The American Mutoscope and Biograph Company's 1897 *Haverstraw Tunnel* provides the first known example of such a film. In its purest form, the phantom ride was forward-looking, with the camera mounted at the front of the train. See Keiller, "Phantom Rides."

## Chapter 4.

### Scopic Images and Mobile Subjects: The Photograph in Perspective

#### “Because appearances contradict reality”

In 1845, Simon-Claude Constant-Dufeux became the first architect elected to hold the chair in perspective at the École des Beaux-Arts in Paris. His first lecture was an exploration of the universal principles of truth, beauty, and utility, a re-working of the Vitruvian triad with truth in the place of solidity [*firmitas*].<sup>1</sup> For Constant-Dufeux, perspective was a means of uniting the different disciplines attending his lectures: students of architecture, painting, and sculpture. If art was a magnificent tree, then perspective was—in César Daly’s transcription of his remarks—the “rising sap, moving from limb to limb in order to redouble the limbs’ strength and fecundity.”<sup>2</sup> Reviewing this inaugural lecture in the pages of the *Revue générale*, Daly mused that Constant-Dufeux

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<sup>1</sup> Ralph Ghoche dates Constant-Dufeux’s inaugural lecture to February or March of 1845. See Ghoche, “Symbolic,” 171n11.

Adapted from Victor Cousin’s “*le vrai, le beau, le bien*” [“the true, the beautiful, the good”], Constant-Dufeux’s motto “*le vrai, le beau, l’utile*” [“truth, beauty, and utility”] was later adopted by the Société centrale des architectes, of which he was a key member. See Ghoche, “Symbolic,” 151–54.

<sup>2</sup> “[S]ève naissante, passant de rameau en Rameau pour redouble leur puissance et leur fécondité.” Daly, “École des Beaux-arts (Paris),” cols. 408–9. Translation from Ghoche, “Symbolic,” 174n16.

devoted his first lecture to an examination of the three principles behind everything worthy of human activity, therefore of the fine arts; he discussed *truth*, *beauty*, and *utility*, but he dwelt more particularly on *truth*, perhaps because the art he teaches, perspective, belongs to illusion, and because appearances contradict reality.<sup>3</sup>

Daly's statement anticipates Charles Blanc's later observation of the distinction between appearance and reality, which was discussed in the previous chapter. It also reveals Daly's own conflicted position. He recognized that perspective was useful for architects (because they needed to "grasp the secret of the magic illusions of optics") but he was reticent to publish perspective drawings in his *Revue générale*.<sup>4</sup> While Constant-Dufeux saw them as essential to a truthful understanding—through visual perception—of architectural and artistic practice, Daly's mischievously sketched a contrary view that perspective drawings were something to be distrusted because of their seductive untruthfulness.

In fact, French nineteenth-century architectural representation was shaped by an overwhelming bias in favor of orthogonal representation. The development of the elevation photograph explored in the previous chapter is one striking example of this proclivity. The omnipresence of two-dimensional plans, sections, and elevations in French architectural production is clear from the collections of the Académie d'Architecture in Paris.<sup>5</sup> Unlike the immediacy of perspectival renderings, orthogonal drawings required specialist training and

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<sup>3</sup> "[A] consacré sa première séance à l'examen des trois principes qui se retrouvent dans tout ce qui est digne de l'activité humaine, par conséquent dans les beaux-arts ; il a traité du *vrai*, du *beau* et de l'*utile*: mais il s'est particulièrement étendu sur le *vrai*, peut-être, parce que l'art qu'il enseigne (la perspective) est celui des illusions, et que constamment l'apparence contredit la réalité." Daly, "École des Beaux-arts" col. 522. Translation modified from Thomine-Berrada, "Pictorial," 147.

<sup>4</sup> "[P]énétrer le secret des illusions magiques de l'optique." César Daly, "Ouverture des cours" col. 522. Translation from Thomine-Berrada, "Pictorial," 147.

<sup>5</sup> Dufournet, "Collections," 11–12.



intellectual effort to conjugate a building from its representations, a facility unavailable to all viewers. This need for informed intellection was perhaps a factor behind the École des Beaux-Arts' bias towards orthogonal representation. Architecture students at the École were required to complete a perspective course from 1824; however, this was never a central part of their curriculum, and later became optional.<sup>6</sup>

The overwhelming dominance of orthographic representations at the École des Beaux-Arts is illustrated by a study of the drawings produced for the school's ultimate prize: its annual Prix de Rome competition. Of the 480 plates of drawings reproduced by *héliotypie* in *Les Grands prix de Rome d'architecture*, a 1905 compendium of first, second, and third place projects for the Prix de Rome between 1823 and 1900, all save twenty-eight plates feature only orthogonal views.<sup>7</sup> The exceptions are elevation perspectives in which the three-dimensional effect has been limited to the foreground—usually caused by buildings sited on water or atop slopes. None of the plates are full perspectives. In fact, in spite of the many months of work dedicated to the production of enormous presentation drawings, perspectives were only required twice for the Prix de Rome competition in the nineteenth century: in 1863 and 1864. David Van Zanten speculates that Viollet-le-Duc's ideas prompted this short-lived exception; Annie Jacques and Riichi Miyaké venture that the subject matter of the 1863 competition may have been the cause.<sup>8</sup> Whereas Emanuel Brune's sections and

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<sup>6</sup> On the teaching of perspective at the École des Beaux-arts, see Thomine-Berrada, "Pictorial." Thomine-Berrada does not give the year after which completion of the perspective course was no longer required for promotion to the *première classe* at the École des Beaux-arts. See "Pictorial," 142.

<sup>7</sup> Developed in the 1870s, *héliotypie* is a form of collotype, also known as a phototype, i.e. a photomechanical process allowing photographic negatives to be transferred onto plates for printing using a screen-less matrix. See "Heliotype" in Nadeau, *Encyclopedia*, 1:125–26.

<sup>8</sup> Van Zanten, "Architectural Composition," 248; Jacques and Miyaké, *Dessins d'architecture*, 58.

elevation for his prize-winning “Principal Staircase of the Palace of a Sovereign” (1863) are in full-color wash, his perspective view is monochrome, leading Van Zanten to claim that it is “unfinished”<sup>9</sup> (fig. 4.1).

This distrust of three-dimensional imagery is confirmed by the French state’s most significant architectural publication of the first half of the twentieth century. The three volumes of Charles-Pierre Gourlier, J.-E. Biet, Edme-Jean-Louis Grillon, and Eugène Tardieu’s *Choix d’édifices publics* (1825–50) present 209 public buildings, chosen from the archives of the French Conseil des bâtiments civils. All of its 389 engraved plates, which were largely produced from the architects’ own drawings, are strictly orthogonal. Each building was illustrated by between one and six plates of plans, sections, elevations, and small-scale details. The editors emphasized the particularity of local knowledge contained within the chosen buildings; the compendium was not meant to restrict architects “to making servile copies, but to guide them in the choice of this or that disposition, due to local needs or resources.”<sup>10</sup> However, their project was a clearly celebratory codification of French public

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As Van Zanten notes, the contemporary press criticized the decision to focus the competition upon a single compositional element: the staircase.

<sup>9</sup> Van Zanten, “Architectural Composition,” 248.

The 1863 competition was omitted from publications of Grand Prix projects, including the *Grand prix de Rome*. See Van Zanten, “Architectural Composition,” 242.

Brune (1836–86) was a graduate of the École Polytechnique, who became known for his prowess as a watercolorist at the École des Beaux-arts. Following his Grand Prix, he travelled to study archeology across the Mediterranean basin, before being named as professor of construction at the École des Beaux-Arts shortly before his untimely death. See Jacques and Miyaké, *Dessins d’architecture*, 58–59.

<sup>10</sup> “[À] en faire de serviles copies, mais pour se guider, dans le choix de telle ou telle disposition, en raison des besoins ou des ressources des localités.” “Avant-propos,” Gourlier et al, *Choix d’édifices*, vol. 1, n.p.

works, whose strict representational regime was highly appropriate for depicting a set of buildings linked by their simplified neoclassicism.

In its report for the Ministère de l'Intérieur appraising the first volume of this publication, the Académie Royale des Beaux-Arts declared, "Here, nothing is ideal; on the contrary, all is real, positive."<sup>11</sup> In addition to noting the *Choix d'édifices*' utility for those provincial architects "removed from the resources and enlightenment so easily obtained in the capital," the academicians focused upon its instructional role for young architects.<sup>12</sup>

If it sometimes necessary to allow students to give free reign to their imagination, this is not the case when they are entrusted with real responsibilities. Any deviation [*écart*] then becomes a grave error, and it is only when guided by the experience of their predecessors that our young architects can advantageously apply the talents they have acquired in the course of their studies. Nothing is better suited to teach them these lessons of experience than the built works presented by the *Choix d'édifices publics*.<sup>13</sup>

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<sup>11</sup> "Ici, rien n'est idéal, tout au contraire est réel, positif." "Rapport adressé à Monsieur le Ministre de l'Intérieur, par l'Académie royale des Beaux-arts sur le premier volume du *Choix d'édifices publics*" in Gourlier et al, *Choix d'édifices*, vol. 2, n.p. While this report is appended to the second volume of the Canadian Centre for Architecture's copy of the *Choix d'édifices* (MAIN M 5366), it is annexed to the first volume of the copy in the Loeb Library at Harvard University (Folio NA 1047 G 743).

The signatories of the report are Percier, Fontaine, Huyot, Vaudoyer, Debret, Leclère, Guénepin, and Le Bas.

<sup>12</sup> "[É]loignées des ressources et des lumières que l'on peut aisément se procurer dans la Capitale." "Rapport adressé," n.p.

<sup>13</sup> "[S]'il est quelquefois nécessaire de laisser les élèves donner l'essor à leur imagination, il n'en saurait être de même lorsque des intérêts positifs leurs sont confiées. Tout écart alors devient une faute grave; et ce n'est que guidés par l'expérience de ceux qui les ont précédés, que nos jeunes Architectes peuvent appliquer avec avantage les talents qu'ils ont acquis dans le cours de leurs études. Ces leçons d'expérience, rien n'est plus propre à les leur donner que l'examen des ouvrages exécutés que présente le *Choix d'édifices publics*." "Rapport adressé," n.p.

Under the reign of neoclassicism's idealist doctrine, orthographic, two-dimensional representation was accepted as the best means for transmitting the positive, circumstantial reality of state-certified French architectural practice. The *Choix d'édifices*' staid engraving of Henri Labrousse's Bibliothèque Sainte-Geneviève in plan and section illustrates this belief (fig. 4.2). The engraved section shows a high degree of detail—including the individual tomes in the reading room and the trees painted on the vestibule's longitudinal walls. Yet for all its precision, the effect is cold and impersonal.

The strict reliance upon orthographic representation echoed that of two other early nineteenth-century architectural publications. Jean-Nicolas-Louis Durand's *Recueil et parallèle des édifices de tout genre, anciens et modernes, remarquables par leur beauté, par leur grandeur ou par leur singularité, et dessinés sur une même échelle* (1800–01) and *Précis des leçons d'architecture données à l'École polytechnique* (1802–05) were crucial manuals for French neoclassicism; their popularity among students at the École des Beaux-Arts would persist well into the more eclectically minded decades of the second half of the century. In the preface to the *Précis*, Durand broke with his mentor Étienne-Louis Boullée's pictorial affinity and decried any claim for drawing as the foundation of architecture. As Antoine Picon notes, Durand rejected perspective drawing along with pictorial techniques such as lavish washes in favour of compositional exercises on graph paper; for Durand, composition was a matter of analysis and not painterly aesthetics.<sup>14</sup> The plates accompanying the *Précis* are strictly orthogonal, using plan, section, and elevation without the slightest hint of three-dimensional representation (fig. 4.3). While the frontispiece to the *Recueil* proudly features perspectival vignettes, only seven of its ninety plates contain three-dimensional elements, all of which are minor.

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<sup>14</sup> Picon, "Poetry of Art," 36 and 41.

Just as Durand's typological emphasis on the *parti* would be influential in the teaching of the École des Beaux-Arts throughout the nineteenth century, so too did his choice of representation align with the French academic mistrust of perspectives and concomitant preference for orthogonality.

It is therefore surprising to read Durand's own appraisal of these competing representational regimes in the preface to the *Précis*. In explaining his unwillingness to see drawing as foundational for architecture and justifying his Spartan use of single lines wherever possible, Durand claimed that orthogonal drawings were fundamentally false,

since nothing in nature is orthogonal in form or effect. Perspective alone might give a true idea of the effect of a building. Strange to relate, however, in an art that is alleged to be founded upon drawing, this is one kind of drawing that is not in use. Indeed, it is strictly forbidden, and an exclusive preference is accorded to orthogonal drawing—which is false, not to say absurd, if the intention is to represent the effect of a building, and dangerous in the extreme, whether architecture be considered for its usefulness or for the pleasure that it gives.... Often, and indeed almost invariably, a design that would make the greatest effect in execution has little or no effect as an orthogonal drawing.<sup>15</sup>

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<sup>15</sup> “[P]uisque la nature ne nous offre rien de géométral ni quant aux formes ni quant aux effets. La perspective pourrait, seule, donner des idées vraies de l’effet d’un édifice. Mais chose étrange dans un art que l’on prétend assimiler aux arts qui ont le dessin pour base! Ce dernier genre de dessin n’est point en usage dans l’Architecture; il y a plus, il y est sévèrement proscriit: et la préférence y est exclusivement accordée au dessin géométral, qui est faux, qui est ridicule lorsque l’on veut représenter l’effet d’un édifice; et qui de plus est extrêmement dangereux, comme que l’on considère l’Architecture, soit sous le rapport de l’utilité dont elle est soit sous celui du plaisir qu’elle procure... Mais souvent et presque toujours, tel projet qui, dans l’exécution, ferait le plus d’effet n’en opère que très-peu en géométral.” Durand, *Précis des leçons*, 1:iv-v. Translation modified from Durand, *Précis of the Lectures*, 74.

In this and subsequent quotations from this work, I have deviated from the translator's choice of “geometric” for *géométral*, using “orthogonal” instead.

In fact, Durand argued that an over-emphasis upon two-dimensional drawings was often responsible for poor design decisions. The solution to the “ruinous consequences of the abuse of orthogonal drawing in architecture” was not, however, a renewed emphasis on perspective.<sup>16</sup> Instead, it was to de-emphasize drawing entirely: “Justly economical with our students’ time, we have therefore set aside very little of it for drawing.”<sup>17</sup>

Durand concludes the *Précis*’ first volume by again defending his disinterest in drawing:

Even supposing that architecture had to be associated with other arts to ensure its survival, this would certainly not be achieved through orthogonal drawings. These false images, far from setting architecture on a level with the noble art of painting, would at best associate it with certain trifling occupations that are the province of caprice alone. Instead, let drawings be done in perspective; and such true and satisfying images will indeed, up to a point, bring architecture close to the other arts. Better still, in view of architecture’s importance for humanity, let it be treated in accordance with its true principles. Then, perhaps, far from needing to advance it to equality with another art, we shall find no other that can justly be placed on a level with it.<sup>18</sup>

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<sup>16</sup> “[F]unestes suites engendrées en Architecture, par l’abus du dessin géométral.” Durand, *Précis des leçons*, 1:v. Translation modified from Durand, *Précis of the Lectures*, 75.

<sup>17</sup> “C’est ainsi que justement avars du tems des Elèves, nous n’en avons consacré au dessin, devenu si peu de chose, qu’une très-faible portion.” Durand, *Précis des leçons*, 1:vi. Translation from Durand, *Précis of the Lectures*, 75.

<sup>18</sup> “[Q]uand même on croirait devoir associer celle-ci [l’architecture] avec les autres arts pour lui assurer une existence; ce ne seroit point par des dessins géométraux que l’on y réussirait. Loin de pouvoir aller de pair avec l’art sublime de la peinture; l’Architecture, au moyen de ces fausses images, ne pourrait tout au plus être associée qu’à certains métiers futiles et qui sont entièrement du ressort du caprice. Qu’au lieu de cela, on fasse des dessins en perspective; ces images vraies et satisfaisantes pourront, jusqu’à certain point, rapprocher des autres arts, l’Architecture. Que l’on fasse mieux et que réfléchissant sur l’importance dont elle est pour l’espèce humaine, on la traite suivant ses vrais principes: alors, bien loin d’avoir besoin de l’égaliser à quelque autre art; peut-être, n’en trouvera-t-on aucun qui puisse justement être mis en parallèle avec elle.” Durand, *Précis des leçons*, 1:105–6. Translation modified from Durand, *Précis of the Lectures*, 127.

Here Durand separates the (painterly) truth of imagery—offered by perspective views such as the vignettes that illustrate the *Recueil*'s frontispiece—with the truth of architecture; strangely, it was through tomes filled with a type of representation he termed false that students could begin to grasp the “true principles” of the latter.

### **Incontestable Truths versus Irresistible lies**

Durand, Daly, and Blanc were among those to consider the relative veracity of orthogonal and perspectival representation. While the former offered abstract truthfulness, the latter offered representations of how objects appeared to human perception. Writing in his 1755 *Dictionnaire portatif de l'ingénieur*, the military engineer Bernard Forest de Bélidor defined perspective as “a science that teaches through rules how to represent objects as they appear to the eye on a flat surface.”<sup>19</sup> Noting that all worldly objects appear in perspective, the archaeologist and naturalist Aubin-Louis Millin echoed Bélidor's formulation in his 1806 *Dictionnaire des Beaux-Arts*. Perspective produced “the perfect image of all objects as they are seen in nature.”<sup>20</sup> For Millin, there lay the origin of all truthfulness in painting. To break the laws of perspective through ignorance or license was to falsify the representation of nature and thereby to discard painting's most important quality: its ability to faithfully depict the world. This required the correct application of two types of perspective: linear and aerial.<sup>21</sup> The former was a matter of geometric construction, while the latter involved the cor-

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<sup>19</sup> “[U]ne science qui enseigne, par règles, à représenter sur une surface plane, les objets tels qu'ils paroissent à la vue.” Belidor, *Dictionnaire portatif*, 226.

<sup>20</sup> “[L]'image parfaite de tous les objets, tels qu'on les voit dans la nature.” Millin, *Dictionnaire des Beaux-Arts*, 232.

<sup>21</sup> Quatremère de Quincy insisted that only the former was relevant for architects. See Quatremère de Quincy, *Dictionnaire historique*, 220.

rect use of color to represent atmospheric effect caused by water vapor in the air. Mathematically exact, linear perspective could not fail to depict objects as they appeared in nature.<sup>22</sup> There lay the “character of truthfulness” that marked the works of Poussin, Vernet, and Veronese.<sup>23</sup> Intriguingly, Millin notes the value of intermediary instruments for the study of objects. A camera obscura or a convex mirror rendered an object’s image “easier to conceive than nature itself, because the image is now framed on a flat surface, and one regards it in a new way; the eye only sees what it can and must apprehend.”<sup>24</sup> However, convex mirrors presented a key weakness of deforming straight lines into curves.

While Charles Blanc recognized the need for painters to accept the laws of perspective, he did not accept Millin’s basis of truthful painting in geometry. For Blanc, “mathematical truth was not of the same kind as pictorial truth. Often, geometry says one thing and our feeling [*notre âme*] says another.”<sup>25</sup> He noted that the apparent size of a human body changed as it moved closer, but that this made no difference to his perception of its size. He mused,

the error of my feeling [*mon âme*] is no less infallible than the geometer’s truth ...  
Something other than physics and geometry is needed to explain how the testimony

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<sup>22</sup> Millin, *Dictionnaire des beaux-arts*, 233.

<sup>23</sup> Millin, *Dictionnaire des beaux-arts*, 233.

<sup>24</sup> “[P]lus facile à concevoir que la nature elle-même, parce qu’elle se trouve encadrée sur une surface plane, et qu’on la regarde d’une manière à laquelle on n’est pas habitué; l’œil ne voit ce qu’il peut et doit embrasser.” Millin, *Dictionnaire des beaux-arts*, 236.

<sup>25</sup> “Non, la vérité mathématique n’est pas de même nature que la vérité pittoresque. Aussi bien, il arrive à tout moment que la géométrie dit une chose et que notre âme en dit une autre.” Blanc, *Grammaire*, 312.



of our eyes is falsified by a wave of feeling [*un arrêt de sentiment*], and how an incontestable truth can be vanquished by an irresistible lie.<sup>26</sup>

Blanc equated orthogonal vision with truthful dimensions, but this was almost completely beyond humans.<sup>27</sup> While God's eye could doubtlessly see the universe orthogonally, humans made do with perspective, that "strange and beneficent illusion."<sup>28</sup>

The distinction between the geometric construction behind linear perspective and the painterly techniques needed for aerial perspective offered two opposing poles for the understanding of perspective in French nineteenth-century architectural discourse. In her history of the teaching of perspective at the *École des Beaux-Arts*, Alice Thomine-Berrada traces an opposition between "pictorial" and "intellectual" representation, which she follows across nineteenth century engagements with perspective.<sup>29</sup> In the first half of the nineteenth century, the *École des Beaux-Arts* sought to reconcile, albeit awkwardly, what Thomine-Berrada describes as "the dual nature of architectural perspective—a sensitive, pictorial rendering by an artist versus a scientific, technical drawing by an engineer."<sup>30</sup> Prior to 1824, the teaching of perspective at the *École des Beaux-Arts* lay within the purview of

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<sup>26</sup> "[L]'erreur de mon âme sera aussi infaillible que la vérité du géomètre ... Il faut, en effet, autre chose que la physique et la géométrie pour expliquer comment le témoignage de nos yeux est contredit à ce point par un arrêt du sentiment, et comment une vérité incontestable peut-être vaincue par un mensonge irrésistible." Blanc, *Grammaire*, 312.

<sup>27</sup> Blanc raised one possible exception: the case where an object placed perpendicular to the eye was also the same size as the observing organ. Blanc, *Grammaire*, 313.

Blanc's equation of an eye the size of its subject with orthogonal vision contradicts Claude-Nicolas Ledoux's famous perspective of his theatre at Besançon included in his *Architecture* of 1804.

<sup>28</sup> Blanc, *Grammaire*, 313.

<sup>29</sup> Thomine-Berrada, "Pictorial."

<sup>30</sup> Thomine-Berrada, "Pictorial," 144.

the mathematics course. This placement of architectural perspective alongside arithmetic and geometry echoed Quatremère de Quincy's belief, expressed in his 1832 *Dictionnaire historique d'architecture*, that perspective was a scientific practice; linear perspective therefore "follows rigorously demonstrated principles."<sup>31</sup> Likewise, although he had been a disciple of Boullée, the architect and painter Jean-Joseph Thibault, who taught the École's first dedicated perspective course for architects from 1824 until 1826, saw perspective scientifically. Perhaps uniquely in the context of the restoration École, Thibault promoted perspective as a mathematical skill—in Thomine-Berrada's words, as "a means of accurately assessing—against reality—the quality of an architectural object."<sup>32</sup>

This emphasis on perspective's mathematical origins seems at odds with their frequent condemnation within the realm of architectural representation for their picturesque (and therefore imprecise or overly-subjective) qualities. Yet within larger artistic debates, architectural perspective was often repudiated as cold and scientific in comparison to the painterly genius behind pictorialism. This was the painter Étienne-Jean Delécluze's view. Writing in the *Journal des débats* in 1859, Delécluze (1781–1863) labeled the scientific principles behind architectural perspectives as fundamentally anti-picturesque, no more than an obedient and accurate hand.<sup>33</sup> Thomine-Berrada once again provides a historic frame for such oppositions, this time the academican Lebrun's seventeenth-century dictate that the

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<sup>31</sup> "[E]st soumise à des principes rigoureusement démontrés." Quatremère de Quincy, *Dictionnaire historique*, 220.

<sup>32</sup> Thomine-Berrada, "Pictorial," 143.

<sup>33</sup> Étienne-Jean Delécluze, "Exposition de 1859."

judgment of the eye was supreme, in response to Bosse and Desargues' claims that art required geometric rules.<sup>34</sup>

Jospeh-Adolphe-Mercier Adhémar (1795–1862), who taught perspective in his studio, which trained future students for entrance to the *École des Beaux-Arts*, responded to Delécluze in the preface to the 1859 third (and revised) edition of his *Traité de perspective linéaire*. For Adhémar, the (dialectical) value of perspective lay in its simultaneous accommodation both of pictorial inventiveness and mathematical rules. “I have never said that geometry could replace the picturesque, yet nor should we say that the picturesque can replace geometry.”<sup>35</sup> Geometry provided a first template to structure basic geometric volumes; it then guided the placing of more complex architectural elements in compositions. It was at this point “that skill in drawing becomes necessary, for geometry no longer suffices, just as the eye cannot suffice to determine with exactitude the main lines of a painting.”<sup>36</sup> This succession of artistic facture upon a geometric template recalls the practice of engravings made from photographs. As discussed at length in the second chapter, in these examples the engraver's intervention modulated and in certain cases corrected the forms and details recorded by photography.

The 1845 election of an architect to the *École des Beaux-Arts*' Chair in Perspective (previously, the title had been held only by painters) might seem to have favored an exclusively

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<sup>34</sup> Thomine-Berrada, “Pictorial,” 144.

<sup>35</sup> Adhémar, preface to *Traité*, xxxi. The preface is dated 25 July 1859. Translation from Thomine-Berrada, “Pictorial,” 144.

<sup>36</sup> Adhémar, preface to *Traité*, xxxi. The preface is dated 25 July 1859. Translation from Thomine-Berrada, “Pictorial,” 144.

scientific approach, but this was not the case.<sup>37</sup> As Ghoche notes, Constant-Dufeux's candidacy, while controversial and far from unanimous, was supported not only by his experience with mathematics and his work with engineers, but also by his demonstrated ability in painterly perspective and his friendship with many artists.<sup>38</sup> While Thomine-Berrada claims that Constant-Dufeux's "highly symbolic vision of architecture ... indicates the school's lack of interest in the technical content of its courses and its positive concern to promote a pictorial approach to architectural representation," Ghoche's opinion is more nuanced.<sup>39</sup> Constant-Dufeux sought to unite the two streams of nineteenth-century perspective—scientific and pictorial—just as he conceived of the arts as branches of the same tree. He rejected the demand that separate courses should be held for architects, painters, and sculptors, and sought a just medium between them. For Constant-Dufeux, scientific accuracy and pictorial feeling could be conjoined truthfully. As the architect Eugène Godeboeuf eulogized in 1871, Constant-Dufeux "was especially delighted that perspective would henceforth be taught by an artist who, without abandoning rigorous diagrammatic theory, would easily manage to introduce his students to the effects that can be generated by feeling."<sup>40</sup>

While previous competitions in the perspective course at the *École des Beaux-Arts* had generally chosen abstract, neoclassical subjects, those set by Constant-Dufeux reflected his

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<sup>37</sup> On Constant-Dufeux's election, see Ghoche, "Symbolic," 168–71.

<sup>38</sup> Ghoche, "Symbolic," 168–69.

<sup>39</sup> Thomine-Berrada, "Pictorial," 146.

<sup>40</sup> "S'il fut heureux d'occuper cette chaire, dans laquelle il succédait à un homme distingué, il le fut surtout de ce que la perspective allait être enseignée par un artiste qui, sans abandonner la théorie rigoureuse des tracés, arriverait plus aisément à initier son auditoire aux effets que peut faire naître le sentiment." *Discours prononcés*, 9. Translation from Thomine-Berrada, "Pictorial," 146.

interests in archaeology and history. As Ghoche notes, these also allowed him to raise the utility of perspective as a matter of optical calibration. The first competition given to architecture students in 1849 was for an Etruscan tomb at Agrigento. Constant-Dufeux presented the tomb's four engaged, canted columns as exemplary of Vitruvius's belief in the need for optical corrections for the sake of visual effect. As Ghoche summarizes, "This demonstrated the teacher's keen awareness that perspective was not simply a tool for depicting the world, but that it also provided real lessons on how to better calibrate the form of an object in connection with its visual reception."<sup>41</sup> Earlier, Thibault had also noted the projective value of perspective. Not only could it be used to present a design to the client and to the public, it also enabled the architect to judge the effect of its proportions: perspective "teaches architects how to give suitable proportions to the different parts of a building without having to worry that these will lose their presumed beauty when they are built."<sup>42</sup> Echoing Durand's worry about the poverty of orthogonal representation for communicating actual effect, Thibault continued:

It may happen that an architect, ignorant of perspective, may present the orthogonal elevation of a building with agreeable proportions and details, which in the drawing are pleasing to the eye, but which lose their elegance in execution. Sometimes, these may even disappear wholly or partially, hidden by some projection or unforeseen obstacle.<sup>43</sup>

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<sup>41</sup> Ghoche, "Symbolic," 183.

<sup>42</sup> "Elle leur apprend à donner des proportions convenables aux différentes parties d'un édifice, sans craindre que, dans l'exécution, elles perdent rien de leur beauté présumée." Thibault, *Application*, 12.

<sup>43</sup> "En effet, il peut arriver qu'un architecte ignorant la Perspective, présente l'élévation géométrale d'un édifice avec des proportions et des détails agréables, qui dans le dessin plaisent à la vue, mais qui dans l'exécution perdent leur élégance, et même quelquefois disparaissent en tout ou en partie, cachés par quelque saillie, ou quelque obstacle imprévu." Thibault, *Application*, 12.

If for Duban and Viollet-le-Duc photography's capacity to reveal unseen details forced the architect to adopt a greater degree of care in their restorations, whether or not these details would be visible to an observer, for Thibault, perspective forces the correct apprehension and judgment of details beforehand. He continued:

But the architect, knowledgeable in the laws of this science, while never suffer such accidents if he or she has foreseen the optical effect produced by his or her finished project; if he or she has given it proportions favorable to this effect and avoided details, which are often too expensive and always useless when they cannot be seen.<sup>44</sup>

Adh mar himself addressed the need for optical correction in perspective drawing with a Parisian example in his 1836 *Traite de perspective*. Considering drawings of the Cathedral of Notre-Dame, Adh mar begins by claiming that the building could not be drawn correctly from its *parvis*: the result would be either too symmetrical or else distorted by the wide angle required for an oblique view of the main fa ade. Adh mar would surely have criticized Lerebours's daguerreotype of the fa ade according to this first criteria; the vantage point offered from the rooftops along the rue Neuve Notre-Dame allowed photographers to produce relatively undistorted elevation photographs of the cathedral's main fa ade (fig. 4.4).<sup>45</sup> Adh mar does allow, however, that Notre-Dame was one of the few Parisian monuments that could be correctly represented from a physical location. The intersection of the rue des Bernardins, the quai de la Tournelle, and the pont de l'Archev ch  offered not only the best viewpoint for an artist drawing *in situ*, but also the correct station point for a geometric

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<sup>44</sup> "Mais l'architecte, instruit des lois de cette science, n' prouvera jamais de pareils accidents, s'il a pr vu d'avance l'effet optique que produira son projet ex cut ; s'il lui a donn  des proportions favorables   cet effet, et s'il a  vit  d'y mettre des d tails souvent trop dispendieux et toujours inutiles lorsqu'ils ne peuvent  tre vus." Thibault, *Application*, 12.

<sup>45</sup> Among others to do so were the Bisson fr res and  douard Baldus.

construction of the cathedral. As seen in Adhémar's perspective, the void created by the River Seine permitted the monument to be grasped as a whole (fig. 4.5). Such a viewpoint was also available to the photographer, as demonstrated by Édouard Baldus's view, likely made in 1852 or 1853 (fig. 4.6).<sup>46</sup> Baldus's photograph is taken from slightly further to the east on the quai des Tournelles; whereas Adhémar insisted on keeping a visible space between the two towers, Baldus has allowed them to overlap slightly. The photographer's framing is slightly tighter to the monument, and reveals that Adhémar has straightened the embankment of the Île de la Cité.

This was not to be Adhémar's only license in his constructed view of Notre-Dame. In his instructions, Adhémar dwelt at length upon the problem of the cathedral's towers: the southern tower (closer to the viewer) was shorter than the northern tower. As Adhémar observed, "one would not believe how such a small irregularity can nevertheless destroy the illusion by changing the proportions which must result from relative distances."<sup>47</sup> It was therefore crucial to manually correct this difference in heights. After all, Adhémar noted, "in the arts, it is not enough to make something that is true [*vrai*]; what we do must also be truthful [*vraisemblable*]."<sup>48</sup> It was for this reason that a tourist or an architect could make an interesting drawing of the leaning tower of Pisa, but no one could produce a good painting. Truth could serve the voyager inclined towards curiosity, or the architect lusting for infinite

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<sup>46</sup> While the J. Paul Getty Museum dates the image to 1850–59, *Photographs of Édouard Baldus* offers the more precise date of 1852–53. See Daniel, *Photographs of Édouard Baldus*, 131 and 223.

<sup>47</sup> "On ne saurait croire combien que irrégularité, si peu grande en apparence, peut cependant détruire l'illusion en changeant les rapports de grandeur qui doivent résulter des distances relatives." Adhémar, *Traité*, 251.

<sup>48</sup> "[D]ans les arts, il ne suffit pas de faire quelque chose de vrai, il faut encore que ce que l'on fait soit vraisemblable." Adhémar, *Traité*, 251.

detail, but the painter needed to follow strictly the conventions of truthfulness, which often clashed with actual appearance. Such injunctions run contrary to Adhémar's request that painters take better account of mathematical perspective.<sup>49</sup> Even the most strictly mathematical approach was not above bowing to artistic convention.

### **A Machine for Producing Perspectives**

In *Before Photography* (1981), the historian of photography Peter Galassi links the invention of photography to the tradition of linear perspective in the visual arts, claiming, "the camera was a tool of perfect perspective."<sup>50</sup> This equation of the optical apparatus with correct representation is commonplace; in the first chapter, we saw many examples in which it was made on the subject of ornamental detail. Elsewhere in the same essay, however, Galassi quotes the painter Edward Hopper, who complained the photographs of architectural details he made were "always so different from the perspective the eye gives," leading him to abandon the practice.<sup>51</sup> As we shall later see, for Galassi such criticisms have more to do with using the camera to produce some types of perspectives at the expense of others. However, the historian of architectural photography Cervin Robinson also notes that photographically produced perspectives were often "optically correct but conventionally odd," suggesting divergences between different methods of accurate spatial depiction.<sup>52</sup>

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<sup>49</sup> Adhémar, *Traité*, xvii–xliii.

<sup>50</sup> Galassi, *Before Photography*, 17.

<sup>51</sup> Galassi, *Before Photography*, 18. Quotation from Brian O'Doherty, "Portrait: Edward Hopper," *Art in America* 52, no. 6 (1964): 77.

<sup>52</sup> Robinson and Herschman, *Architecture Transformed*, 58.



Many nineteenth-century writers worried over the correctness of photographic perspective. Writing in 1894, the French engineer and instructor at the École Polytechnique, René Colson, observed

The faithfulness [*fidelité*] of perspective and of effect is a capital question for Photography. Isn't it, in effect, the point of the medium? Mustn't we work so that the sensation procured [*sensation procurée*] for the eye by the obtained image neither elongates, shortens or deforms the perspective, thereby producing a false effect, completely different from the model?<sup>53</sup>

In *La Perspective en photographie* (1894), Colson laid out a series of principles so that photographs could produce “an exact sensation, equivalent to seeing the model.”<sup>54</sup> For Colson, this equivalency between a correct (photographic) perspective and a real scene was instinctive. However, to produce this effect, the observer's eye had to be situated at the correct viewpoint. Like Sirodot, he recognized that photography was far from a purely automatic operation. Art was required not only for the choice of a photograph's subject matter, but also to establish the criteria by which the faithfulness of a print could be judged. In turn, the means to obtain this desired effect were a matter for science.

Turning first to stereoscopic photographs, Colson noted that in these double images, only correct perspective is needed to produce an accurate effect. Single images, however, require not only perspectival faithfulness, but also the correct level of detail and the proper

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<sup>53</sup> “La fidélité de la perspective et de l'effet est une question capitale en Photographie. N'est-ce pas là, en effet, le but même du procédé? Et ne doit-on pas s'efforcer d'éviter que la sensation procurée à l'œil par l'image obtenue allonge, raccourcisse, déforme la perspective, et produise un effet faux, tout différent du modèle?” Colson, *Perspective en photographie*, v.

<sup>54</sup> [U]ne sensation exacte, conforme à la vue du modèle” Colson, *Perspective en photographie*, 69.

accentuation of tones in paintings. These conditions equally applied to photography to guarantee “the faithfulness [fidélité] and truth of the rendered effect [*l’effet rendu*].”<sup>55</sup> The majority of *La Perspective en photographie* is then dedicated to the construction of perspective from a precise viewpoint; the distortions that would ensue should the eye be displaced from that privileged point, and the role of lenses, as well as the choice of focal length and image size in producing a correct image. Colson also presented methods for correcting erroneous perspectives. In keeping with the practice of nineteenth-century experiments with photography, but also in a proleptic vision of the meta-data now embedded in digital photographs, Colson concluded with the hope that the distance of the exact viewpoint and its allowable tolerance would be marked on photographs. Not only would this facilitate the correct viewing of any prints made from the photograph, it would also allow for the identification and correction of perspectival errors.<sup>56</sup>

An earlier English publication, F. W. Mills’s *Photography for Architects* (1890) considered the problem of perspectival distortion as it applied to photographing façades. To photograph a building’s exterior, an operator often found it necessary to tilt his or her camera upwards, yielding a “perspective [that] will be noticed to be, to say the least of it, a little original.”<sup>57</sup> This unhappy situation could be rectified by adjusting the camera’s swing-back, so that the photographic plate remained parallel to the object to be photographed, and therefore perpendicular to the ground. Mills suggested the use of a plumb line or the operator’s watch and chain for this purpose. Intriguingly, the need for such an adjustment was

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<sup>55</sup> “[P]our la fidélité et la vérité de l’effet rendu.” Colson, *Perspective en photographie*, 3-4.

<sup>56</sup> Colson, *Perspective en photographie*, 70.

<sup>57</sup> Mills, *Photography for Architects*, 15.

illustrated not with a photograph, but instead with the reproduction of a drawing (fig. 4.7). The sketch on the left showed the “absurd perspective” of York Minster’s South Front resulting from a failure to control the camera’s tilt, while the one on the right presented the correct result, produced by adjusting the camera’s swing-back until it was perpendicular to the ground.<sup>58</sup> Such advances in camera technology at the end of the century had partially replaced the need for Nègre and his contemporaries to find high viewpoints for their elevation photographs.

### **Logical Constructions**

The desire for photography to depict perspective with mathematical exactitude aligned it with the existing practice of French perspectival drawing. While generally mistrusted within academic circles and relegated to the realm of mathematics or painting, a longstanding tradition of tridimensional representation did exist. This tended to assume an austere, restrained aesthetic that privileged precise line work over atmospheric effects, an effect that was heightened by steel-plate engraving. Like their contemporary across the Elbe, Karl Friedrich Schinkel (1781–1841), Charles Percier (1764–1838) and Pierre Léonard Lafontaine (1762–1853) were known for their austere perspectives. Featuring strong lines and without shading, these do little to deviate from neoclassical restraint into experiential effect (fig. 4.8). The same stylistic austerity is found in Paul-Marie Letarouilly’s immense *Édifices de Rome moderne* (1840–57), an example roughly contemporary with the *Revue générale*’s Bibliothèque Sainte-Geneviève engraving. Although Letarouilly sometimes inserted figures to add local color, his drawings—especially once engraved—remained cold and impersonal (fig. 4.9). Even the magnificent watercolors in Félix Duban’s 1837 *Album du Duc d’Orléans*

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<sup>58</sup> Mills, *Photography for Architects*, 16.

are rich yet aesthetically restrained. A gift from the unfortunate French heir to the future Prussian King Friedrich Wilhelm IV, the album's views oscillate mostly between one- and two-point perspectives; interestingly, an oblique view of the Church of the Madeleine is framed within an elevation perspective (fig. 4.10).<sup>59</sup>

The further development of perspective drawings in the nineteenth-century can be seen in the 1861 competition for the Nouvel Opéra. While no perspective views were required, many competitors submitted them anyway; César Daly published several of them as engravings in the *Revue générale* (fig. 4.11).<sup>60</sup> While not among Daly's selection, Viollet-le-Duc's is striking (fig. 4.12). While clearly resulting from a painterly tradition, the image presents certain photographic qualities: the raised perspective and presence of surrounding buildings, the strong shadows highlighting both the project's distinctive massing and its decorative elements, and the way the image seems to come in and out of focus as a means of communicating both spatial depth and movement. While the advantages of such a spatialized image are clear—especially compared with the difficulty of judging depth in beaux-arts orthogonal elevations—we may speculate that the perspective view of the *Opéra* did not aid Viollet-le-Duc's cause. As Mead notes, “Viollet-le-Duc's structurally and functionally rational project was ultimately unacceptable” to the jury because “his programmatically conscientious design subordinated compositional unity to the articulation of the building's individual

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<sup>59</sup> On the *Album du Duc d'Orléans*, see Mathieu, “L'Album du Duc d'Orléans.” Mathieu claims the album was offered to Friedrich Wilhelm on the occasion of the Duc d'Orléans's wedding to Duchess Hélène of Mecklenburg-Schwerin, a match arranged by the Prussian heir. Friedrich Wilhelm was himself known as a keen patron of architecture; close to the architect Karl Friedrich Schinkel, he met with Pierre-François-Léonard Fontaine in Paris in 1814. Mathieu, “L'Album du Duc d'Orléans,” 210.

<sup>60</sup> The *Revue générale* published nine perspective views of competition projects for the Nouvel Opéra. See *Revue générale de l'architecture et des travaux publics* vol. 19 (1861): pl. 27, 29–31, 35, 40.

parts and spaces.”<sup>61</sup> While revealing the unifying effect of Viollet-le-Duc’s choice of French renaissance classicism, the perspective shows the sequence of distinct volumes, expanding both vertically and horizontally, that form the composition.

Viollet-le-Duc’s *Opéra* perspective can be compared to certain photographs by Édouard Baldus. While in the previous chapter we saw his remarkable success capturing elevations frontally, Baldus occasionally photographed monuments from an angle. As Barry Bergdoll notes, Baldus “allowed himself an oblique perspective only when it would underscore the volumes of the building.”<sup>62</sup> This is the case in his view of the Church of Saint-Germain l’Auxerrois in Paris, made between 1854 and 1857 (fig. 4.13). Baldus’s editorial decision to excise the church’s surroundings from the final print only emphasizes its volumetric form.

Just as Baldus’s photographs occasionally aligned with the French tradition of oblique perspectives, it is quite possible that the Bisson frères’ did as well. The historian of photography Marie-Noëlle Leroy notes that from 1852—the year in which they made their photograph of the Bibliothèque Sainte-Geneviève—the Bisson frères sought to penetrate the specialized market for architectural photographs. Seeking a way to distinguish themselves, they experimented with close-up views, “putting in evidence the façade, avoiding other distractions.”<sup>63</sup> Leroy notes that by avoiding the frontal vision so common in architectural photographs of the time, the Bisson frères’ 1852–53 photographs of the Alhambra “obtained a far

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<sup>61</sup> Mead, *Architectural Empathy*, 76.

<sup>62</sup> Bergdoll, “Matter of Time,” 107.

<sup>63</sup> “Mettant en évidence la façade, évitant ainsi de distraire l’attention.” Leroy, “Monument photographique,” 92.

greater effect of depth, all while giving more information.”<sup>64</sup> Their photograph of the Bibliothèque Sainte-Geneviève taken a few months later clearly fulfills this desire (fig. 4.14). They positioned their camera at the corner of rue Clovis and rue Clotilde—the only location from which the entirety of the façade could be captured.<sup>65</sup> Oblique, their chosen view presents the library as a unified and prismatic object.

