

the architecture of the Grand Siècle must consider the unitary concept that then governed “the city and the court.”

With its three main parts, the layout of the catalogue matches that of the exhibition. The first part, titled “Le métier: Être architecte,” or “The Profession: Being an Architect,” examines how architects became progressively empowered as professionals. In addition to the customary apprenticeship contracts, such as that of François Mansart (cat. 6), the catalogue features lesser-known documents, such as the 1702 “Petition for Abdicating the Profession,” in which Pierre-Alexis Delamair (1676–1745) sought to relinquish his work as master mason to “focus on the study of architecture” (cat. 11). Such documents illustrate emerging tensions between traditional building “masters”—members of professional guilds, generally masons or carpenters—and architects, who worked outside the guild structure. The founding of the Royal Academy of Architecture in 1671 further reinforced this divide. Numerous architectural treatises and manuals included in the exhibition document this emancipation from traditional building hierarchies and attest to the critical role of contemporary texts that codified oral know-how and techniques, and that made transfers between manual art and intellectual knowledge possible.

The second part of the catalogue, titled “Le dessin: L’expression du projet,” or “The Drawing: Expression of the Project,” is devoted to the development of architectural drawing in seventeenth-century France, still very much dependent on the model provided by Jacques Androuet du Cerceau I (1515–85) a century earlier. While the practice of architectural drawing tended to be more professional and technical in France than it was in humanist Italy, it remained no less ambitious. Cojannot and Gady painstakingly identify the authors and subjects of the drawings, underscoring the graphic mastery of designers such as Jacques Lemercier (cat. 74–77), François Mansart (cat. 80–84, 91), and Louis Le Vau (cat. 84–88). These drawings also reveal the multiple actors who were involved in the design process. Some of them, such as those created by Guillaume Feuillet (ca. 1650–1700), a “theater carpenter” (cat. 90), and Charles Chamois (ca. 1610–84), a master builder and probably

also a master mason (cat. 99), testify to growing architectural skills in the building trades. Expanding the known corpus of seventeenth-century architectural drawings, including some new works of breathtaking quality, the catalogue also revisits the collaborative process that characterized the design and construction of early modern French buildings. The evolution of building schemes, often documented in drawings, demonstrates the levels of trust that architects established with their close collaborators. The contributions of early modern architectural draftsmen were not well documented until 1692, when First Architect Jules Hardouin-Mansart (1646–1708) established an office of draftsmen paid directly by the king.

The investigation of shared skills continues in the third part of the catalogue, titled “Le chantier: À pied d’œuvre,” or “The Site: On the Job.” This section considers the “places of coincidence” where architects, contractors, and workers met. Once again, the catalogue presents documents such as building estimates, contracts, and large- and small-scale construction drawings (cat. 134–45) to illustrate the workings of a collective system enabled by drawing and model making. To show the dynamics at play on seventeenth-century construction sites, the authors devote an entire section to the building of the Collège des Quatre-Nations in Paris. They present here several discoveries, such as an exceptional bird’s-eye view of the first project for the college from a private collection (cat. 150). Following this research, they are able to assign François d’Orbay (1634–97) a major role in the project’s elaboration (cat. 170–72).

At the same time the *Dessiner pour bâtir* exhibition was taking place, another show, titled *L’art du chantier: Construire et démolir du XVI^e au XXI^e siècle* (*The Art of the Building Site: Construction and Demolition from the Sixteenth to the Twenty-First Century*), was also being held in Paris, at the Cité de l’Architecture et du Patrimoine. Curated by Valérie Nègre, professor at the University of Paris 1 Panthéon-Sorbonne, this exhibition presented material that enriched Cojannot and Gady’s exhibition, and the two exhibitions’ catalogues are also complementary.² Tracing the rise of the architect as a building professional in seventeenth-century France, these books chart new

avenues for future research into the deeply collective nature of early modern architectural practice.

