Bartolomeo Ammannati: Moving Stones, Managing Waterways, and Building an Empire for Duke Cosimo I de' Medici

Felicia M. Else
Gettysburg College

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Abstract
This study, drawing on new information from unpublished documents, reconsiders the working methods and responsibilities of sculptor and architect Bartolomeo Ammannati in the context of Cosimo I de' Medici's creation of a grand ducal Tuscan empire. Ammannati was an indispensable part of the broader enterprise of ducal and grand ducal building activity, urban development, and court bureaucracy. His success was reliant on skills different than those emphasized by Giorgio Vasari. Instead of divinely inspired disegno or rampant terribilità, Ammannati showed his technical, organizational, and supervisory skills to move stones, build bridges, manage waterways, and keep track of expenses - the very stuff behind Cosimo's empire building. Specific projects include many that are well known; others are entirely new to scholars. This essay emphasizes the importance of labor management, transportation networks, account keeping, engineering, and water management as aspects vital to civic governing and empire building in this dynamic though unstable phase of the early modern period.

Keywords
Bartolomeo Ammannati, Duke Cosimo I de' Medici, Florence, Tuscan empire

Disciplines
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When sculptor and architect Bartolomeo Ammannati (1511–92) came to Florence to work for Duke Cosimo I de’ Medici in 1555, he faced a city and territory undergoing dramatic change. During his reign (1537–74), Cosimo achieved unprecedented military and political goals, including alliances with the Hapsburgs, the conquest of Siena, the creation of a maritime force, and the acquisition of the grand ducal title. Cosimo cast himself as a new Augustus Caesar, intent on creating a unified Tuscan empire with Florence as its capital. For court artists it was a dynamic though challenging time, a competitive climate in the wake of Michelangelo’s departure. A demanding but frugal patron, Duke Cosimo required that art serve the goal of refashioning the Medici family, the city of Florence, and his territorial holdings with the trappings of ancient imperial power—all on a tight budget.¹ Over the years, Ammannati flourished, taking charge of


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a number of important art and architectural projects, such as the Santa Trinita bridge and the expansion of the Palazzo Pitti. Despite his prominence during this important time, little is known about his personality and daily life. His biography is not well documented, and what is known lacks the colorful anecdotes and tales of temperament behavior that make for great reading.2

Ammannati's role as court artist and architect in this period deserves a second look, as a remarkable set of unpublished documents has come to light that provides welcome new information, much of it in his own words. Ammannati was an indispensable part of the broader enterprise of ducal and grand ducal building activity, urban development, and court bureaucracy. In the examples discussed here, his success was reliant on skills different from those emphasized by Giorgio Vasari. Instead of divinely inspired disegno or rampant terribilità, Ammannati showed his patron he had the technical, organizational, and supervisory skills to move stones, build bridges, manage waterways, and keep track of expenses—the very stuff behind Cosimo's empire building.

The documents themselves are a rich and unusual addition to the historical record, both for the study of Ammannati's life and work and for a broader consideration of artistic production and the network of labor and court administration involved. In 1997, a corpus of ninety letters written by or on behalf of Ammannati was put up for auction at Christie's in London, part of a collection of Italian Renaissance manuscripts from the Giannalisa Feltrinelli Library.3 Fifty-six of the documents were acquired by the Getty Research Institute in Los Angeles, thirty-three are in a private collection in the New York area cited under the name HP Kraus, and one was last reported in the possession of another antiquarian book dealer.4 Dating between 1562 and 1579, these documents relate to a particularly active period of Ammannati's service under Cosimo I and his son, Francesco I de' Medici.5 This study will discuss new aspects relating to the practice and


4The letters, divided into separate lots, are summarized in Giannalisa Feltrinelli Library, 13–25. The letters bear the dating of the Florentine year, or stile fiorentino (s.f.), which began on 25 March. The common dating, or stile nuovo (s.n.), is used unless otherwise specified. Documents in the Getty Research Institute, Ammannati Letters, are cited as GRI, followed by the original date of the document. The HP Kraus holdings are cited as HP Kraus, followed by the original date of the document. Unless otherwise noted, all translations are by the author.