The *Revue générale*'s Bibliothèque Sainte-Geneviève plate was unique not only as a precocious example of the use of a photograph as the basis for an engraving (see chapter 2), but also as a perspective view, given the architectural press' almost complete reliance on orthographic imagery at that time (fig. 4.15).<sup>66</sup> It is also remarkable for the alignment between architectural and photographic vision it exemplifies. If Nègre and Baldus's elevation photographs responded to the academic preference for orthogonal imagery, the Bisson frères' photograph certainly followed Labrouste's affinity for perspective. In his article on the *Revue générale*'s Bibliothèque Sainte-Geneviève perspective, Neil Levine argues that Labrouste “clearly thought in perspective,” using it for both design and representation.<sup>67</sup> As a student at the École des Beaux-Arts, he drew small interior perspectives in his sketchbooks. As a *pensionnaire* in Italy, Labrouste studied the illusionistic architectonic forms in Roman

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<sup>64</sup> “[O]btient une sensation de profondeur beaucoup plus importante, tout en donnant plus d’informations.” Leroy, “Monument photographique,” 86.

<sup>65</sup> As Levine notes, the left edge of the photograph, which is disturbed by the platform of the Panthéon and its railing, has been cropped in the engraving. Levine, “Template,” 325–27.

<sup>66</sup> Levine notes that of the sixty-odd engravings of the Bibliothèque Sainte-Geneviève published in the architectural press—including coverage in the *Encyclopédie d’architecture*, *The Builder*, and the *Allgemeine Bauzeitung*, only the *Revue générale*'s exterior view was a perspective. Levine, “Template,” 311 and 330n26. The popular press, however, did publish perspectives; for example, *L’Illustration*'s interior view of the reading from January 1851.

<sup>67</sup> Levine, “Template,” 322.

wall paintings and pre-Renaissance frescoes by Giotto and others. His *envois* were famous for their perspective views of the temple of Hera I at Paestum and his design for a frontier bridge between France and Italy, and he continued to use perspectives in his professional work upon his return.<sup>68</sup> While the use of photography is tied to an urge to document that which already exists in the world, a rapid sketch made by Labrouste in 1839—well before the start of construction and therefore before the Bisson frères' photograph—utilizes a similar, oblique viewpoint (fig. 4.16). Levine—who claims Labrouste commissioned the Bisson frères—imagines the architect standing over the photographer's shoulder, positioning the camera exactly as he wished.<sup>69</sup> While photography provided Labrouste with a useful tool to produce an engraving to his liking, in no way did it modify his point of view.

In *Before Photography*, Peter Galassi challenges the teleological notion that the invention of photography was a disruptive moment, one that precipitated new formal developments in painting and other arts. Instead, Galassi argues that photography arrived at a propitious moment in which the rise of a new form of pictorial coherence aligned with the particular visual qualities of photographs.<sup>70</sup> Using paintings as examples, Galassi distinguishes between two forms of perspective views: “logical constructions” and “selective descriptions.” In the former, three dimensions are constructed out of two, while in the latter, a flat image was derived from “a given three-dimensional world.”<sup>71</sup> Galassi's comparison of the Urbino *Ideal City* panel (c. 1480–90) with Emanuel de Witte's *Protestant Gothic Church* (1669) illus-

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<sup>68</sup> Levine, “Template,” 318–23.

<sup>69</sup> Levine, “Template,” 325.

<sup>70</sup> Galassi, *Before Photography*, 11–12.

<sup>71</sup> Galassi, *Before Photography*, 18.

trates the distinction between these visual conceptions (figs. 4.17 and 4.18). In the former, the painting's composition echoes the classical symmetry of the architectural scene. The receding perspective is calibrated by the piazza's grid, which in turn organizes the pictorial space. If the viewer stands outside the timeless space of the Urbino panel, he or she is placed inside the contingent pictorial space of de Witte's visual fragment. In this Dutch painting, the oblique view and tight cropping are unrelated to the church's architectural form; Galassi goes so far as to claim, "The momentary play of light and shade ... obscures the architectural logic."<sup>72</sup> While this statement may accord with certain Renaissance or neoclassical conceptions of architecture, it is at odds with the nineteenth century's increasingly fragmenting and fragmentary visual culture.<sup>73</sup>

Galassi situates photography's emergence within this tradition of "selective descriptions," which favored the subjective participation of the viewer, discontinuous forms, the singular, and the contingent. Turning to nineteenth-century visual culture, Galassi linked early photography to the emergent realist bent in landscape *études* (sketches made from nature). In these drawings, painters set aside the neoclassical realism of the *ébauche* (compositional study) to develop "the syntax of an art devoted to the singular and contingent rather than the universal and stable."<sup>74</sup> The guarantee of realism is assured by that which is incidental to the subject of the image: "It is precisely the mediating conditions of perception—the cropping frame, the accidents of light, the relative point of view—that makes the pictures

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<sup>72</sup> Galassi, *Before Photography*, 13.

<sup>73</sup> On the nineteenth century's fragmentary visual culture, see Rosen and Zerner, *Romanticism*.

Galassi notes that in painting, the "willfully fragmentary and internally discontinuous" view offered by this and other Dutch sixteenth century works became common in the late nineteenth century. See *Before Photography*, 14.

<sup>74</sup> Galassi, *Before Photography*, 25.



here seem real.”<sup>75</sup> Visible in paintings by John Linnell, J.-B.-C. Corot, and John Constable, this emphasis on partiality and the moment was also the syntax of photography. Instead of a world constructed in the artist’s studio, these images were extracted from an exterior world recognized “as an uninterrupted field of potential pictures.”<sup>76</sup>

Among the photographs Galassi included in *Before Photography* is the Bisson frères’ fragmentary view of the panel of the Saint-Marcel Portal, also known as the Sainte-Anne Portal, at Notre-Dame (fig. 4.19). This photograph was one of twelve taken by the Bisson frères and included in the 1853 *Monographie de Notre-Dame de Paris*, which also featured steel engravings and chromolithographs.<sup>77</sup> Unsurprisingly, Galassi chose to include this close-up and not the *Monographie*’s first plate, the Bisson frères’ almost faultless frontal view of the cathedral under restoration (fig. 4.20). As an elevation photograph, it lacked the fragmentary and contingent nature Galassi was seeking.

### Selective Depictions

Photography, after all, could produce both logical constructions and selective descriptions, following in either visual tradition where required to do so. The *Revue générale*’s Bibliothèque Sainte-Geneviève engraving clearly belong to the earlier, compositional traditional of perspectives. While made from the Bisson frères’ photograph, we have seen how the contingent aspects of this image were excised in favor of architectonic legibility: a slice of the real was distilled in the engraver’s studio, and purified of its reality in the process. A

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<sup>75</sup> Galassi, *Before Photography*, 27.

<sup>76</sup> Galassi, *Before Photography*, 16.

<sup>77</sup> On the *Monographie de Notre-Dame*, see Jean-Michel Leniaud’s introduction to the 2008 facsimile edition.

new series of images that appeared in the French architectural press around 1870 evidently belong to Galassi's second category. While such images may have pictorial antecedents in a painterly chain stretching from De Witte to Degas, they were antithetical to the prevailing, codified strictures of drawn architectural representation, which now began to respond to the contingent and scopic qualities of photographs. These images belong to a larger reassessment of three-dimensionality in French architectural representation and experiential spatiality in practice.

As we have seen previously with the example of Labrouste and the Bibliothèque Sainte-Geneviève, Daly's *Revue générale* had indeed published perspectives prior to 1870. Most notably, it published perspective views of Labrouste's Hôtel de Mr. Fould in 1858 as well as the series on the competition entries for the Nouvel Opéra in Paris.<sup>78</sup> However, these were clear exceptions. A turning point came in 1872. Between 1861 and 1871, only twenty-eight of the plates published by the *Revue générale* were in perspective, an average of less than three per year across these ten volumes. However, the following ten volumes, published between 1872 and 1881, contain 102 perspectives among the plates—over ten per year. These perspectives took many forms: many preserved the unity of the building while presenting it in its context (be it urban or picturesque), while others depicted historic subjects.<sup>79</sup> Significantly, an important number present a radically new framing—or cutting—of the architectural object.

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<sup>78</sup> Three perspective views of the Hôtel de M. Fould were published in the *Revue générale de l'architecture et des travaux publics* vol. 16 (1858), pl. 8, 9, 10.

<sup>79</sup> "Hôtel privé, boulevard Exelmans, à Auteil. Vue perspective," *Revue générale de l'architecture et des travaux publics* 30 (1873), p. 59 (picturesque); "Monument élevé à la mémoire du maréchal Moncey, Place de Clichy, à

In 1874, the *Revue générale* published six plates of Aimé Sauffroy's new headquarters for *Le Figaro*. Three of these plates are perspectives. Eschewing a strict elevation, the first shows the main façade in a lightly asymmetric perspective.<sup>80</sup> While there is no evidence to prove this engraving is traced from a photograph, the possible vertical elongation caused by the upward tilt of the camera lens is palpable. A second perspective view of the Salle du Public is unremarkable, save perhaps for the degree of precision and the level of detail, lacking significant hierarchical differentiation.<sup>81</sup> However, a third view of the entrance vestibule is stunning (fig. 4.21). Not only is its chiaroscuro quality quite remarkable, providing a highly modulated depiction of three-dimensional space, but the framing is shocking, giving the impression of instantaneous snapshot rather than the considered and deliberate drawing for which the *Revue générale* was famous.

Taken together—and in spite of the vestibule perspective's radical framing—the engravings of the Hôtel Figaro present a unified and in many ways conventional summary of a building, as seen through its principal spaces. However, a second example from the *Revue générale* offers a more exploratory gaze, one that seems to scope the architectural object. In 1872, the *Revue générale* published two perspectives of the Antoine-Isidore Eugène Godeboeuf's new headquarters for Ministère de l'agriculture, du commerce et des travaux publics in Paris. An interior view offers a rather abstract composition depicting an interior passage and the entrance (fig. 4.22). This view explores a fragment of space, in which care-

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Paris," *ibid.*, vol. 29 (1872), pl. 35 (urban); "Tourelle, rue Hautefeuille, à Paris (XVIe siècle)," *ibid.*, vol. 30 (1873), pl. 13 (historic) provide singular examples from each category.

<sup>80</sup> "Hôtel du journal *le Figaro*, rue Drouot, à Paris. Façade principale en perspective," *Revue général d'architecture et des travaux publics* 31 (1874), pl. 46.

<sup>81</sup> "Salle du Public," *Revue général d'architecture et des travaux publics* 31 (1874), pl. 49.

fully modeled shadows accentuate the effect of three-dimensional depth. The level of detail is equal across the image. A second perspective, similar in its graphic language, shows a more complex space, including the interior court and a vaulted passageway (fig. 4.23). These two perspectives are all the more stunning given that they are the only two views published by Daly of Godeboeuf's imposing building. No general interior or exterior view is provided. These two images seem to respond to a form of curiosity, the pleasure of a visual—and dynamic—penetration of a space, rather than to any desire to present or to understand the building as a unified ensemble.

While the *Revue générale*'s engravings took many representational in the 1870s and 1880s, what unites the more traditional perspectives with their radical colleagues is the idea that the building has become a field of visual experience, one which can be grasped through a range of views, each in itself a moment in time and space. Certain views offer images of a unified architectural object; others present a fragment cut free from its context. Other publications also experimented with such fragmentary views. Over a decade earlier in the United Kingdom, *The Builder* published two engraved views of Deane and Woodward's Oxford Museum as it neared completion in 1859. The first of these, delineated by Benjamin Sly and engraved by John Smith Heaviside, is particularly striking, given its slight angle and tight cropping, suggesting a highly photographic survey of the building, unlike any architect's sketch or drawing (fig. 4.24). The accompanying article confirms this suspicion: "The new Museum is approaching completion, and we publish in our present number two views of the exterior, from photographs of the actual building."<sup>82</sup> Here the text serves to assure the

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<sup>82</sup> "University Museum," 252.

reader that *The Builder*'s illustrations faithfully reproduce the building itself, and not its representation.<sup>83</sup>

This shift towards perspectival—and often “photo-scopic”—imagery is made clear by a comparison of two major French government publications, one from the second quarter of the nineteenth century, the other from its penultimate decade. As we have seen previously, the plates in the *Choix d'édifices publics* were strictly orthogonal. In contrast, the four volumes of Félix Narjoux's *Paris, Monuments élevés par la ville* (1880-1883), contain no less than 148 perspective views. Often a single building would be the subject of multiple three-dimensional views; in the exceptional case of Louis Duc's Palais de Justice, eighteen such views are included. While these perspectives are most commonly found as figures inserted in the text, nevertheless 73 of the 292 large engraved plates are also perspectives, without counting bird's-eye views. While orthographic representations still predominate, buildings not illustrated by at least one perspective are rare. Many of these assume a fragmentary quality, such as this view of vestibule at the Théâtre de la gaité (fig. 4.25). Later in the 1890s, the periodical *La Construction Moderne* published many such engravings, including a view of the old Hôtel de Ville in Bourges, notable for the way both the base and the top of the tower are cropped (fig. 4.26). We may only speculate as to the position of the artist or photographer responsible for such a close-up image.

### **A Moving Subject and Serial Imagery**

If Daly's *Revue générale* represented an orthodox position within Second Empire architectural circles, Viollet-le-Duc's *Gazette des architectes et du bâtiment* saw itself as avant-

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<sup>83</sup> Richardson and Thorne, “Introduction,” 21, 25–26.

garde.<sup>84</sup> In its first years, the *Gazette des architectes* was particularly concerned with the question of architectural representation. In his “Preliminary Article,” Viollet-le-Duc *fits* declared that the *Gazette des architectes*’ illustrations were “far more than the text, the demonstration of the figured object, and in this way, take precedence over the explanations.”<sup>85</sup> Often preferred to the text, images occupied a dominant place within its pages, and were themselves the subject of frequent experiments. It is no accident that one of the most significant articles published by the *Gazette des architectes*, the Swiss aesthetician David Sutter’s “New Treatise on Perspective,” was entirely devoted to drawing. It appeared in multiple fascicules across three years. Based upon a highly detailed analysis of the physiology of the human eye, Sutter’s study of the art of perspective is a highly scientific exploration. Through this analysis of the mechanisms behind optical perception, Sutter sought to establish positive rules for drawing and painting. “The law of the canvas,” he wrote, “is the law the eye.”<sup>86</sup>

All of the images published in the *Gazette des architectes* from 1863 to 1871 were engraved on copper plates using Xavier Conte’s new technique. Less expensive than intaglio engraving on steel plates, this technique derived from lithography offered above all the possibility to print text and image on the same page.<sup>87</sup> The *Gazette des architectes*’ illustration assumed a didactic role to explain the functioning of objects and especially their construction. Remarkably, an axonometric view appears several decades before Auguste Choisy adopted this

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<sup>84</sup> On the *Gazette des architectes et du bâtiment*, see Bouvier, *Édition d’architecture*.

<sup>85</sup> “[B]ien plus encore que le texte, la démonstration de l’objet figuré, et viennent de cette manière au-devant des explications.” Viollet-le-Duc, “Article préliminaire,” 3. Quoted in Bouvier, *Édition d’architecture*, 103n29.

<sup>86</sup> “La loi du tableau ... c’est la loi de l’œil.” Sutter, “Nouveau traité” 213.

<sup>87</sup> Bouvier, *Édition d’architecture*, 103.

technique; co-incidentally, it appears in a volume containing one of Choisy's first articles.<sup>88</sup> As Béatrice Bouvier notes, from its onset the *Gazette* heavily favored perspective views, unlike its predecessor, the *Encyclopédie d'architecture*, which had preferred orthogonal representations.<sup>89</sup>

In that same issue, the *Gazette des architectes et du bâtiment* began a long reportage on the newly restored and enlarged house of the famous *couturier* Charles Frederic Worth in Suresnes, which appeared over two volumes between 1868 and 1871. Designed by Viollet-le-Duc's former student and assistant, Denis Darcy, the Maison Worth (1865–69) stood on a large site to the west of Paris between the fortress of Mont-Valérien and the Bois de Boulogne.<sup>90</sup> In his text, Anatole de Baudot remarked, "This house was not conceived according to an overall plan; it is the result of additions and successive transformations. Nevertheless, it is very interesting from diverse points of view."<sup>91</sup> These "diverse points of view" are explored through a remarkably heterogeneous series of forty-three engraved illustrations. In addition to orthographic views and diagrammatic details, no less than eighteen of these were perspectives. The first of these depicts the entirety of the Maison Worth from a bird's-eye perspective, allowing for the complex ensemble to be grasped (fig. 4.27). De

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<sup>88</sup> "Chaire dans l'église abbaye des moines bénédictins à Fulda (province de Hesse), en Prusse," *Gazette des architectes et du bâtiment* 7 (1869–71), fig. 53; Choisy, "L'Économie."

On the affinities between Choisy's axonometry and the pictorial tradition surrounding Viollet-le-Duc and his rationalist school, see Bressani, "Surintelligibilité et fantastique."

<sup>89</sup> Bouvier, *Édition d'architecture*, 104.

<sup>90</sup> The Maison Worth was demolished in 1892; in the 1930s, the Hôpital Foch was built on the former site.

<sup>91</sup> "L'habitation dont il s'agit n'a pas été conçue sur un plan d'ensemble, et n'est que le résultat d'adjonctions et de transformations successives. Elle est néanmoins fort intéressante à divers points de vue." Baudot, "Propriété de M.," 169.

Baudot assures his readers that this view, together with the site plan, reveals “the general arrangement, as well as the place occupied by each of the parts on this house, which is a little disjointed, but of very picturesque effect and full of joy.”<sup>92</sup> Another perspective gives a general view of the house, this time from the point of view of a visitor looking upwards from its sloping courtyard towards the jumble of volumes that form its main wing (fig. 4.28). To the right, the glazed winter garden, which serves to connect the main house to its dining room and kitchen, can be glimpsed behind a tree.

This view from the dining room towards the adjoining winter garden was the subject of an interior perspective (fig. 4.29). No single element holds focus in this engraving, which seems equally intended to explore the play of light upon the dining room floor, the dense foliage in the winter garden, and the delicate woodwork forming the wall between them. The view does not capture the dining room as a whole—there is no large table, and we see only a fractions of its floor, ceiling, and walls. While de Baudot had appreciated the asymmetry of certain elements in the dining room’s design—especially a circular staircase and dumb waiter providing a link to the kitchen and cellar [*office*]<sup>93</sup>—its effect cannot be judged from this partial view. Far more than depicting any single object, or giving a complete impression of a room, this perspective “scopes” a moment of heightened spatial interest, revealing the visual pleasure that is to be unlocked through a dynamic exploration of the Maison Worth.

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<sup>92</sup> “À l’aide du plan général et de a perspective à vol d’oiseau, on peut se rendre compte de la disposition générale, ainsi que de la place occupée par chacune des parties de cette habitation, un peu décousue, mis d’un effet très pittoresque et plein de gaieté.” Baudot, “Propriété de M.,” 174.



Two views of the Maison Worth's second floor library provide key examples of the subtly different forms this spatial scoping could assume. Rectangular in plan, the library was designed with two raised alcoves [*loges*] for reading. The first view focuses upon a single alcove, showing Darcy's efforts to gently distinguish it from the main space, as well as his care in arranging the woodworking and tapestries decorating the room (fig. 4.30). Although the library as a whole is not grasped, the moment of visual interest in this image corresponds to a discrete architecture object: the alcove. This is not the case with a second perspective (fig. 4.31). It is hard to identify a single object as a point of focus for this image. Could it be the steps leading to the raised alcove, or the balustrade that becomes a table to its side? In fact, the real, palpable focus of the image appears to be the sunlight streaming through the stained-glass window, lighting the wooden steps and floor. Once again focused upon a moment of visual interest and not a complete space, the engraving this time depicts not a discrete object but rather an ambience, a spatial atmosphere revealed through a dynamic perception of the building.

Together, these perspectives form a strange spatial collage.<sup>93</sup> While certain views present the integrity of the Maison Worth as a whole, most work to dissolve it scopically into a series of autonomous fragments. It is unknown if these perspectives were actually traced from photographs, but the series clearly give the impression of a free photographic scanning. The framing of the images is frequently unusual, as it cuts through architectural elements in an

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<sup>93</sup> The increasingly serial and cumulative nature of architectural imagery in the late nineteenth-century took many guises. Eve Blau has studied the meaning created by the ordering and re-ordering of images in Thomas Annan's *Glasgow Improvements Act* (1871), *Photographs of Old Closes* (1878), and *The Old Closes* (1900). See Blau, "Patterns of Fact," 45–50. Robert Elwall has noted how the English magazine *Country Life*'s use of serial imagery to describe the experience of visiting rural estates. See Elwall, "Photography Takes Commands," 35–36.

almost haphazard manner. The level of detail is even across the images, which take on a heavily three-dimensional character thanks to a strong play of light and shadow.<sup>94</sup> Above all, an uncanny feeling of the eye's free roaming is felt throughout the set of images. Apart from the bird's-eye view, the viewer does not survey the whole from an idealized viewpoint; instead, he or she becomes a subjective visitor, wandering through an infinite field of possible views, pausing at moments of heightened visual interest. These images respond to a visual curiosity—or visual pleasure—in the dynamic comprehension of space rather than to any desire to comprehend a unified whole.

While humans lacked the divine capacity for perfect orthogonal vision — “man, in his infirmity, grasps only shortcuts everywhere” — Charles Blanc nevertheless celebrated the richness of their changing visual surround so clearly evident in the *Gazette des architectes*' views of the Maison Worth.<sup>95</sup> Writing in his *Grammaire des arts du dessin* (1867), Blanc claimed that a human “promenades his intelligent gaze and each of his movements causes his point of view to change. The rays converge of their own volition to form an ever-changing spectacle, always new.”<sup>96</sup> Far from being faulty, this made perspective into “the ideal of visible things,” but this ideal was pleasantly evasive.

[It] escapes us and runs away. Always within reach of our gaze, it is always beyond our grasp. As man advances towards his horizon, the horizon retreats before him,

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<sup>94</sup> Without speculating as to their possible photographic origins, Béatrice Bouvier praises Chateaubert's illustrations of the Maison Worth as exemplary of a perfect mastery of the Comte technique. See Bouvier, *Édition d'architecture*, 104.

<sup>95</sup> “[L]’homme, dans son infirmité, n’en saisit partout que des raccourcis.” Blanc, *Grammaire*, 513.

<sup>96</sup> “[I]l y promène son regard intelligent, et, chacun de ses mouvements faisant varier son point de vue, les lignes viennent d’elles-mêmes y concourir et lui former un spectacle toujours changeant, toujours nouveau.” Blanc, *Grammaire*, 514.

and the lines that seem to converge in the furthest distance remain eternally separated in their eternal convergence. It is as if man carries with him a sort of mobile poetry which obeys the will of his movements, and which seems to have been given us to veil the nudity of the true, to correct the rigor of the absolute, and soften for our eyes the inexorable laws of divine geometry.<sup>97</sup>

The inability to grasp the objective truth of the orthogonal was amply compensated by the magnificent spectacle available to an ambulant, observing subject. If Renaissance perspective had posited the human viewpoint as the center of the visual world, the nineteenth century not only fragmented this gaze, it also recognized its productive mobility.

Whether in the *Revue générale*'s coherent, virtual tour of the Tower House's major spaces (discussed in chapter 2), or in the *Gazette des architectes*' more heteroclit presentation of the Maison Worth, a clear paradigm of subjective spatial perception is evident. The representational transformation of architecture from a neoclassical ideal best understood through orthographic projections to a proto-modernist paradigm whereby it becomes a fragmented field with moments of heightened visual significance corresponds to nineteenth-century architects' growing interest in space. In his 1863 *Entretiens sur l'architecture*, Viollet-le-Duc put forth such a dynamic view of architectural experience.<sup>98</sup> Criticizing the visual monotony caused by the arrangement of buildings within a symmetrical urban ensemble, he praised the the Greek temple precinct's irregular disposition; not only did such an arrangement

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<sup>97</sup> “[L]’idéal des choses visibles.” “[N]ous échappe sans cesse et nous fuit. Toujours à la portée de nos regards, il est toujours insaisissable. À mesure que l’homme s’avance vers son horizon, son horizon recule devant lui, et les lignes qui paraissent se réunir au plus profond du lointain demeurent éternellement séparées dans leur convergence éternelle. De sorte que l’homme porte en lui comme une poésie mobile qui obéit à la volonté de ses mouvements, et qui semble nous avoir été donnée pour voiler la nudité du vrai, pour corriger la rigueur de l’absolu, et pour adoucir à nos yeux les lois inexorables de la divine géométrie” Blanc, *Grammaire*, 514.

<sup>98</sup> Viollet-le-Duc, “Septième entretien,” 254–56.

better suit functional needs, it also valorized the temple's siting in the landscape, yielding a dynamic effect as one walks around it. In *Le Nouvel Opéra*, Charles Garnier encouraged a similar experiential point of view, for instance, criticizing the decision to situate the new monument at the head of a long axial boulevard of symmetrical buildings.<sup>99</sup> It is of course Auguste Choisy, in his *Histoire de l'architecture* of 1899, who would codify more firmly the notion of the *promenade architecturale*, leading the way for the twentieth century's own dynamic conception of architecture.<sup>100</sup> While Choisy is forever associated with a different modernist form of representation—the axonometric—his theoretical stance places him firmly in harmony with the modern (photographic) visual regime that emerged around 1870 with photo-scopic representation.

### **The Role of Photography**

What was the role of photography in this new visual regime, one presenting often-fragmentary and sometimes serial images imbued with qualities that were unquestionably shared by photography? The previous chapter analyzed an earlier moment, in which photography aligned itself with architectural practice and theory by producing elevation photographs to match the French academic proclivity for orthogonal representation. We then saw how photography could generate “logical constructions” to support the longstanding, if secondary, tradition of perspectives running from Percier and Fontaine to Labrouste. Finally the emergence of more spatial and fragmentary “selective depictions” produced a class of “photo-scopic” imagery in which the camera's role not only seems more palpable, it also

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<sup>99</sup> Garnier, *Nouvel Opéra*, 1:102–3.

<sup>100</sup> Choisy, *Histoire de l'architecture*.

appears to be decisive: now drawings respond to the qualities and effects of photographs, and not vice versa.

Certain treatises on perspective did contain instructions for constructing cropped interior views. Not only did Adhémar's *Traité de perspective* (first published in 1836—three years prior to Daguerre's announcement) show how draftsmen could geometrically delineate “logical constructions,” it also provided a single example of a “selective description.” Adhémar frequently insisted upon the importance of a distant viewpoint to avoid the anamorphic distortion that frequently plagued close-up views. However, this did not prevent him from demonstrating the accurate construction of interiors that surely fall under Galassi's second category. In a perspective of the Halle aux Blés in Paris, the vaulted double colonnade surrounding the circular plan provides not only a challenge of geometric construction, but also a rich moment of spatial interest, which Adhémar animates with numerous figures and animals (fig. 4.32).

As the above case demonstrates, the camera was not necessarily behind every instance of “photo-scopic” imagery, a class of representations that aligned certain strands from the tradition of perspective drawing with others from the nascent field of photography. However, as confirmed by the *Revue générale*'s Tower House engravings, and by the following case, it frequently was; the palpable sensation of photographic scanning felt in so many late-nineteenth century engravings was often the result of an unseen, remediated photograph.

Just as the *Gazette*'s imagery has fragmented the Maison Worth, it performed a similar dissolution of the architectural object in its 1869–70 presentation of Dérivé Devrez's Villa Honoré in Trouville, a Norman town near the mouth of the Seine. Also known as the Villa

Sidonia, Devrez's villa was built in 1866–67 for a wealthy stockbroker on a site facing the English Channel. In his accompanying text, Anatole de Baudot was effusive in his praise of this example of Viollet-le-Duc's "rational picturesque," produced by another one of his disciples.<sup>101</sup> "In the middle of the pretentious and poorly built houses which burden the Trouville coast, the Villa Honoré is a pleasure to see and reconciles one with modern architecture a little."<sup>102</sup> For de Baudot, the villa's truthfulness lay in its honest use of materials, and in the strict correspondence of its interior disposition and exterior massing: "The interior frankly mirrors the exterior and the chosen construction materials are shown with great sincerity."<sup>103</sup> De Baudot praised Devrez for avoiding the petty and unprincipled faults that he felt plagued most new country houses: unnecessarily symmetrical plans, false façades (some with fake windows) unrelated to interior spaces, and plastered walls made to look like stonework.<sup>104</sup>

The *Gazette*'s fifteen engravings provide a thorough and focused coverage of the Villa Honoré; nine of these are orthogonal drawings (four plans, one section, and four elevations). Of the six perspective views, it is the first—a general view from an elevated vantage point—that confirms the effects of the villa's massing praised by de Baudot (fig. 4.33). Devrez's

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<sup>101</sup> Désiré Henry Louis Devrez (1824–96) was a student of Hector Horeau.

<sup>102</sup> "Au milieu des habitations prétentieuses et mal bâties qui encombrent la côte de Trouville, la villa Honoré fait plaisir à voir et réconcilie un peu avec l'architecture moderne." Baudot, "Villa Honoré," 281.

<sup>103</sup> "[L]e parti intérieur s'accuse franchement au-dehors et que les moyens de construction adoptés s'y montrent avec une grande sincérité." Baudot, "Villa Honoré," 287. The architectural historian Gilles Plum counters, however, that this honest disposition of garrets [*combles*] was unnecessarily complex, making it both expensive to build and to maintain. See Plum, *Villas balnéaires*, 75.

<sup>104</sup> Baudot, "Villa Honoré," 287.

creation is seen as a whole, surrounded by its newly created *parc* with the seaside behind.<sup>105</sup> De Baudot claimed that the architect's greatest challenge was not to ruin this picturesque setting, with its green hills leading to a wide maritime horizon. This perspective demonstrates the success of Devrez's intervention on this account in every way but one: the engraving transmits neither the green color of the hills, nor the polychrome effect of the villa's brickwork.

While we may only speculate as to the possible photographic origins of the *Gazette*'s Maison Worth illustrations, those of three of its Villa Honoré perspectives have been confirmed. In a 1989 monograph on Trouville, the art historian Claude Mignot identifies the source photograph used for the *Gazette*'s general view of the villa (fig. 4.34).<sup>106</sup> The engraving deviates from this photograph mainly through the addition of two figures picturesquely approaching the porch, in the landscaping of the *parc* (several trees and tree branches obscuring the villa's façade on the right have been removed), in the finer detailing given to the villa's rooftop finials, and especially in the detailing of the water, mudflats, and sky behind the villa. The engraving's tonal range is far more moderate than the photograph's. However, these differences are outweighed by the similarities between the two images, both of which provide easily apprehended "logical depictions" of the Villa Honoré in two-point perspective.

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<sup>105</sup> From 1878, this valuable property would be subdivided and further villas constructed. See Culot and Jakovljevic, *Trouville*, 454–65.

<sup>106</sup> Formerly in a private collection, this photograph is now held by the Musée Trouville. Culot and Jakovljevic, *Trouville*, 448–49.

If photography was used to produce a topographic account satisfying both architectural and picturesque interest in the general view, the camera's capacity to fragment the built object is evident in the other perspectives. Photographic sources have been identified for two of these, and may be confidently surmised for the other three. All are partial views presenting a tightly cropped piece of the villa's exterior; strangely given de Baudot's focus upon the picturesque volumetry resulting from Devrez's interior arrangement, none are interior views. This "photo-sopic" focus—clear in all five of these fragmentary perspectives—on a single element or zone at the expense of its context is clear in a perspective of the porch (fig. 4.35). A second story gabled window is sliced in half, hiding the villa's complex sloping roof. The tightness of the perspective only partially includes the projecting billiards room—with office above—to the left and almost completely conceals the water closet in a projecting turret on the garden façade to the right. However, the close-up has the advantage of better capturing the pinnacle and gargoyle marking the corner of the villa, the balustrade of the first-floor terrace, and the decoration above the shallow arch supporting it. The effect of southern light entering the porch—and the warmth it would bring—is clearly felt, but not any sense of how this intermediate space connects interior and exterior. Given the visual attention it receives in the *Gazette's* view, it is interesting to read de Baudot's opinion of the porch: it is "useless for the general organization of the general plan ... and it is only there because the owner wanted it is an hors-d'oeuvre."<sup>107</sup> This statement hints at the existence of a slight conflict between the textual axis running from Devrez to de Baudot and the visual one joining photographer and engraver; in that case, it is the latter with whom Honoré himself would be in sympathy.

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<sup>107</sup> "[I]nutile à l'arrangement général du plan ... et qu'il n'est là que comme un hors-d'œuvre qu'a voulu le propriétaire." Baudot, "Villa Honoré," 281.



The source photograph includes furniture (the chairs at the end of the porch), some tree branches, and curtains and/or shutters in many windows, all of which were omitted from the engraving (fig. 4.36). However, these differences pale compared to the similarity of these fragmenting views. The same is true for the view of the north façade (fig. 4.37). The engraving's tight cropping is explained by its photographic origin (fig. 4.38). The eye is drawn to the detail of the façade's brick and stonework and its varied openings, without being given a sense of their larger context—one would have to refer to the orthogonal elevation in order to understand this. Photographically generated, this is scopic vision, a focused gaze with no time for that which is outside the frame.<sup>108</sup>

Photography may not have determined this new interest in spatial complexities, but it facilitated a new dynamic conception of the architectural object, which was increasingly viewed subjectively and atmospherically.<sup>109</sup> Working together with a concurrent theoretical desire for a dynamic appreciation of architecture, from the late 1860s onwards the camera dissolved the classical unity of the building in favor of the experience of moving through space. The photographically instantiated architectural subject was still disciplined by many visual codes, but he or she was now increasingly free to roam.

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<sup>108</sup> Devrez himself submitted a frame containing one watercolor [*lavis*] and seven photographs of the Villa Honoré to the 1876 Philadelphia Centennial International Exhibition. See France. Commission, *Expositions internationales*, 190 and Culot and Jakovljevic, *Trouville*, 485.

<sup>109</sup> On the shift towards a subjective and spatial understanding of architecture in France, see Mead, *Architectural Empathy* and Thibault, *Géométrie*. For German examples see Vischer, *Empathy*.

## Chapter 5.

### Material Facts, Immaterial Fictions

#### “Called upon to render precious services”

In 1857—four years before he won the competition for the Nouvel Opéra—Charles Garnier lamented in *Le Musée des sciences* the frequent instances in which new materials or techniques were granted too great a license. “Surpassing their assigned goal, we replace a useful and advantageous system with another which is only more or less ingenious.”<sup>1</sup> Thankfully, in science and in industry, the new invention was inevitably and beneficently re-directed within acceptable limits by practice, economy, and an analysis of its resulting products. To Garnier’s consternation, this was not the case in the arts, where “sometimes the love of novelty, then habit consecrate [it] at the expense of good taste.”<sup>2</sup> The incorrect uses of photography and iron offered the ultimate examples of this error.

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<sup>1</sup> “[O]n dépasse le but qui doit leur être assigné et qu’on remplace un système utile et avantageux par un autre qui n’est que plus ou moins ingénieux.” Garnier, “Architecture en fer,” 321.

<sup>2</sup> “[Q]uelquefois l’amour de la nouveauté, puis l’habitude viennent le consacrer aux dépens du bon goût.” Garnier, “Architecture en fer,” 321.

Thus photography, called upon to render precious services, tries each day to replace drawing and engraving, that is to say to replace art with science and feeling with exactitude; it also how iron, the use of which is indeed preferable to wood in almost all areas of construction, encroaches upon architecture, changing her characteristic forms, and finally substitutes industry for art.<sup>3</sup>

In this passage, Garnier intriguingly conflates the artistic medium of drawing with the reproductive art of engraving, hinting at a widespread uncertainty as to exactly which forms of the nineteenth-century's visual economy were under attack from photography.<sup>4</sup> His attitude towards photography presages Charles Baudelaire's famous review of the Salon of 1859, in which the poet praised photography's utilitarian applications while condemning its artistic pretensions, which were the subject of a major public debate in the 1850s. For Garnier, strength, thinness and resistance to fire were iron's material advantages; both he and Baudelaire agreed that exactitude was photography's. Decrying the recent taste for realist painting and poetry, Baudelaire claimed "I am convinced that photography's poorly applied developments have contributed, like all purely material developments, to the impoverishment of French artistic genius, already so rare."<sup>5</sup> Allied with popular bad taste, photography was at risk of corrupting art. With each passing day, art prostrated itself further

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<sup>3</sup> "C'est ainsi que la photographie, appelée du reste à rendre de précieux services, vient tenter chaque jour de remplacer le dessin et la gravure, c'est-à-dire de remplacer l'art par la science, le sentiment par l'exactitude; c'est ainsi que le fer, dont l'emploi est bien préférable à celui du bois dans presque toutes les parties de la construction, vient empiéter sur l'architecture, changer ses formes caractéristiques, et enfin substituer de même l'industrie à l'art." Garnier, "Architecture en fer," 321-22.

<sup>4</sup> See Bann, *Parallel Lines*.

<sup>5</sup> "[J]e suis convaincu que les progrès mal appliqués de la photographie ont contribué, comme d'ailleurs tous les progrès purement matériels, à l'appauvrissement du génie artistique français, déjà si rare." Baudelaire, "Salon de 1859," 328.

before reality, and artists increasingly painted what they could see, not what they could imagine.

Garnier also believed that French artistic genius was threatened by iron architecture. His criticism rested upon the question of monumentality: for Garnier, architecture was a matter of the proper balancing of solids and voids to produce harmonious proportions.

Above all, the impression one must feel when looking at a monument is a feeling of grandeur, of nobility, of calm and confidence. It is this aspect that must constitute the primary quality of architecture. Wherever force is replaced by dexterity, where fundamental principles, instead of being large and severe, become thin and affected, art disappears to make way for ingenuity and astonishment.<sup>6</sup>

Iron architecture could offer only an emaciated appearance of slender supports in which voids predominated—voids lacking the relative proportion that could only be given by the more corporeal forms of masonry. “It is therefore the inability of iron to give masses and points of support sufficient to the eye, that forces one to reject it in any *artistic* construction.”<sup>7</sup> This attitude towards the unsuitability of iron for monumental architecture explains Garnier’s decision not to include Durandelle’s construction photographs of iron columns and beams in *Le Nouvel Opéra* (see chapter 1). While iron was incredibly advantageous for the new theatre’s structure—the Opéra’s temporary home in the Salle Lepelletier was de-

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<sup>6</sup> “L’impression que l’on doit avant tout ressentir à la vue d’un monument, c’est un sentiment de grandeur, de noblesse, de calme et de confiance; c’est cet aspect qui doit constituer la première qualité de l’architecture. Partout où la force est remplacée par l’adresse, où les principes fondamentaux, au lieu d’être larges et sévères, deviennent grêles et affectés, partout alors l’art disparaît pour faire place à l’ingéniosité, à la surprise.” Garnier, “Architecture en fer,” 322. Translation from Mead, *Charles Garnier’s Paris Opéra*, 303 n. 83.

<sup>7</sup> “C’est donc l’impuissance du fer à donner des masses et des points d’appui suffisants pour les yeux, qui force à le faire rejeter de toute construction *artistique*.” Garnier, “Architecture en fer,” 322.

stroyed by fire in 1873—it was inappropriate as a visual representation for this state-funded pleasure palace. As Mead recognizes, Garnier’s “extensive yet hidden” use of iron was “technologically precocious” and entirely in keeping with the architect’s privileging of appearance over structure.<sup>8</sup> Such dissimulation of an industrial structure behind a classicist mask exemplifies the Beaux-arts’ approach against with both the French rationalist school and later International Style modernists would rebel.

In his *Musée des sciences article*, Garnier had clarified that his emphasis of the penultimate term—*artistic*—was intended to acknowledge iron’s immense practical utility. He was willing to accept visible iron for large-span spaces such as hangars, train sheds, markets and greenhouses, but not for theatres and other public buildings. To give a warning of iron’s inappropriateness for art, Garnier sarcastically claimed that Louis Auguste Boileau had designed his church of Saint-Eugène in Paris (1854–55) as “an example of the poor effect produced by iron when it is used without taste and with the pretention of replacing stone by copying more or less its rational forms. He therefore set aside all self-respect ... and sacrificed himself as completely as possible.”<sup>9</sup> A visit to Saint-Eugène would be enough to convert any former partisan of metal architecture.<sup>10</sup>

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<sup>8</sup> Mead, *Architectural Empathy*, 156.

<sup>9</sup> “[U]n exemple du mauvais effet que produit le fer lorsqu’il est employé sans goût, et avec la prétention de remplacer la pierre en lui empruntant à peu près ses formes rationnelles; il a donc laissée de côté tout amour-propre... il s’est sacrifié, et son sacrifice a été aussi complet que possible.” Garnier, “Architecture en fer,” 322.

Today, Boileau’s church is officially known as the Church of Saint-Eugène-Sainte-Cécile.

<sup>10</sup> Viollet-le-Duc also attacked Boileau’s design, and with it the Saint-Simonian Michel Chevalier’s claim that engineers were showing the way towards a new architecture. As Martin Bressani summarizes, for Viollet-le-Duc,

An iron building of which Garnier did approve was Victor Baltard and Félix-Emmanuel Callet's Halles Centrales (1854–74), under construction in central Paris at the time of his article. Baltard's Halles "summarize almost all the advantages of metallurgical architecture."<sup>11</sup> They offered functional interiors, easy and effective circulation, all while displaying the "artistic character" Garnier so clearly sought for public buildings.<sup>12</sup> The key to making the Halles acceptable was Baltard's use of brick curtain walls in-filling between iron columns on a six-meter grid. Frosted glass and wooden louvers above allowed for light and ventilation beneath the pavilion's zinc roofs, while contributing to what Garnier described as the "appearance of solidity that sets off the mass of the pavilions and contrasts happily with the great openings that terminate the covered streets."<sup>13</sup> Here was an acceptable balance of masonry and metal, solid and void in the service of France's architectural tradition. Even the ironwork was praiseworthy:

Baltard's oeuvre demonstrates that when iron is used judiciously in the construction of special buildings, when it avoids the pretention of replacing stone and bor-

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engineers lacked the "historical introspection" needed to transform new industrial means into meaningful forms. See Bressani, *Architecture*, 428.

<sup>11</sup> "[R]ésument à peu près tous les avantages de l'architecture métallurgique." Garnier, "Architecture en fer," 322.

<sup>12</sup> "[C]aractère artistique," Garnier, "Architecture en fer," 322.

<sup>13</sup> "[A]spect de fermeté qui fait valoir la masse des pavillons et contraste heureusement avec les grandes ouvertures qui terminent les rues couvertes." Garnier, "Architecture en fer," 322. Translation from Mead, *Making Modern Paris*, 221.

rowing the latter's characteristic forms, it can sometimes give very beautiful results.<sup>14</sup>

It was the Halles' status as a "special building" that solved one contradiction in Garnier's text: whereas pure iron structures were acceptable for normal markets, he implicitly raises the Halles to the higher category of architecture.