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Notes

1. Claude Mignot, “Pierre Le Muet architecte” (PhD diss., Université Paris-Sorbonne, 1991); Antoine Picon, *Claude Perrault, 1613–1688, ou la curiosité d’un classique* (1988; repr., Paris: Picard, 2000); Jean-Pierre Babelon and Claude Mignot, eds., *François Mansart: Le génie de l’architecte* (Paris: Gallimard, 1998); Claude Mignot, *François Mansart: Un architecte artiste au siècle de Louis XIII et de Louis XIV* (Paris: Le Passage, 2016); Hilary Ballon, *Louis Le Vau: Mazarin’s Collège, Colbert’s Revenge* (Princeton, N.J.: Princeton University Press, 1999); Alexandre Cojannot, *Louis Le Vau et les nouvelles ambitions de l’architecture française* (Paris: Picard, 2012); Thierry Verdier, *Augustin-Charles d’Aviler, architecte du roi en Languedoc, 1653–1701* (Montpellier: Les Presses du Languedoc, 2003); Alexandre Gady, *Jacques Lemercier, architecte et ingénieur du roi* (Paris: Éditions de la Maison des Sciences de l’Homme, 2005); Bertrand Jestaz, *Jules Hardouin-Mansart, vie et œuvre* (Paris: Picard, 2008); Alexandre Gady, ed., *Jules Hardouin-Mansart, 1646–1708* (Paris: Éditions de la Maison des Sciences de l’Homme, 2010); Anthony Gerbino, *François Blondel: Architecture, Erudition, and the Scientific Revolution* (London: Routledge, 2010); Juliette Hernu-Bélaud, “De la planche à la page: Pierre Bullet et l’architecture en France sous Louis XIV” (PhD diss., Université Paris-Sorbonne, 2015); Adriana Sénard-Kiernan, “Étienne Martellange (1569–1641): Un architecte visiteur de la Compagnie de Jésus à travers la France au temps de Henri IV et de Louis XIII” (PhD diss., Université Toulouse-Jean Jaurès/ Université Paris-Sorbonne, 2015). See also Alexandre Gady, ed., *Jules Hardouin-Mansart: Le chantier infini* (Paris: Le Passage, 2020).
2. See Valérie Nègre, ed., *L’art du chantier: Construire et démolir du XVI^e au XXI^e siècle* (Ghent: Snoeck, 2017).

Sugata Ray

Climate Change and the Art of Devotion: Geoaesthetics in the Land of Krishna, 1550–1850

Seattle: University of Washington Press, 2019, 264 pp., 3 maps, 111 color illus. \$70 (cloth), ISBN 9780295745374

Sugata Ray’s *Climate Change and the Art of Devotion* is an ambitious book that explores how human interactions with the earth and its environment—an emerging specialization within the environmental humanities

known as geoaesthetics—shaped the art and architecture of Braj, the region in north-central India associated with the life of the Hindu divinity Krishna. Discussing the historical evolution of geoaesthetics in relation to the art and architectural projects of this region, Ray employs an analytical framework that reveals the profound connections between designs and ecological conditions in Braj from the sixteenth through the nineteenth centuries, during the period of the Little Ice Age, or LIA (14–22). The focus on geoaesthetics and ecology represents an innovative approach to the study of South Asian art history, and Ray largely succeeds in persuading the reader of the advantages of this method. Less successful is his framing of the argument within new debates about localized historical experiences of climate change. This is not surprising, as this field is still in its infancy, with many new and constantly updated findings that are difficult to represent adequately, given the slow pace at which scholarly monographs are produced.

A key factor in the book's focus on geoaesthetics is the sensibility that Ray brings to this work, as he is highly attuned to the perspectives and self-fashioning of those engaged in Krishna devotion. As he notes, new devotional practices in Braj considered the features of the local landscape, including the river Yamuna, rocks, trees, and even the dust itself, to be charged with sacred energy, and thus to represent various forms of Krishna's presence (13). Ray divides the book into four chapters following the logic of these devotional practices: "Water," "Land," "Forest," and "Ether." Each explores a different facet of the intersection of Krishna devotion with geoaesthetics. For example, in chapter 1, "Water," Ray convincingly demonstrates the strong bonds connecting devotional aspects of "viewing" the sacred in manuscripts associated with Krishna's devotees to the riparian architecture of Sati Burj, a riverside tower constructed in 1570, as well as to typical local architectural features such as ornamental doorways and ghats, the steps leading down to the river. Similar practices of viewing through ornamental windows were central to the courtly rituals of Mughal emperors and Rajput rulers. In exploring the parallels between riparian symbols and architectural features that facilitated the rituals of both sacred and political spaces,

Ray does an excellent job of showing the multiple cultural and historical contexts that informed geoaesthetics in northern India at this time.