5Because these documents were dated before and after the establishment of the grand duchy in 1569, the overall period is described as "ducal"; "grand ducal" is used for specific instances after 1569.
organization of several projects in Florence and Pisa, projects central to Cosimo's artistic and political legacy. In some cases, the projects are already well known, such as the raising of the Column of Santa Trinita, and now a fuller account of their making is available. Other cases are new discoveries, like the repair of bridges in Pisa and an ambitious proposal for a canal embankment. Ammannati's involvement in the small, almost banal details of supplies, transportation, and labor can be traced directly. Payment records, bills of lading, workers' wages, water levels, measurements of stone, wood, and rope feature in this correspondence. Ammannati emerges as an important artistic personality during a period when the status and responsibilities of artists were still in flux. While not the swashbuckler or letterato, Ammannati showed a mastery of communication and accountability in a range of tasks that though often unglamorous were vital for the Medici's projects. There was a lot at stake for Cosimo as he strove to compete in a broader political and economic arena, one that required him to go well beyond inland Florence. This essay focuses on sixteenth-century Tuscany. Labor management, transportation networks, account keeping, engineering, and water management were aspects of civic governing and empire building in this dynamic though unstable phase of the early modern period.

**Ammannati, Cosimo, and the Rendering of Accounts**

Like Augustus, Cosimo prided himself as the "architect of a new golden age of the arts," and he took an active role in bringing about an intense period of building in Florence. These new documents form part of a network of correspondence involved in procuring materials—in this case, instructions and updates sent by Ammannati in Florence to Francesco Busini and Giovanni Caccini, the provveditori or purveyors of works, at Pisa. At this time the port city of Pisa was an important navigational hub, and the provveditori there handled communications for loading and unloading supplies as well as hiring boats for transporting goods along the Arno to Florence. The issues raised in this new corpus of letters reflect the challenges behind building on the scale that Cosimo felt was necessary to transform republican Florence into the capital of a new ducal empire. Furthermore, Cosimo dramatically reformed how governmental business was done and how its records were kept. As Eric Cochrane points out, "the first principle of Cosimo's government . . . was efficiency," and this entailed streamlining


and centralizing administrative offices as well as documenting their activites and expenses. Cosimo’s desire for accurate and organized paperwork signified something more than a penchant for bureaucracy; it was, as one scholar put it, a way of “having the resources of the empire constantly before him.”

Correspondence sent to and from Cosimo and Francesco, published by Giovanni Gaye and others, shows that the Medici rulers themselves often kept tabs on materials in transit, particularly from the quarries. These new documents provide a more detailed picture of the nuts and bolts behind this important transportation network, handled by the duke’s trusted court artist and architect, Ammannati.

Ammannati strove to develop a good system of recordkeeping to make his expenses available to the duke and his court ministers. In a letter dated 24 December 1562, Ammannati wrote of his desire to “be able always to render good account” so that “whatever has been spent and whatever will be spent should be well spent. . .” In a 1568 memorandum, Ammannati confirmed with Duke Cosimo that he had understood “the best way to handle the paperwork” for the Pitti building project: “It is better to give everyone his instructions, underwritten by me, and to keep a copy of them and of all the expenses; and likewise for the things that are received or used, no matter how small, to write down where it comes from and where it is to be used, or has been used.” Such attention to detail was a necessity, not a luxury. Although a strong patron of the arts, Cosimo was notorious for treating his artists and writers in the same scrupulous manner as his other civil servants, eliciting Benvenuto Cellini’s remark that “this lord behaved more like a merchant than a duke.”

Ammannati also understood the need to delegate, not only the physical tasks but the management of accounts and maintainece of timely communications. As Victoria Kirkham has discussed, Ammannati’s own writing is “legible but not beautiful,” reflecting a lack of formal education at an early age. Therefore, Ammannati had much to gain by delegating such tasks; even his learned wife, Laura Battiferri, scripted important letters for him, including one in this corpus. Thirty-three letters in this corpus were scripted by Benedetto Giramonti, described as a kind of “secretary and agent” to the artist. Not much has been

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10 Gaye, *Carteggio inedito, 3:75, 89.*

11 Translation by Kirkham. See Kirkham, “Creative Partners,” 544–47.


13 On the writings of Laura and Bartolomeo, see Kirkham, “Creative Partners,” 530–34. I propose that a letter dated 4 December 1562 was written by Laura Battiferra (HP Kraus, 4 December
written about Giramonti, though he clearly worked closely with Ammannati during this period. In a letter to Cosimo dated December 1562, Ammannati may have been referring to Benedetto when he described a son of the provveditore of Grosseto, Guglielmo Giramonti. The artist proposed that this twenty-six-year-old youth serve as one of two ministers on the fabbrica of the Pitti Palace, pointing out that he is “very assiduous . . . and will handle the paperwork with much diligence and urge the men on.” In 1564, Giramonti acted as a signatory to the sale of an Urbino farm by Ammannati and his wife. In the memorandum of 1568, Ammannati provided a detailed description of Benedetto’s activities so that the duke could determine what wage Benedetto should be paid. The artist pointed out that Benedetto had already been keeping track of the paperwork for the Pitti building project and that his pay had been increased for taking on extra work related to the quarrying of paving stones and handling of the paperwork for the Neptune Fountain. The letters here written by Giramonti were likely part of these duties.