Materiaility was a major point of controversy surrounding the Halles, especially as they were first designed. In September 1851, the Prince-President Louis-Napoléon Bonaparte laid the cornerstone for the Halles' first pavilion (the final design would include twelve such structures, separated by enclosed streets). The architects Baltard and Callet had earlier proposed a scheme marked by its light, iron pavilions, designed to provide an elegant hybrid of stone and iron construction, however this delicate transparency was rejected in favour of funereal monumentality, and construction began according to revised plans for massive masonry enclosures (fig. 5.1). While Labrouste's Bibliothèque Sainte-Geneviève was controversial for including visible iron into a building type considered to be within the canons of architecture, Baltard's first Halles pavilion received an opposite criticism. Writing in the pages of the *Revue générale* in 1854, César Daly acknowledged the quality of the first pavilion's masonry, but then ridiculed its presence on such a functional building: "it is hard to see what this heap of stones has to do with the vending of vegetables and flowers."<sup>15</sup> The public ech-

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<sup>14</sup> "[L]'oeuvre de M. Baltard montre que lorsque le fer est employé judicieusement dans la construction d'édifices spéciaux, qu'il n'a pas la prétention de remplacer la pierre et de lui emprunter ses formes caractéristiques, il peut parfois donner de très-beau résultats." Garnier, "Architecture en fer," 322.

<sup>15</sup> "Mais il difficile de comprendre la convenance de cette entassement de pierres, pour abriter une vente de légumes et de fleurs" Daly, "Halles centrales," col. 26. Translation from Mead, *Making Modern Paris*, 188.

oed Daly's sentiment and derisively nicknamed Baltard and Callet's pavilion the "Fort de la Halle" in a play on the name given to the market's strong-armed porters, known as the *forts de la halle*. The strength of the public reaction against this lithic fortress forced the newly crowned Emperor Napoléon III to halt work on the markets in June 1853.

Baltard and Callet were dismissed but then reinstated; and the Emperor approved their new and definitive project for construction in May 1854—the one which Garnier so heartily praised in his article, although he did regret that Baltard was not allowed to use stone.<sup>16</sup> Mead speculates that Louis-Napoléon may have insisted upon the earlier shift to monumental stone pavilions in 1851 in order to symbolize the conservative solidity of his government, which had been elected to put an end to the turmoil plaguing the newly formed Second Republic.<sup>17</sup> Following his *coup d'état* of December 1851, as Emperor Napoléon III sought to wrap his regime in an image of modernity. Spurred by his own visit to see the Crystal Palace in London, and with modernization as his mantra, he declared that were required for the markets were "vast umbrellas ... *rien de plus!*"<sup>18</sup>

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<sup>16</sup> Garnier, "Architecture en fer," 322.

Callet died in 1854, leaving Baltard to complete the Halles alone.

<sup>17</sup> Mead, *Making Modern Paris*, 210.

In his preface to the first volume of Émile Zola's Rougon-Macquart series, the historian Maurice Agulhon dwells upon the opposition of solidity—as represented by the rampart—in opposition to revolutionary fluidity of the (marching) column, both of which feature prominently in *La Fortune des Rougon*. See Agulhon, "Préface."

<sup>18</sup> "[D]e vastes 'parapluies' ... rien de plus!" Haussmann, *Mémoires*. Quoted in Moncan, *Baltard, Les Halles de Paris*, 28.



If the Fort de la Halle's reception had generally revolved around what materials and degree of monumentality were typologically appropriate for the design of a market, the later pavilions were discussed in terms of their thinness. Daly was pleased with the new buildings, whose light construction had preserved their historical associations with open-air markets. Most importantly, the eye was satisfied by their "slender, delicate, light" columns, which offered "the best, most economical use of space."<sup>19</sup> Writing in *L'Illustration*, the journalist Édouard Fournier noted that the Halles' pavilions – "these veritable cathedrals of cast iron and glass, svelte and light in their immutable solidity, luminous and aerial" – clearly recalled—without directly copying—the iconic Crystal Palace.<sup>20</sup>

These comments laid bare what Garnier had identified as perhaps the most significant obstacle to iron's architectural assimilation: its apparent immateriality. The slender proportions of iron columns, beams and roof trusses produced an architecture wholly divorced from the traditional proportions of masonry construction. Fournier's comparison of the Halles to the Crystal Palace was apt, for Paxton's pavilion for the 1851 had precipitated opinions on the matter. While John Ruskin appreciated the popular appeal of the Crystal Palace as well as the "mechanical ingenuity" of its construction, he declared that such ingenuity was "*not* the essence ... [of] architecture."<sup>21</sup> Gottfried Semper adopted a similar attitude. While he praised the Crystal Palace, he too refuted the notion that a material as slender as iron could constitute a monumental style of architecture. Within the voluminous

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<sup>19</sup> Daly, "Halles Centrales," cols. 103–4. Translation from Mead, *Making Modern Paris*, 220.

<sup>20</sup> Fournier, "Halles Centrales," 138. Translation from Mead, *Making Modern Paris*, 220.

<sup>21</sup> Ruskin, *Opening of the Crystal Palace*, 6.

pages of *Style*, Semper declared that what he termed metal-rod construction, in its mathematical quest for invisibility, offered “infertile ground for art.”<sup>22</sup> As Sokratis Georgiadis notes, Semper passionately believed that matter, not its absence, carried architecture’s symbolic form.<sup>23</sup> In his article on the Halles, Garnier echoed such sentiments.<sup>24</sup>

### **“Everything true is not always beautiful”**

Garnier’s criticism of iron architecture’s slender proportions echoed the architect Achille Hermant’s response to the iron arches supporting the roof over the illusionistic vestibule of Henri Labrouste’s Bibliothèque Sainte-Geneviève. Writing in *L’Ariste* in the year of the library’s inauguration, Hermant praised Labrouste’s overall design for the artistic progress it exemplified, and the vestibule in particular for its originality and pleasant effect. However, he was troubled by the shallow and thin iron arches supporting the vestibule’s ceiling, which rested upon thick stone pillars.

“In the way in which these two very different materials—stone and cast iron—are brought together and united, the pillar appears heavy and the arch thin. There is something shocking in seeing so much force expended to support so little. We are perfectly aware of the objections one might make about the comparative strength of the two materials, but it must not be forgotten that *everything true is not always beautiful*, and that what is materially solid and sufficient may fail to satisfy our eyes. We see and we feel before we reason and more than we can reason. After mathematical-

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<sup>22</sup> Semper, *Style*, 659.

<sup>23</sup> Georgiadis, “Introduction,” 8.

<sup>24</sup> In *Style*, Gottfried Semper argued for cylindrical tubes as a way to deploy iron’s tensile strength without sacrificing traditional masonry proportions. Garnier, however, noted that if iron structures were no thinner than their stone equivalents, the former held no advantage over the latter. See Semper, *Style* and Garnier, “Architecture en fer,” 322.

ly calculating the solidity, we must calculate with no less exactitude the impression that the form will produce.<sup>25</sup>

For Hermant, this rule had been insufficiently observed in Labrouste's design of the vestibule's supports. While he believed this supposed default had been the result of accident rather than insufficient study, he did critique Labrouste's rationalist ethos that architecture was the art of decorated construction. According to Hermant, this formulation was not exactly true: while important, construction of secondary rank; it was only a means to an end. Architecture must respond to material necessities, but it must also "translate and reproduce the ideas of its epoch."<sup>26</sup> This was a moral necessity in whose absence character and style were impossible.

Daly also gently reproached Labrouste's stringency, and shared Hermant's worries that the material truth of construction might sometimes fail to satisfy the perceptual truth of aesthetics. Writing in 1887 in the *Revue générale*, Daly recalled a conversation with the architect from over forty years earlier on the relationship between truth and beauty in architecture. Entering Daly's apartment on the rue Furstenberg in Paris, Labrouste had torn his suit. Daly chided him, asking whether out of respect for the truth he would leave the trace of his

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<sup>25</sup> Emphasis mine. "[P]ar la manière dont sont rapprochées et réunies ces deux matières si différentes, le pierre et la fonte, le pilier paraît lourd et l'arc maigre. Il y a quelque chose de choquant à voir tant de force dépensée pour supporter si peu. Nous savons parfaitement tout ce qu'on peut nous objecter sur la puissance comparée de chacun de ces matériaux; mais il ne faut pas oublier que tout ce qui est vrai n'est pas toujours beau, et que ce qui est solide et suffisant, matériellement, peut bien ne pas satisfaire nos yeux. On voit et on sent avant de raisonner et plus vite qu'on ne raisonne. Il faut donc, de toute nécessité, après avoir calculé mathématiquement la solidité, calculer, avec non moins d'exactitude, l'impression que la forme doit produire." Hermant, "Bibliothèque," 130–31.

<sup>26</sup> "[E]lle traduise et reproduise les idées de son époque." Hermant, "Bibliothèque," 129.

accident? Labrouste meekly responded that he would ask his tailor “not to cheat.”<sup>27</sup> Their conversation turned to a second example: Daly hoped that repairs to a crack in his mantel-piece could be disguised as a vein in the marble. Upon reflection, Labrouste declared that he would certainly condemn such a falsehood. As these anecdotes indicate, Daly felt that Labrouste’s attitude towards truth was absolutist, while the latter felt the editor somewhat lax in his practices. According to Daly, Labrouste could “never understand ... art separated from truth, construction in contradiction with form, or form in contradiction with the materials employed in its realization. I find untruths profoundly repugnant; they are nonsense more often than not and always ugly.”<sup>28</sup> Daly disagreed; while he believed that truth and logic were essential for art, he doubted whether their multiplicity could always be reconciled in something so complex as architecture. Whereas metaphysicians—and Labrouste—saw truth as whole and indivisible, for practical men and women “it was, on the contrary multiple... for them, there are truths of the mind [*vérités de l’esprit*] such as abstract science; truths of feeling [*vérités de sentiment*] such as aesthetics and morals; and material truths [*vérités matérielles*] such as physics, chemistry and natural history.”<sup>29</sup>

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<sup>27</sup> “[D]e ne pas faire de *tricherie*.” Daly, “Vieux souvenirs,” 614.

<sup>28</sup> “Je ne comprendrai jamais... l’art séparé de la vérité, la construction en contradiction avec la forme, ou la forme en contradiction avec les matériaux employés pour la réaliser. Le mensonge me répugne profondément ; le plus souvent c’est un non sens, et c’est toujours une laideur.” Daly, “Vieux souvenirs,” 614.

<sup>29</sup> “[E]lle est, au contraire, multiple... il y a pour eux les vérités de l’esprit—la science abstraite; —les vérités de sentiment—l’esthétique, la morale;—les vérités matérielles—la physique, la chimie, l’histoire naturelle.” Daly, “Vieux souvenirs,” 614.

Writing 1887, Daly noted that architecture had passed from an age of absolute beauty to one of absolute truth before positivism and the theory of evolution had finally placed empirical observation and historical study in their rightful place as the foundations of architectural doctrine.

Baudelaire has also distinguished between truth and beauty. Echoing Hermant, he noted in his 1859 critique of naturalist art: “The exclusive taste for the True (so noble when it is limited to its real [*véritables*] applications) here oppresses and suffocates the taste for the Beautiful.”<sup>30</sup> While Hermant was criticizing the unabashed use of iron and Baudelaire was attacking photography’s pernicious artistic pretences, once again the analogy of these two industrial inventions, the one material and the other representational, is clear. The constructed trope of photographic truth threatened existing aesthetic codes of what was and was not beautiful.

As Martin Bressani and Marc Grignon have observed, shifting conception of truth and fiction in architecture mark a distinction between classicism and romanticism. For eighteenth-century architects such as Jacques-François Blondel, beauty was a matter of truthful representation, which meant skilful imitation.<sup>31</sup> It certainly was not to be found in pure unadulterated facts, a belief that would be echoed by Hermant and Baudelaire in the nineteenth century. As Stephen Bann and others have noted, romanticism dismissed eighteenth-century myths such as Marc-Antoine Laugier’s primitive hut in favour of a far closer engagement with the real, one that generated its own set of productive fictions. The truthful had to correspond to truth and not vice-versa. For Adrian Forty, this concomitant cleaving of truth and beauty can be traced to the scientific revolution’s preference for empirical observation over received wisdom and to Kant’s separation of aesthetics from ethics and morality, ending a

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<sup>30</sup> “Le goût exclusive du Vrai (si noble quand il est limité à ses véritables applications) opprime ici et étouffe le goût du Beau .” Baudelaire, “Salon de 1859,” 326.

<sup>31</sup> Bressani and Grignon, “Henri Labrouste,” 712–13.

union that had endured from Plato and Aristotle.<sup>32</sup> Truth now excluded deception, a rejection that Labrousse certainly would have endorsed.

### *Ceci tuera cela*

In addition to questions of truth, truthfulness and beauty, architectural worries over the proportions of iron architecture reflected a wider societal malaise: the frontier between the material and the immaterial was constantly shifting during the nineteenth century, for which Karl Marx's famous edict that "all that is solid melts into air" provides an apt epitaph.<sup>33</sup> Several times within his encyclopaedic—yet fictional—descriptions of Second Empire France, the novelist Émile Zola grappled with the unstable place of iron architecture within the zeitgeist of dematerialization that had gripped the nineteenth-century imaginary.<sup>34</sup> Across the twenty volumes of his Rougon-Macquart series, Zola brought his readers face to face with iron buildings in their many facets: as new typological forms in the rapidly changing city; as nodes within emerging networks for the circulation of commerce and capital; as sites of labor and production; as monstrous symbols of oppressive modernity; and as oneiric sites for escape from it. Zola's descriptions of the market, the department store and other iron buildings provide telling indices of attitudes towards iron architecture: both the author's and his public's.

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<sup>32</sup> Forty, "Truth," 294.

<sup>33</sup> Marx and Engels, *The Communist Manifesto*, 223. For a fascinating discussion on the inadequacy of "all that is solid ..." as a translation for Marx's original German "Alles ständische und Stehende verdampft," see Thomas, "Alles Ständische."

<sup>34</sup> On Zola's depictions of iron architecture and its frequent dematerialization in the Rougon-Macquart series, see Sealy, "Dreams in Iron."

Published in 1873, Émile Zola's *Le Ventre de Paris* (translated into English as *The Belly of Paris* or *The Fat and the Thin*) depicted the Halles in great detail. Alongside abundant descriptions of this fluctuating world of colors, sounds, tastes and smells—the veritable stomach of Paris—Zola also gives careful attention to the market pavilions. While the author does little to hide his spite for their fattened and too-satisfied petty bourgeois merchants, he sees in this “forest of ironwork,” a presaging of the arrival of the twentieth century in the nineteenth.<sup>35</sup> One character in particular, the painter Claude Lantier, praises the Halles at length: amidst all the historicist architecture of the nineteenth century, only they carry the torch of modernity.

Riding in the back of a vegetable cart with his friend Florent on their way for a day in the countryside at Nanterre, Lantier recalls the view northwards to the Halles from the rue de Roule, which they had earlier glimpsed. Repurposing Victor Hugo's celebrated maxim “*ceci tuera cela*” from *Notre-Dame de Paris* (*The Hunchback of Notre Dame*, 1831), Lantier compares to the Halles to the south façade of the church of Saint-Eustache (1530–1637; restored 1842–60), whose side portal was framed by the roof spanning one of the Halles' covered streets.<sup>36</sup>

‘It’s an odd mixture ... that bit of church framed round by an avenue of cast iron. The one will kill the other; the iron will slay the stone, and the time is not very far off. ... I don’t think that it was any mere chance of position that set a rose-window of Saint Eustache right in the middle of the central markets. No, there’s a whole

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<sup>35</sup> Zola, *The Belly of Paris*, 24.

<sup>36</sup> On architectural response to Hugo's maxim, see Levine, “Book and the Building,” and Bressani and Grignon, “Henri Labrouste.”

manifesto in it. It is modern art, realism, naturalism — whatever you like to call it — that has grown up and dominates ancient art.<sup>37</sup>

A Charles Marville photograph from 1868 provides an image of the prospect described by Lantier (fig. 5.2). If for Hugo it was the mechanical reproducibility offered by the printing press that would kill the communicative function of the cathedral, now for Zola it was iron architecture that wielded the ferrous dagger.

Lantier continues his vehement exposition of *ceci tuera cela*, adding a popular vote in support of his unabashed praise for the futurism of the Halles.

‘The pious old builders are all dead and gone; and it would be better to cease erecting those hideous carcasses of stone, in which we have no belief to enshrine. Since the beginning of the century there has only been one large original pile of buildings erected in Paris — a pile in accordance with modern developments — and that’s the Halles... Ah! they are a fine bit of building, though they but faintly indicate what we shall see in the twentieth century! And so, you see, Saint Eustache is done for! It stands there with its rose-windows, deserted by worshippers, while the markets spread out by its side and teem with noisy life.’<sup>38</sup>

For Lantier, the church was only “a piece of bastard architecture, made up of the dying gasp of the middle ages, and the first stammering of the Renaissance.”<sup>39</sup> This comment

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<sup>37</sup> “C’est une curieuse rencontre, disait-il, ce bout d’église encadré sous cette avenue de fonte... Ceci tuera cela, le fer tuera la pierre, et les temps sont proches... Je m’imagine que le besoin de l’alignement n’a pas seul mis de cette façon une rosace de Saint-Eustache au beau milieu des Halles centrales. Voyez-vous, il y a là tout un manifeste: c’est l’art moderne, le réalisme, le naturalisme, comme vous voudrez l’appeler, qui a grandi en face de l’art ancien.” Zola, *Ventre de Paris*. Translation from Zola, *The Belly of Paris*.

<sup>38</sup> Zola, *Ventre de Paris*. Translation from Zola, *Belly of Paris*.

<sup>39</sup> Zola, *Ventre de Paris*. Translation from Zola, *Belly of Paris*.



runs counter to Anatole de Baudot's praise for works from transitory periods between dominant styles. However, it confirms French nineteenth-century architects' and theorists' obsessions with the evidentiary value of monuments such as Saint-Eustache. Lantier also criticized modern churches, which "resemble all kinds of things—libraries, observatories, pigeon-cotes, barracks; and surely no one can imagine that the Deity dwells in such places."<sup>40</sup>

While Lantier's comparison of Saint-Eustache and the Halles Centrales appears logical, it is questionable in light of a key fact missing from Lantier's futurist monologue. Baltard had been responsible both for the markets and the nineteenth-century restoration of Saint-Eustache. In fact, Baltard's early career had mostly been dedicated to maintaining, restoring and embellishing Parisian churches. Moreover, Lantier ignored the extent to which the ensemble of Baltard's Halles pavilions (not only the Fort de la Halle) negotiated between the thinness of metallic construction and the corporeality offered by brick—the latter having rendered them acceptable to Garnier. As Mead observes, the Halles were both polychromatic and ornamental (as were many other nineteenth-century iron buildings, such as Ferdinand Dutert's Galerie des Machines et the 1889 Exposition Universelle.) Conversing with both religious and domestic typologies, the market's ornamentation was drawn from late medieval and early Renaissance sources. The Halles' columns were fluted and were topped with classically inspired capitals, while cast-iron rosettes occupied the spandrels between the columns. The yellow- and red-brick walls infilling the space between the col-

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<sup>40</sup> Zola, *Ventre de Paris*. Translation from Zola, *Belly of Paris*.

Which modern churches did Zola have in mind? Perhaps he is unwittingly and asynchronously condemning one of Baltard's own works, the church of Saint-Augustin (1860–68)?

umns were organized in a diamond pattern, echoed by the mullions on the frosted glazing above.<sup>41</sup>

Marville's photograph, however, barely registers the Halles' masonry, its fine ornamentation or the pattern of its brickwork. To Lantier's opposition of new material and old, the photograph instead juxtaposes the material presence of the historic city with the spatial and atmospheric presence of the markets and the church. As is often the case with Marville's urban views, the photographer's attention was first drawn to the street's cobblestone surface and the liquids that sometimes made it glisten. Together, with the plastered façades of the buildings in the rue des Prouvaires, they frame an urban void, one that is extended by the iron arches enclosing the street between two of the Halles' pavilions. In this image, what matters most about the Halles is their nodal position with a regional alimentary network, one that is shown to be both avant-garde (by its the iron roof) and tenuously contingent (through the narrow rue des Prouvaires, easily blocked by a few vegetable carts). At the end of this tunnel-like one point perspective, the church is doubly dematerialized: first by the haziness brought about by sunlight and distance and secondly because the most prominent elements visible on its façade are also voids. While for Lantier the stained glass rose window formed a metonymic pair with Saint-Eustache's stone walls, it must not be forgotten that French religious architecture had a long tradition of using pairing slender stone supports and stained glass walls to produce a decidedly immaterial effect.<sup>42</sup>

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<sup>41</sup> Mead, *Making Modern Paris*, 213–14.

<sup>42</sup> See Middleton, "Rational Point of View" and Picon, "Freestanding Column."

Lantier's enthusiasm for all that is new is balanced by the apprehensions of the novel's Christ-like protagonist, Florent. A political prisoner escaped from Devil's Island, Florent feels oppressed and disoriented upon his return in 1858 or 1859 to Paris, which has been transformed beyond his recognition by Baron Haussmann during his absence.<sup>43</sup> On the morning of his arrival, the famished fugitive is unable to orient himself amidst the new markets, which have been erected during his long years of exile. His first perception of the Halles' physical form interweaves organic and inorganic metaphors:

high above this phantom town, stretching far away into the darkness, there appeared to be a mass of luxuriant vegetation, a monstrous jungle of metal, with spindle-shaped stems and knotted branches, covering the vast expanse as with the delicate foliage of some ancient forest.<sup>44</sup>

For the starving Florent, this vegetal covering cannot entirely hide the Halles' monstrous materiality. That same morning, Florent observes the Halles' pavilions solidifying before his gaze in the morning light. These iron structures pass through all the stages of materialization and dematerialization, changing from the natural to the mechanical as the morning haze lifts:

Florent watched Les Halles emerge slowly from the shadows, from the dreamland in which he had seen them, stretching out like an endless series of open palaces.

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<sup>43</sup> In *Le Ventre de Paris*, Zola relates that Florent was arrested during the uprising of December 1851 and subsequently deported to Devil's Island in January 1852. He returned after seven (*Zola, Belly of Paris*, 44 and 119) or eight years (*ibid.* 106) away from France; that is, in either September 1858 or 1859. In his study of Impressionist painting, T.J. Clark expounds upon criticisms of Haussmannization, including the sense that the old, recognizable Paris had been lost. For Clark, economic dislocation, more than physical change (which is its sign) is behind the sensation. See Clark, "View from Notre-Dame."

<sup>44</sup> Zola, *Belly of Paris*, 20.

Greenish-grey in color, they looked more solid now, and even more gigantic, with their amazing mast-like columns supporting the great expanse of roofs. They rose up in geometrically shaped masses; and ... seemed like some vast modern machine, a steam engine or a cauldron supplying the digestive needs of a whole people, a huge metal belly, bolted and riveted, constructed of wood, glass, and iron, with the elegance and power of a machine working away with fiery furnaces and wildly turning wheels.<sup>45</sup>

In this frightening impression of the market pavilions, Zola vaunts the Halles' materiality as a terrifying sublime machine, denaturing the very bodily processes of sustenance that it fulfills. Florent's thin frame is ill at ease amidst the corpuscular plenitude of the market, where he finds employment as a minor functionary. His constant nausea and inability to gain weight signify his malaise vis-à-vis both the Empire and his immediate surroundings. Florent's appearance as the thin man in this nineteenth-century rendition of Brueghel's fat kitchen echoes many of the principal concerns that emerged in the public debates surrounding the Halles' design and construction.<sup>46</sup>

Nowhere is the imaginary provoked by iron architecture more volatile than at its highest reach, namely in its roof structures. While one would expect the roofscape to offer a moment of clear comprehension far above the tumult of the city streets below, it is at its apex that the iron building reaches its greatest representational instability in Zola's narratives.<sup>47</sup>

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<sup>45</sup> Zola, *Belly of Paris*, 24–25.

<sup>46</sup> In an aside to Florent, Lantier mentions this 1563 Brueghel print. See Zola, *Belly of Paris*, 190–1.

<sup>47</sup> The unknowable urban expanse does become clarified when seen from an elevated vantage point in another Zola novel. From her vantage point in suburban Passy, Paris changes appearance to reflect the protagonist Hélène's moods in *Une Page d'amour* (1878; translated as *A Love Episode* in English). As Martin Bressani explains, while a character exploring the city on foot cannot grasp Paris, the urban organism becomes comprehensible when seen from afar and especially above. See Bressani, "Spectacle of the City."

If, from ground level, Florent perceived the Halles and the bourgeois world they enclosed to be oppressive, then from above he found in their zinc roofs a field for escapist reverie. Twice in the course of *Le Ventre de Paris* Zola describes what Florent sees as he gazes upon the roofscape of the Halles from the mansard window of his room on the fifth floor of his half-brother Quenu's *charcuterie*. Strangely, from this elevated position, where the markets could be comprehended as a whole, the otherwise solid and oppressively material pavilions sublimate into an immense and mythical nature:

[The roofs] looked like sleeping lakes, on whose surface the reflection of a window pane gleamed every now and then like a silvery ripple ... Florent delighted in the great stretch of sky before him, in the vastness of Les Halles which, amid the narrow streets of the city, reminded him vaguely of the seashore, of the still grey waters of a bay barely stirred by the far-off rolling of the swell. He would lose himself in dreams as he stood there; each night he would imagine some fresh coastline. It made him very sad, and at the same time very happy, to return in his mind to the eight hopeless years he had spent away from France.<sup>48</sup>

A vast natural landscape, the Halles' appearance shifts with the prevailing atmospheric conditions:

On moonless nights they grew darker, becoming dead black lakes, stagnant and foul. The clear nights changed them into shimmering fountains of light; the moon streamed across the two levels of the roofs, pouring down the vast sheets of metal, running over the edges of those immense superimposed basins.<sup>49</sup>

Likewise, their appearance shifts with the seasons:

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<sup>48</sup> Zola, *Belly of Paris*, 105–6.

<sup>49</sup> Zola, *Belly of Paris*, 248.

In cold weather the roofs were still and frozen, like the fjords of Norway where the skaters fly; while the hot nights of June lulled them into a deep sleep. One evening in December, when he opened his window, he had found them white with snow, so lustrously white that they lit up the coppery sky. Unmarked by a single footprint, they stretched out like Arctic wastes; and they lay in the loveliest of silences, as gentle as an innocent giant.<sup>50</sup>

The markets' appearance even shaped Florent's moods:

As the panorama before him changed, Florent's thoughts would become tender or violent. The snow calmed him, the vast sheet of whiteness seemed to him a veil of purity thrown over the filth of the markets. The clear nights, with their shimmering moonlight, carried him away into a land of fairy tale. It was on dark nights that he suffered, the burning nights in June, which spread before him a kind of evil-smelling marsh, the stagnant water of some accursed sea. And the same nightmare always returned.<sup>51</sup>

Henri Mitterrand has noted the contrast in *Le Ventre de Paris* between the Halles' inorganic materiality and the organic effusion of meat and vegetables within; it is as if Zola is deconstructing the Haussmannian order of the former with the ebullience of the latter.<sup>52</sup> The above passages confirm this observation, but concentrate its conscious deconstruction within the dense material web of the Halles' roof structure. In sum, the transient nature of the market, itself a place of exchange between city and countryside, is, in Zola's novel, projected inward into Florent's psyche and outward into the physical appearance of its pavilions.

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<sup>50</sup> Zola, *Belly of Paris*, 248.

<sup>51</sup> Zola, *Belly of Paris*, 248.

<sup>52</sup> Mitterrand, "Tiens, voilà."

Nineteenth-century discourses also wrestled with photographs' puzzling status as material objects. Supported by the camera's impressive capacity to record detail, the indexical equivalence established between building and photograph challenged the latter's own autonomy. Was the photograph "the thing itself" (to use Roland Barthes' formulation)? If not perfectly equivalent, perhaps photography was a process of dematerialization, one in which the built object was reduced to a ghostly spectre? Or, were photographs substantial surfaces upon which even the most ephemeral effects could (theoretically) materialize in a mediatory process of thickening? While photography promised an aura-less series of identical copies, many photographs—especially daguerreotypes—were unique and precious specimens, and chemical instability made others into ephemeral phenomena. Reproducible in larger and larger print runs, photographs resisted easy incorporation into publications until the final decades of the nineteenth century. When it arrived, the halftone process offered a cheap and easy technique for printing photographs in the press at the cost of a pointillist image. The crispness of detail crucial to notions of photographic truth was possible in expensive collotypes, but not in mass-market halftone images, a situation with which architectural periodicals had to wrestle.<sup>53</sup>

The shifting materialities at work in both iron architecture and photography are visible in a construction photograph of the Halles from 1856 published by the *Revue générale* (fig. 5.3). This was the second photograph to appear in an architectural publication; earlier that same year, the *Revue générale* had published Fortier's view of the François Ier staircase at Blois,

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<sup>53</sup> On the competing uses of collotype and halftone in British architectural publications, see Elwall, "Photography Takes Command."

(see chapter 1.) Continuing his experiments with photography, César Daly published the iron skeleton of the Halles' southwest pavilion before its brick cladding, glazing, louvers and zinc roofing were added. Having previously had much to say about the Blois calotype, in this instance Henri Sidorot was silent about the photograph in his accompanying article, save noting that it was made using Poitevin's lithographic process.<sup>54</sup> The image makes the concentrated material presence of the iron skeleton starkly clear, especially given its setting against the washed-out background of an over-exposed sky. The structure appears as pure fact, unmistakable in black and white. This unambiguous presence is softened slightly by the finesse of the Halles' finely detailed iron ornament. Where it is not doubled up, the fretwork filling the spandrels between the innermost columns is exquisitely clear. The delicate fidelity of its rendering recalls Talbot's early photogram experiments with lacework patterns. The *Revue générale*'s photograph also renders the incomplete Halles as a permeable web, one through which interior and exterior, foreground and background, buildings and sky occupy a single, flattened visual register.

### **Seeing the Future in the Past**

Given the analogy between iron and photography exposed by Baudelaire and Garnier, it is unsurprising that the former served as a frequent subject for the latter. Whether of soon-to-

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<sup>54</sup> Sidorot, "Halles Centrales," col. 370 n. 1.

A civil engineering graduate of the École Centrale des Arts et Métiers, Poitevin (1819–82) developed a means of transferring photographs to treated surfaces (not necessarily lithographic stones) with areas which attract and repel ink. A forerunner of the phototype and other forms of collotype, photolithography was used for archaeological publications as well as Austin A. Turner's 1860 *Villas on the Hudson*, which featured thirty-one country residences in antebellum America. See Hannavy, *Encyclopedia*, 2:1139–40 and Nadeau, *Encyclopedia*, 2:375 and 391.



be-hidden or permanently exposed structures, views such as Durandelle's construction photographs of the Opéra and Tour Eiffel created a visual imaginary for iron architecture, one which twentieth-century architects and theorists would deploy in their teleological quest to historicize the origins of International Style modernism (figs. 5.4 and 5.4).<sup>55</sup> While the leading architects and theorists of twentieth-century modernism often proclaimed their decisive break with history, they were just as likely to ground contemporary practice in precocious—often “unconscious”—strands of nineteenth-century building. Sigfried Giedion's 1928 manifesto *Bauen in Frankreich, Bauen in Eisen, Bauen in Eisenbeton* (*Building in France, Building in Iron, Building in Ferro-Concrete*) is a prime example. Within its pages (exquisitely laid out by Laszlo Moholy-Nagy), Giedion used photographs to argue that the immaterial forms and spatial interpenetration produced by the “engineer's vision” behind the great nineteenth-century engineering structures had been transferred into Le Corbusier's villas of the 1920s.<sup>56</sup> As Sokratis Georgiadis notes, Giedion was troubled by modernism's material associations, such as Walter Curt Behrendt's terming of modern architecture as a “material style.”<sup>57</sup> So Giedion instead constructed a parallel and dematerialized lineage, which celebrated the spatial manipulations in plan and section that were made possible by reinforced concrete construction, all the while ignoring its heavily corporeal nature. Interestingly, many nineteenth-century architects, especially Anatole de Baudot, saw rein-

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<sup>55</sup> For an example of this debate on whether nineteenth-century photographs of iron architecture should be considered “modern,” compare Perego, “Un Atelier du XIXe,” and Keller, “Durandelle.” While Perego reads a proto-modern aesthetic into Durandelle's construction photographs, Keller considers any such effect to be the result only of a concern for rigorous documentation.

<sup>56</sup> On Giedion's own use of photography, see Oechslin and Harbusch, “Sigfried Giedion.”

<sup>57</sup> Georgiadis, “Introduction,” 41.

forced concrete as a means of deploying iron's tensile strength without falling prey to its painfully unfortunate and downright un-architectural (to their eyes) immateriality.<sup>58</sup>

Giedion's *Building in France* hugely impressed Walter Benjamin, who wrote personally to congratulate the author; Benjamin quoted from *Building in France* at length in his *Arcades Project*. As Detlef Mertins observes, both Giedion and Benjamin were enthralled by the interpenetration of spaces afforded by a dematerialized architecture.<sup>59</sup> As Mertins explains, Benjamin put forward a slightly different perspective on the city and iron construction than Giedion's. Benjamin certainly admired the "radical knowledge" that Giedion harvested from the elevated viewpoints offered by the Tour Eiffel and the Pont transbordeur in Marseilles. Through the imperfect mediation of photography, Giedion could indeed use these structures as vantage points to see the future in the past. For Giedion, this futurity lay in the structure itself, that is, within the physical pattern of solid and void that characterizes iron construction.<sup>60</sup> His caption to a photograph of the Bon Marché's iron-and-glass roofscape in *Building in France* exemplifies this latent potentiality: "When the nineteenth century feels itself unobserved, it becomes bold" (fig. 5.6).<sup>61</sup> In this statement, Giedion recog-

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<sup>58</sup> Writing in 1896, F. de Villenoissy provides a detailed summary of the major positions regarding iron in French architecture, including de Baudot's espousal of reinforced concrete. See Villenoissy, "L'Architecture en Fer."

<sup>59</sup> Mertins, "Walter Benjamin." For Hilde Heynen, this interpenetration was clearly understood to have a social component; the erasure of boundaries was to be applied to both physical obstacles and societal hierarchies. See Heynen, "What Belongs?" 131. Elsewhere, I argue that Zola enacts this social component in his many scenes of rooftop reverie, including those in *Le Ventre de Paris*. See Sealy, "Dreams in Iron," 239.

<sup>60</sup> Mertins, "Walter Benjamin," 158–59.

<sup>61</sup> Giedion, *Building in France*, 117.

nized the potential of the roofscape as a place far away from the prying eyes of conformism and academicism, upon which the future could emerge.

Benjamin saw something else in Giedion's photographs: the view of the city afforded through the iron structure. Such views could reveal the "magnificent potentiality locked within the reality of alienation and exploitation" visible below in the working-class quarters of Paris.<sup>62</sup> While Giedion praised the engineers' vision that produced the glazed roofscape, Benjamin lauded the constructors who had first gained a new, technologically mediated understanding of the city from above. This understanding transformed the overcrowded city from a site of daily oppression into a hopeful image of future emancipation. While the upper half of the *Revue générale*'s Halles photograph illustrates the spatial possibilities of iron construction championed by Giedion, the lower half reveals a Benjaminian re-mediation of the urban body.

**"It would seem that we still have to wait."**

The 1889 Universal Exposition in Paris celebrated iron construction and lauded the work of scientists and engineers, symbolized as it was by the controversial construction of the Tour Eiffel and Ferdinand Dutert's immense Galerie des Machines. Roger Marx compared the latter to "a bird in flight," with an airy, floating sensibility.<sup>63</sup> As Meredith Clausen notes, the architect Frantz Jourdain lauded his colleagues who now followed the technological aesthetic of the engineer.<sup>64</sup> He praised the Galerie des Machines' iron structure for "having

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<sup>62</sup> Mertins, "Walter Benjamin," 159.

<sup>63</sup> Marx, "L'Exposition Universelle," 362.

<sup>64</sup> Clausen, Frantz Jourdain, 84.

only the dimensions mathematically necessary for the strength and stability of these audacious domes.”<sup>65</sup> Jourdain’s celebration of iron architecture led to a series of articles in *La Construction Moderne* in 1887 in which he sparred with the Garnier. The latter feared that Paris was being transformed into a factory, when it should instead remain a museum; “If we let progress dominate us, art will become nothing but a memory.”<sup>66</sup> In his riposte, Jourdain claimed that Garnier had “declared war on progress” and displayed his “hatred for the modern spirit.”<sup>67</sup>

Jourdain’s effusive praise and Garnier’s invective are indicative of a key point: 1889 was both the triumph and apogee of iron construction. While Jourdain and others would continue their quest to reconcile technology and modernity through sinuous curves and flowering ornament, others led a more conservative reaction. As Deborah Silverman notes, although the Tour Eiffel remained standing on the Champ de Mars, it was symbolically dismantled on many occasions in the 1890s.<sup>68</sup> Henri Labrouste’s reading room at the Bibliothèque Nationale (1854–75), once praised for the immateriality of its cast-iron columns and ceramic domes, was condemned in the 1890s as an act of vandalism—a betrayal of the classical qualities of the library’s older wings. A new restoration project would allow “the palace to triumph over the railroad shed.”<sup>69</sup> At the 1889 Exposition, the term “Art Nouveau” had been

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<sup>65</sup> Jourdain, “L’Architecture,” 469.

<sup>66</sup> Garnier, “Arts et Progrès,” 25.

<sup>67</sup> Jourdain, “Art et Progrès,” 37.

<sup>68</sup> Silverman, *Art Nouveau*, 152.

<sup>69</sup> Bouchot, “Les Derniers travaux,” 91–7. See also Silverman, *Art Nouveau*, 148–51. Likewise, Jourdain’s Art Nouveau Samaritaine department store (1905–10) was covered with a stone façade in the 1920s. See Clausen, “Frantz Jourdain,” 1.

used to describe the Tour Eiffel and the Galerie des Machines, both of which were sublime feats of engineering. In the 1890s, the meaning of Art Nouveau shifted, now describing the government-led promotion of artisanal crafts and interior decoration: the public monument had given way to the private iron ornament.

While the analogy between iron architecture and photography can be extended to note the extent to which each could support this *fin-de-siècle* continuation or return of historical forms. Photography's path to ubiquity was more straightforward. While it had once been hidden behind the mark of the engraver's remedial burin, technical advances coupled with its ability to provide a characteristically modern visual regime led to its increasingly widespread adoption. The question of whether iron could provide a modern architectural aesthetic was comparatively far more difficult, fraught as it was by questions of immateriality. Given its frequent use as a structural and not a cladding material in France, iron was often hidden behind masonry façades, serving as a support for the very historicist style-architecture it was supposed to supplant. As a representational medium, photography's modernity was not limited to its content; the relative modernity of buildings—at least from a twentieth-century modernist point of view—was often limited to an analysis of their visual aesthetics.

Lévy's *Constructions nouvelles* and other similar publications, such as Héliographe's *Nouveautés architecturales* (c. 1900) contain photographic views mostly depicting recently completed apartment buildings intended for a well-off clientele. Such publications were revolutionary in recording a survey of modern, commercial architecture, as opposed to earlier photographic emphasis on historic monuments, such as the Château de Blois, or massive state-run projects like the Nouveau Louvre and the Nouvel Opéra. The photographs in the-

se publications clearly deploy a modern photographic visual regime, with angled views in two-point perspective, often taken from an elevated vantage point. The commercial nature of these publications perhaps explains the preference for “logical constructions” over “selective depictions,” but the sense of fragmentation inherent in the latter is not absent: in these photographs, it is the urban object of bourgeois Paris that is being fragmented into alluring pieces, ripe for speculative acquisition. While the depicted constructions span a wide variety of historicist architectural styles, they share a degree of modulated ornamentation well revealed by the angled viewpoints. Many of these photographs were taken just at the end of construction, as evidenced by the “à louer” signs on Gustave Gridaine’s apartment building on the rue du Général Henrion Bertier in Neuilly and several others in the album (fig. 5.7).

Historical compendia such as Paul Planat’s 1905 *Le Style Louis XVI* also exemplify the modernity of fin-de-siècle photographs. Planat was far from a traditionalist and his journal, *La Construction moderne*, had often published photographs in the 1880s depicting engineering structures. *Le Style Louis XVI* presents 136 original photographs by François Antoine Vizavona of major monuments from the eighteenth century, such as the École Militaire and the church of Saint-Sulpice (fig. 5.8). Seen from the modernist point of view, Planat’s choice of subject matter is surprisingly reactionary and an invitation to falsehood: an attempt to return French architecture to its classical roots at the expense of the experimentation with new forms, materials and ideas that had marked the previous decades. Yet for Planat, the “simple and true” Louis XVI style was an antidote to the historicist exaggera-

tions of nineteenth-century French architecture.<sup>70</sup> Like Hermann Muthesius's interest in the English Queen Anne and German *Biedermeier* styles, he recoiled from ornamental excess and sought a way forward through sober example of national historic tradition. In his preface to *Le Style Louis XVI*, he declared that architects today must "choose between Vice and Vertu, as in mythical times. In art, at least, vice has many charms, but they are misleading; we are constrained sooner or later to return to architectural vertu."<sup>71</sup> The photographs in his publication were central to this project. While strict imitation was anathema to art,

artists are allowed to and it is useful for them to study exemplary styles [*styles de bon aloi*], in order to discern what is and remains immutably beautiful, because this beauty is founded on the reasonable, the just and the true. It is then up to the artist to make use of these qualities... to use according to his personal talent.<sup>72</sup>

Whether Planat's publication should be considered modernist or reactionary, Vizzavona's photographs are undeniably marked by a modernist sensibility, with their frequent diagonal views, plunging perspectives and play of spatial juxtapositions (often accentuated by the mirrors adorning many of the depicted buildings' interiors; fig. 5.9). Save for their subject matter, they would not be out of place in one of Le Corbusier's early publications.

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<sup>70</sup> "[S]imple et vrai." Planat, *Style Louis XVI*, i.

<sup>71</sup> "[C]omme aux temps mythologiques, choisir entre le Vice et la Vertu. En art, tout au moins, le vice a bien quelques charmes, mais ils sont trompeurs; on est contraint tôt ou tard de revenir à la vertu architecturale." Planat, *Style Louis XVI*, i.

<sup>72</sup> "[I] est permis aux artistes et il leur est utile d'étudier les styles de bon aloi, pour y discerner ce qui est et demeure immuablement beau, parce que cette beauté est fondée sur le raisonnable, le juste et le vrai. Il appartient ensuite à l'artiste de s'approprier ces qualités, ainsi constatées, pour les utiliser au gré de son talent personnel." Planat, *Style Louis XVI*, i.

In 1896, twenty-three after the publication of *Le Ventre de Paris*, Zola acknowledged his profound disillusion with the state of iron architecture. Answering a question posed by Jourdain in the pages of the *Revue des Arts Décoratifs*: “What do you think of contemporary architecture?” Zola replied: “I believed for an instant that a new material, iron, would create a modern style. But it would seem that we still have to wait.”<sup>73</sup> In late nineteenth-century French architecture, the question of what would be a modern style, and what would constitute truthful architecture remained unresolved. Yet at the same time, the representation of the vastly different claimants converged upon a modern photographic visual regime, one that would be familiar to twentieth-century eyes.

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<sup>73</sup> “Que Pensez-vous” 95.



## **Conclusion.**

### **“Unseen and accidentally developed”**

John Ruskin claimed the English were an upright and faithful people; however, they admitted “more of pretence, concealment and deceit” in their architecture than any other nation.<sup>1</sup> In his 1849 “The Lamp of Truth,” Ruskin enumerates three principle falsehoods in nineteenth-century architecture: structural falsity, material falsity, and the operative deceit inherent in the use of any form of cast or machine-made ornament.<sup>2</sup> Although Ruskin’s essay often veers into Protestant moralising, it is notable for its many digressions. Ruskin enumerates multiple permissible divulgations from the (otherwise) absolute moral necessity of truth in architecture; for example, his acceptance of the fictive vegetable metaphor impregnating Gothic structural members. Truth may be an absolute, God-given moral impera-

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<sup>1</sup> Ruskin, “Lamp of Truth,” 60.