In chapter 2, "Land," Ray builds on a different aspect of devotional practice and its associated geoaesthetics by investigating how Braj-centered topophilia shaped the interactions of Krishna devotees not only with the local landmark of Govardhan Hill but also with its constituent rocks. According to a miracle story, Krishna lifted Govardhan up to shelter the world from a deluge. As Ray notes, this scene was incorporated into the iconography of Krishna in multiple devotional images, statues, and panels. He goes further, however, inviting the reader to consider the materiality of the rock, a deep-red local sandstone from which images and temples were carved, and which provided the essential building materials for Mughal imperial architecture. In pausing to consider the sacred efficacy (*dbatu*) of these distinctive geological formations, Ray reminds readers of the vital cosmological connections between the human and material worlds, connections extending far beyond the anthropocentric perspective that usually defines the modern relationship between nature and culture (87). In this chapter we see a more integrated conceptual practice that connects humans with landscape and materiality, and that invests the embodied rock with sacral presence and power.

However persuasive his arguments for the geoaesthetics of devotionalism as a means to gain new perspectives on material culture, Ray's analysis of these practices as part of a broader reaction to climate change is less convincing. In discussing the Little Ice Age in Asia, Ray makes the point that for much of the world the LIA did not cause the cold, icy conditions experienced in northern Europe; rather, many locales experienced increasingly intense and frequent droughts (14–15). As Ray admits: "The Vaishnava actors in my narrative were almost certainly unacquainted with the sweeping climatic transformations that were occurring concurrently in the Americas, Southeast Asia, Africa, and Europe in this period" (16). Indeed, many of the droughts he discusses were chronologically distant from one another, and the impacts of these events on the cognition, imagination, and understanding of human actors

require further study. It is also worth noting that the region of Braj, and Mathura, its chief town, stood within the great semiarid zone of the Mughal Empire, characterized by the "dry, deciduous woodlands and scrub forest that was the natural cover in this ecoregion" (101). Thus, the droughts of the LIA in western India represented the intensification of an already familiar weather pattern.

Nor is it clear what impacts the LIA may have had in Braj. Although we know that the local impacts of the LIA varied greatly across regions around the world, the ways in which these events affected South Asia are yet to be tabulated and understood.¹ The most extensive factor in the growing urbanization, deforestation, and cultivation of land around Braj followed upon its increased incorporation into a global economy—in particular, through the cultivation of indigo. Mathura is located near Bayana, a famous indigo-producing tract of this period.² As Ray discusses, the merchants, wealthier peasants, and priestly families—whose devotional practices celebrated the lush riverine ecology, sacred groves, and fauna of their imagined Braj—would have been the agents who drove this increased urbanization and trade. The extent to which these communities recognized their impact on the local environment and integrated this awareness into their religious practice also awaits further study.

This is not to diminish Ray's contribution to the study of the environmental humanities and art and architectural history. In chapter 3, "Forest," he offers a nuanced and sophisticated reading of human-driven ecological change. Describing the myriad ways in which Krishna devotees embraced greenery, both in the depiction of bowers (*kunjās*) in stone carvings and paintings and in the actual planting of thick foliage and vines within temple complexes, Ray notes that these practices emerged at a time when intensive cultivation was causing the natural vegetation in these areas to disappear (98). He does not romanticize these sacred groves as symbolic survivors of a premodern past or allegories of harmonious interactions between humans and the environment; rather, he describes them as "simulated gardens" (130). This chapter features some of Ray's most intriguing and problematic arguments. Whether one interprets these groves as

evidence for a nonstatist “inclusive habitus of inventive play” (131) depends on how one views the communities associated with such patronage. After all, the hierarchies of caste, status, wealth, and gender within Vaishnava devotional communities are well documented, and, as Ray’s work suggests, temple groves, like other contemporary architectural forms, were immersed within these complex and evolving political, social, and economic conditions. It is a pity that the insights Ray brings to his analyses of built space, geoaesthetics, and sacred cosmology do not extend to the social hierarchies of their production, although it is also perhaps unfair to expect a book that does so much to do even more.

Many of these practices of viewing, sacralization, and devotional connection with the materiality of sacred spaces continue into the fourth and final chapter, “Ether.” Here Ray addresses the traces of global, cosmopolitan styles at a colonial-era temple as expressions of devotional hydroaesthetics, performative traditions, and decorative arts that persisted into the modern period.

The high-quality color illustrations and maps in the book aid the reader in comprehending Ray’s complex analysis. This is a thought-provoking work whose greatest contribution is that it carves a path for new studies that may extend our understanding of the deep and complex interrelationships among geoaesthetics, ecology, spiritual practice, and the built environment in early modern India.