MAKING A CITY OF MARBLE

For this ducal empire-in-the-making, not just any type of building would do. Later biographers would write that Cosimo had found Florence, as Augustus had found Rome, a city of brick, and left it a city of marble. Key to this enterprise was the opening of new quarries in the Medici territories of Seravezza, an arduous task that Cosimo followed eagerly. As Michelangelo had done when he founded quarries there decades earlier, the duke’s ministers had to construct roads, set up facilities, and establish transportation and communication networks, all in challenging terrain. The stones there were of great value and versatility—the

1562), which Kirkham has confirmed (private conversation). On Giramonte as secretary and agent, see Giannalisa Feltrinelli Library, 18. Besides Giramonti and Battifera, there are five other hands, which remain unidentified in the corpus. Two different hands composed copies of letters sent to Ammannati (GRI, 26 April 1572, and HP Kraus, 19 January 1562, s.f.); another wrote three letters (GRI, 30 April 1563; HP Kraus, 23 January 1562, s.f., and 10 December 1562), and two other letters are by two additional hands (GRI, 4 December 1563 and 2 June 1570).

14In a letter dated November 1563 to Cosimo, Ammannati referred to the “son of Giramonte” as handling the paperwork for the Column of Santa Trinita. See Gaye, Carteggio inedito, 3:74–75, 121.

15Kirkham, “Creative Partners,” 532–33.

16Kirkham, “Creative Partners,” 546–47.

17Baccio Baldini praised the marbles of Seravezza, remarking that “si può dire di lui quel che Augusto morendo disse di se stesso, che haveva riceuut o Roma di mattoni & la lasciava di marmo.” See Baccio Baldini, Vita di Cosimo Medici, Primo Granduca di Toscana (Florence: Bartolomeo Sermartelli, 1578), 26.

18These quarries, which were in Medici territory, were intended to compete with those at Carrara. See Christiane Klapisch-Zuber, Les maîtres du marbre: Carrara, 1300–1600 (Paris: S. E. V. P. E. N., 1969), 151–65, 223n15; Wallace, Michelangelo at San Lorenzo, 15–62; Magda Fabretti and Anna Guidarelli, “Miniere d’argento e cave di marmo,” in Potere centrale e strutture periferiche nella Toscana del ’500, ed. Giorgio Spini (Florence: Leo S. Olschki, 1980), 139–74; Luigi Zangheri, “I marmi
pure whiteness of marmo bianco was comparable to that of Carrara and ideal for statuary, while the more decorative marmo mischio featured rich shades of purples, reds, and yellows, a type of breccia or mixture of many stones, supposedly discovered by the duke himself.\textsuperscript{19} Mischio found its way into a range of private and public artworks, carved into doorposts, fireplaces, niches, basins, obelisks, columns, even the sarcophagus of Michelangelo. A number of letters, from about 1565 to 1568, deal with the logistics of transporting marble from these new quarries for the Neptune Fountain, the Palazzo Pitti, the Palazzo Vecchio, the Cathedral, and the Uffizi (Magistrati) (figs. 1–3).\textsuperscript{20} These documents expand knowledge of Ammannati’s involvement, adding a more vivid context and narrative to what is known from archival record payments.\textsuperscript{21} From Florence, Ammannati sent instructions and drawings to the quarries, where assistants would extract and block out the needed material, transport it to the marina, and load it onto a boat headed to Pisa, then to Signa. Both obvious frustration and unexpected patience run throughout the correspondence, as Ammannati tried to maintain order in his accounts and over his shipments and workmen.

These and other letters refer to the budget accounts (conti) or allotments (assegnamenti) for each ducal building project (fabbrica). To cover the cost of workmen at the quarries, Ammannati proposed an agreement to the duke, which he confirmed in a letter to Caccini, that “five scudi a week be paid from this fabbrica [Pitti] and as much from the Palazzo [Vecchio], and similarly from the fabbrica of the Magistrati and from the Opera di Santa Maria del Fiore [Cathedral of Florence]” in order to “pay the men who work at the quarries of misti at Seravezza.” Each fabbrica was to account for its own expenses and needs and


Figure 1a. Bartolomeo Ammannati, detail of Neptune Fountain showing *mischio* portions of basin and chariot, Piazza della Signoria, Florence, 1560–74. Photo: author.