<sup>2</sup> Ruskin treats with the use of iron under this category; he ultimately decides to exclude the structural use of iron from architect, although not on grounds of deceitfulness. Iron was, however, permissible for binding, where it was used as if it were a form of cement. Such a claim is highly interesting in light of Antoine Picon’s discussion of fluid definition of materials (for instance, the point at which reinforced concrete ceases to be a composite). See Picon, *Digital Culture*, 144.

tive, but it is also to be accessed on a case-by-case basis. It is therefore unsurprising that Ruskin, almost at the very beginning of “The Lamp of Truth,” avows that truth is something that must be practiced. This is logical given Ruskin’s own endowment of skilled manual labour with great moral authority. For Ruskin, speaking truth was more a matter of habit—a question of customary practice—than of will. The artisan should practice truth not because truthful handicrafts would advance the cause of truth, but rather because such a practice is ennobling for the worker.<sup>3</sup>

Describing the watershed moment in the historical evolution of Gothic architecture when truth was sacrificed for delight through a focus on line instead of mass, Ruskin makes use of a photographic metaphor. While previously Gothic architects had focused their craft upon the forming of light-filled voids within windows, at a certain point their gaze shifted from these openings to the stonework surrounding them. Previously,

the architect did not care about the stone... [But] when the stone-work became an arrangement of graceful and parallel lines, that arrangement, like some form in a picture, unseen and accidentally developed, struck suddenly, inevitably on the sight.<sup>4</sup>

This allusion to photography’s chemical mystery recalls contemporaneous statements by Baron Gros, Viollet-le-Duc and Ruskin himself praising photography’s ability to reveal details that the human eye had not registered.

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<sup>3</sup> Ruskin, “Lamp of Truth,” 57.

<sup>4</sup> Ruskin, “Lamp of Truth,” 91.

Given nineteenth-century architects' and theorists' special concern for truth, it is unsurprising that they would construct a discourse of truthfulness surrounding architectural photographs. Their affinity for truthful representations as a support for supposedly truthful practice naturally imbricated photography in other media, such as casting, engraving and perspectival drawing. Against representations considered to be false, such as drawings tainted by insufficient or inaccurate details, pictorial conventions or picturesque conceits, photography offered supposedly unmediated, faithful and unimpeachable documentation. In fact, photography's greatest utility in terms of truth lay in the potent pairing of its indexical guarantee and the mediated malleability of the images it produced. While truth was widely held to be an ideal, I have argued that it was even more so a construct erected and renewed through truthful practices involving both the making of visual representations and the textual claims made on their behalf.

Believing their epoch to be ridden with falseness, Europe's leading nineteenth-century cultural critics, architects and theorists joined Ruskin in his obsession with the question of truth. This concern resounded in France with Baudot, Labrouste, and Viollet-le-Duc and in England with Fergusson, A.W.N. Pugin and William Morris. Further afield, Muthesius in Germany, Adolf Loos in Austria, and Louis Sullivan in the United States wrestled with the problem. In nineteenth-century French architectural discourse, truth was both a specific term (*la vérité, le vrai*), a series of derivative expressions (*le véritable, le vraisemblable*) that were sometimes understood to be malleable antonyms to absolute truth, and an umbrella

for a larger category of related concepts invested with moral import, such as honesty, objectivity, sincerity, rationalism and functionalism.<sup>5</sup>

Adrian Forty has organized the vast number of terms in this final grouping into three classes: the expressive truth of the inner essence or spirit of the maker; structural truth, which often assumed a moral dimension; and historical truth, the imperative that architecture be of its own time.<sup>6</sup> Examples of each have been explored in this dissertation. In the first chapter, photography was shown to support the expressive truth of the restoration architect, whose practice required impeccably accurate documents to properly constrain his or her subjective interventions. The desired presence or necessary absence of certain intermediate actors (photographers, ornamental stone carvers, engravers, etc.) from representations was discussed in the first two chapters. The truth or falsity of the spatial and mobile experience of a viewing subject was considered in the fourth chapter. The final chapter focussed upon structural truth, and especially the conflict brought about by iron construction with earlier equations of truth and beauty. The imperative for historical truth was seen in the practices of restoration and historicist ornamentation considered in the first chapter. The utility of remediated photographs as evidence for disputes over historical questions was explored in the second chapter.

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<sup>5</sup> In her study of architectural discourse and the concept of truth in *fin-de-siècle* Vienna, Leslie Topp examines many different concepts of truth, from realism to idealism, primacy of purpose (*zweck*) to social and moral authority, as well as rationalist truth to materials and structure. These related understandings shaped the practices of Joseph Maria Olbrich, Josef Hoffmann, Otto Wagner and Loos. See Topp, *Architecture*.

<sup>6</sup> Forty, "Truth."

To Fortý's categories a fourth may be added: the constant negotiations as to what constituted "representational truth." In the first chapter, the construction of an indexical guarantee in photography and other analogous media, and the notion that photographs could access a higher visual truth than the human eye were examined. The extent to which scientific objectivity is in fact a subjective performance was explored in the second chapter, which focused upon the lengths permissible to produce images that could live up to idealized standards of representational fidelity and utility. The third and fourth chapters focused upon the long debates offered the competing truth claims of orthogonal and perspectival representations. The fifth chapter examined the brutal facticity of the photograph, and whether its industrial associations made it more or less truthful.

While photographs, especially those published using photographic reproduction techniques, are central to each chapter, a wide variety of other media has been considered, including casting, engraving, drawing and literature. Throughout, particular attention has been paid to the claims made on behalf of photographs, especially their truthfulness. While such affirmations must necessarily be understood as contingent and shifting, it is precisely their constructed nature that allows us to witness the creation of a discourse around photography in architectural circles. In particular, the frequent combination of an assertion of photography's indexical guarantee—often through praise for photographs' remarkable fidelity of detail—with an acknowledgement of its several shortcomings opens an intriguing discursive space, one which posits a photographic ideal which most if not all individual photographs could not match.

Together, the five thematic chapters of this dissertation trace the rise of a photographic visual regime in nineteenth-century French architectural publications. They move from

inaugural moments, such as the *Revue générale*'s Blois and Halles photographs from 1856 and the English example of *The Builder*'s 1845 Dreux engraving, through the emergence of a truly photographic regime in a series of engravings around 1870 published by the *Gazette des architectes* and the *Revue générale*, to the complex visual environment of the century's later decades, evidenced by disparate works such as Baudot's *La Sculpture française* (1884) and Lévy's *Constructions nouvelles* (c. 1895). While not always instantiated by photographs, this modern visual regime was marked by its many photographic qualities: an extremely high and even level of detail, dramatic shading, diagonal viewpoints and abrupt cropping distinguish these images from existing orthogonal and perspectival drawings. This tightly focused scopic vision offers a dynamic conception of the architectural object, dissolving the classical unity of the building in favor of the experience of moving through space. Tied to the rising spatial awareness in architectural theory, this visual regime continues the same ethos of fragmentation seen in the catalogues of photographs of plaster casts at the heart of historicist ornamentation.

For Peter Collins and other theorists of modern architecture, truth—in the form of rationalism and functionalism—offered a check on the dangers of unbounded imagination.<sup>7</sup> This was especially the case with Hannes Meyer and many other *Neues Bauen* architects, for whom design had to offer universal solutions to precisely defined problems. Earlier, Carlo Lodoli had called for an architecture of truth based on reason as an antidote against Baroque

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<sup>7</sup> Collins, *Changing Ideals*.

caprice.<sup>8</sup> The extent to which such moralizing claims rest upon fictions is made by clear by Marc-Antoine Laugier's primitive hut, which served a similar purpose.

John Ruskin's view was the opposite: in "The Lamp of Truth" he affirms that the imagination was not deception, so long as it accepted the absence or the impossibility of the thing imagined. In a sadly prescient comment, Ruskin declares the imagination to be "a noble faculty so long as it confesses its own ideality; when it ceases to confess this, it is insanity."<sup>9</sup> Once again, this assumes a religious dimension, for spiritually, men must "be able to invent and behold what is not," but morally, they must confess that it is not.<sup>10</sup>

This dissertation has explored how architectural practices asserting truthfulness supported new representational techniques. While my sympathies are with Ruskin's view of the imagination as not inherently deceitful, I have gone beyond his stricture to recognize that while architectural practice may strive for ideals, it is supported by carefully calibrated mediations, accepted license, and productive fictions furnished by representations. While the ideal of truth remains elusive, the spectacle of its assertion in practice is not only possible but also profoundly powerful.

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<sup>8</sup> Forty, "Truth," 296.

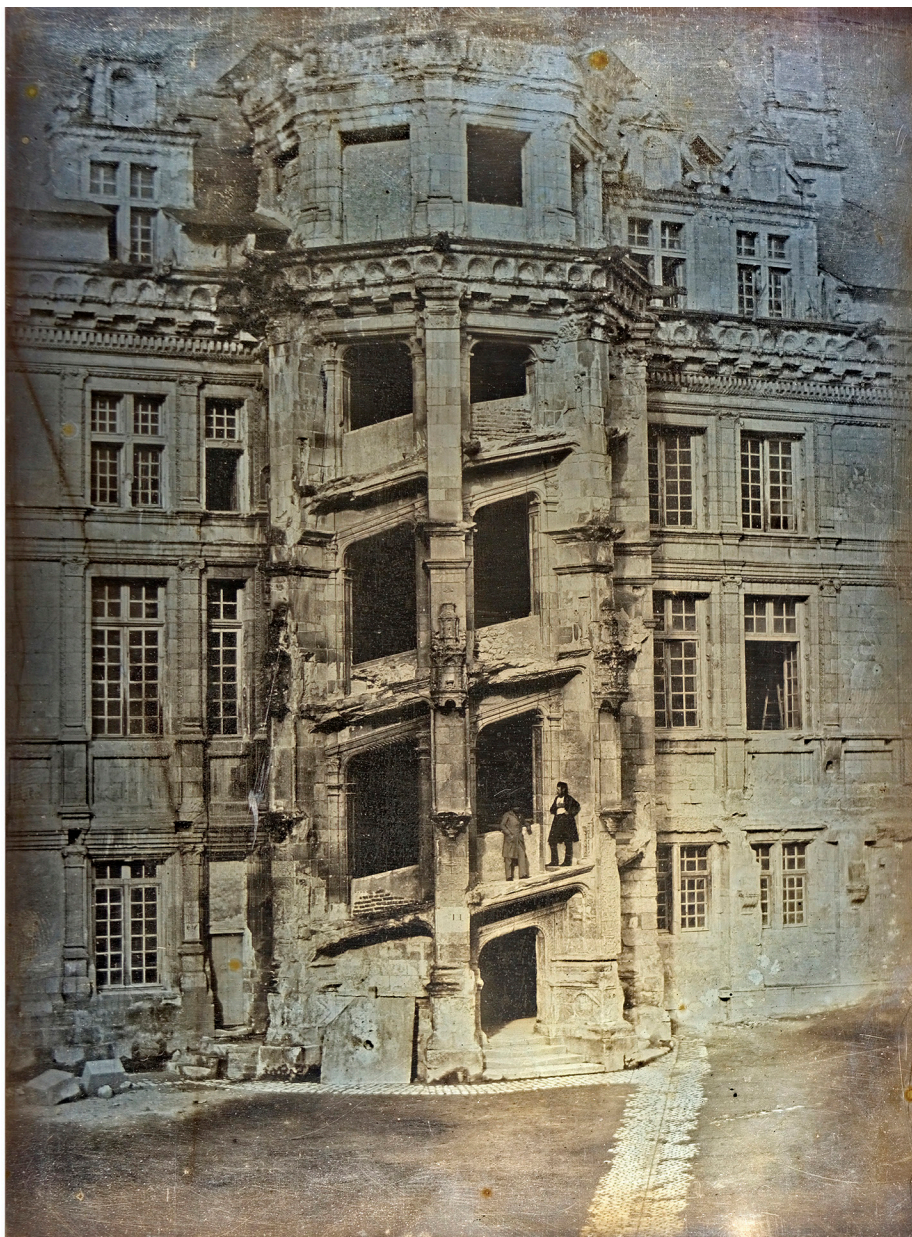
<sup>9</sup> Ruskin, "The Lamp of Truth," 58.

<sup>10</sup> Ruskin, "The Lamp of Truth," 58.



1.1. François-Alphonse Fortier, Staircase of the François Ier Wing of the Château de Blois (built c. 1520), restored in 1847 by M Duban, c. 1853. Calotype. In *Revue générale de l'architecture et des travaux publics* 14 (1856): plate 21. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.R484.





1.2. Hippolyte Bayard, Château de Blois, view of the François Ier Staircase, 1843. Daguerreotype. Collection Société française de photographie (coll.SFP) frSFP\_0024im\_0323\_DG.



1.3. William Henry Fox Talbot, *The Haystack*, probably 1841. Salted paper print from paper negative. In William Henry Fox Talbot, *The Pencil of Nature* (London: Longman, Brown, Green, & Longmans, [1844–46]), plate 10. Metropolitan Museum of Art 1994.197.2 (5). Gift of Jean Horblit, in memory of Harrison D. Horblit, 1994. Digital image downloaded under a Creative Commons Zero license from the Metropolitan Museum of Art website.



1.4. William Henry Fox Talbot, View of the Boulevards at Paris, May 1843. Salted paper print. In William Henry Fox Talbot, *The Pencil of Nature* (London: Longman, Brown, Green, & Longmans, [1844–46]), plate 2. J. Paul Getty Museum 84.XM.478.8. Digital image courtesy of the Getty's Open Content Program.



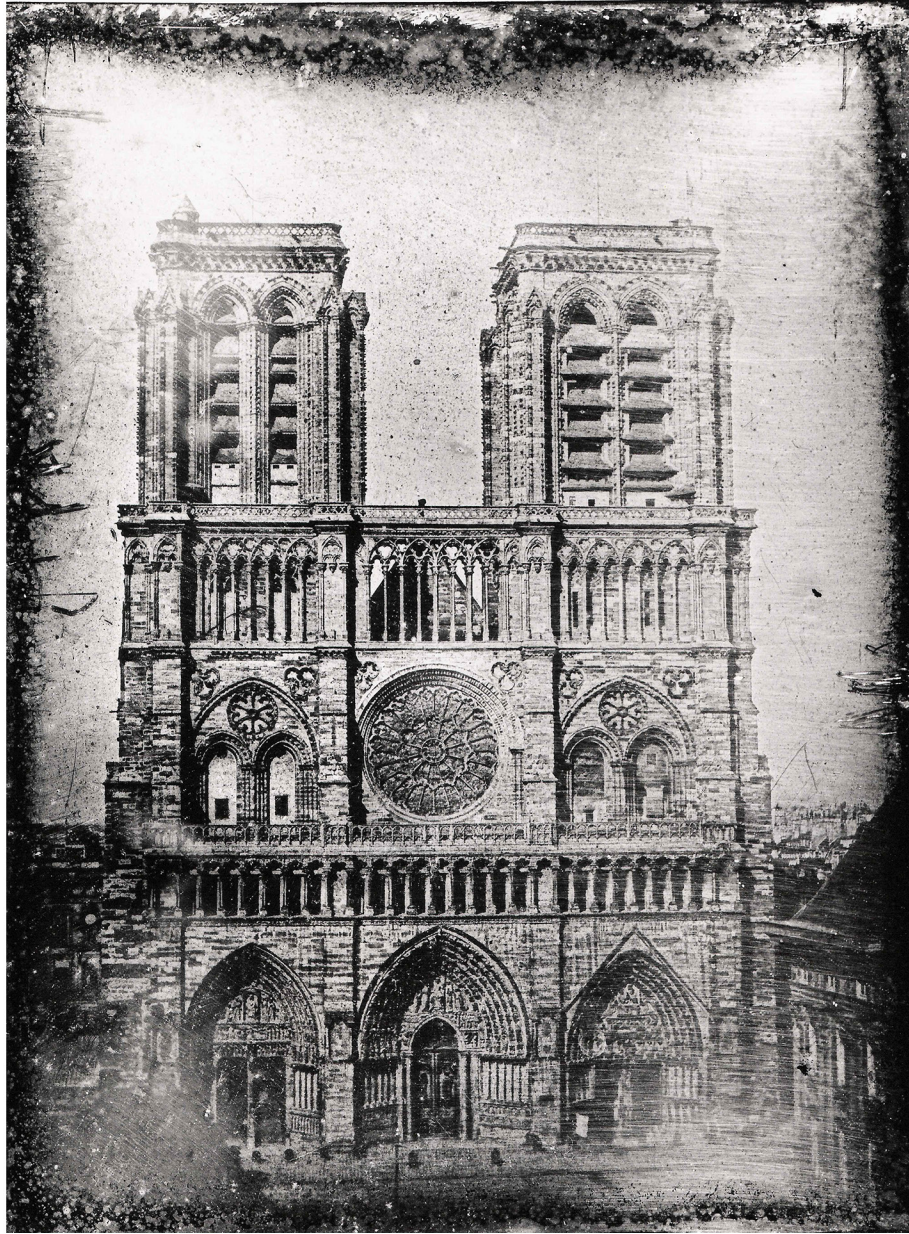
1.5. Baron Jean-Baptiste-Louis Gros, View of the east façade of the Propylaea, Acropolis, Athens, Greece, 1850. Full-plate daguerreotype. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CCA PH1982:0603.



1.6. The 'Frenchman' [Cavalier Iller], Venice. The Grand Canal. Casa Foscari, c. 1845. Daguerreotype. Collection K. & J. Jacobson P 89. In Ken Jacobson and Jenny Jacobson, *Carrying Off the Palaces: John Ruskin's Lost Daguerreotypes* (London: Quaritch, 2015), 279 catalogue No. 129. Photograph by Peter Sealy.



1.7. John Ruskin and the “Frenchman” [Cavalier Iller], Venice. The Grand Canal. Palazzo Loredan, c. 1845. Daguerreotype. Collection K. & J. Jacobson P 86. In Ken Jacobson and Jenny Jacobson, *Carrying Off the Palaces: John Ruskin’s Lost Daguerreotypes* (London: Quaritch, 2015), 279 catalogue No. 279. Photograph by Peter Sealy.

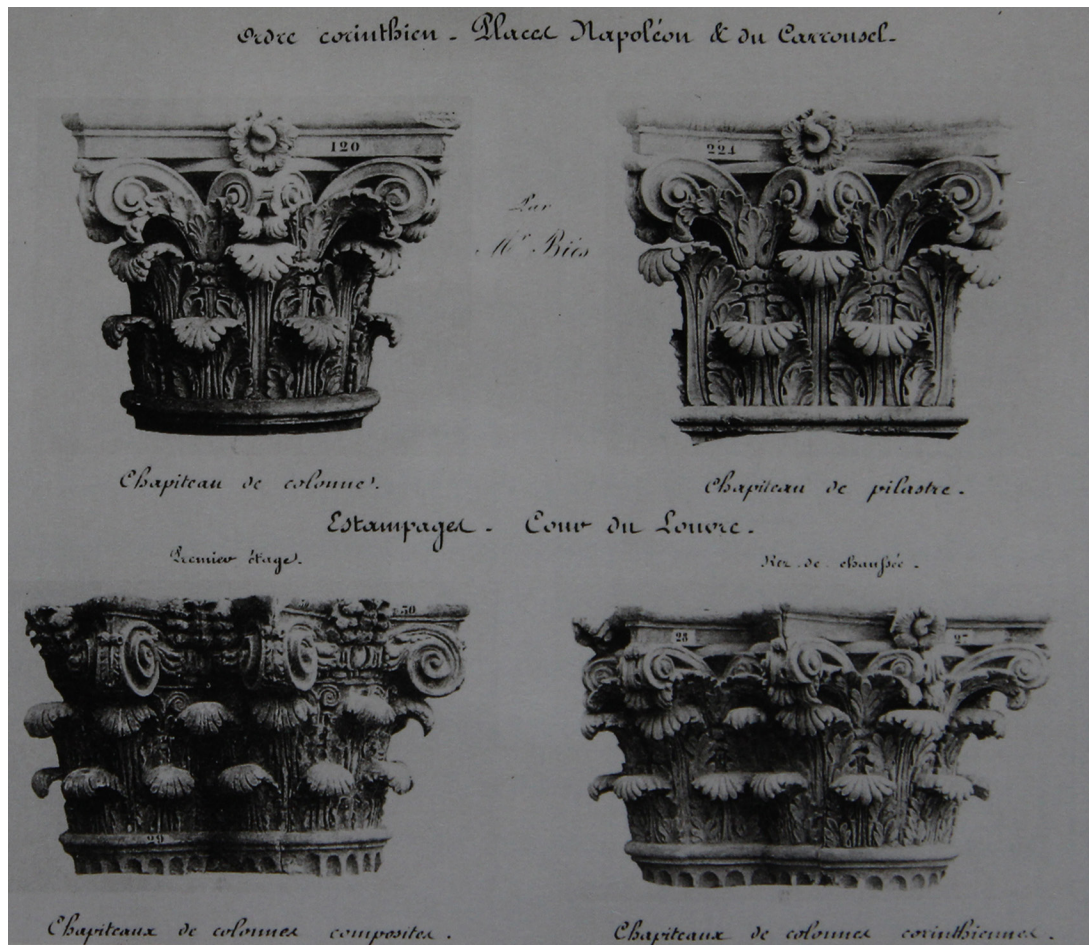


1.8. Nicolas Marie Paymal Lerebours, Notre Dame, Paris, 1839 or 1840. Full-plate daguerreotype. Oxford Museum of the History of Science 89963.



1.9. William Henry Fox Talbot, Lacock Abbey, 1845. Salted paper print. In William Henry Fox Talbot, *The Pencil of Nature* (London: Longman, Brown, Green, & Longmans, [1844–46]), plate 19. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture PH1985:0382.





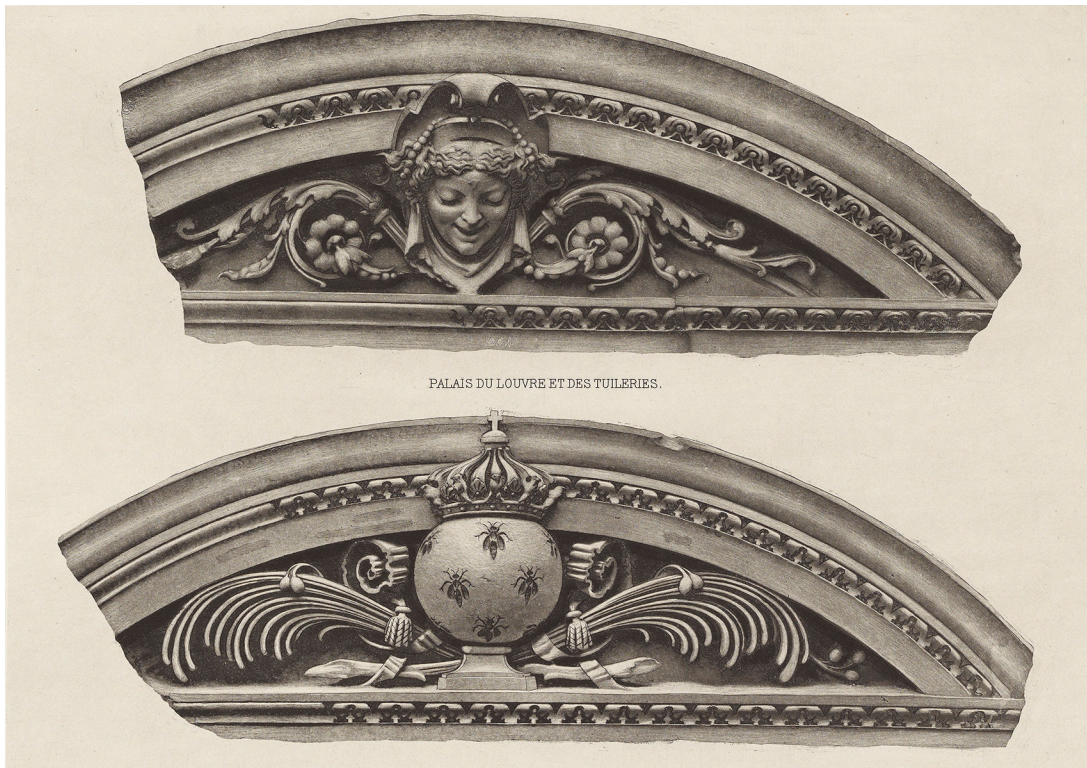
1.10. Édouard Baldus, Casts from the Place Napoléon & du Carrousel and Cour Carrée, 1857 or earlier. Salted paper print. In Édouard Baldus, *Réunion des Tuileries au Louvre 1852-1857* (Paris: Chardon aîné, 1857). Photograph from Malcom Daniel, *The Photographs of Édouard Baldus* (New York: Metropolitan Museum of Art; Montreal: Canadian Centre for Architecture, 1994), 115, figure 89.



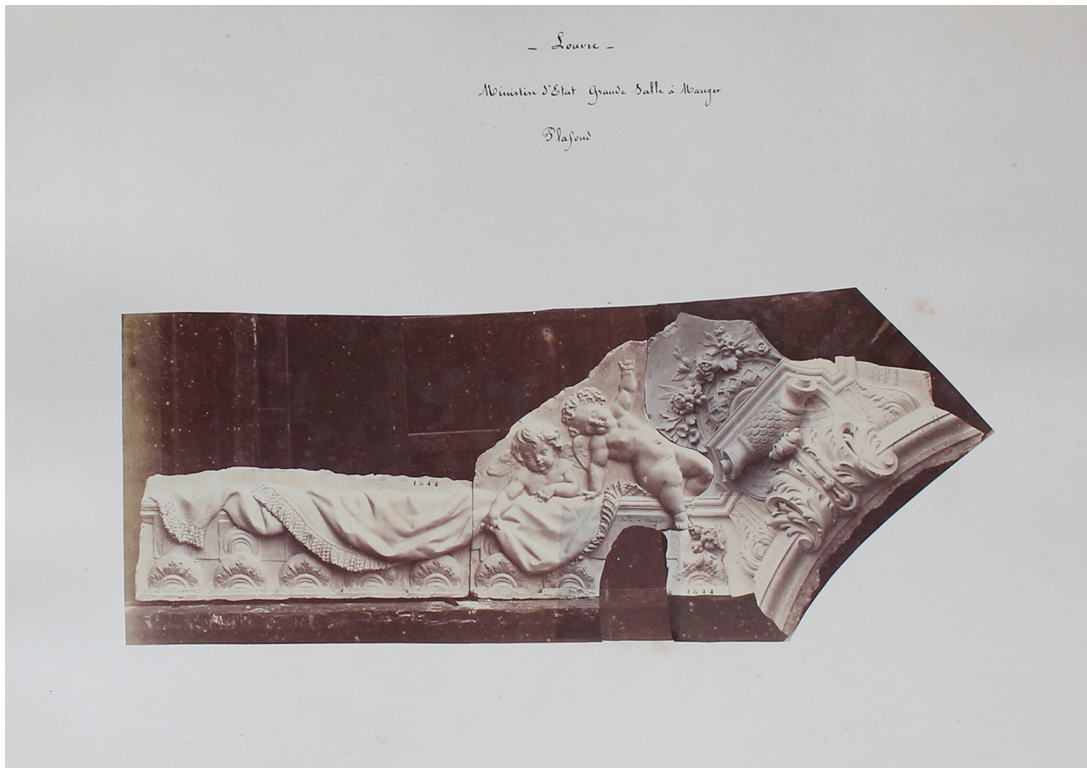
1.11. Édouard Baldus, Nouveau Louvre, c. 1868. Héliogravure. In Édouard Baldus, *Palais du Louvre et des Tuileries: Motifs de Decorations tires des Constructions executées au Nouveau Louvre et au Palais*. J. Paul Getty Museum 84.XM.415.7. Digital image courtesy of the Getty's Open Content Program.



1.12. Édouard Baldus, The Pavillon Sully, Louvre, Paris, between 1852 and 1857. Salted paper print. In *Réunion des Tuileries au Louvre 1852–1857* (Paris: Chardon aîné, 1857). J. Paul Getty Museum 84.XO.735.3.2.19. Digital image courtesy of the Getty's Open Content Program.



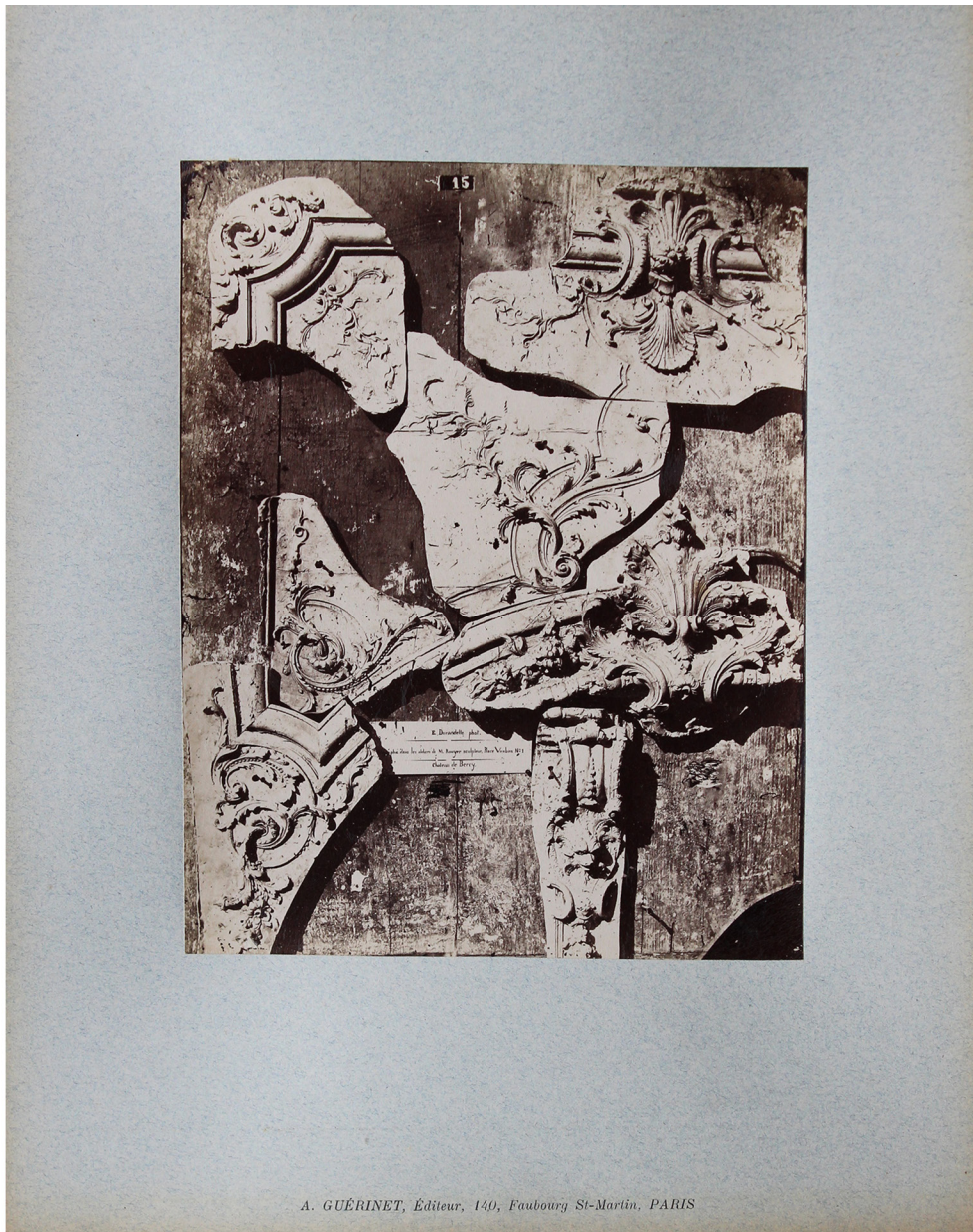
1.13. Édouard Baldus, Louvre (Façade on the Quai), c. 1868. Héliogravure. In Édouard Baldus, *Palais du Louvre et des Tuileries: Motifs de Decorations tires des Constructions executées au Nouveau Louvre et au Palais*. J. Paul Getty Museum 84.XO.610.87. Digital image courtesy of the Getty's Open Content Program.



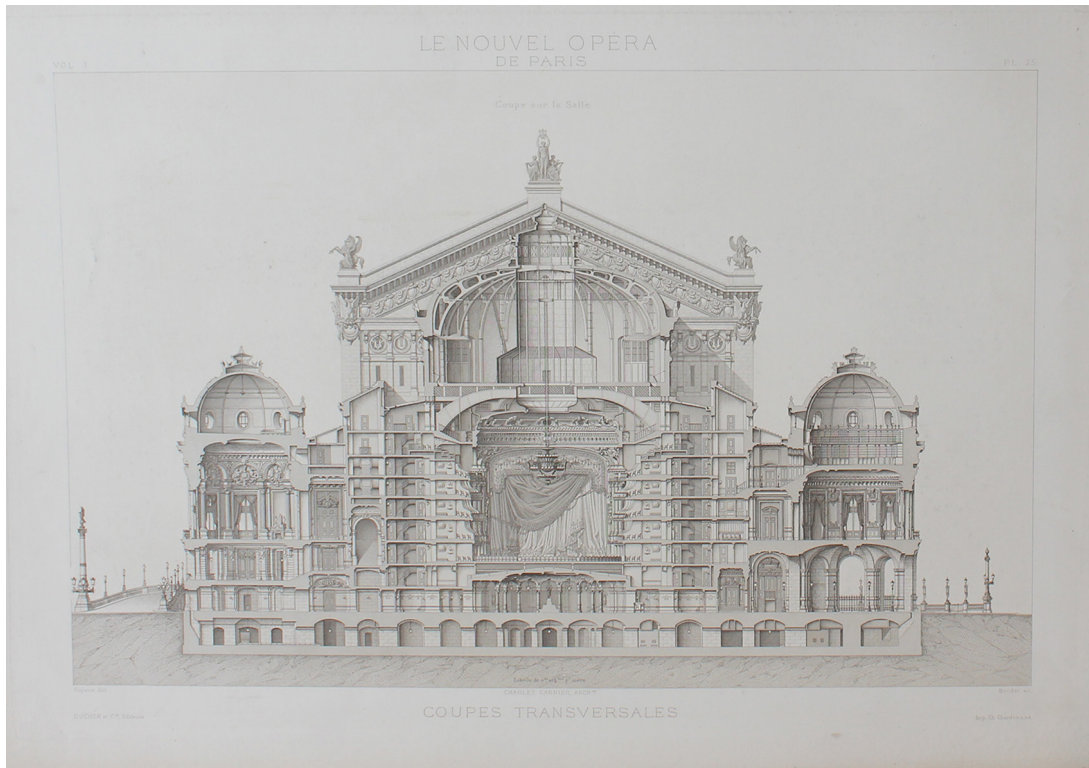
1.14. Édouard Baldus, Grand Dining Room of the Minister of State, between 1853 and 1860. Albumen silver print. In "Photographies d'après les Modèles composés et exécutés en pierre, bois, bronze, fonte de fer et carton-pierre pour le Palais des Tuileries et du Louvre de 1853 à 1860 par Émile Knecht sculpteur." Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1986:0777:038. Photograph by Peter Sealy.



1.15. Louis-Émile Durandelle, Apprentice Leaning on Plaster Casts Taken from the Frieze of the Grand Salon, Château de Bercy, 1860 or 1861. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1979:0469:020. Photograph by Peter Sealy.



1.16. Louis-Émile Durandelle, Plaster Casts Taken from the Château de Bercy, 1860 or 1861. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1979:0469:014. Photograph by Peter Sealy.



1.17. Charles Garnier, Section through the Auditorium, 1880 or earlier. Engraving. In Charles Garnier, *Le Nouvel Opéra de Paris*, vol. 1, *Planches* (Paris: Ducher et Cie., 1880), plate 25. Albumen silver print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M 4868. Photograph by Peter Sealy.





1.18. Louis-Émile Durandelle, Streetlamp from Exterior Sidewalk, 1876. Albumen silver print. In Charles Garnier, *Le Nouvel Opéra de Paris, Bronzes* (Paris: Ducher et Cie., 1876), plate 8. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1979:0162.01:008.



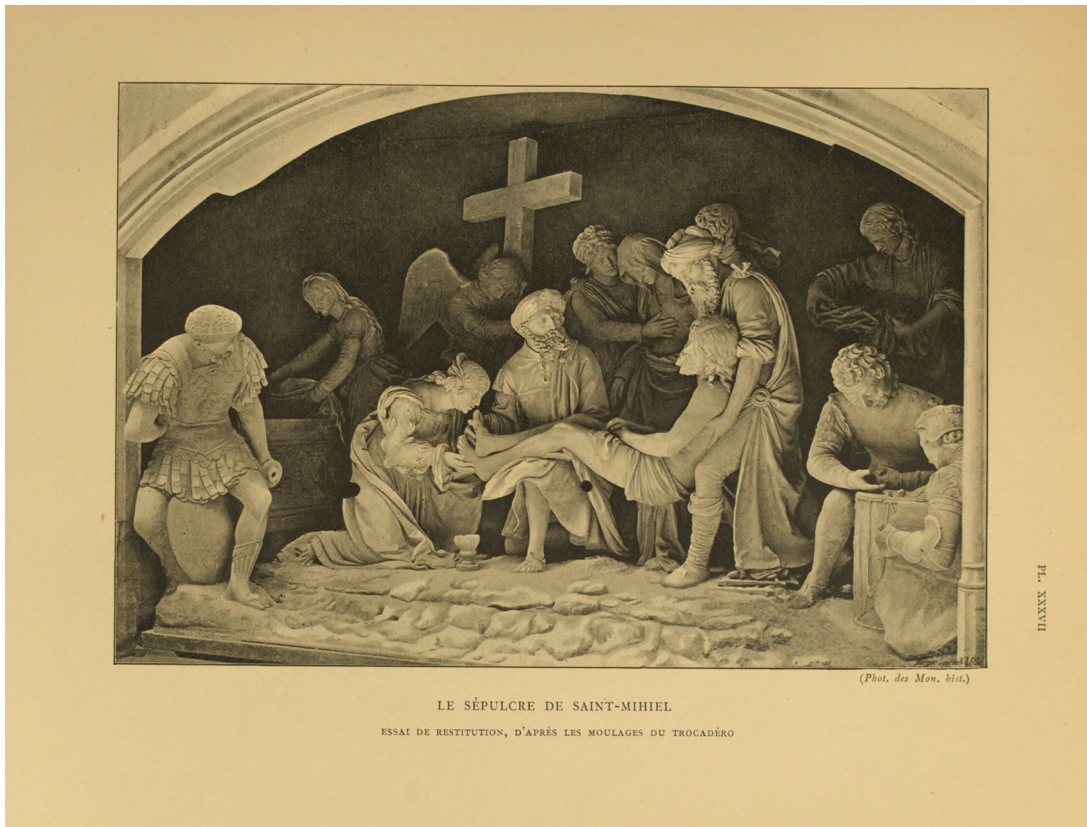
1.19. Louis-Émile Durandelle, View of a keystone and tympanum of the lower part of the Ticket Lobby, c. 1868. Albumen silver print. In Charles Garnier, *Le Nouvel Opéra de Paris, Sculpture ornementale* (Paris: Ducher et Cie., 1876), plate 12. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1979:0162.04:012.



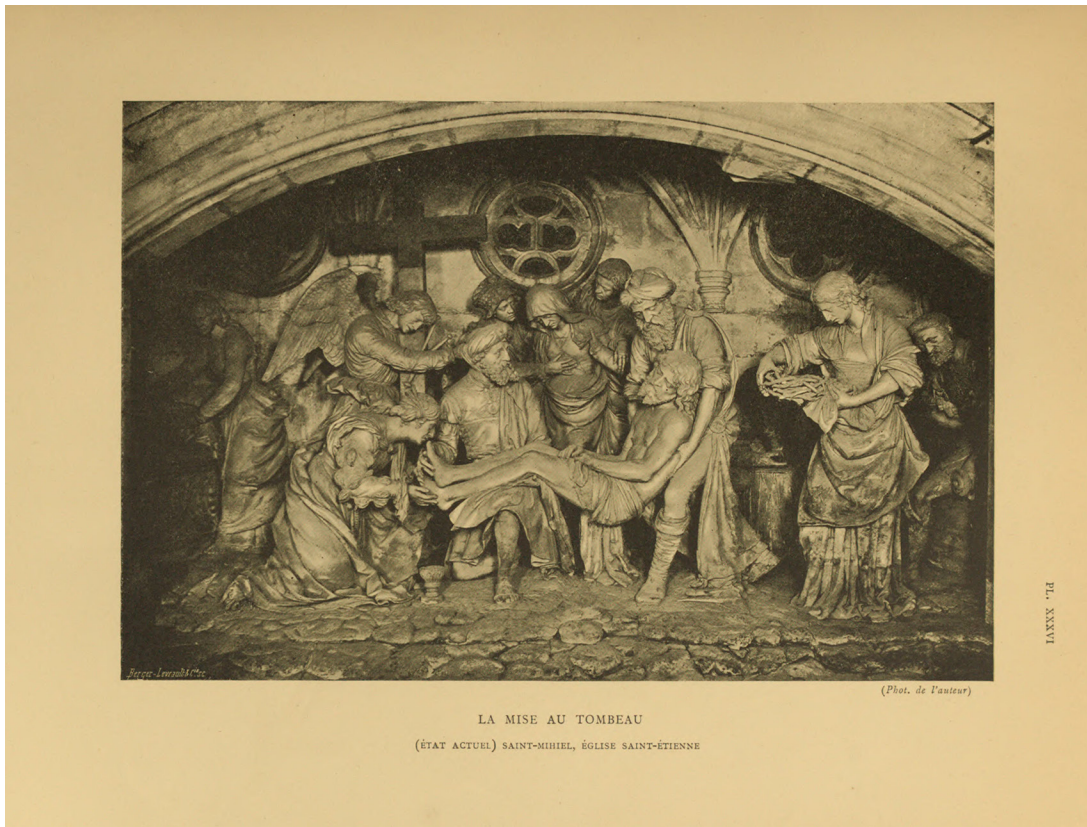
1.20. Louis-Émile Durandelle, Column capital from the Circular Vestibule, 1875 or earlier. Albumen silver print. In Charles Garnier, *Le Nouvel Opéra de Paris, Sculpture ornementale* (Paris: Ducher et Cie., 1876), plate 25. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1979:0162.04:037. Photo-graph by Peter Sealy.



1.21. Paul Robert, Musée de Sculpture comparée: 16th century Gallery, ca. 1895 or earlier. Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée (Palais du Trocadéro)*, vol. 4, XVI<sup>e</sup> siècle (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 83. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy.



1.22. Unknown Photographer of the Monuments Historiques, The Saint-Mihiel Sepulchre, Restitution, After the Trocadéro's Casts, 1911 or before. In Paul Denis, *Ligier Richier: L'Artiste et son oeuvre* (Paris: Berger-Levrault, 1911), plate 37. University of Toronto Robarts Library NB553 .R5 D3. Digital image downloaded from the Internet Archive.



1.23. Paul Denis, *The Entombment*, (Current State) Saint-Mihiel, Église Saint-Étienne, 1911 or before. In Paul Denis, *Ligier Richier: L'Artiste et son oeuvre* (Paris: Berger-Levrault, 1911), plate 36. University of Toronto Robarts Library NB553 .R5 D3. Digital image downloaded from the Internet Archive.