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Notes

1. Data available to scholars through dendrochronology and the study of lake sediments and stalagmites remain thin, but local variations in rainfall and temperature are well documented across the coastal, plain, and mountainous regions of South Asia. See Udaya Kuwar Thapa, Santosh K. Shah, Narayan Prasad Gaire, and Dinesh Raj Bhujju, “Spring Temperatures in the Far-Western Nepal Himalaya since AD 1640 Reconstructed from *Picea smithiana* Tree-Ring Widths,” *Climate Dynamics* 45, nos. 7–8 (2015), 2069–81; M. F. Quamar and M. S. Chauhan, “Signals of Medieval Warm Period and Little Ice Age from Southwestern Madhya Pradesh (India): A Pollen-Inferred Late-Holocene Vegetation and Climate Change,” *Quaternary International* 325 (Mar. 2014), 74–82; Stefan Polanski, Bijan Fallah, Daniel J. Befort, Sushma

Prasad, and Ulrich Cubasch, “Regional Moisture Change over India during the Past Millennium: A Comparison of Multi-proxy Reconstructions and Climate Model Simulations,” *Global and Planetary Change* 122 (Nov. 2014), 176–85.

2. Irfan Habib, *An Atlas of the Mughal Empire* (Delhi: Oxford University Press, 1986), 8B.

Robert J. Kapsch

Building Washington: Engineering and Construction of the New Federal City, 1790–1840

Baltimore: Johns Hopkins University Press, 2018, 384 pp., 38 color and 83 b/w illus. \$69.95 (cloth), ISBN 9781421424873

Robert J. Kapsch’s detailed account of the difficult process of building Washington, D.C., focuses on the shift in American architecture from dependence on gentleman builders to the emergence of professional architect-engineers. *Building Washington* begins with a description of the political and financial problems that accompanied the creation of a capital city for a new, relatively poor, and not well-coordinated federation of states with diverse populations and interests. The vision was George Washington’s, the implementation Thomas Jefferson’s. Kapsch explains the evolution from Washington’s eighteenth-century amateur vision to nineteenth-century professionalization under Jefferson (16). In his introduction he ably lays out the tangle of difficulties these men faced when executing their ambitious plan in a virgin area, with little funding, political will, or professional expertise. He reviews the technical, political, financial, and planning problems they encountered along the tortuous path to the birth of the new city. Together, Washington and Jefferson achieved many successes, even though one significant aspect of their vision atrophied: the commercial development of the Georgetown harbor. That would prove impossible, given the silting of the Potomac caused by deforestation of surrounding lands and the competition the harbor faced from other ports—specifically, those in Galveston, New Orleans (not mentioned by Kapsch), and New York (12–13).

Kapsch’s account corrects many long-held misconceptions about the personalities and problems involved in the development of Washington, D.C. One of these is the familiar belief that the original, French-born city planner, Pierre Charles L’Enfant,

was unduly arrogant. Kapsch shows him to have been professionally competent and prescient in his assessment of problems to be avoided. L’Enfant may have been haughty, but his conflicts were with equally haughty and opinionated commissioners, amateurs all, who sought to protect their own interests and prerogatives (22–30). Kapsch’s argument here is convincing, supported as it is by detailed planning information and by the fact that these same commissioners later fought with L’Enfant’s successors. Another of Kapsch’s important observations comes with his reevaluation of William Thornton’s design for the Capitol building. He explains that funding difficulties arose because of Jefferson’s administrative inexperience, in particular his low estimate of construction costs and his shaky funding model, which was based on land sales (a model L’Enfant criticized to no avail). By 1801, when Jefferson became president, he had learned from his mistakes and the default of land speculators, so he was able to put the construction on a more solid financial footing.

In the book’s first part, Kapsch examines problems related to the recruitment of labor and the provision of materials to this largely unpopulated region. He describes the first infrastructure projects that required the transportation of materials to building sites, along with the projected development of the port of Georgetown. Here the reader might wish for a broader overview of that infrastructure. Kapsch could have brought greater clarity to his discussion by treating infrastructure as a separate topic and relating it to the need for transportation in bringing economy and speed to construction. He lays out the various projects and their designs, difficulties, and successes, but it would be useful to know exactly how those projects related to one another, as well as their comparative importance in the city’s overall development. Further, this part of the book would have benefited from tighter organization and the omission of irrelevant anecdotal information. As an example, the descriptions of fort building and critiques of design and construction around Washington are interspersed with battle accounts that, although entertaining, are not germane to the book’s arguments (120–23). Nevertheless, the well-documented information on construction contained here is of great value.