Figure 1b. Bartolomeo Ammannati, detail of Neptune Fountain showing *mischio* portions of basin and chariot, Piazza della Signoria, Florence, 1560–74. Photo: author.
was to be acknowledged by those receiving orders at Seravezza. Corinna Vasić Vatovec has characterized Ammannati’s arrangement as a move to decentralized power, establish a direct relationship between workshop and quarry, and give architects of the fabbriche more autonomy. Ammannati here, she observes, assumed the role of administrator and financial advisor, and his proposal was approved by the duke and was influential for future negotiations on the running of the quarries.

Keeping the accounts straight was not always easy. In a letter dated 16 June 1565, Giramonti acknowledged receiving Busini’s expense account for ropes, which “we will reimburse to the account for raising the column [Santa Trinita],” but he warned the provveditore “not to mix the accounts of money for Capitano

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22HP Kraus, 14 April 1565. Ammannati had proposed this scheme in an earlier petition to the duke, published by Gaye (Carteggio inedito, 3:172). Vasić Vatovec, “L’impegno di Cosimo,” 334n34, proposes that the addressee is Cosimo, not Prince Francesco, as Gaye listed.

23Vasić Vatovec, “L’impegno di Cosimo,” 331, discusses its influence on the duke’s “Istruzione” of 1571 written when Giovanbattista Carnesecchi took on the role of provveditore at Seravezza.
Figure 3. *Mischia* niche and tabernacle for Jacopo Sansovino statue of St. James, nave of Santa Maria del Fiore (cathedral), Florence. Photo: author.
Diana on account of the horse because it is a thing of the fountain [Neptune Fountain] and not of the column." Similarly, in a subsequent letter, Giramonti asked Busini to send a separate bill (polizza) with the next shipment of mischio because "those for the Pitti and the Fountain are not all the same account." In one instance, Busini had to be warned not to get the marbles themselves mixed up, in this case, those for the Neptune Fountain and the Uffizi. In a couple of letters, Ammannati had to direct charges sent by the provveditore to Francesco di Seriacopo, stating, "I do not pay except for the things of the Pitti and the freights from Pisa to Florence." Ammannati's eye for detail in the "scritture" comes through in many of these letters. In one example, the artist asked Provveditore Caccini to correct vouchers numbering 499 to 506 because "the number written and beginning after 499 is put down as number 490."28

In a series of letters, Ammannati instructed the provveditore to include specific information on each block of marble to help keep deliveries on time and to the right location. In a letter dated September of 1565, Giramonti gave instructions to Busini to include with future shipments of marmi misti "the number, the length, the thickness, and the width so that we can immediately satisfy the boatmen because we pay them by the thousand-weight (migliaio)," a sum that could be calculated if given the blocks' measurements.29 Ammannati urged the provveditore to "be diligent in writing to those at the quarries who direct the said misti that they give clear notice (aviso) where these have to go because they go to various places..."30 In March 1566, Giramonti explained to Busini that after receiving a marble column that they did not know what to do with, he had instructed Raffaello Carli, the capomaestro at Seravezza, to put the following signs (segni) on future marble shipments: P for the Pitti; C for the column; F for the fountain; O for the Opera di Santa Maria del Fiore; P for the Palace of His Excellency in the Piazza; and M for the Magistrati. Furthermore, "it will suffice only if you give the measurements piece by piece as on your last bill of lading" so that each boatload may be sorted by destination.31

Ammannati was quick to follow up when his instructions were not being complied with, because time and money were being wasted. A letter to Busini dated September 1566 repeated his request to send measurements "so that the

24 GRI, 16 June 1565. The column referred to here is the Column of Piazza Santa Trinita. Jacopo Diana worked for the quarries at Carrara, where Ammannati had ordered one block for one of the horses on the Neptune Fountain. See Else, "La maggior porcheria," 488.
25 HP Kraus, 28 September 1566.
26 GRI, 26 April 1567.
27 GRI, 25 and 31 July 1568. The charges are related to freights from Seravezza to Pisa.
28 GRI, 30 April 1563.
29 HP Kraus, 15 September 1565. A thousand-weight (migliaio) refers to a thousand libbre, approximately 339 kilograms. On migliaio as unit of measure, see Louis Waldman, Baccio Bandinelli and Art at the Medici Court (Philadelphia: American Philosophical Society, 2004), xxxi.
30 HP Kraus, 15 September 1565.
31 HP Kraus, 2 March 1565, s.f.
poor boatmen are not delayed and have to wait because each time a man then has to be sent to take the measurements, and one spends for no reason at all.”