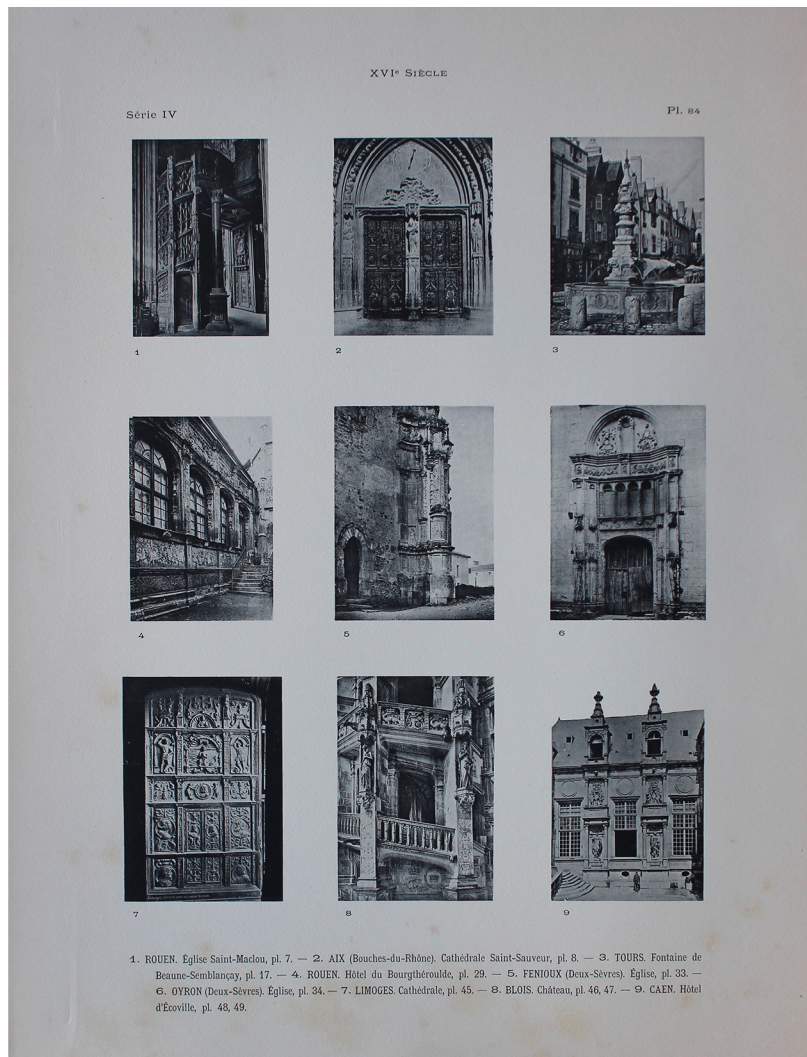


1.24. Paul Robert, *La Mise au Tombeau* by Ligier Richier from the Church of Saint-Étienne at Saint-Mihiel (Meuse). Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée (Palais du Trocadéro)*, vol. 4, *XVI<sup>e</sup> siècle* (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 62. Phototypie. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy.



1.25. Paul Robert, Château de Blois: Ornament above a Door from the François Ier Staircase at the Château de Blois, ca. 1895 or earlier. Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée (Palais du Trocadéro)*, vol. 4, *XVI<sup>e</sup> siècle* (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 46. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy.





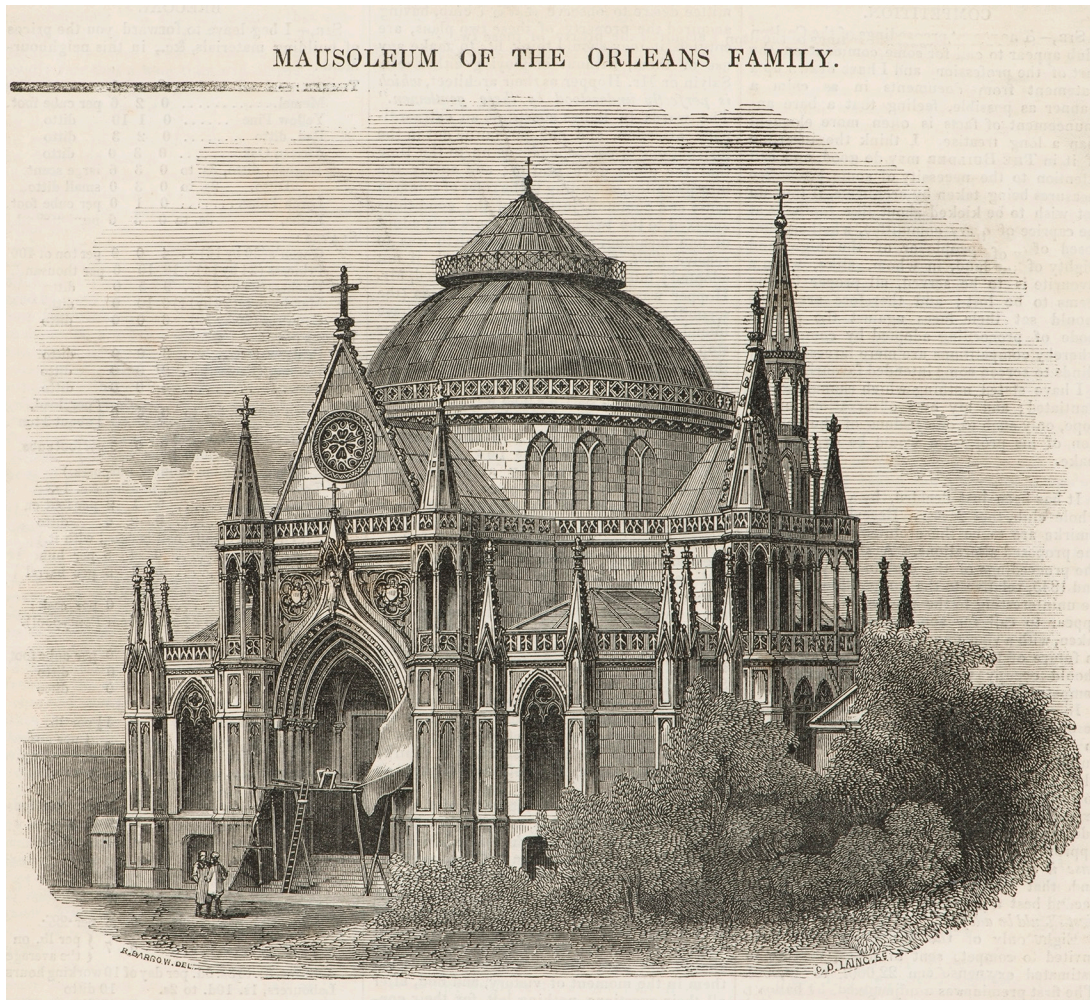
1.26. Unknown Photographers, possibly Séraphin-Médéric Mieusement, Paul Robert and/or Neurdein frères, Plate Showing the Ensemble of the Monuments from which the Sculptural Fragments reproduced in the Previous Plates were taken, ca. 1895 or earlier. Phototypie. In P. Frantz Marcou, *Album du Musée de sculpture comparée (Palais du Trocadéro)*, vol. 4, *XVI<sup>e</sup> siècle* (Paris: Ch. Massin; Brussels: A. Louis de Meuleneere, [1895?]), plate 84. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M NB27.P2 (ID:95-B3826). Photograph by Peter Sealy.



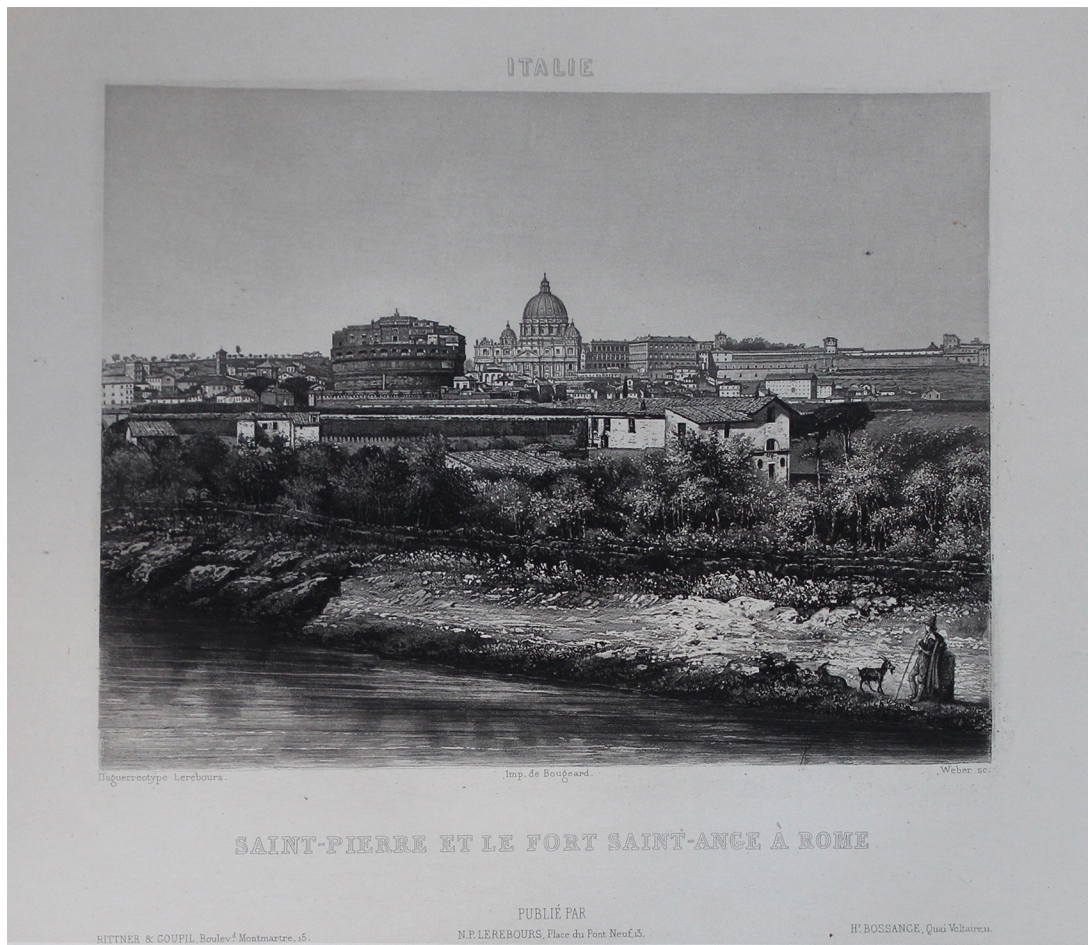
1.27. Séraphin-Médéric Mieusement, Chimney Friezes and Ornament above a Door, Grand Staircase, Château de Blois, 1884 or before. In Anatole de Baudot, *La Sculpture française au moyen âge et à la Renaissance*, vol. 2 (Paris: Des Fosseuz et Cie., 1884), “Renaissance,” plate 17. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal MAIN M M5468; ID:85-B5844. Photograph by Peter Sealy.



1.28. Séraphin-Médéric Mieusement, Trumeau and Corbels under the Statues of the Main Portal, Amiens Cathedral, 1884 or before. Héliogravure. In Anatole de Baudot, *La Sculpture française au moyen âge et à la Renaissance*, vol. 1 (Paris: Des Fosseuz et Cie., 1884), “XIII<sup>e</sup> siècle,” plate 5. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal MAIN M M5468; ID:85-B5844. Photograph by Peter Sealy.



2.1. Mausoleum of the Orleans Family, 1845. Engraving. In *The Builder* 3, no. 122 (7 June 1845): 270. Collection Centre Canadien d'Architecture / Canadian Centre for Architecture, Montréal PER W.B83.



2.2. St. Peter's and the Castel Sant'Angelo in Rome, between 1839 and 1842. Engraving. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 1, plate 38. Collection Centre Canadien d'Architecture / Canadian Centre for Architecture, Montréal CAGE M 8132. Photograph by Peter Sealy.



2.3. Unknown Photographer, View of Rome, Castel Sant'Angelo and St. Peter's Basilica, c. 1839. Daguerreotype. George Eastman House, Rochester NY: Collection number 76:168:153. In Janet Buerger, *French Daguerreotypes* (Chicago: University of Chicago Press, 1989), 35 figure 32. Photograph by Peter Sealy.

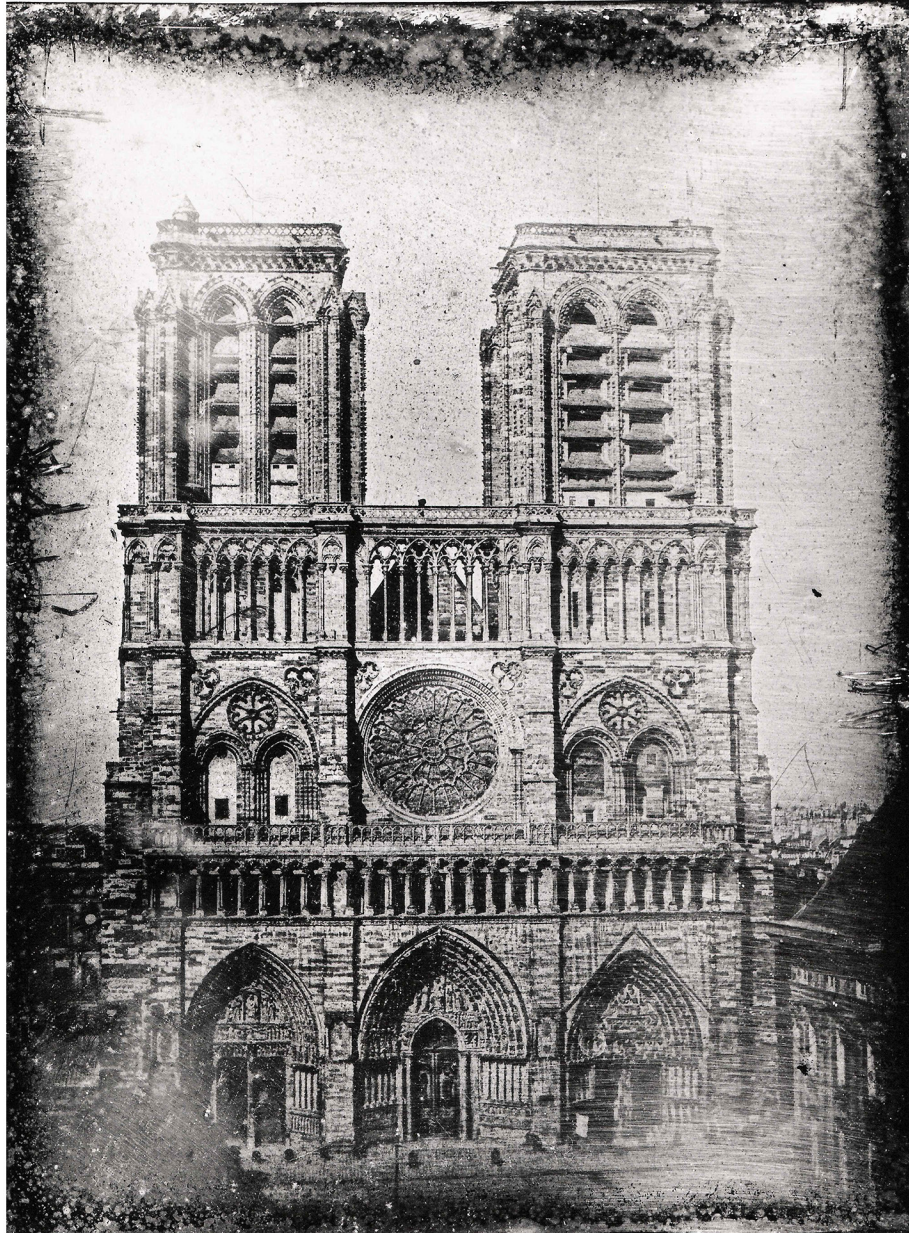


2.4. Niagara: Horseshoe Falls, between 1839 and 1842. Engraving. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 1, plate 3. Collection Centre Canadien d'Architecture / Canadian Centre for Architecture, Montréal CAGE M 8132. Photograph by Peter Sealy.



2.5. Hugh Lee Pattinson, The Horseshoe Falls, 1840. Daguerreotype. Newcastle University Library Special Collections DAG/4.





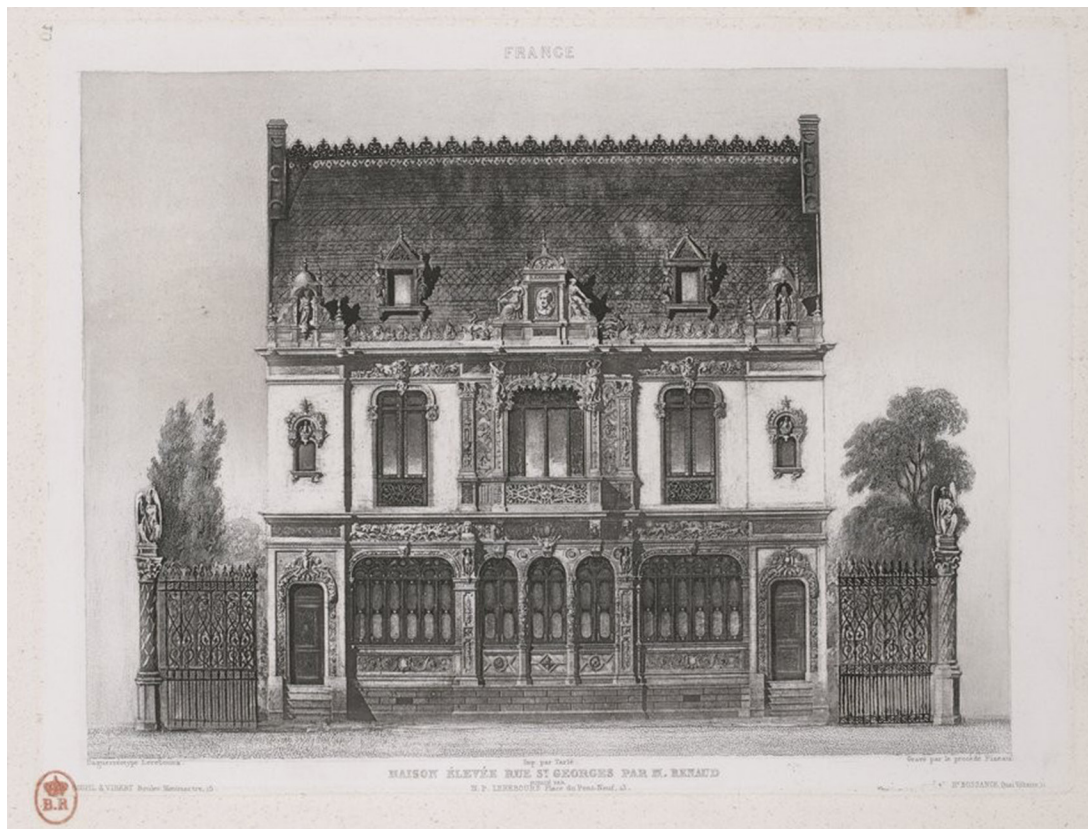
2.6. Nicolas Marie Paymal Lerebours, Notre Dame, Paris, 1839 or 1840. Full-plate daguerreotype. Oxford Museum of the History of Science 89963.



2.7. Façade of Notre-Dame-de-Paris, between 1839 and 1842. Engraving. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 2, plate 21. Bibliothèque nationale de France RESG-G-9 (2).



2.8. A Bas-relief from Notre-Dame, between 1839 and 1842. Engraving produced from a daguerreotype using the Fizeau process. In Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 2, plate 24. Bibliothèque nationale de France RESG-G-9 (2).



2.9. House built on rue St. Georges by M. Renaud, between 1839 and 1842. Engraving produced from a daguerreotype using the Fizeau process. Noël-Marie Paymal Lerebours, *Excursions daguerriennes: Vues et monuments les plus remarquables du globe* (Paris: Rittner et Goupil, Lerebours, and Hr. Bossange, 1840-1842), vol. 1, unnumbered plate. Bibliothèque nationale de France RESG-G-9 (1).



2.10. London in 1842, Taken from the summit of the Duke of York's column [The "Colosseum Print"], 1843. Engraving. In *Illustrated London News* 2, no. 36 (8 January 1843). Collection Centre Canadien d'Architecture / Canadian Centre for Architecture, Montréal PER W.I444.



2.11. Eugène-Emmanuel Viollot-le-Duc, Second Day of Champigny, 1871. Watercolor. École nationale supérieure des Beaux-Arts PC 63523 bis-1. Image copyright Beaux-Arts de Paris, Dist. RMN-Grand Palais / Art Resource, NY.



2.12. Roger Fenton, Valley of the Shadow of Death, 1855. Salted paper print. J. Paul Getty Museum 84.XM.504.23. Digital image courtesy of the Getty's Open Content Program.

## LE NOUVEL OPÉRA

La construction de l'Opéra se poursuit avec activité; l'aménagement intérieur est à peu près terminé; les blocs de pierre et de marbre sont en place, attendant le ciseau des sculpteurs, qui doivent les dégrossir et enrichir la matière de tous les caprices de l'art.

Tel qu'il est, l'intérieur de ce gigantesque édifice présente l'aspect le plus imposant; ces morceaux de pierre nue, fantastiquement éclairés, en certains endroits, de jets de lumière brutale, se fondent en d'autres dans une obscurité profonde qui en efface les contours; on croirait qu'ils émergent d'abîmes sans fond. Des deux côtés de la scène, la muraille s'élève nue jusqu'au faite de l'édifice; l'œil mesure avec effroi cette hauteur vertigineuse, dont l'aspect extérieur du théâtre ne donne aucune idée. La scène est énorme; l'adjonction du foyer de la danse, qui lui est adossé, permettra de lui donner, à l'occasion, des profondeurs inconnues jusqu'à ce jour, et dont l'art du décorateur saura certainement tirer un parti merveilleux. Vue de cet endroit, la salle pa-

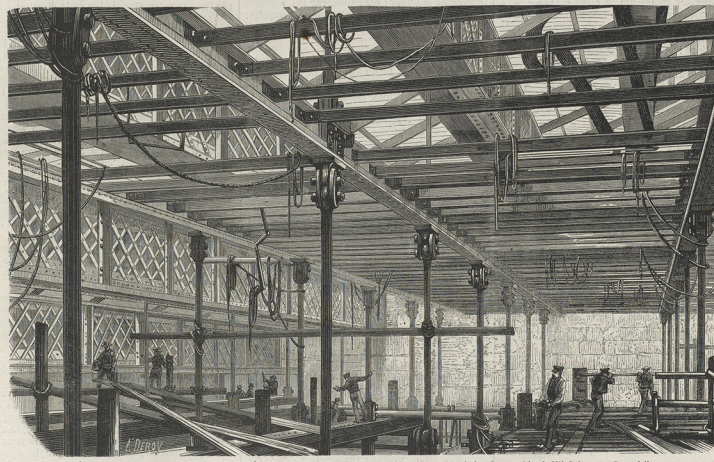


ÉTAT ACTUEL DES TRAVAUX DU NOUVEL OPÉRA. — L'entrée des voitures. — Descente à couvert.

rait une bouffonnière, quoique l'ouverture de toutes les issues permette d'apercevoir en même temps les vastes couloirs de service et une partie du foyer.

Immédiatement au-dessus de la scène, trois énormes grils se superposent, suspendus aux frises et prenant point d'appui sur les murailles latérales; ces grils, entièrement formés de pièces de fonte, comme toute la carcasse intérieure de l'édifice, forment le laboratoire des machinistes; ils sont coupés de ponts destinés à faciliter la manœuvre. Le gril le plus élevé, dont nous donnons la vue, est à une hauteur de 60 mètres au-dessus des fondations. C'est le point culminant de l'Olympée.

L'entrée des voitures se fera par le *passillon* dit *des abonnées*. On descendra à couvert à quelques pas d'une grande rotonde située immédiatement au-dessous de la salle. L'orchestre et le parterre reposent sur une immense rosace de fonte, d'une grande hauteur, qui forme en même temps le plafond de cette rotonde, où les domestiques pourront attendre leurs maîtres, à l'abri du vent et de la pluie. L'entrée à couvert est une des innovations



ÉTAT ACTUEL DES TRAVAUX DU NOUVEL OPÉRA. — Le troisième gril, au dessus de la scène. — D'après les photographies de MM. Delmaet et Durandelle.

2.13. Current state of works on the Nouvel Opéra: carriage entry, covered ramp and third gridiron, above the stage. After the photographs by MM. Delmaet and Durandelle. Engravings. In *L'Illustration* 55, no. 1407 (12 February 1870), 113. Harvard University Widener Library PFr 229.1 F (5E).





2.14. Louis-Émile Durandelle, Construction of the Nouvel Opéra, Paris, c. 1870. Albumen print. École nationale supérieure des Beaux-Arts Ph 7449.



ÉTAT ACTUEL DES TRAVAUX DU NOUVEL OPÉRA. — Couloir et escalier secondaire. — Dessin de M. Pignard.

2.15. Current state of works on the Nouvel Opéra: Corridor and secondary staircase. Drawing by M. Pignard. Engravings. In *L'Illustration* 55, no. 1408 (19 February 1870), 148. Harvard University Widener Library PFr 229.1 F (5E).



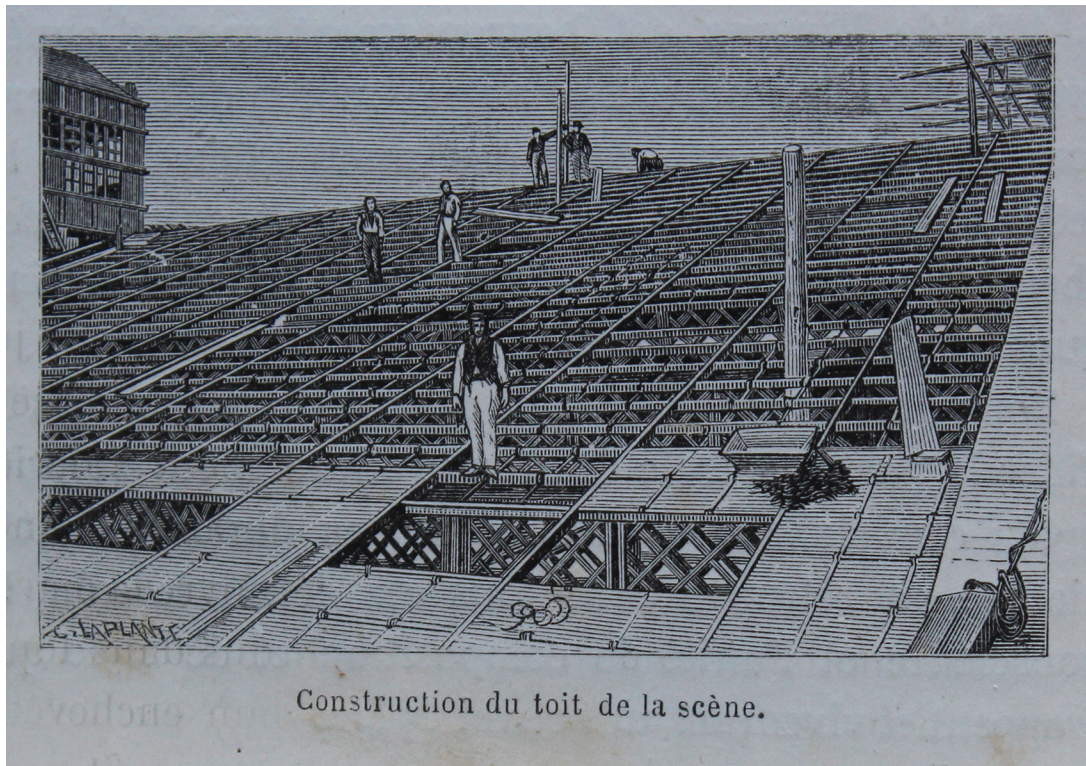
2.16. Louis-Émile Durandelle. Construction of a staircase at the Paris Opéra, c. 1870. Albumen Print. École nationale supérieure des Beaux-Arts Ph 269.



2.17. Louis-Émile Durandelle, Iron Girders of Stage Flytower, 1868. Albumen Print. École nationale supérieure des Beaux-Arts Ph 3810.



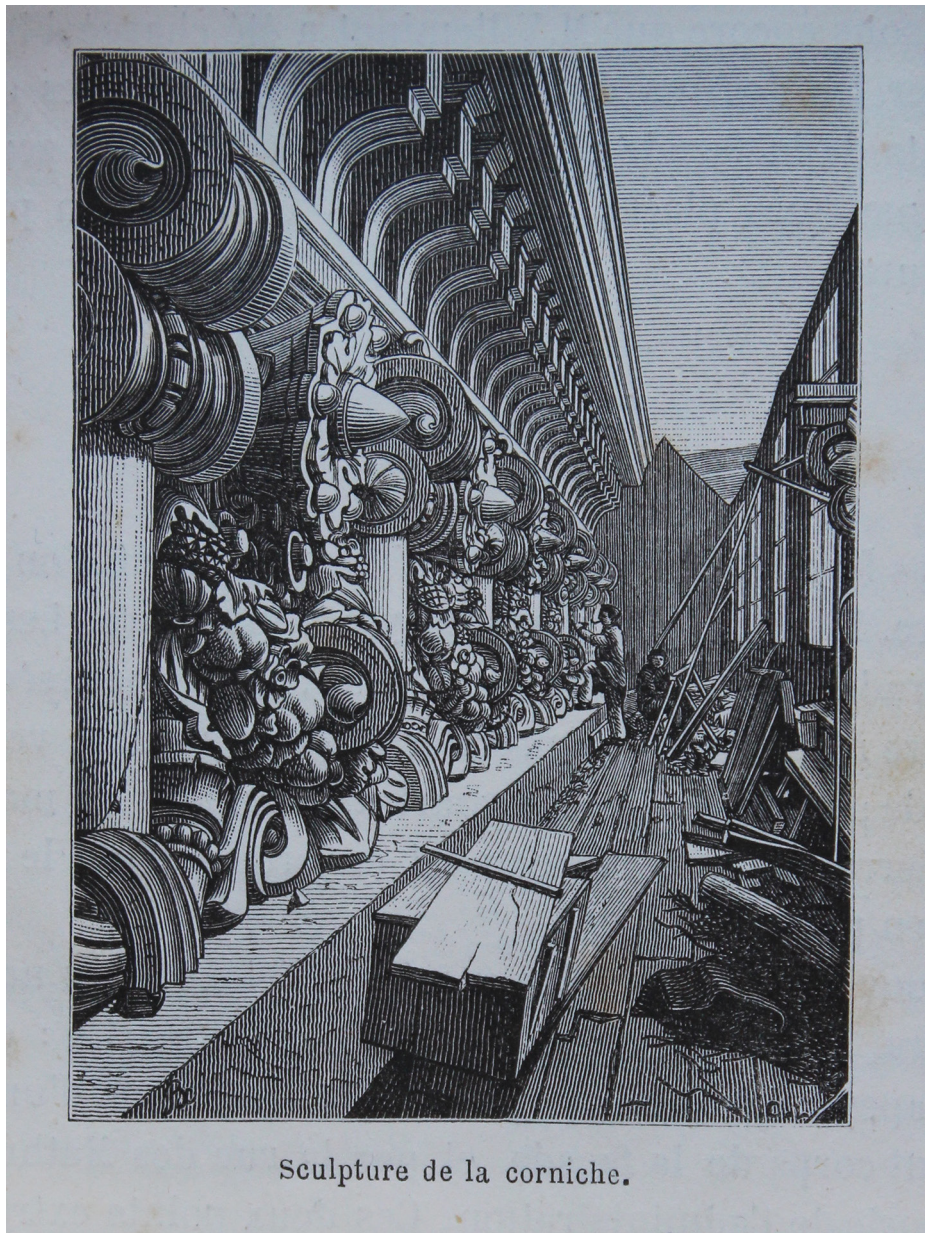
2.18. Louis-Émile Durandelle, Construction of the Nouvel Opéra, Paris, The “Phantom of the Opéra” and workers on the roof, 1869. Albumen print. École nationale supérieure des Beaux-Arts Ph 270.



2.19. Construction of the Flytower roof. Engraving. In Charles Nutter, *Le Nouvel Opéra* (Paris: Librairie Hachette et Cie, 1875), 66. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal I.D.Y. 87-B6590. Photograph by Peter Sealy.



2.20. Louis-Émile Durandelle, Flytower cornice and frieze, between 1865 and 1872. Albumen silver print from glass negative. In Charles Garnier, *Le Nouvel Opéra de Paris, Sculpture ornementale* (Paris: Ducher et Cie., 1876), plate 40. Metropolitan Museum of Art 1995.9. Purchase, The Horace W. Goldsmith Foundation Gift, through Joyce and Robert Menschel, 1995. Digital image downloaded under a Creative Commons Zero license from the Metropolitan Museum of Art website.



Sculpture de la corniche.

2.21. Sculpting the cornice, 1875. Engraving. In Charles Nutter, *Le Nouvel Opéra* (Paris: Librairie Hachette et Cie, 1875), 52. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal I.D.Y. 87-B6590. Photograph by Peter Sealy.





2.22. Photographer's Voiture near Old Water Reservoir, Rue Lamarck, Paris, 24 March 1884. Albumen silver print. In "Construction Views of the Basilica of Sacré-Coeur, Paris," unpublished album (1879-90). Collection Canadian Centre for Architecture, Montréal PH1991:0061:001-165. Photograph by Peter Sealy.



2.23. Fiacre Near Old Water Reservoir, March 1884. Engraving. In *Bulletin de l'Oeuvre du voeu national au Sacré-Coeur de Jésus* 9 (June 1884): 431.



L'ANCIENNE GARE SAINT-LAZARE. — VESTIBULE DE LA BANLIEUE

L'ANCIENNE GARE SAINT-LAZARE. — VESTIBULE DE LA LIGNE DE NORMANDIE  
D'après les photographies de M. Durandelle.

2.24. The old gare Saint-Lazare. Suburban vestibule and Normandy line vestibule. After M. Durandelle's photographs. In *L'Illustration* 91 no. 2344 (28 January 1888): 57. Collection Canadian Centre for Architecture, Montréal PER W.I446.



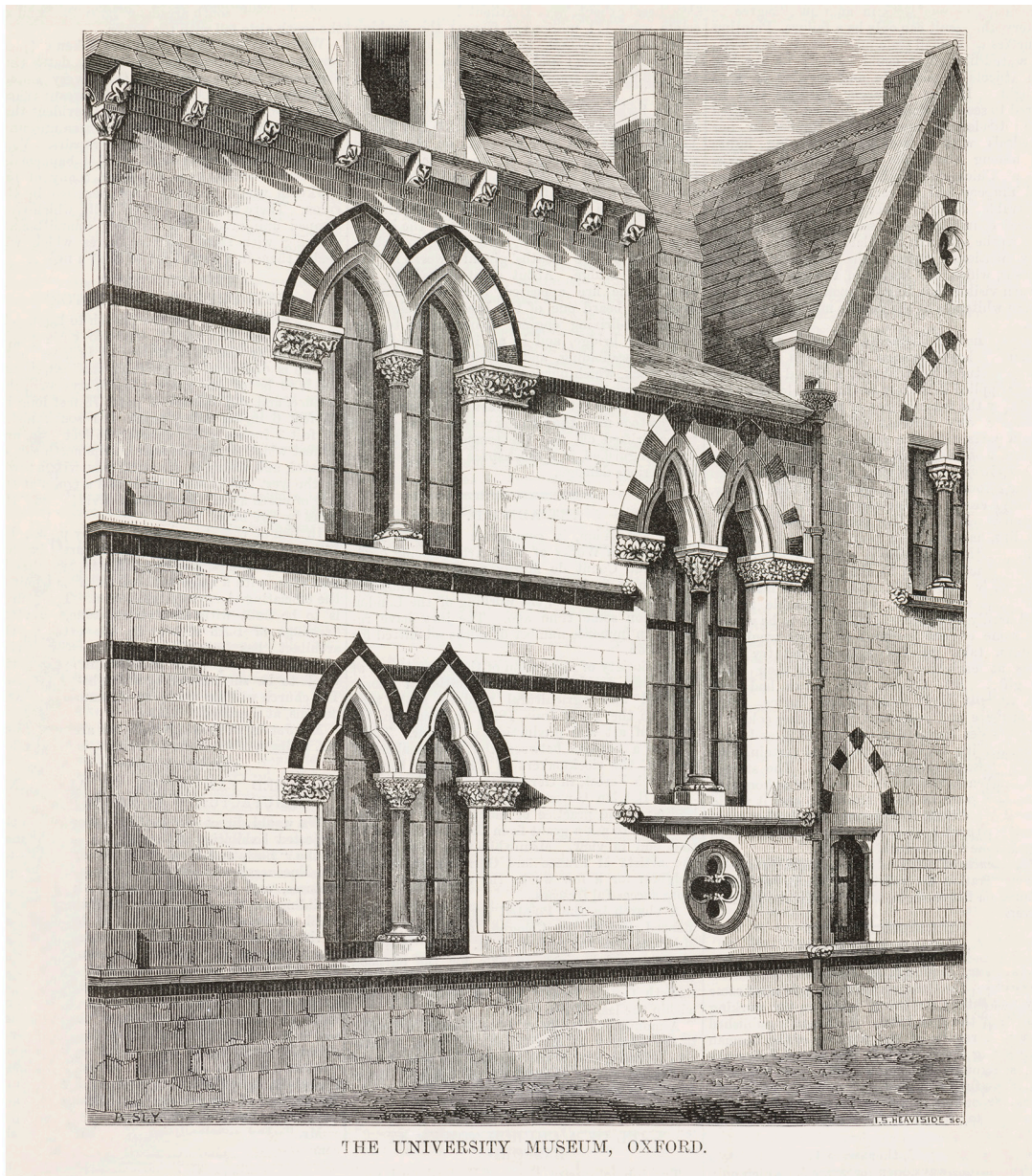
2.25. Durandelle, Gare Saint-Lazare: St-Germain crescent: departures 1887. Albumen print. Collection Musée d'Orsay PHO 2000 9 8. Image courtesy RMN.



2.26. Durandelle, Gare Saint-Lazare: Normandie departures, baggage hall, stairs to waiting rooms, 1887. Albumen print. Collection Musée d'Orsay PHO 2000 9 7. Image courtesy RMN.



2.27. Reconstruction of the gare Saint-Lazare. Demolition of the old façade. After M. Durandelle's photograph. Engraving. In *L'Illustration* 91, no. 2344 (28 January 1888): 56. Collection Canadian Centre for Architecture, Montréal PER W.I446.



2.28. The University Museum, Oxford. Engraving. In *The Builder* 17, no. 844 (9 April 1859): 252. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83.

THE BUILDER, AUGUST 15, 1885.



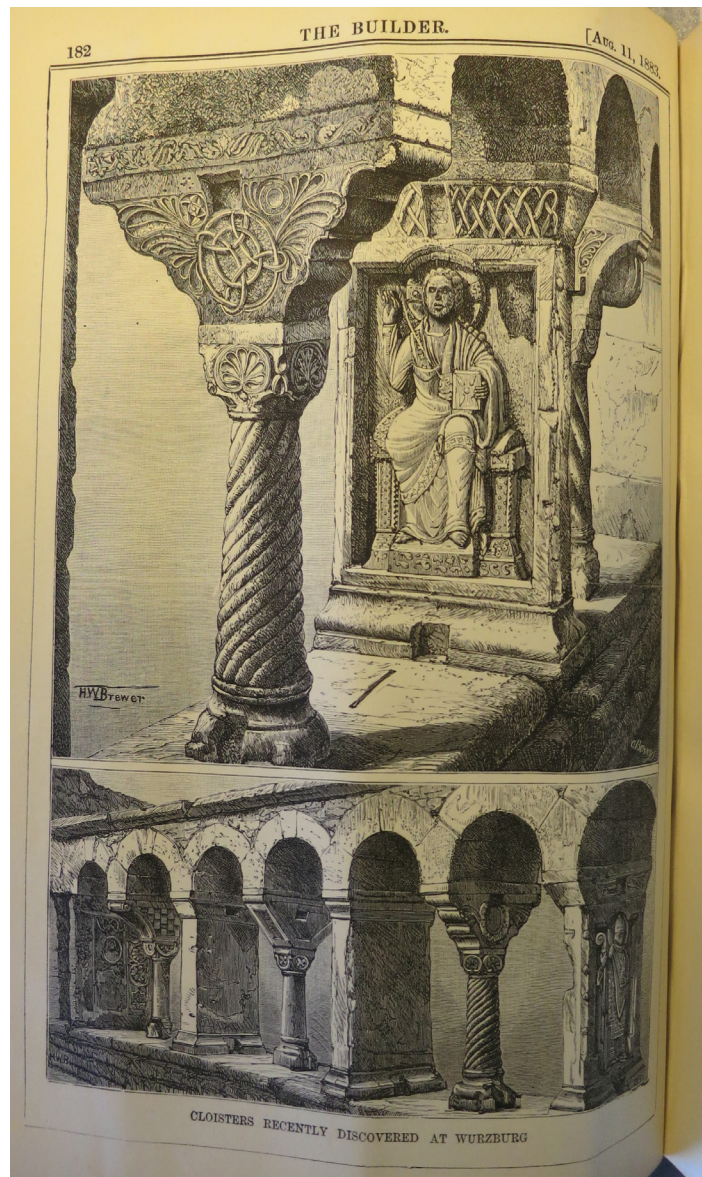
ROYAL EXCHANGE ASSURANCE OFFICES, PALL MALL.  
MR. G. AITCHISON, A.R.A., F.R.I.B.A., ARCHITECT.

2.29. Royal Exchange Assurance Offices, Pall Mall. Engraving. In *The Builder* 49, no. 2219 (15 August 1885), 220. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83.





2.30. Unknown photographer, Royal Exchange Assurance Offices, 29 Pall Mall, London, c. 1885. Mounted sepia photoprint. RIBA Collections RIBA14224.



2.31. Cloisters Recently Discovered at Wurzburg. Engraving. *The Builder* 45, no. 2114 (11 August 1883): 182. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83. Photograph by Peter Sealy.



2.32. Priapus à gaine (after a photograph by M. Franck.) Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 12. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



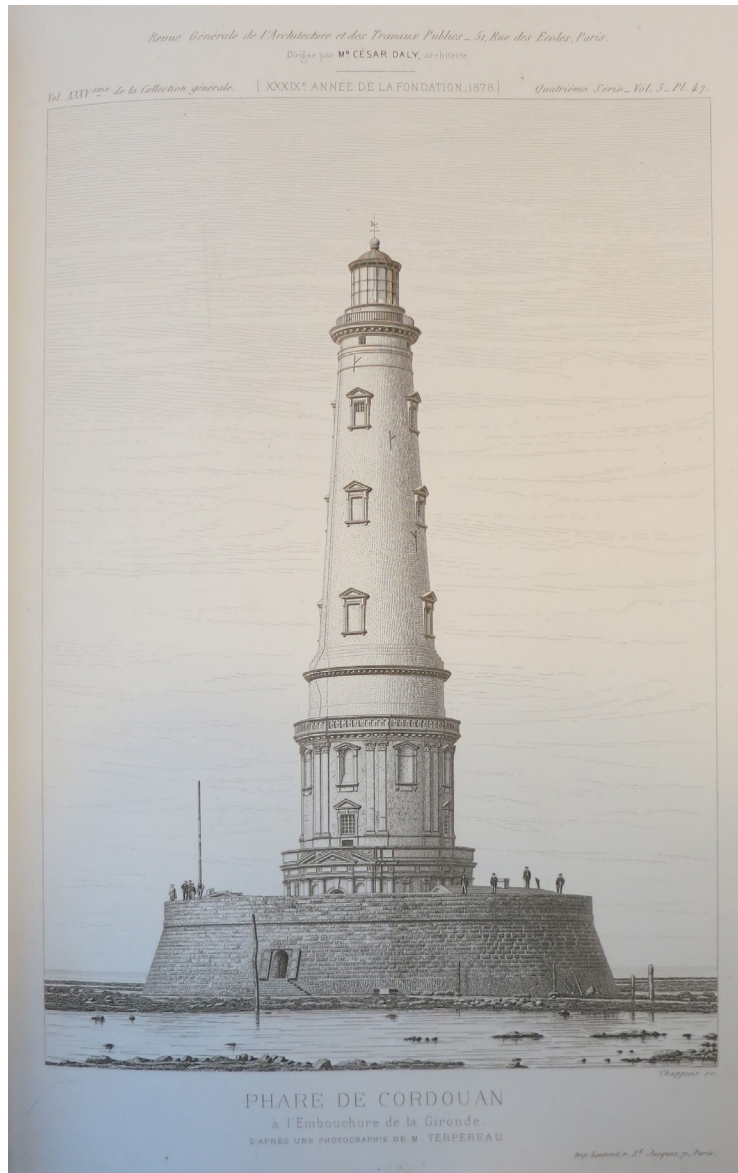
2.33. Sculpted panel (15th century). Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



2.34. Sculpted panel (16th century) (after a photograph by M. Franck.) Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 32. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



2.35. House of Mr. Charles Fleury, architect, Rouen. Engraving. In *Revue générale de l'architecture et des travaux publics* 29 (1872), plate 34. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



2.36. Phare du Cordouan at the mouth of the Gironde. After a photograph by Terpereau. Engraving. In *Revue générale de l'architecture et des travaux publics* 35 (1878), plate 47. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



2.37. Alphonse Terpereau, Phare du Cordouan, c. 1870. Albumen paper print from a glass negative. Collection Médiathèque de l'architecture et du patrimoine, Charenton-le-Pont, France 0084/033/E051 PH099468.





2.38. Specimens of the Domestic Architecture of the United States of North America. House in New York, Ware and Van Brunt, architects. House in Chicago (Illinois), Burnham and Root, architects. Engraving. In *Revue générale de l'architecture et des travaux publics* 43 (1886): plate 11. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



2.39. Unknown photographer, possibly Albert Lévy, Ware and Van Brunt, Residence 38th St. near Madison Ave, New York NY, c. 1883. Photograph. In *Albert Lévy's Architectural Photographic Series* 1, no. 147. Art Institute of Chicago Architecture Photograph Collection RBA Digital File name 59270.



2.40. Specimens of the Domestic Architecture of the United States of North America. House in Boston (Massachusetts), Carl Fehmer, architect. House in Chicago (Illinois). Engraving. In *Revue générale de l'architecture et des travaux publics* 43 (1886): plate 10. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



2.41. Albert Lévy, Carl Fehmer, 191 Marlborough Street, Boston MA, c. 1885–95. Photograph. In *Albert Lévy's Architectural Photographic Series* no. 31, 33. Art Institute of Chicago Special Ryerson and Burnham Libraries Book Collection 779.4 L66a no.31, 33.



2.42. Burges House (London): The Two Façades—Garden and Street. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate. 47. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.



2.43. Tower House, Melbury Road, Kensington, London: Street Front, 1880s. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate. 6 RIBA Library Photographs Collection RIBA7220.



2.44. Tower House, Melbury Road, Kensington, London: Garden Front. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 5. RIBA Library Photographs Collection RIBA7219.



2.45. Burges House (London): Entrance Hall. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate. 49. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.





2.46. Tower House, Melbury Road, Kensington, London: View of Entrance Hall. Photoprint.  
In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 7.  
RIBA Library Photographs Collection RIBA106714.



2.47. Burges House (London): Library. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate 50. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.



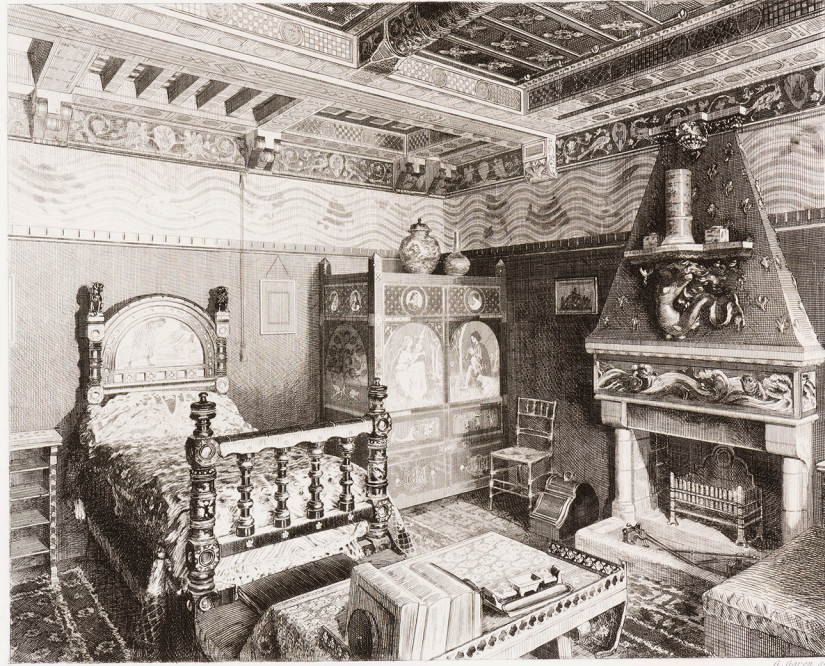
2.48. Tower House, Melbury Road, Kensington, London, 1880s. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 12. Victoria and Albert Museum, National Art Library.



2.49. Burges House (London): Dining Room. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate 51. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.



2.50. Tower House, Melbury Road, Kensington, London: The Dining Room, 1880s. Photo-print. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 8. RIBA Library Photographs Collection RIBA7221.



HÔTEL. BURGES (LONDRES)

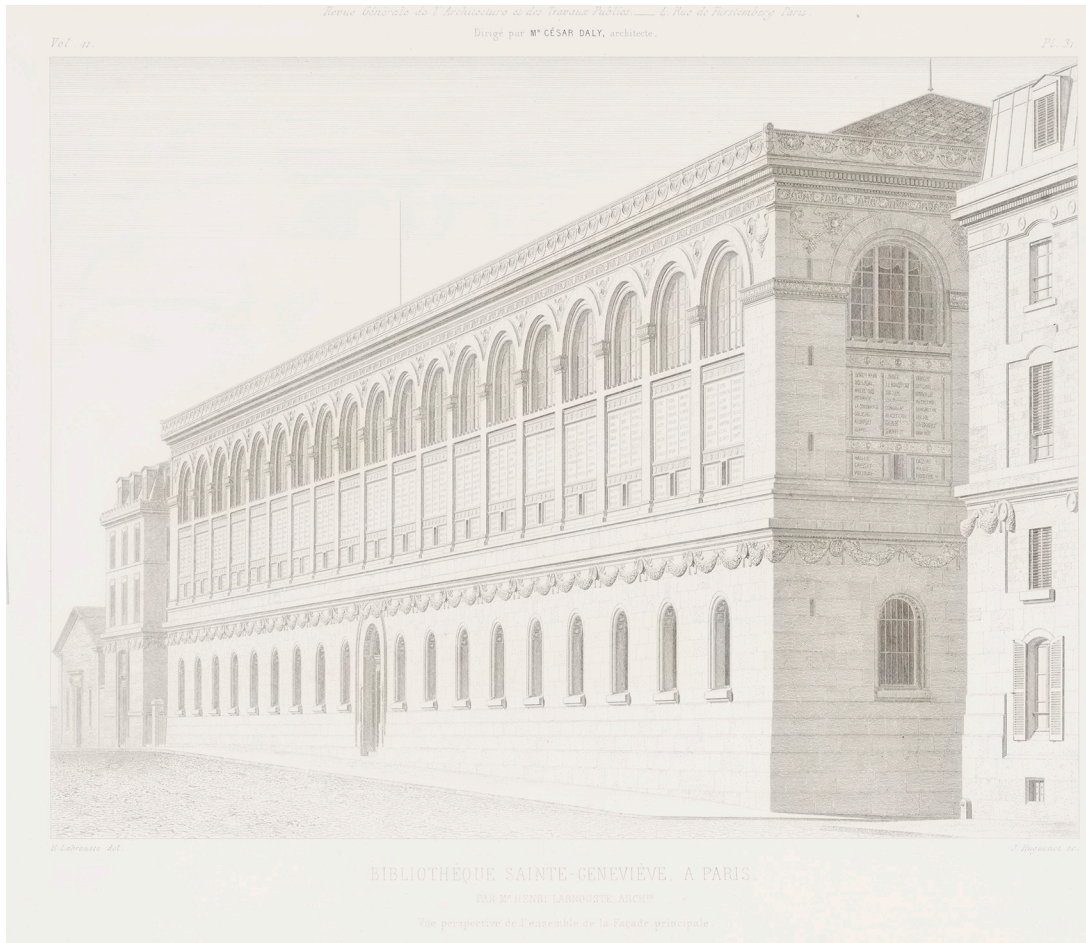
Chambre à coucher.

Imp. A. Lemerrier, Paris.

2.51. Burges House (London): Bedroom. Engraving. In *Revue générale de l'architecture et des travaux publics* 44 (1887), plate 52. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.



2.52. Tower House, Melbury Road, Kensington, London: the Mermaid Bedroom (William Burges' bedroom), 1880s. Photoprint. In R. P. Pullan, ed., *The House of William Burges* (London, B. T. Batsford, 1886), plate 26. RIBA Library Photographs Collection RIBA7228.



2.53. Henri Labrouste, Perspective drawing of the Bibliothèque Sainte-Geneviève. Engraving by Jacques-Joseph Huguenet. In *Revue générale de l'architecture et des travaux publics* 11 (1853): plate 31. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.





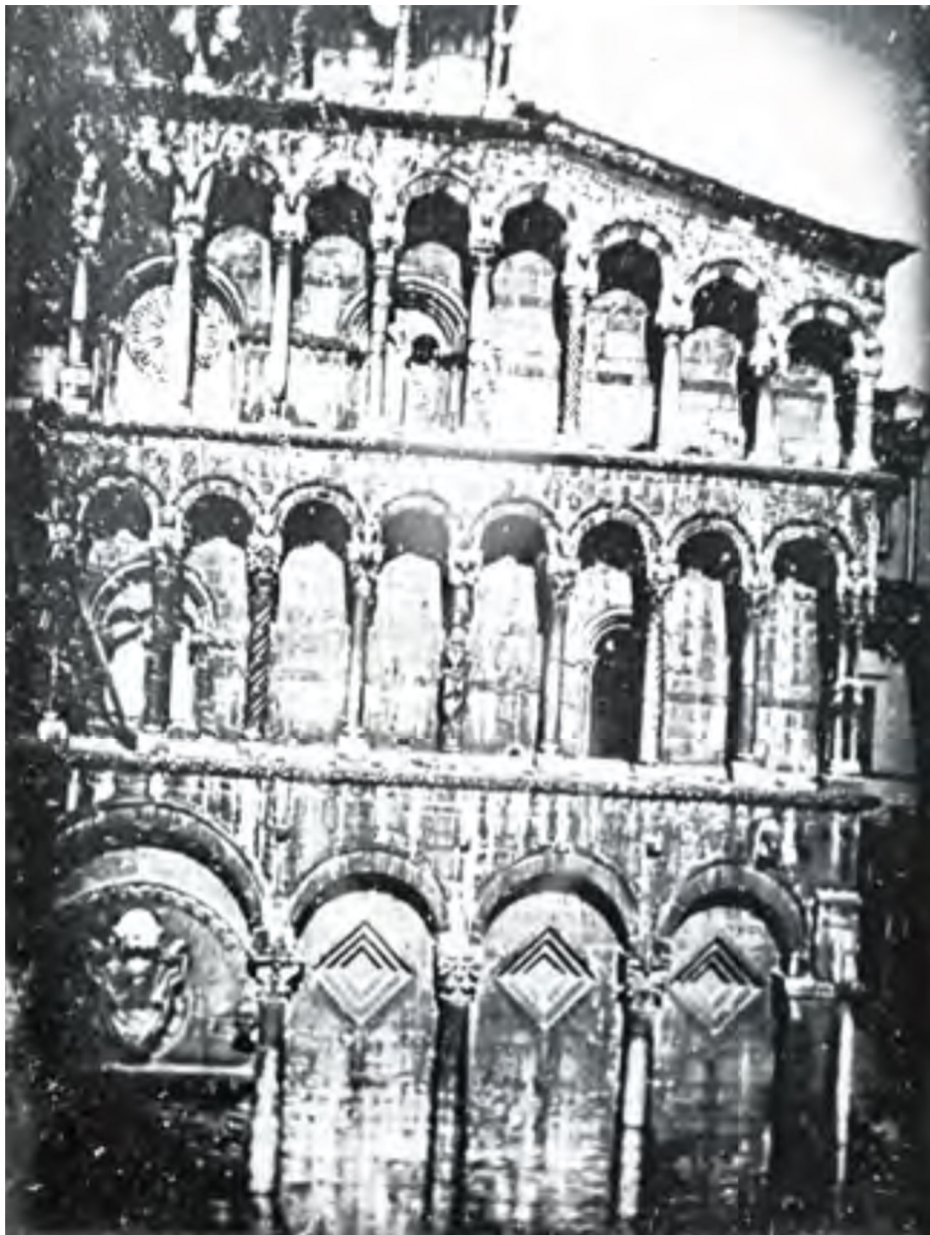
2.54. Louis-Auguste et Auguste-Rosalie Bisson (Frères), Façade of the Bibliothèque Sainte-Geneviève in 1852. Salted paper print probably coated with albumen, on mount. Académie d'Architecture 492.



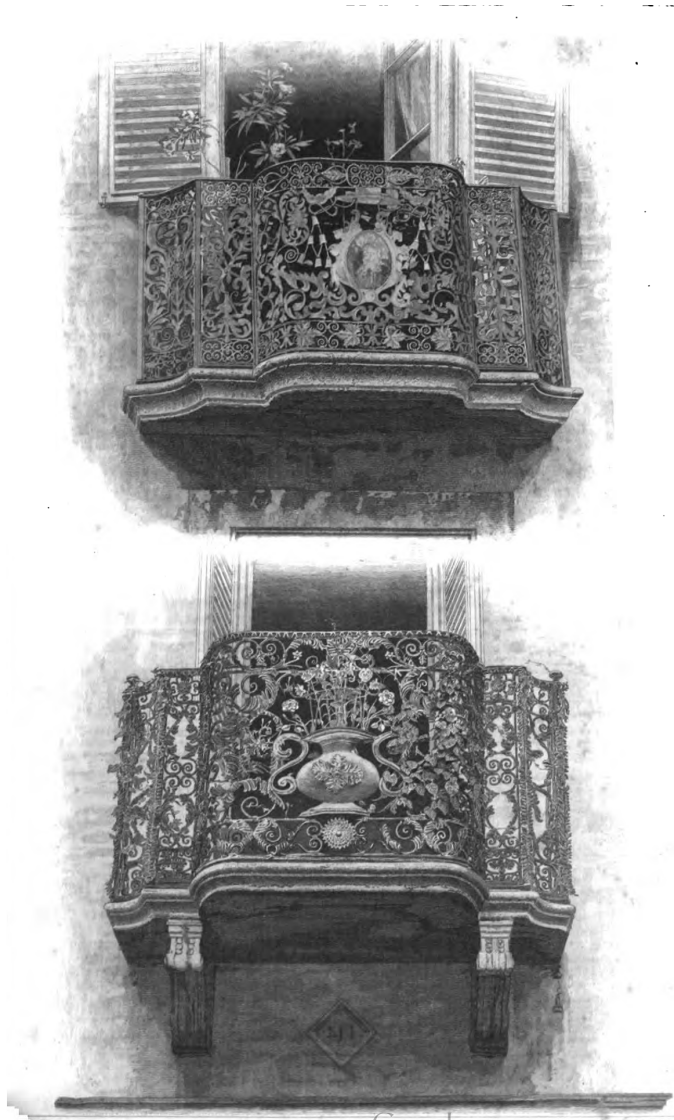
2.55. L'École française, Athènes. Engraving. In *La Semaine des constructeurs* 1, no. 26 (6 January 1877): 307. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.S45. Photograph by Peter Sealy.



2.56. John Ruskin, Arch from the Façade of the Church of San Michele at Lucca. Engraving. In John Ruskin, *The Seven Lamps of Architecture* (New York: John Wiley 1849), plate 6. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:88-B4360. Photograph by Peter Sealy.



2.57. Unknown photographer, possibly John Ruskin. San Michele, Lucca, Detail of façade. Daguerreotype. Ruskin Library Collection Lancaster, UK RF Dag 69.



2.58. John Ruskin, Iron Work of Bellinzona. Engraving. In John Ruskin, *The Two Paths: being lectures on art, and its application to decoration and manufacture, delivered in 1858-9* (London: Smith and Elder, 1859), frontispiece & plate 13. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal MAIN ID:85-B12852. Photograph by Peter Sealy.



2.59. Unknown photographer, possibly John Ruskin. Window and Balcony [Bellinzona].  
Ruskin Library Collection, Lancaster, UK RF Dag 110.



2.60. John Ruskin, Tracery from the Campanile of Giotto, at Florence. Engraving. In John Ruskin, *The Seven Lamps of Architecture* (New York: John Wiley, 1849), plate 9. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:88-B4360. Photograph by Peter Sealy.



3.1. Charles Nègre, *The Little Rag-Picker*, 1851. Collotype. Museum of Modern Art Photography Department 482.1964.

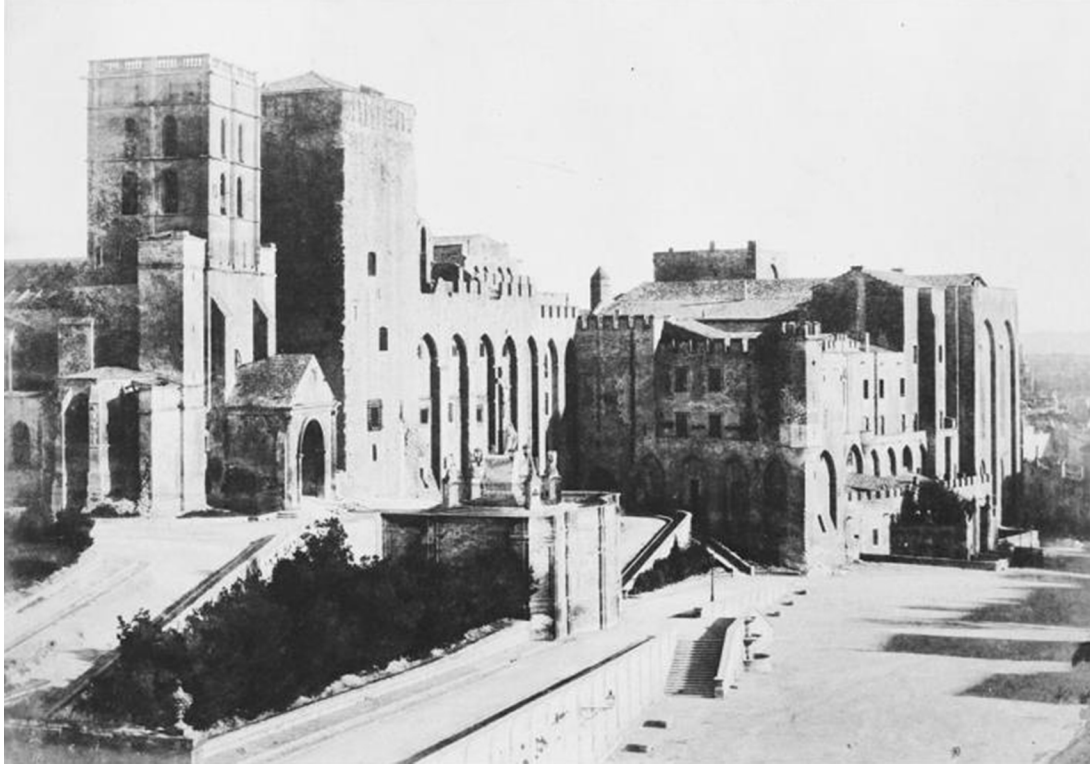




3.2. Charles Nègre, Cloître Saint-Trophime cloister, east gallery, ca. 1852. Salted paper print from a paper negative. Musée d'Orsay PHO 1981 6.



3.3. Charles Nègre, Detail of Tympanum and Lintel Sculpture, Saint Trophime, Arles, France, 1852. Salted paper print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1984:0712.



3.4. Charles Nègre, Avignon, Palais des Papes, west side, 1852. Salted paper print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1986:0547.



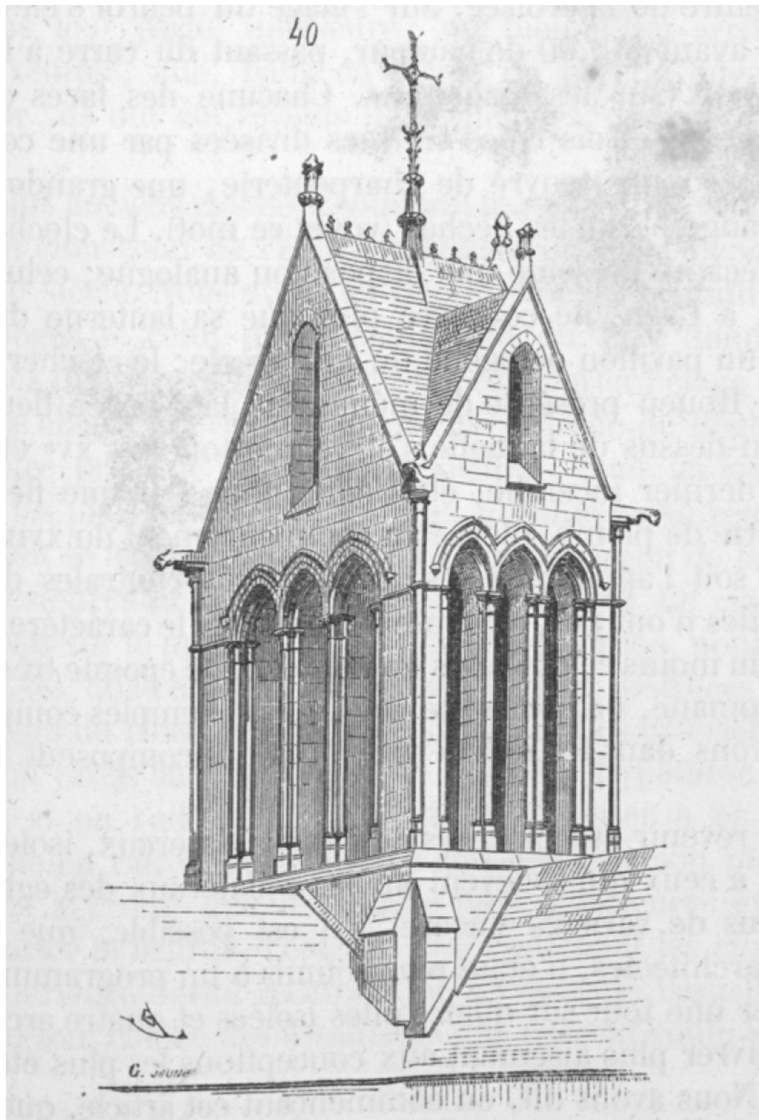
3.5. Charles Nègre, View of West Façade of St. Trophime, Arles, France, 1852. Salted paper print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1978:0207.



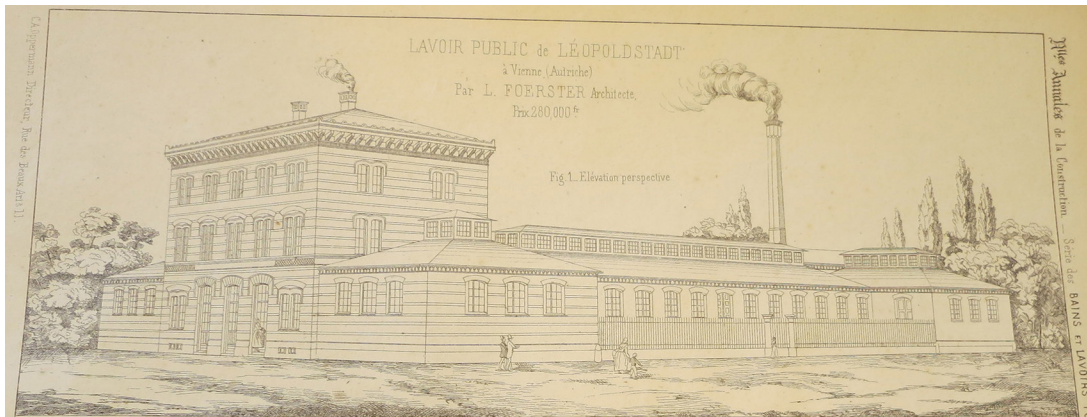
3.6. Charles, Nègre, Saint-Gilles-du-Gard: The West Façade of the Church, 1852. Two salted paper print (or negatives), joined. Previously, Collection André Jammes, Paris. In James Borcoman, *Charles Nègre, 1820-1880* (Ottawa: National Gallery of Canada, 1976) 142, plate 87. Photograph by Peter Sealy.



3.7 Example of an Elevation perspective. Temple of Athena Nike, Athens. Engraving. In Charles Blanc, *Grammaire des arts du dessin*, 8th ed. (Paris: Renouard, 1889), 77. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W8808; ID:85-B8215. Photography by Peter Sealy.

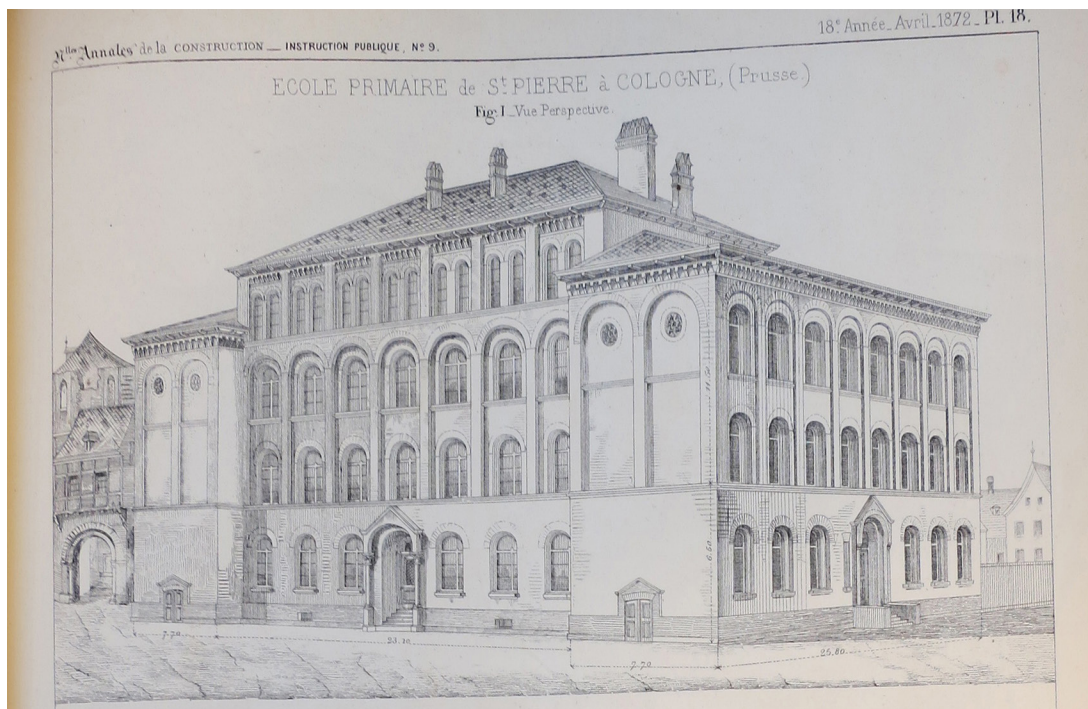


3.8 Eugène-Emmanuel Viollet-le-Duc, Elevation perspective of the central belltower of Dormans. Woodcut engraving. In Eugène-Emmanuel Viollet-le-Duc, *Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle* (Paris: Bance; A. Morel, 1854–68) 3:333. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN 0005619. Photograph by Peter Sealy.

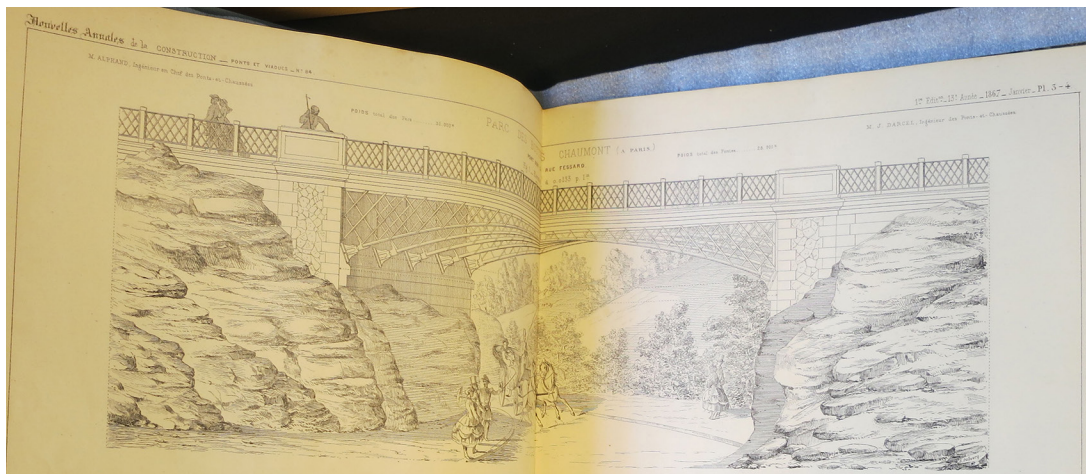


3.9. Leopoldstadt public laundry, Vienne (Austria). Elevation perspective. Engraving. In *Nouvelles Annales de la Construction* 1, no. 8 (1855): plate 31, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.

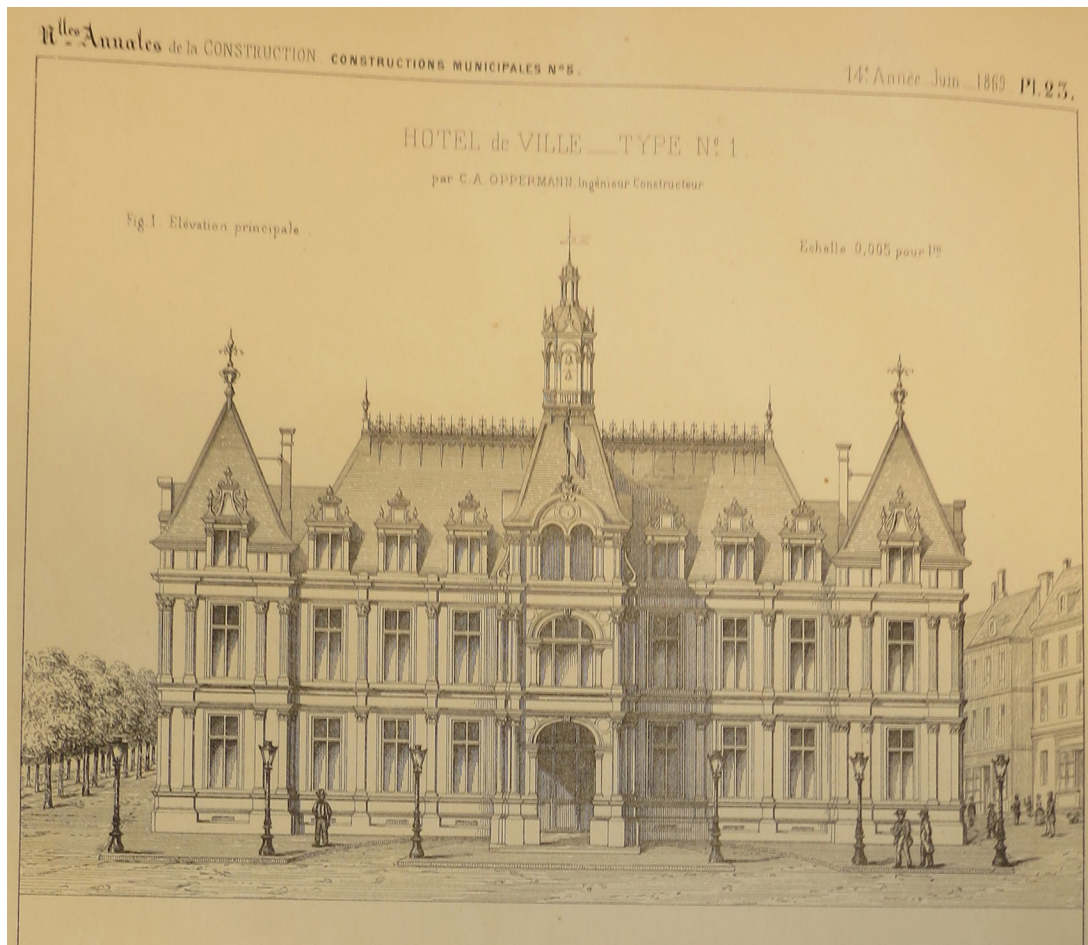




3.10. St. Pierre primary school, Cologne (Prussia). Perspective view. Engraving. In *Nouvelles Annales de la Construction* 18, no. 208 (1872): plate 18, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.



3.11. Parc des Buttes Chaumont. Bridge on the rue Fessard. Elevation at 0.0133 per 1m. Engraving. In *Nouvelles Annales de la Construction* 13, no. 145 (1867): plates 3-4, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.



3.12. Hôtel de Ville. Type No. 1. In *Nouvelles Annales de la Construction* 14, no. 174 (1869): plate 23. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.

COTTAGE A VEULES-EN-CAUX (Seine - Inférieure).

M. P. Dechard,  
Architecte.

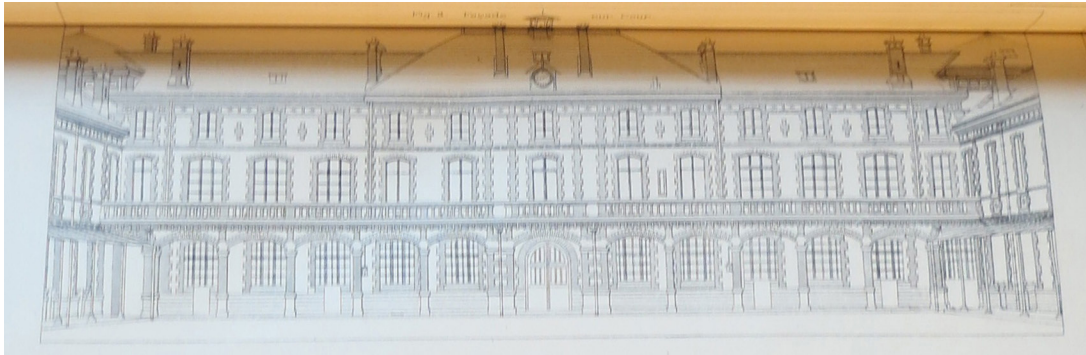
Fig 1. (Ech. 1/100)

Elevation  
principale

Fig. 2.  
Coupe  
longitud<sup>le</sup>



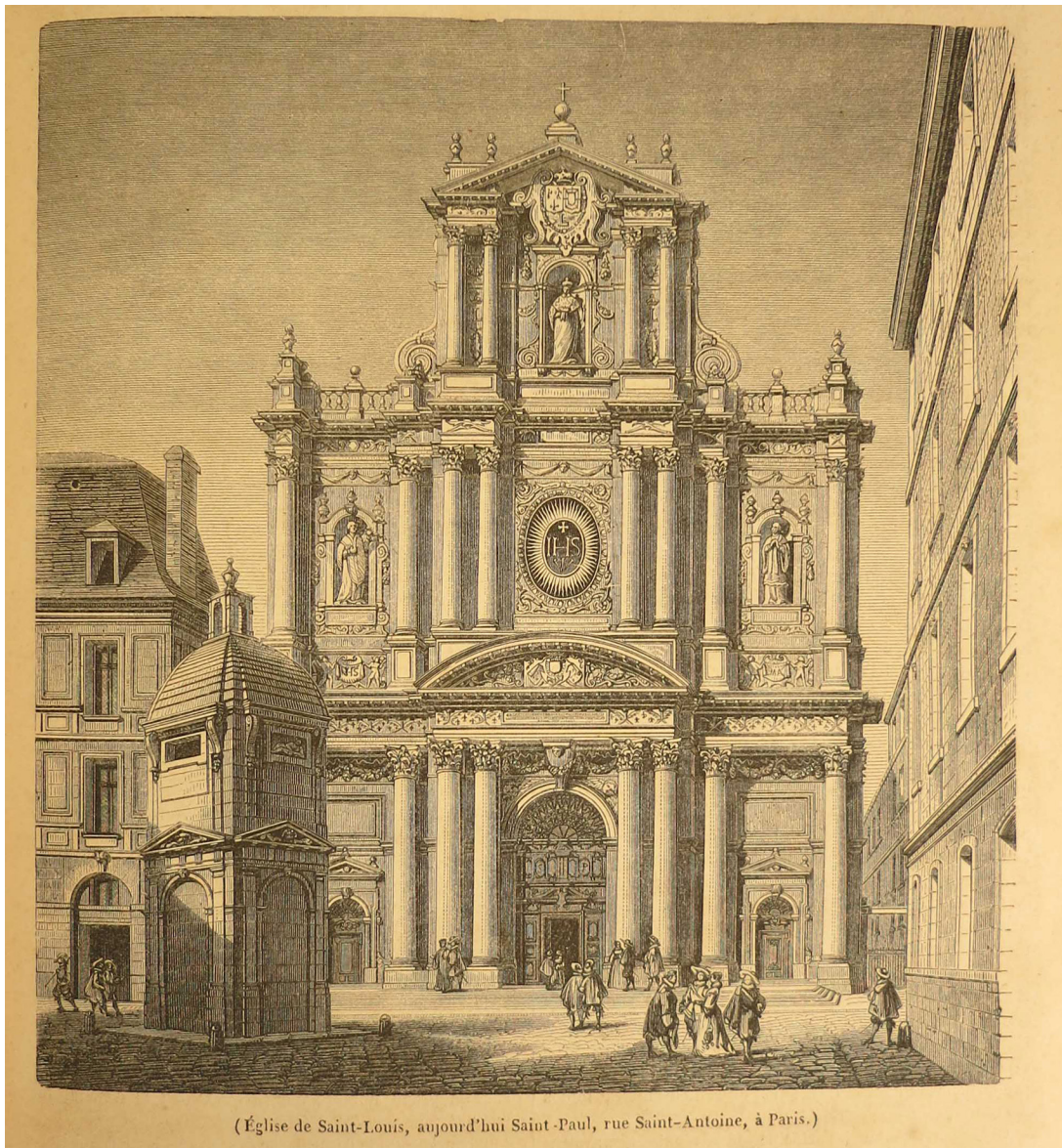
3.13. Cottage, Veules-en-Caux (Seine-Inférieure). (Scale. 1/100) Main elevation. Engraving. In *Nouvelles Annales de la Construction* 35, no. 413 (1889): plate 25, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.



3.14. Collège Carnot, Fontainebleau. Fig. 3. Façade on the courtyard. Engraving. In *Nouvelles Annales de la Construction* 40, no. 470 (1894): plates 7–8, fig. 3. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.

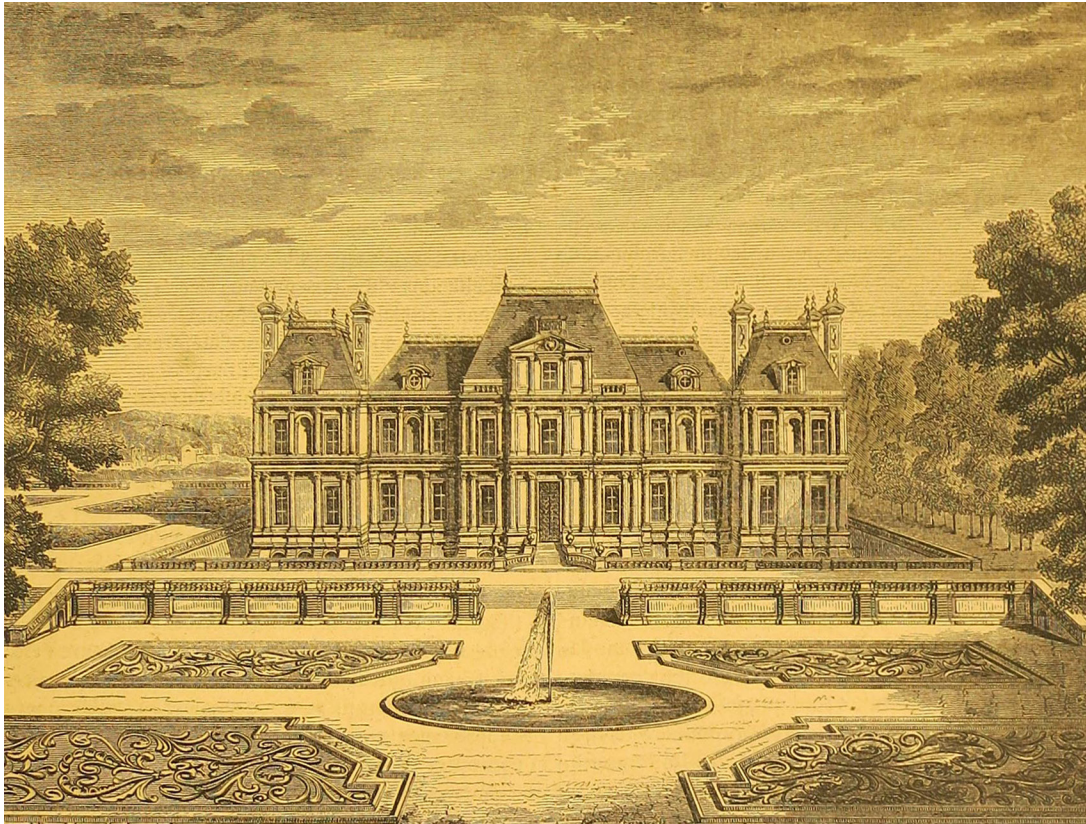


3.15. Exposition Universelle of 1889. Dôme Central. Glyptographie. In *Nouvelles Annales de la Construction* 35, no. 416 (1889): plates. 36–37, fig. 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.N68. Photograph by Peter Sealy.



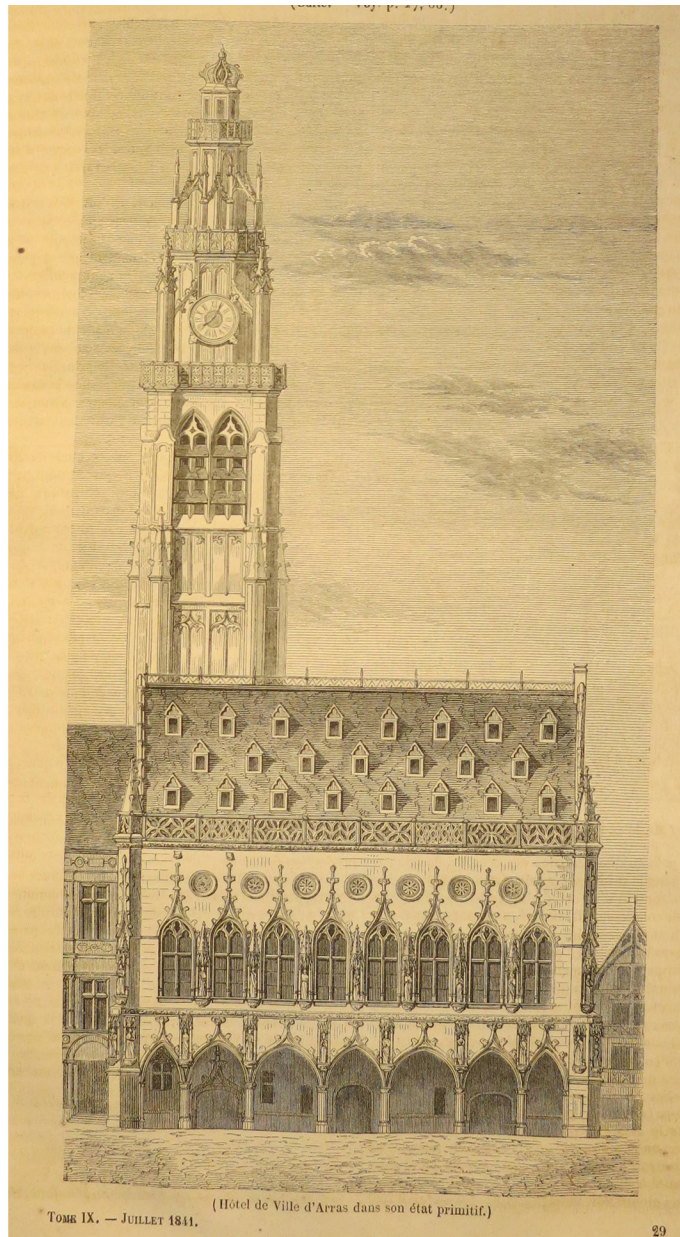
(Église de Saint-Louis, aujourd'hui Saint-Paul, rue Saint-Antoine, à Paris.)

3.16. Church of Saint-Louis, today Saint-Paul, rue Saint-Antoine, Paris. Engraving. In *Le Magasin Pittoresque* 14 (1846): 105. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.M33. Photograph by Peter Sealy.

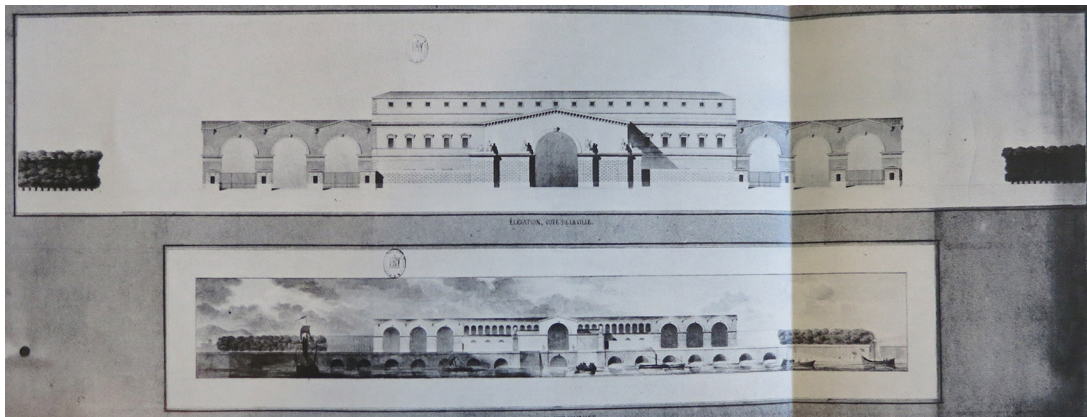


3.17. View of the Château de Maisons, built by François Mansart. Engraving. In *Le Magasin Pittoresque* 16 (1848): 172. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.M33. Photograph by Peter Sealy.





3.18. Arras, Hôtel de Ville in its original state. Engraving. In *Le Magasin Pittoresque* 9 (1841): 225. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.M33. Photograph by Peter Sealy.



3.19. Félix Duban, Customhouse and Tollhouse, 1823. Drawing In Arthur Drexler, ed., *The Architecture of the École des Beaux-Arts* (London: Secker & Warburg, 1977), 146.



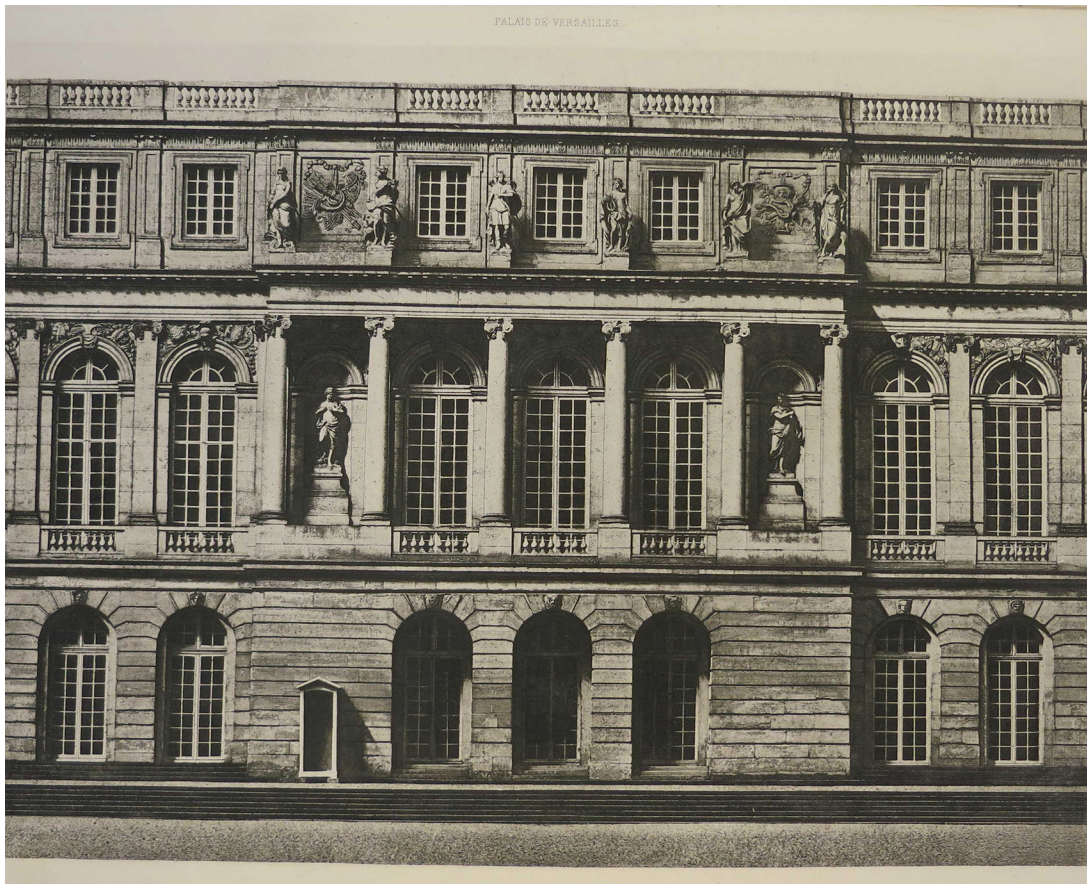
3.20. Louis-Ambroise Dubut, Public granaries [façade elevation], 1797. Ink and watercolor on cloth-faced paper. École nationale supérieure des Beaux-arts de Paris PRA 115-2.



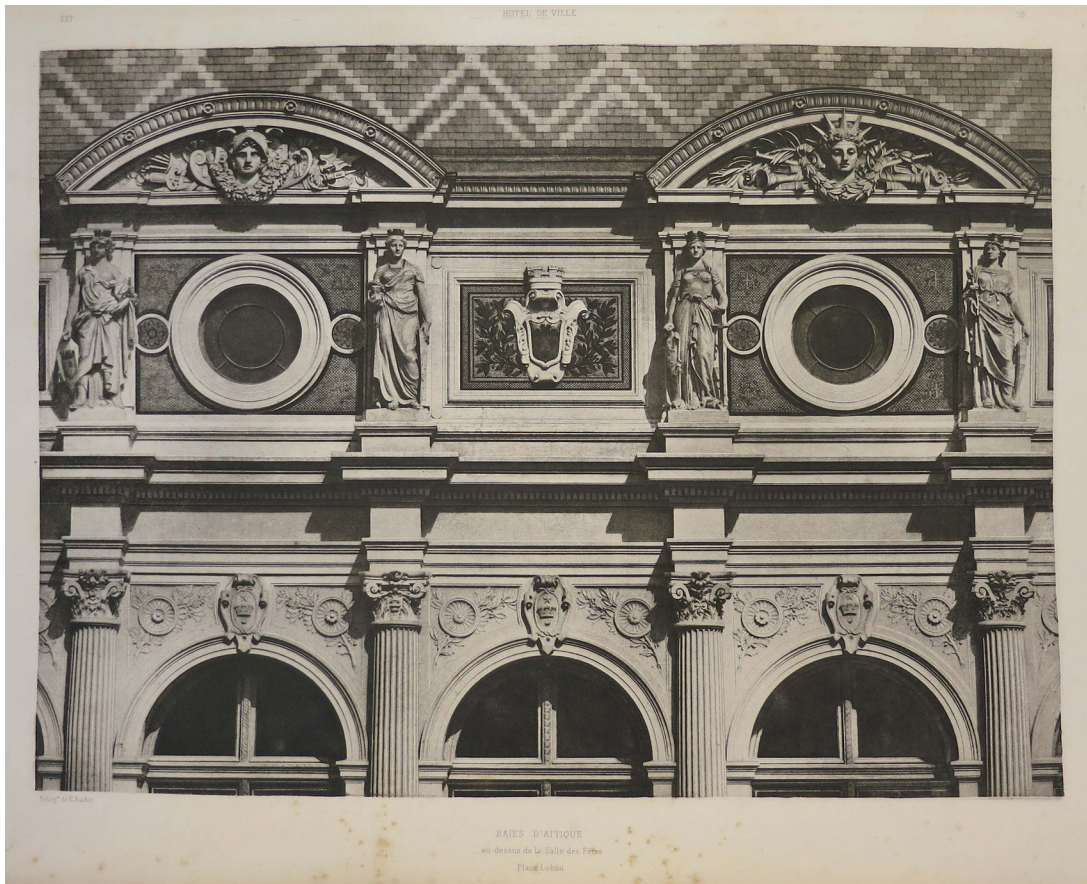
3.21. Édouard Baldus, View of the Porte Saint-Denis, facing north or south, Paris, France, c. 1852. Albumen silver print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1980:0220.



3.22. Édouard Baldus, Petit Trianon: Garden façade. Héliogravure. In Édouard Baldus, *Palais de Versailles: Motifs de décorations* (Paris: E. Baldus, c. 1870–77) plate 96. Collection: Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M 7621. Photograph by Peter Sealy.



3.23. Édouard Baldus, Façade on the Parc. Héliogravure. In Édouard Baldus, *Palais de Versailles: Motifs de décorations* (Paris: E. Baldus, c. 1870–77) plate 98. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE M 7621. Photograph by Peter Sealy.



3.24. Édouard Baldus, Baies d'attique au dessus de la Salle des Fêtes: Place Lobau. Héliogravure. In Théodore Ballu and Édouard Deperthes, *Reconstruction de l'Hôtel de Ville de Paris* (Paris: Librairie centrale d'architecture, 1884), plate 55. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:94-B14. Photograph by Peter Sealy.



3.25. Édouard Baldus, Cour des bureaux. Héliogravure. In Théodore Ballu and Édouard Deperthes, *Reconstruction de l'Hôtel de Ville de Paris* (Paris: Librairie centrale d'architecture, 1884), plate 40. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN ID:94-B14. Photograph by Peter Sealy.





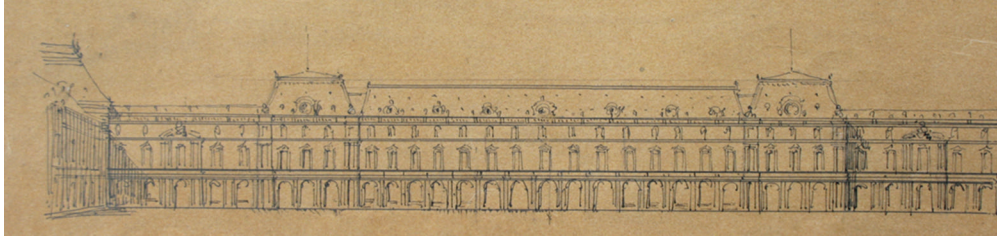
3.26. Édouard Baldus, The Imperial Library of the Louvre, Paris, c. 1856–57. Albumen silver print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1976:0080.



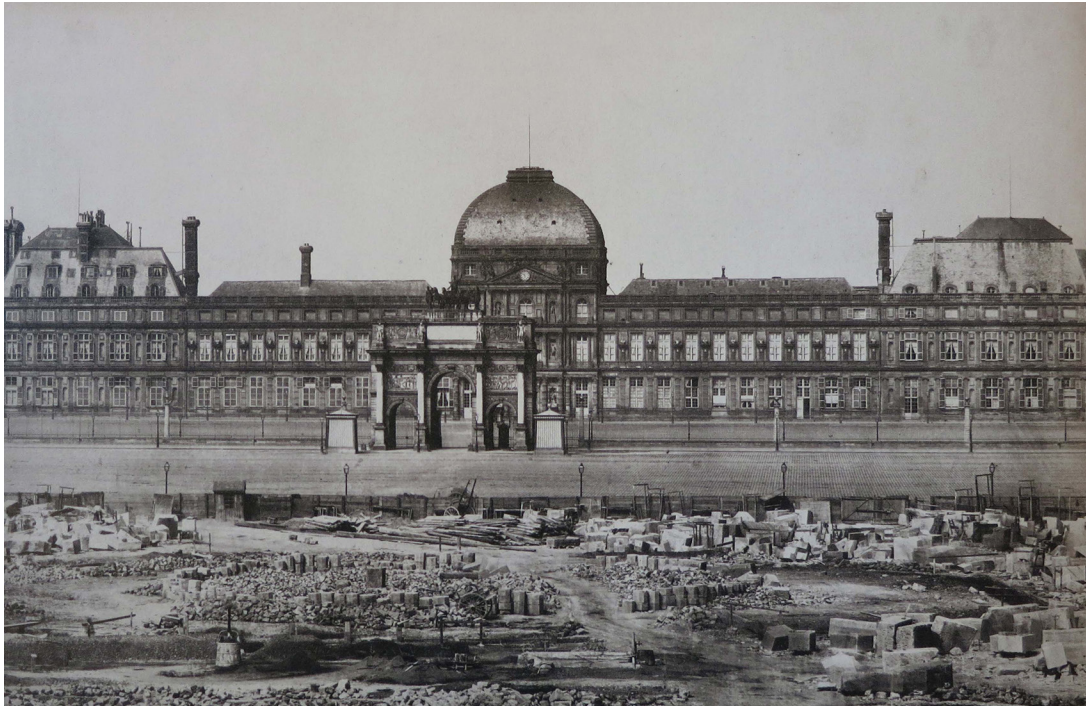
3.27. Hector Lefuel, Study for the façade of the Pavillon Sully, 1857. Archives nationales, Paris 64 AJ 424 69 bis.



3.28. Édouard Baldus, The Pavillon Sully, Louvre, Paris, between 1852 and 1857. Salted Paper Print. In *Réunion des Tuileries au Louvre 1852–1857* (Paris: Chardon aîné, 1857). J. Paul Getty Museum 84.XO.735.3.2.19. Digital image courtesy of the Getty's Open Content Program.



3.29. Agence d'Hector Lefuel, Cour du Carrousel elevation of the north gallery of the Tuileries, 1859. Archives nationales, Paris 64AJ 514\* pièce 8. Photograph by Guillaume Fonkenell.



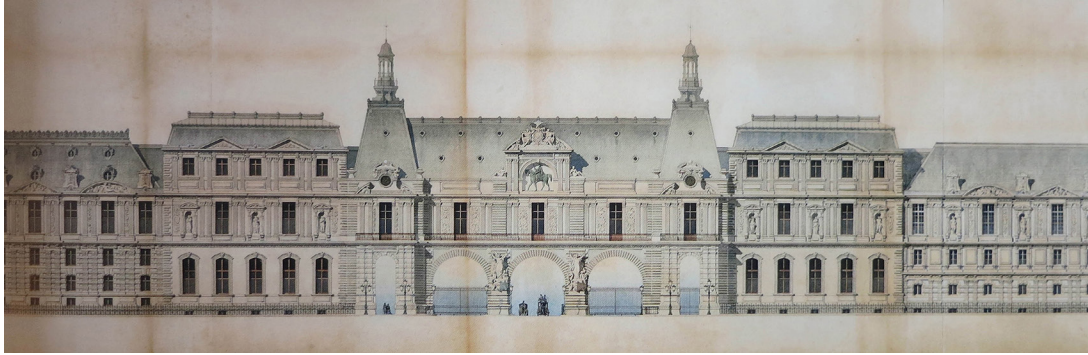
3.30. Édouard Baldus, Tuileries Palace, Paris, 1855. Galerie Michèle Chomette, Paris. In Malcolm Daniel, *The Photographs of Édouard Baldus* (New York: Metropolitan Museum of Art; Montreal: Canadian Centre for Architecture, 1994 164 plate 38.



3.31. Anonymous, First political execution by guillotine, place du Carrousel, 1792. Paris, Musée Carnavalet G. 22084.



3.32. Collaborator of Lefuel, Grands Guichets, perspective taken from the Seine side, c. 1864–66. Drawing. Paris, musée du Louvre, Archi7 ; 64AJ592pièce3.

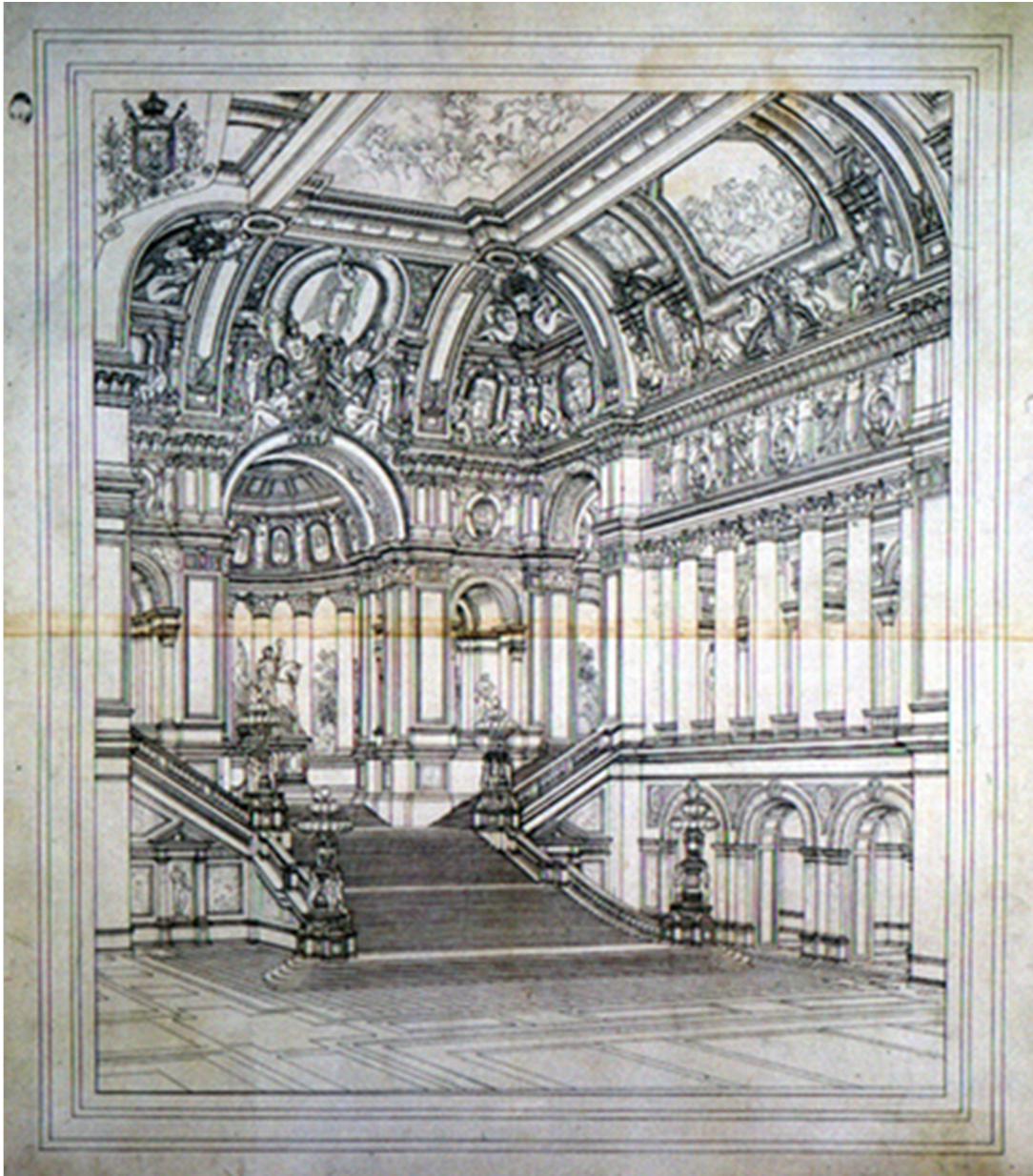


3.33. Agence d'Hector Lefuel, Grands guichets, Orthogonal elevation, Seine side, 1864.  
Drawing. Paris, musée du Louvre Archi1; 64AJ592pièce7.

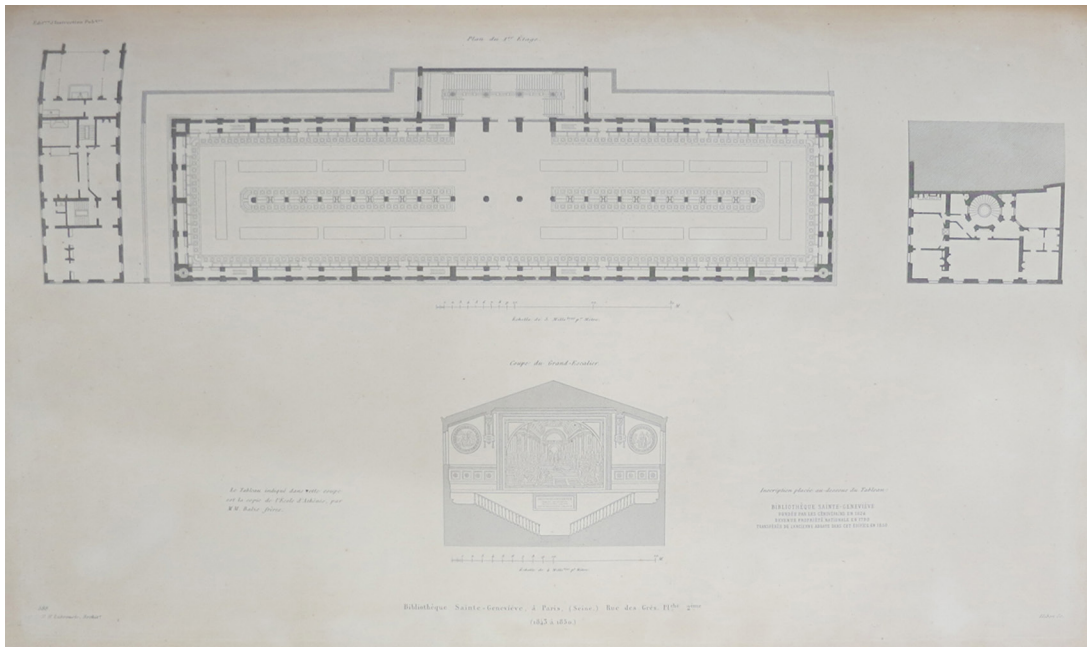




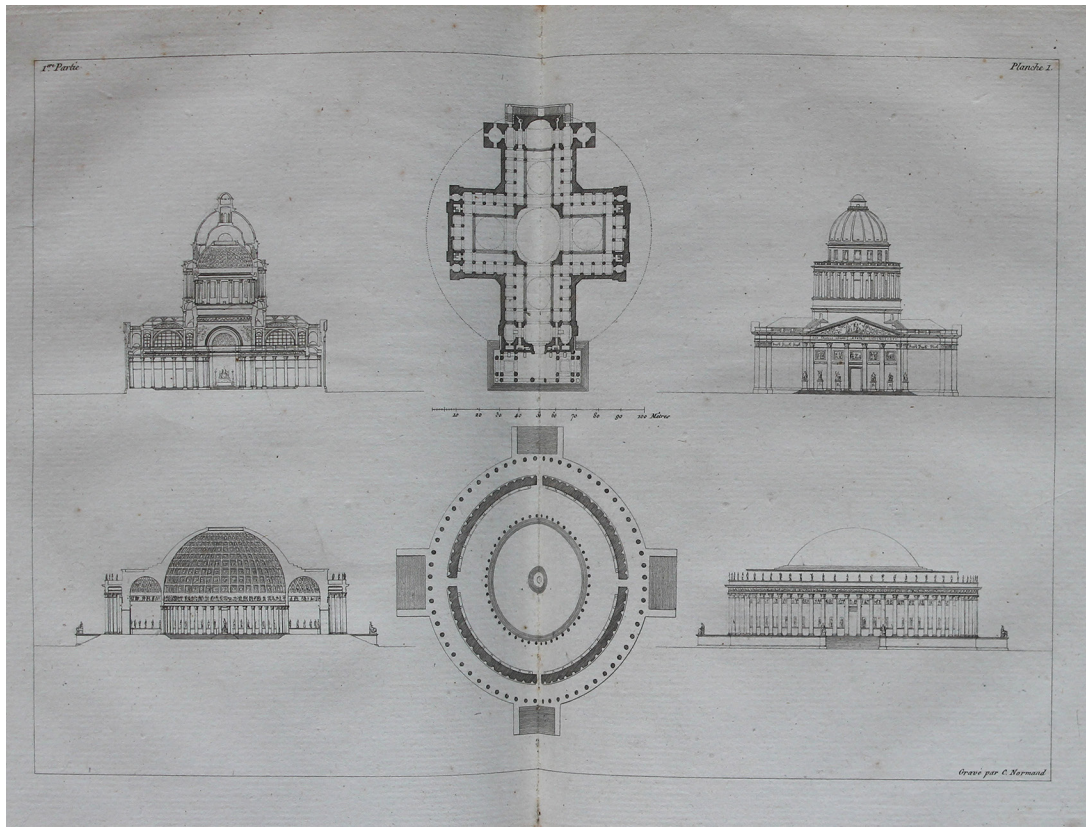
3.34. Édouard Baldus, Toulon, 1861 or later. Albumen silver print from wet collodion glass plate negative. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1981:0816:069.



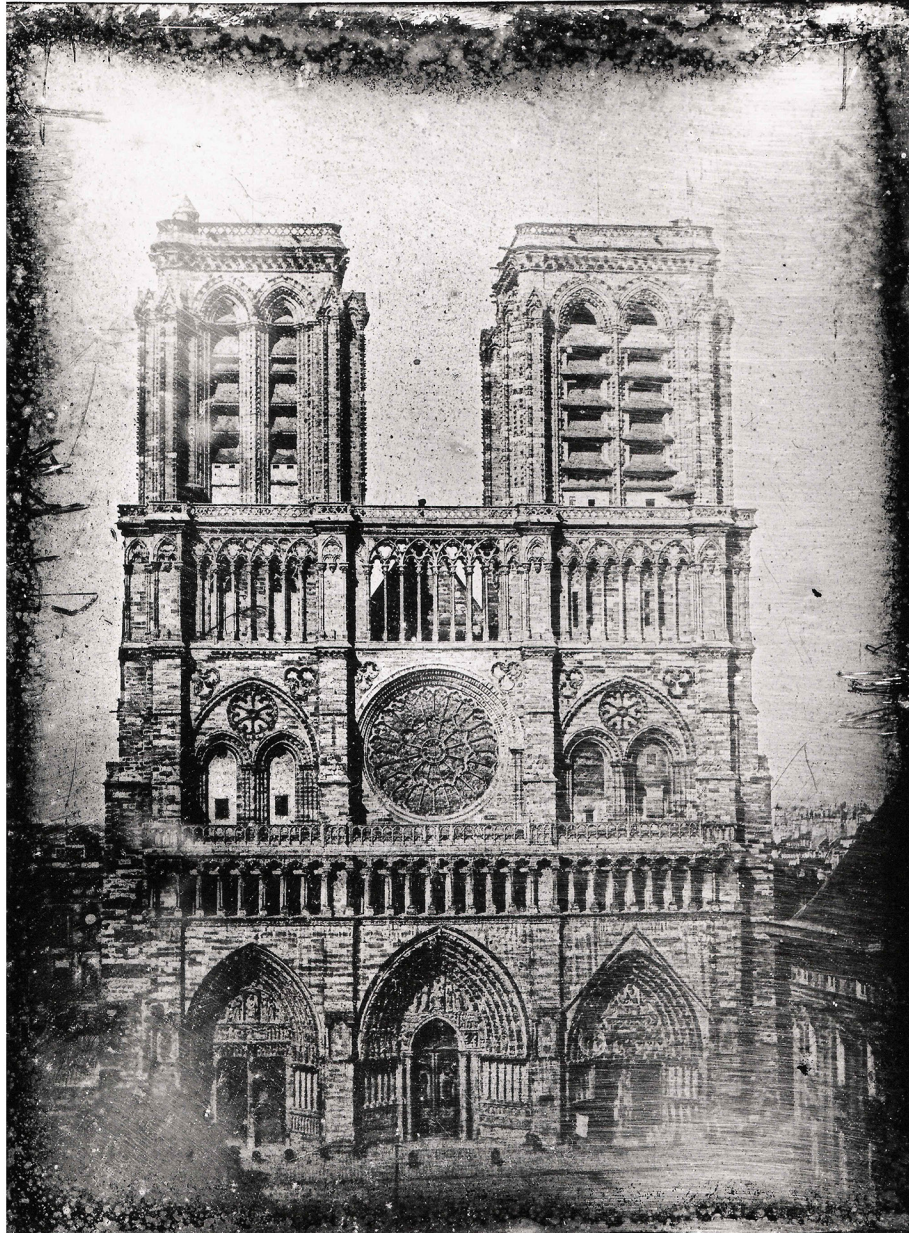
4.1. Emmanuel Brune, Main staircase of a sovereign's palace, longitudinal section. Perspective. India ink on paper. École nationale supérieure des beaux-arts PRA 232-3.



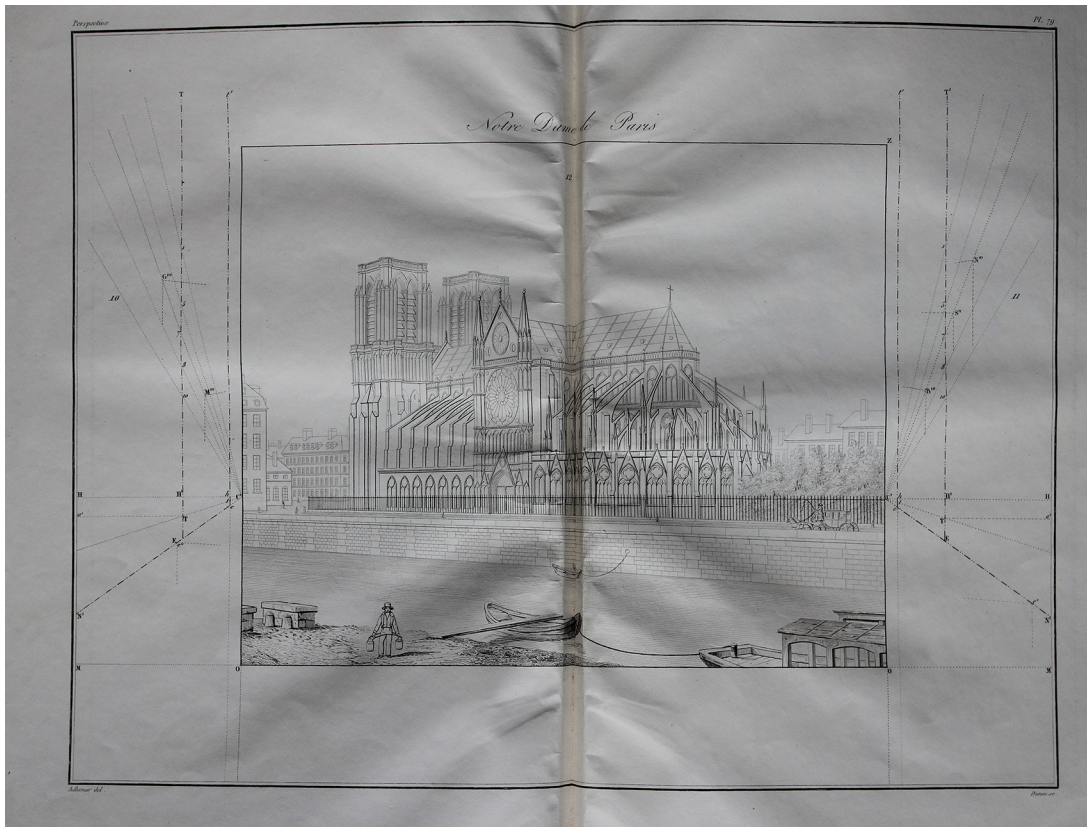
4.2. Bibliothèque Sainte-Geneviève, Paris. Ground floor plan and transversal section. Rez-de-Chaussée & Coupe Transversale.” In Charles-Pierre Gourlier et al., *Choix d’édifices publics*, vol. 3 (Paris: L. Colas, 1825-50), plate 387. Collection Centre Canadien d’Architecture/ Canadian Centre for Architecture MAIN M 5366. Photography by Peter Sealy.



4.3. Untitled. Engraving. In Jean-Nicolas-Louis Durand, *Précis des leçons d'architecture données à l'École polytechnique*, vol. 1 (Paris: the author, Year X [1802]–Year XIII [1805]), plate 1. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal CAGE NA2520.D8213 (0007169). Photograph by Peter Sealy.



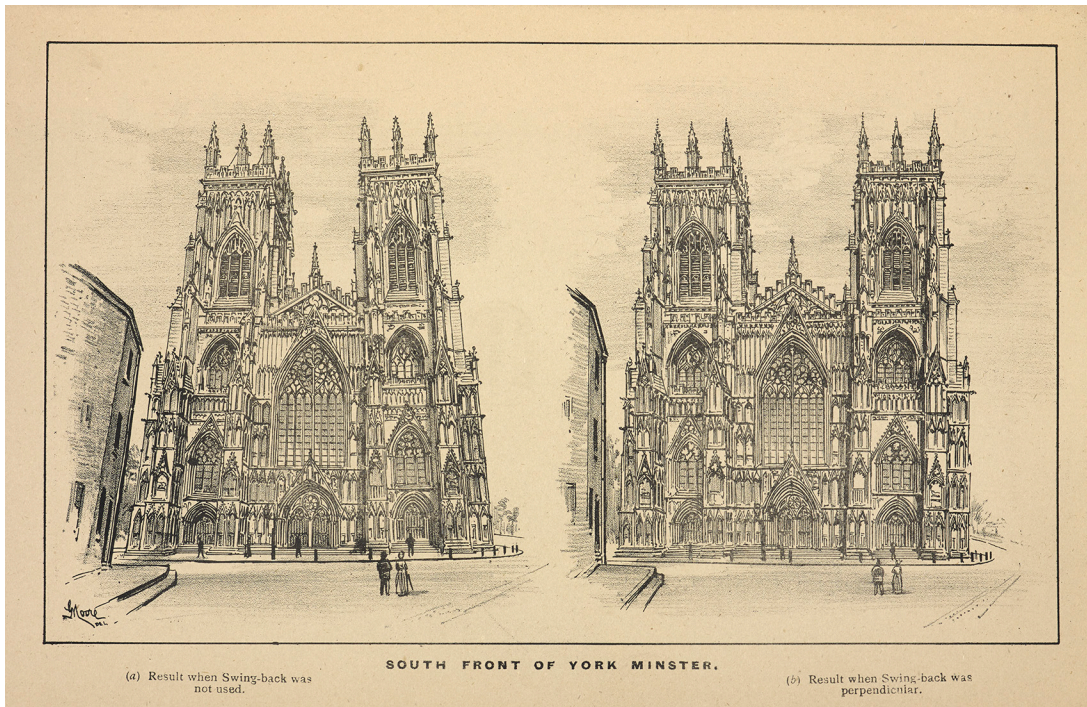
4.4. Nicolas Marie Paymal Lerebours, Notre Dame, Paris, 1839 or 1840. Daguerreotype. Oxford Museum of the History of Science 89963.



4.5. Joseph Alphonse Adhémar, Notre Dame de Paris, 1859. Engraving. In Joseph Alphonse Adhémar, *Traité de perspective linéaire* (Paris: Armand Colin & Cie, 1880): plate 79. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal. MAIN M NA2710.A4 1880. Photograph by Peter Sealy



4.6. Édouard Baldus, Notre-Dame Cathedral, 1850–59. Albumen silver print. J. Paul Getty Museum 84.XP.218.20. Digital image courtesy of the Getty's Open Content Program.



4.7. South Front of York Minster. Engraving. In F.W. Mills, *Photography for Architects* (London: Iliffe & Son, 1890). British Library f.37 08909.





4.8. Percier and Fontaine, “The Library at Malmaison,” 1812. Drawing.



4.9. Paul-Marie Letarouilly, View of the Capitol buildings from the Tarpeian Rock. Engraving. In Paul-Marie Letarouilly, *Édifices de Rome moderne, ou, Recueil des palais, maisons, églises, couvents, et autres monuments publics et particuliers les plus remarquables de la ville de Rome*, 3 vols. (Paris: Typographie de Firmin Didot frères, 1840–57), plate. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M NA44.L645.A63 1840. Photograph by Peter Sealy.



4.10. Félix Duban, Paris, View of the church of the Madeleine, 1836–37. In *Album du Duc d'Orléans* (1837). Watercolor. Image courtesy Kupferstichkabinett der Staatlichen Museen zu Berlin—Preussischer Kulturbesitz.



4.11. Grand Opéra de Paris (Competition of 1 February 1861). Project of Mr. Tétaz, Project of M. Haller. Engraving. In *Revue générale de l'architecture et des travaux publics* 19 (1861): plate 27. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



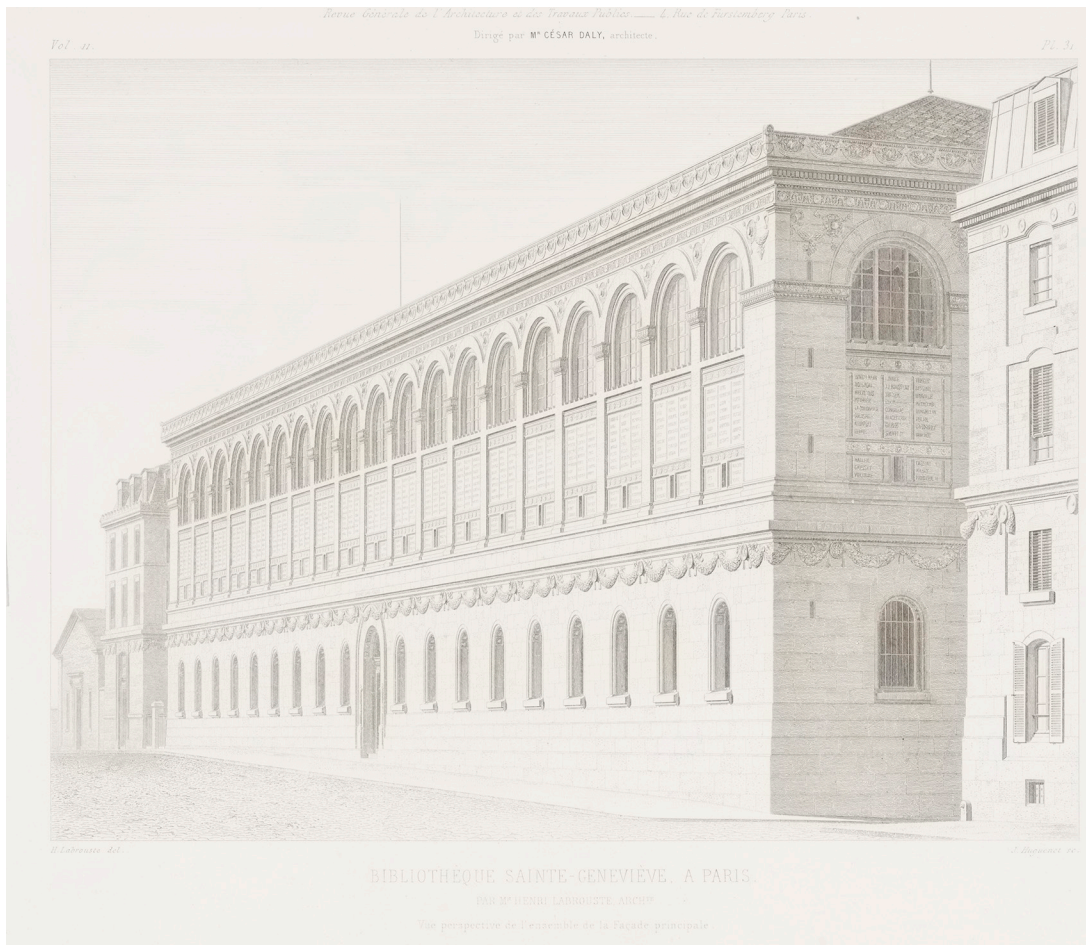
4.12. Eugène-Emmanuel Viollet-le-Duc, Opéra, Paris. Académie impériale de musique. View of the building and its surroundings, project, 1861. Photo (C) Ministère de la Culture— Médiathèque du Patrimoine, Dist. RMN-Grand Palais / image RMN-GP.



4.13. Édouard Baldus, Church of Saint-Germain l'Auxerrois, 1854-57. Albumen silver print. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1983:0199:011.



4.14. Louis-Auguste et Auguste-Rosalie Bisson (Frères), Façade of the Bibliothèque Sainte-Geneviève in 1852. Salted paper print probably coated with albumen, on mount. Académie d'Architecture 492.



4.15. Henri Labrouste, Perspective drawing of the Bibliothèque Sainte-Geneviève. Engraving by Jacques-Joseph Huguenet. In *Revue générale de l'architecture et des travaux publics* 11 (1853): plate 31. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.





4.16. Labrouste, sheet of preliminary plans and sketches for Bibliothèque Sainte-Geneviève, ca. 1839. Drawing. Bibliothèque Sainte- Geneviève, Paris.



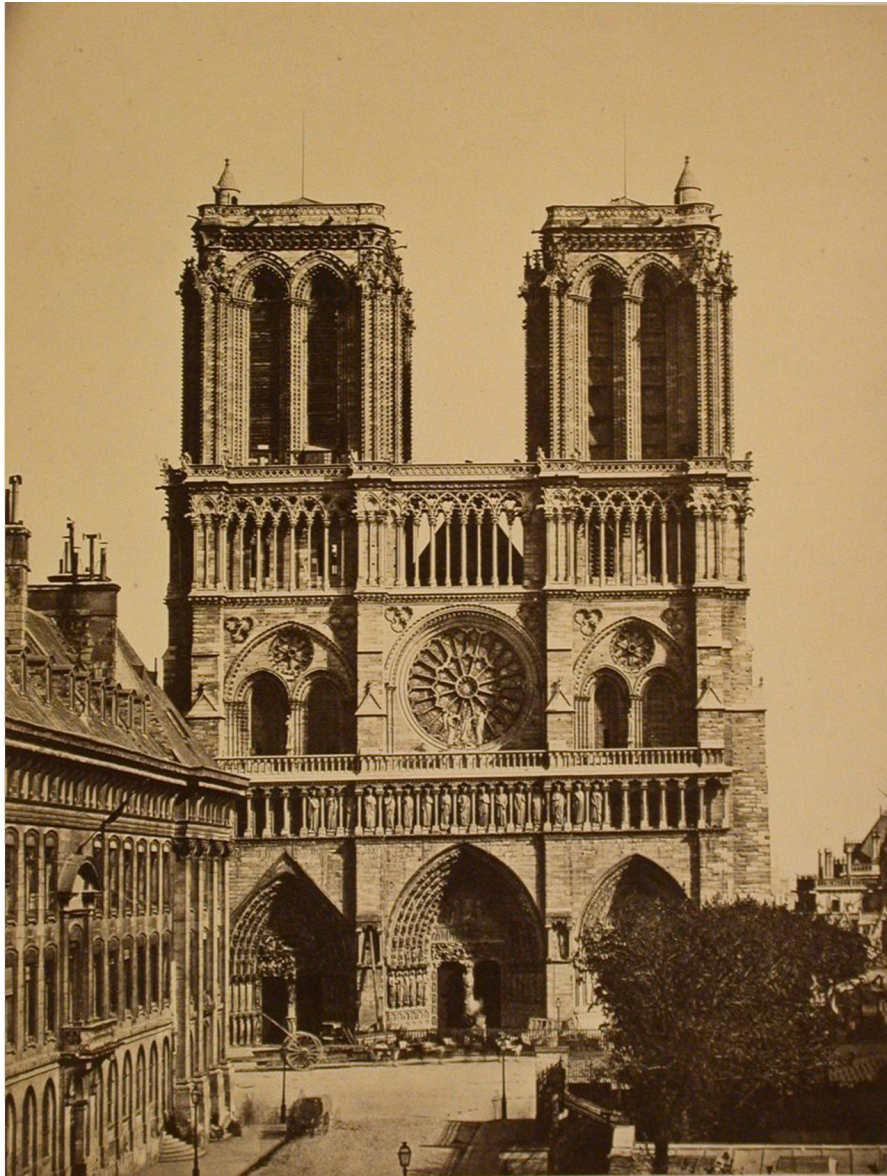
4.17 Unknown central Italian painter, Ideal City, c. 1480–90. Painting. Galleria Nazionale delle Marche, Palazzo Ducale di Urbino.



4.18. Emanuel de Witte, Interior of a Protestant, Gothic Church, with a Gravedigger in the Choir, 1669. Oil on panel. Rijksmuseum, Amsterdam SK-A-4054.



4.19. Bisson frères, “Pivoting panel [vantail] of the Saint Marcel portal, called Sainte Anne portal, 1853. Albumen silver print. In *Monographie de Notre-Dame de Paris* (Paris: A. Morel, 1853): plate 1. Collection Centre Canadien d’Architecture/Canadian Centre for Architecture, Montréal, PH1980:0039:008.



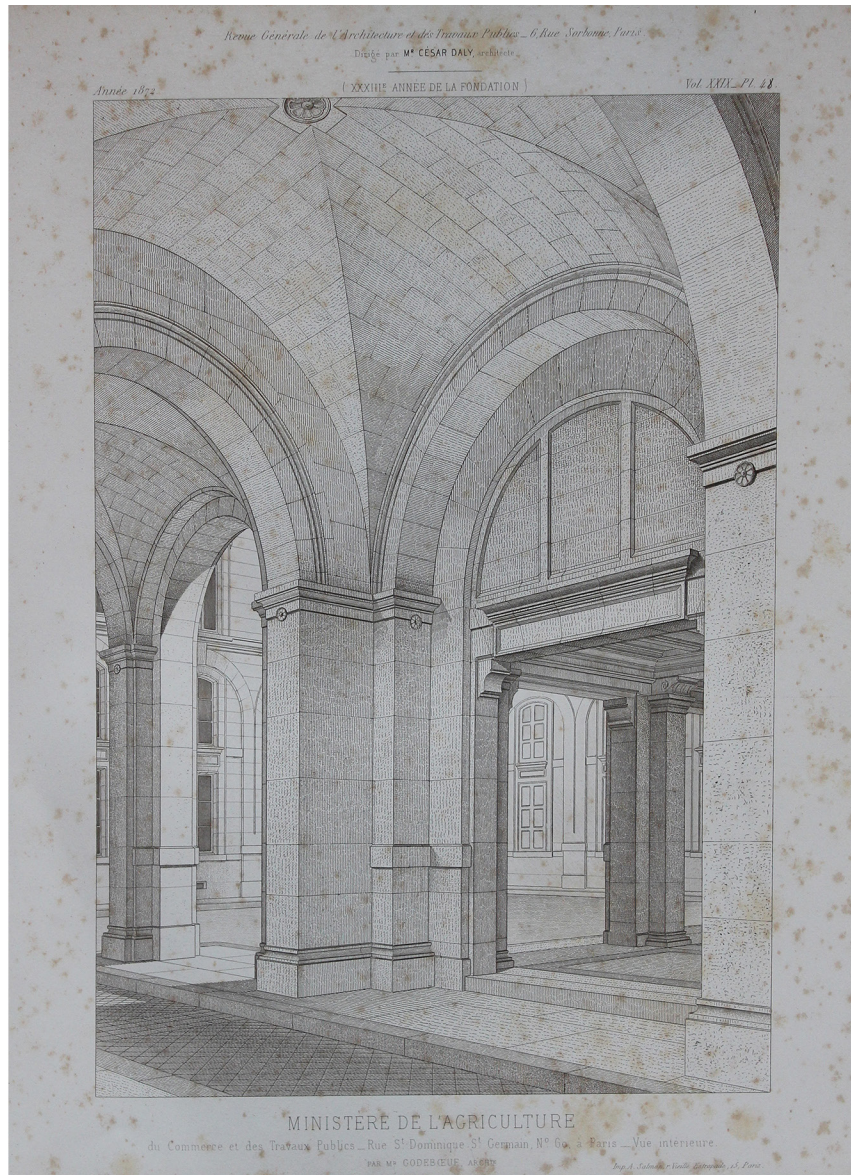
4.20. Bisson frères, West façade, 1853. Albumen silver print. In *Monographie de Notre-Dame de Paris* (Paris: A. Morel, 1853). Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal, PH1980:0039:001.



4.21. Hôtel du journal le Figaro, rue Drouot, at Paris. Perspective view of the main façade. Engraving. In *Revue général d'architecture et des travaux publics* 31 (1874): plate 48. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484.

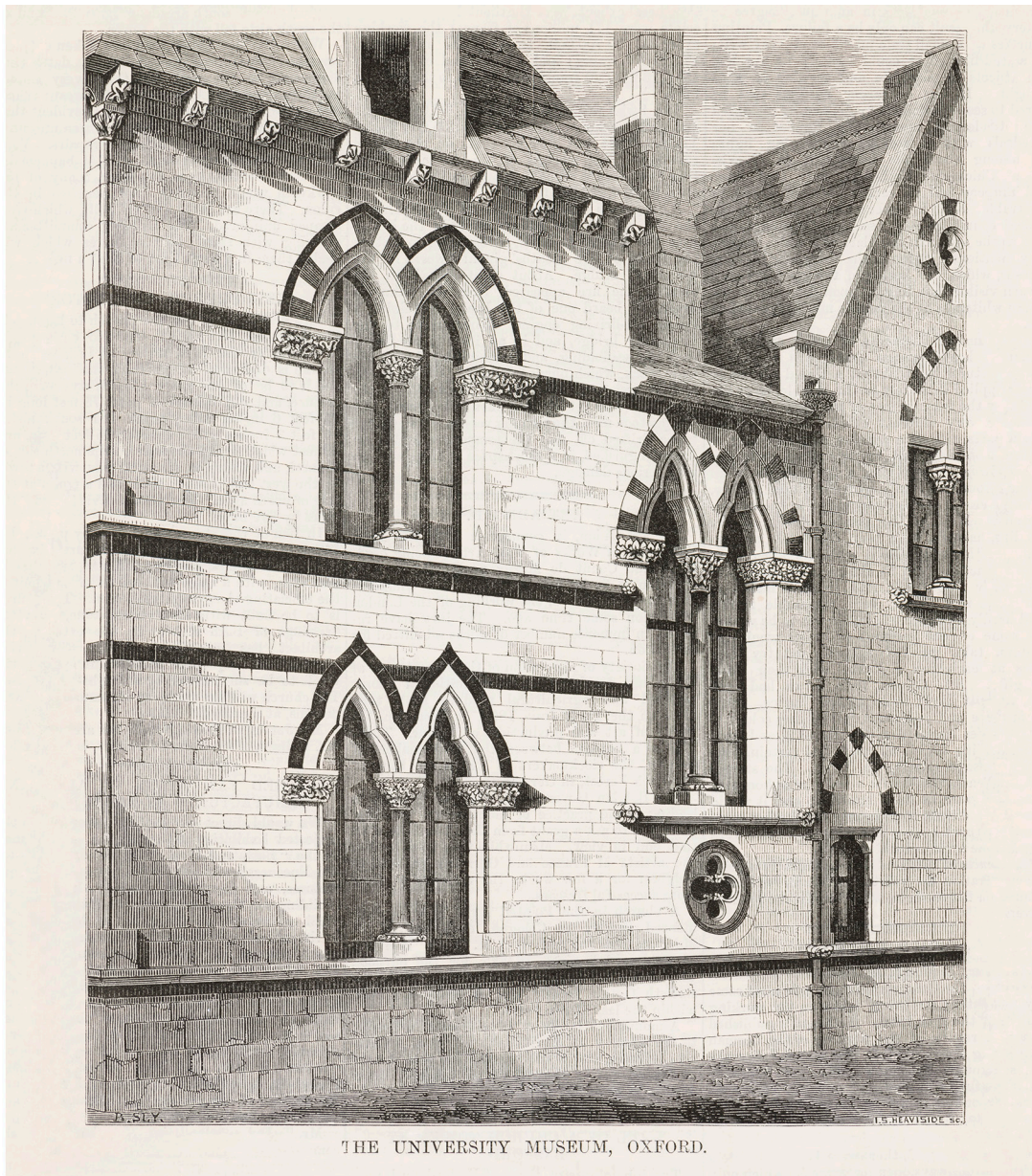


4.22. Ministère de l'Agriculture, du Commerce et des Travaux publics, at Paris. Interior perspective view. In *Revue générale de l'architecture et des travaux publics* 29 (1872): plate 47. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.



4.23. Ministère de l'Agriculture, du Commerce et des Travaux publics, at Paris. Interior perspective view. In *Revue générale de l'architecture et des travaux publics* 29 (1872): plate 48. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN W.R484. Photograph by Peter Sealy.





4.24. The University Museum, Oxford. Engraving. In *The Builder* 17, no. 844 (9 April 1859): 252. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.B83.

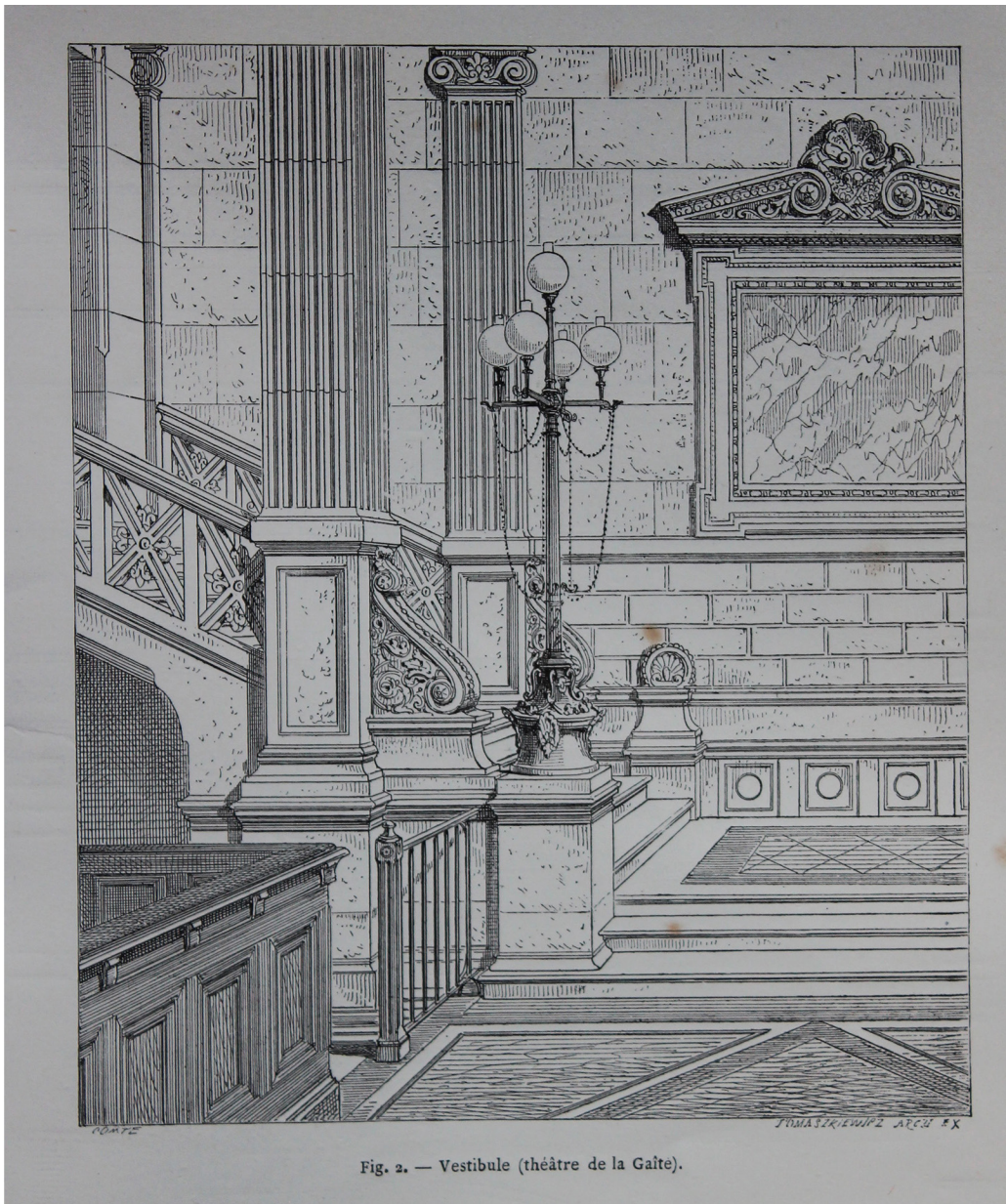
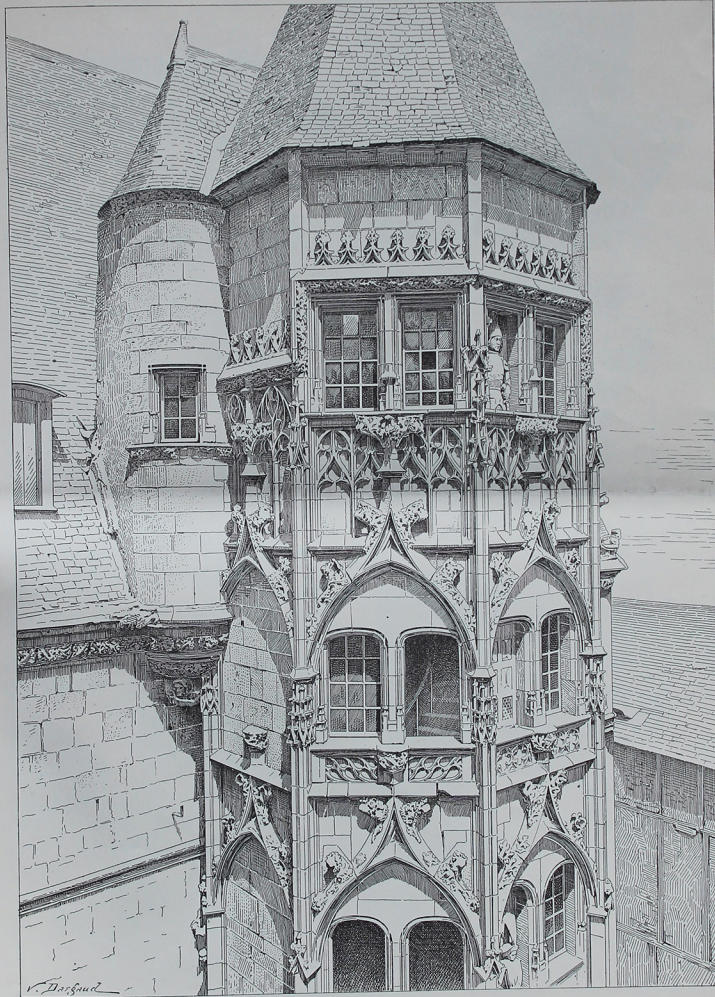


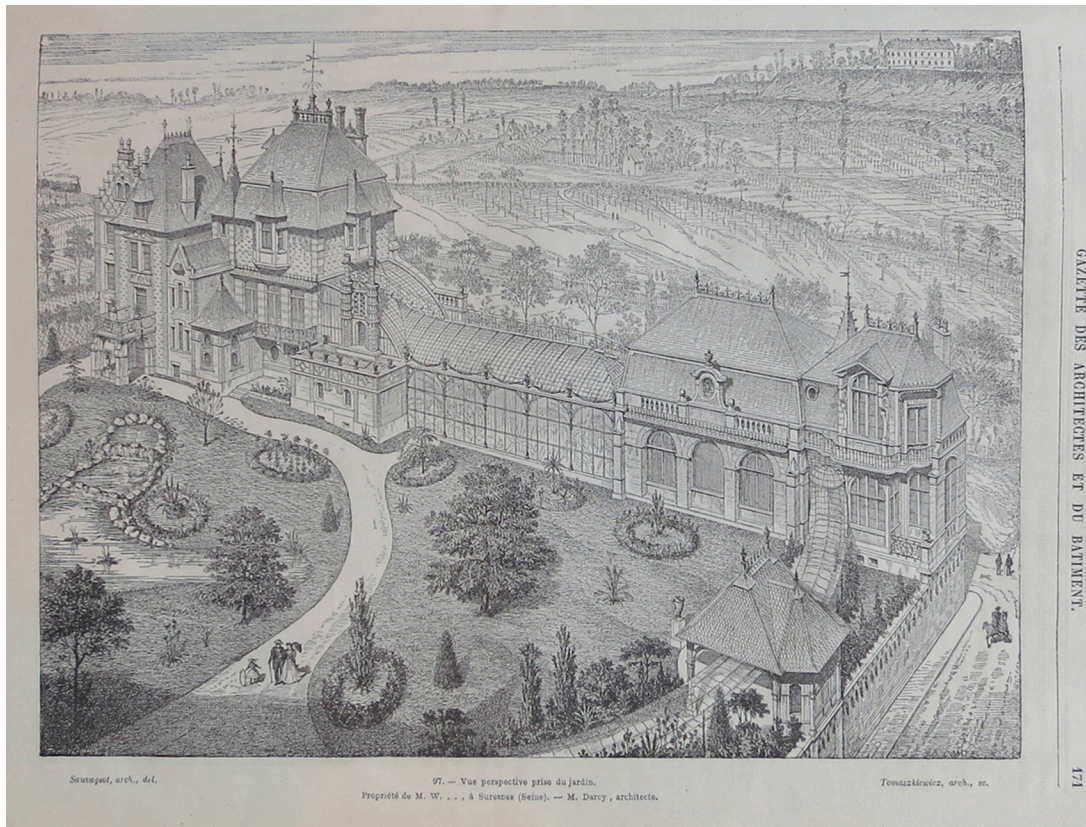
Fig. 2. — Vestibule (théâtre de la Gaîté).

4.25. Vestibule (théâtre de la Gaîté). Engraving. In Felix Narjoux, *Paris, monuments élevés par la ville, 1850–1880* (Paris: Vve. A. Morel et Cie., 1880–83), plate. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal MAIN M 2103.



ANCIEN HOTEL DE VILLE, A BOURGES.

4.26. Old Hôtel de Ville, at Bourges. Engraving. In *La Construction moderne* 8 (1892–93): plate 39. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.C668. Photograph by Peter Sealy.



4.27. Property of M. W. . . ., at Suresnes (Seine). Bird's eye view of the main buildings. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–71): fig. 116. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.

PROPRIÉTÉ DE M. W..., A SURESNES (SEINE)

M. DARCY, ARCHITECTE.



Chateaueud, arch., des.

116. — Vue perspective des bâtiments d'habitation.

4.28 Property of M. W. ..., at Suresnes (Seine). Perspective view from the garden. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–71): fig. 97. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.

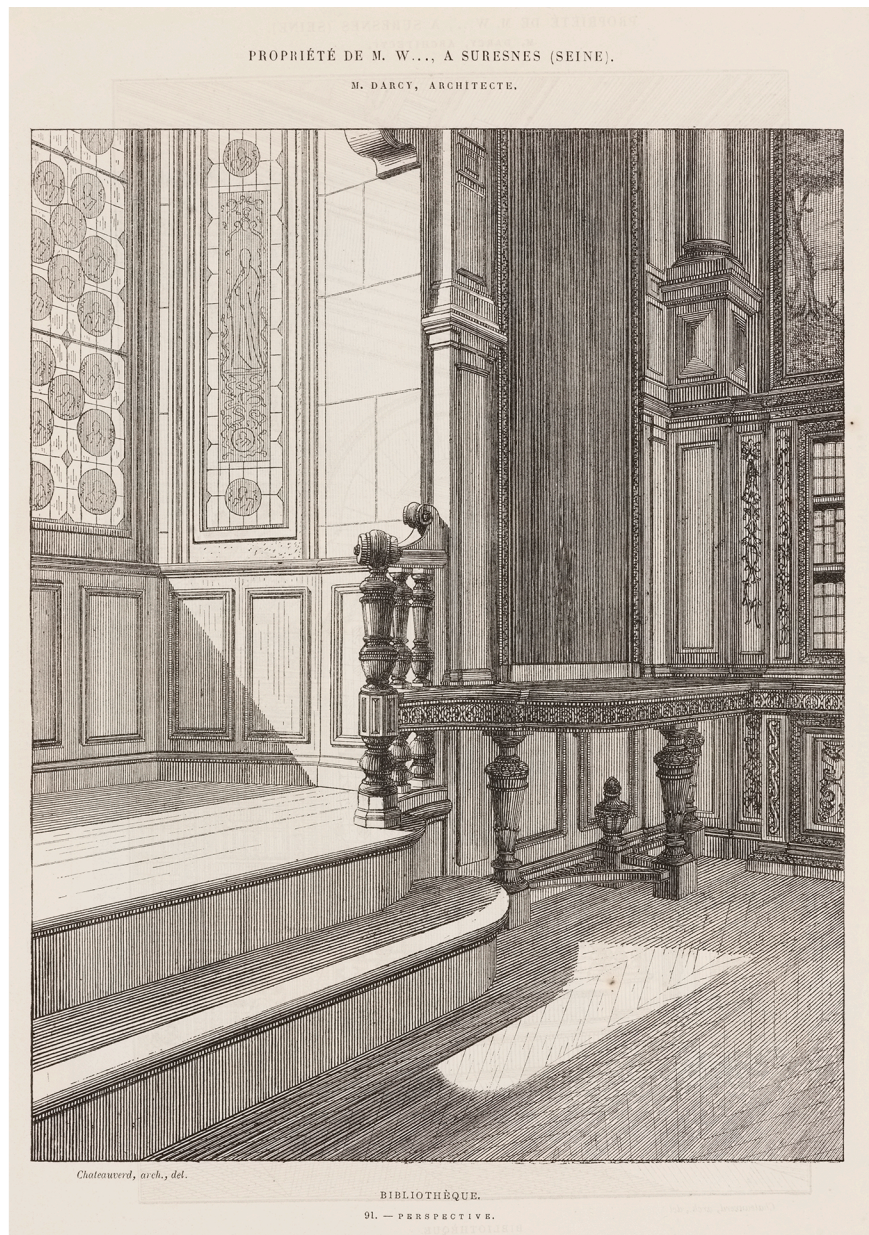
PROPRIÉTÉ DE M. W. . . , A SURESNES (SEINE).  
M. DARCY, ARCHITECTE.



4.29. Property of M. W. . . . , at Suresnes (Seine). Dining room (looking towards the winter garden). Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–71): fig. 43. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.



4.30. Property of M. W. . . ., at Suresnes (Seine). Library. Perspective. In *Gazette des architectes et du bâtiment* 7 (1869–71): fig. 90. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.

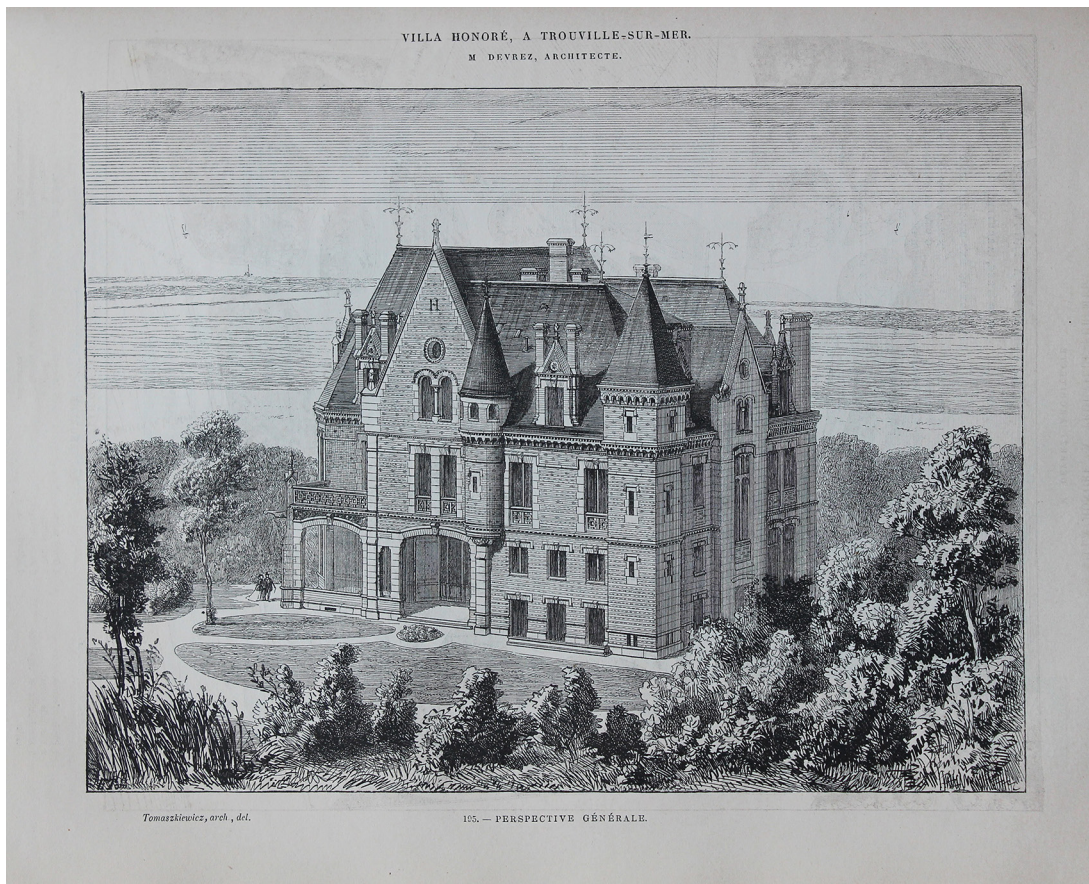


4.31. Property of M. W. . . , at Suresnes (Seine). Library. Perspective. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–71): fig. 91. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal PER W.G392.

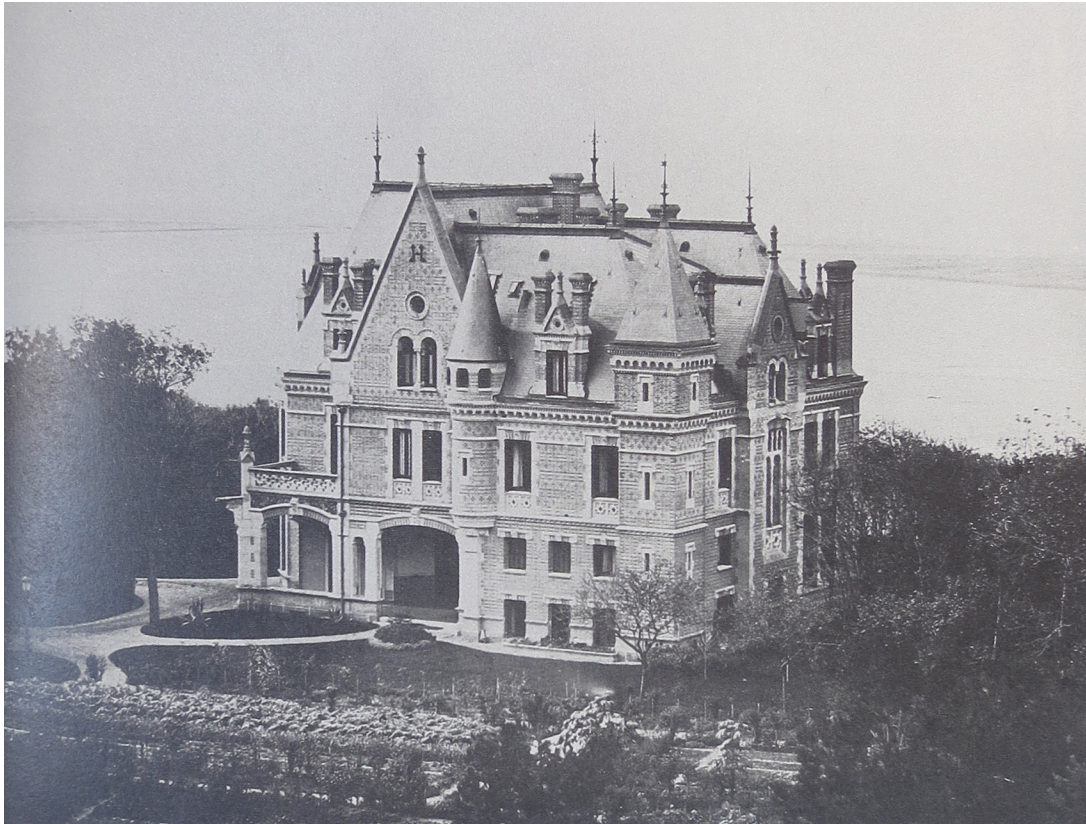




4.32. Halle aux blés, Paris. Engraving. In Joseph Alphonse Adhémar, *Traité de perspective linéaire* (Paris: Armand Colin & Cie, 1880), plate 76. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal. MAIN M NA2710.A4 1880. Photograph by Peter Sealy.



4.33. Villa Honoré at Trouville-sur-mer. M. Devrez, architect. General perspective. Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–70): 283. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.



4.34. Unknown photographer, Villa Sidonia c. 1868. Photograph. Musée de Trouville. In Culot, Maurice and Nada Jakovljevic, eds. *Trouville* (Liège: Mardaga, 1989), 449. Photograph by Peter Sealy.



4.35. Villa Honoré, Trouville-sur-mer. M. Devrez, architect. Perspective of the porch. Engraving. *Gazette des architectes et du bâtiment* 7 (1869–70): 302. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392.



4.36. Unknown photographer, Villa Honoré at Trouville, detail of the façade on the rue Croix. Photograph. Musée de Trouville, Gift of M. and Mme d'Allaines, 1989. In Gilles Plum, *Villas balnéaires du second empire: Trouville, Deauville et Côte Fleurie* (Cabourg: Éditions Cahiers du Temps, 2001), 72. Photograph by Peter Sealy.



4.37. Villa Honoré, Trouville-sur-mer. M. Devrez, architect. Perspective (north façade). Engraving. In *Gazette des architectes et du bâtiment* 7 (1869–70): 323. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PER W.G392. Photograph by Peter Sealy.



4.38. Unknown photographer, Villa Honoré at Trouville, detail of the façade on the rue Demain, between 1867 and 1870. Photograph. Musée de Trouville, Gift of M. and Mme d'Allaines, 1989. In Gilles Plum, *Villas balnéaires du second empire: Trouville, Deauville et Côte Fleurie* (Cabourg: Éditions Cahiers du Temps, 2001), 71. Photograph by Peter Sealy.



5.1. Charles Marville, Pavillon 2 of the Halles Centrales (the “Fort de la Halle”), 1866. Albumen print. Musée Carnavalet CARPH000536.

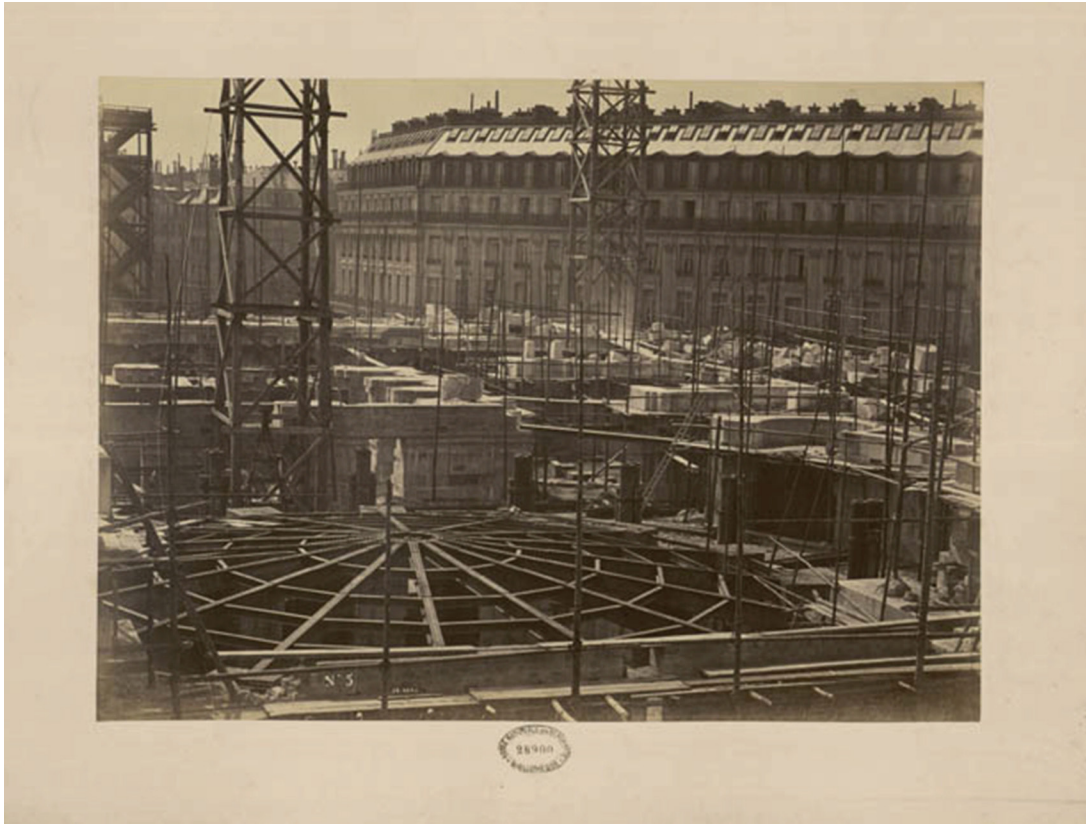




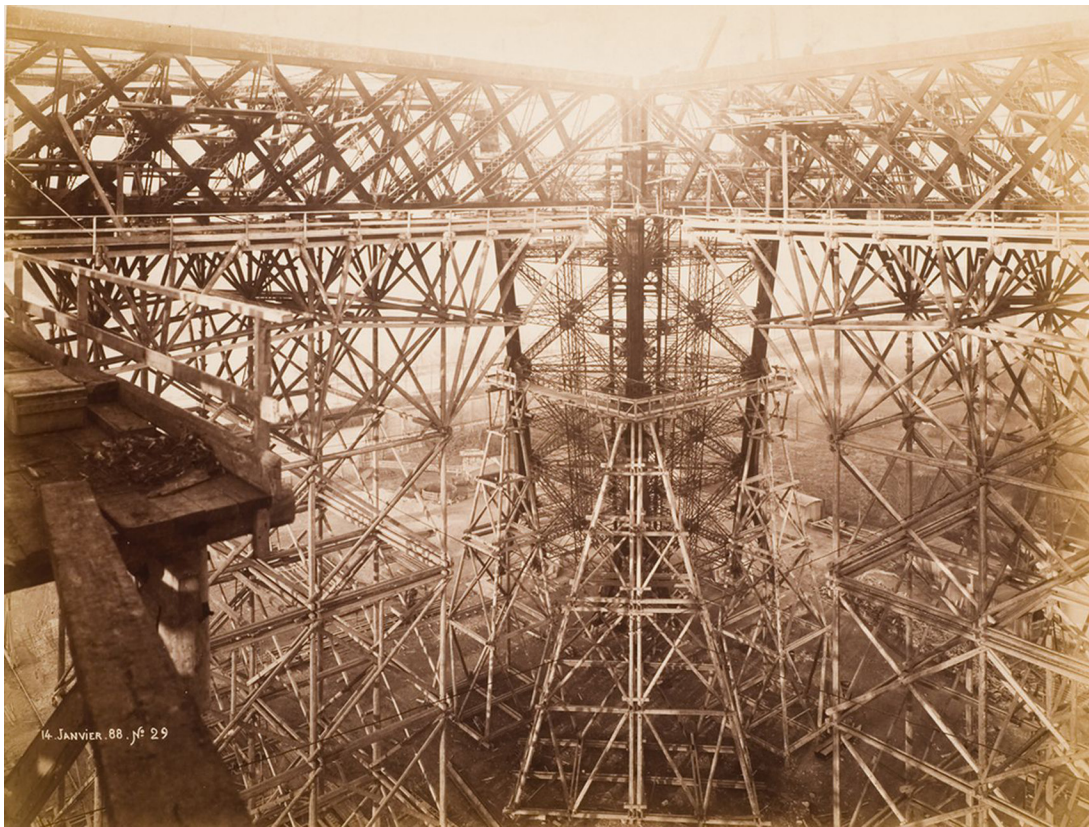
5.2. Charles Marville. "Rue des Prouvaires, from Rue St. Honoré, Paris (1st arrondissement)," 1868. Photograph. Bibliothèque historique de la Ville de Paris. © Charles Marville/BHVP/Roger-Viollet.



5.3. Halles Centrales, Paris: View of the southwest pavilion under construction, 1856. Photograph. In *Revue générale de l'architecture et des travaux publics* 14 (1856): plate 41. Collection Centre Canadien d'architecture/Canadian Centre for Architecture, Montréal PER W.R484.



5.4. Louis-Émile Durandelle, Construction of the Nouvel Opéra, Paris. Albumen print. École nationale supérieure des Beaux-Arts Ph 3674.



5.5. Louis-Émile Durandelle, Tour Eiffel, Paris, 1888. Albumen silver print. Collection Centre Canadien d'architecture/Canadian Centre for Architecture, Montréal PH1987:0362.



Fig. 23. L. C. BOILEAU and EIFFEL: BON MARCHÉ DEPARTMENT STORE. 1876. Glass Roof  
 When the nineteenth century feels itself unobserved, it becomes bold. If possible, one conceals the new designs. Only gradually do the unobserved rear fronts of railroad stations, factories, the unspoiled forms of iron and concrete become visible.

impetus was the great disparity that everyone could see there between wholesale and retail prices. This price margin had to be reduced in order to meet the purchasing power of the poorer population.

The design of the department store demands:

Greatest possible freedom for circulation, clear layout,

Greatest possible influx of light.

Glass and iron thus become the constituent materials. Glass for the generous skylights as well as for the broad plate-glass windows for displays and the upper stories (side lighting).

The iron skeleton allows thin pillars within: freedom of circulation, clear layout, and it permits the best utilization of light at the front.

The first consistent realization of a department store in glass and iron is the MACASINS AU BON MARCHÉ (Paris), 1876. Eiffel as engineer-constructor, L[ouis-] C[harles] Boileau, the son of the indefatigable advocate for the introduction of iron, as architect.

Broad windows at the front. Only the corner pavilions, a reminiscence of French châteaux, could not be abandoned, as was even the case later (Paul Sédille's Printemps). But already Boileau remarks that these stone pillars are no more than the

Figs. 21 to 24

117

5.6. Glass Roof, Bon Marché Department Store, Paris. Photograph. In Sigfried Giedion, *Building in France, Building in Iron, Building in Ferro-Concrete* (Santa Monica: Getty Institute for the History of Art and the Humanities, 1995) 117. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal ID NA2599.8.G454; ID:95-B2187.



5.7. Apartment Building, rue du Général Henrion Berthier, Neuilly. Gustave Gridaine, architect. Albumen silver print. In Albert Lévy, *Les Constructions nouvelles: Maisons de rapport, hôtels privés : album photographique* (Paris: E. Ducher, c. 1895), plate 26. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal PH1981:0234:001-035. Photograph by Peter Sealy.



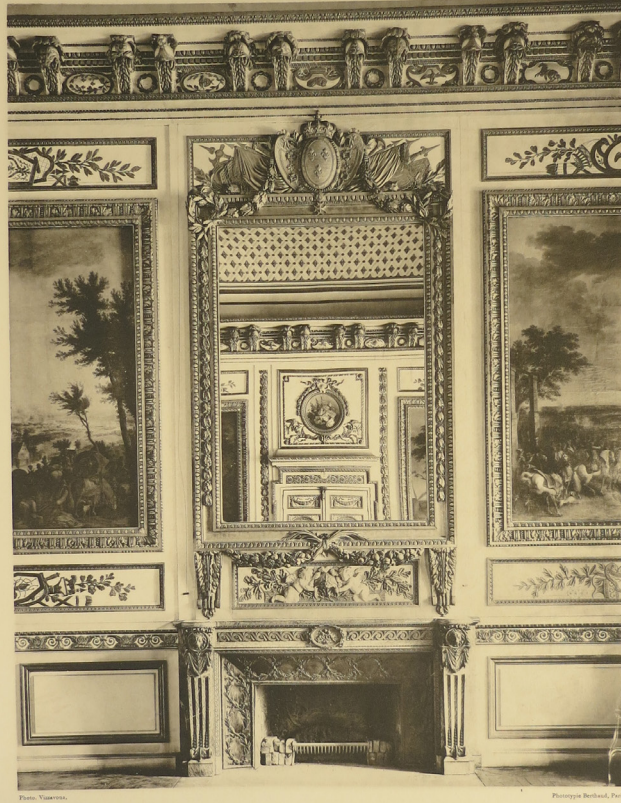
Photo, Vigneron.

Phototypie Barbaud, Paris.

ÉGLISE SAINT-SULPICE — TOUR SEPTENTRIONALE ET FAÇADE  
Architectes : CHALGRIN et SERVANDONI

*Librairie de la Construction Moderne*

5.8. Église Saint-Sulpice—Northern Tower and Façade. Chalgrin and Servandoni, architects. Phototypie. In Paul Planat, *Le Style Louis XVI: recueil de motifs choisis d'architecture au XVIIIe siècle* (Paris: Librairie de la construction moderne, 1905), plate 37. Collection Centre Canadien d'Architecture/Canadian Centre for Architecture, Montréal MAIN M 7582. Photography by Peter Sealy.



ÉCOLE MILITAIRE — CHEMINÉE ET GLACE DU SALON DES MARÉCHAUX

Éditeur de la Construction Moderne

5.9. École Militaire—Chimney and Mirror of the Marshall's Salon. Phototypie. In Paul Plannat, *Le Style Louis XVI: recueil de motifs choisis d'architecture au XVIIIe siècle* (Paris: Librairie de la construction moderne, 1905), plate 54. Collection Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal MAIN M 7582. Photography by Peter Sealy.



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