Four months later, Ammannati had Giramonti explain to Busini again that, without the measurements for the blocks, “we have to send someone to the port to measure them, and one wastes time, and, after one wastes time, one causes the boatmen to be delayed.”

Following one delivery, the artist asked that Busini send word next time if someone at the quarries forgets to put the right sign on a block, because those unloading at Signa will not know what to do. In a letter dated August 1568, Ammannati stressed the importance of provveditore Busini’s supervision. Accurate measuring and recording of the cargo at Pisa was key, and “we will pay much better if such is done by a faithful and loving minister like yourself than one outside of [the service of] His Excellency.” Most of the correspondence relating to measurements and signs was written by Giramonti, but this last letter was in the hand of Ammannati himself. The tone is more personal and gracious, and one can speculate that Busini read it with great care.

When it came to dealing with problems from workmen, Ammannati was not always so gracious. On 16 November 1566, Giramonti wrote to Busini that “when the boatmen complain to you, they are wrong,” and he put particular blame on a Lucha di Pagholo, whom he accused of mishandling two pieces of marble by unloading them into the water two braccia from the Arno riverbank. In another letter, the artist made a veritable rant about the misbehaving boatmen and prescribed some tough action:

These bargemen and boatmen are badly disciplined because they come here and protest that they are so overcome by trouble. One gives them more than they deserve, and ... [the] worst is that they go to complain to you in Pisa to excuse themselves ... so that all us ministers are set at cross purposes by such rabble. ... when you hear one of them complain wrongly, I would punish him beyond what seems just (a misura di carboni). ... Errors by the boatmen could result in a backlog of delays or even damaged goods, for which Ammannati would have to account to the duke. A few days after this last letter, Giramonti reported that there had been a broken jamb among the last

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32HP Kraus, 28 September 1566.
33GRI, 25 January 1566, s.f. Ammannati reinforced this point in a letter of 1 February 1567, as three pieces of marble he received did not have weights or measurements, and their freights could not be paid. See GRI, 1 February 1566, s.f.
34GRI, 30 December 1567.
35GRI, 14 August 1568.
36GRI, 16 November 1566.
shipment and that Busini should inform the boatmen and those who load and unload the marbles that "those who break them will pay for them."38

Ammannati was not always the bad cop, however. On one occasion, he asked Caccini if money could be made available because "these quarrymen and cartwrights are poor and need their wages each week."39 The artist was especially committed to working with his fellow ministers, declaring in one letter, "I think only of doing honor and loving the ministers of His Excellency and having easy negotiations with them."40 Even when faced with delays, Ammannati managed encouraging words, in one instance affirming that "each time one says to the duke so much misti has arrived, His Excellency is very greatly pleased."41 In some instances, Ammannati let the provveditore know that he was facing pressure from the ducal family. In the case of the Neptune Fountain, Ammannati ordered that "no one be excused from anything," as Cosimo and Francesco were urging him to finish the project because the temporary stucco decorations put on it for the Entrata of 1565 had deteriorated into a filthy mess.42 One of the most frustrating episodes documented in these letters involved a set of steps (scaglioni) for the Neptune Fountain, which the scarpellino, a Matteo Starnazini of Carrara, had botched. The pieces were incorrectly cut, described by Ammannati as a "porcheria" or "mess," and the artist wound up scavenging marble from the area to make do but not without demanding from Busini that Starnazini be sent to Florence to account for what he had done. Provveditore Busini seemed rattled by the whole business, and at one point Ammannati wrote to him in a reassuring but firm manner:

I know you have a thousand excuses. In the end you do well because you do what it takes so that Their Highnesses can have what they want. Dearest Francesco, . . . if I had not been more than very patient . . . I would have let things drag out . . . which would have never reached an end. . . . I beg you to be patient with what remains of the fountain so that [illegible] I might bring it to completion to satisfy not just the patron but all the nobility of Florence and to clean up that piazza. If I had allowed indignation to carry me away, I would have made the greatest mess in the world. . . .43

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38 GRI, 25 January 1566, s.f.
39 HP Kraus, 15 May 1563, Ammannati made a similar observation about paying "poveretti" working at the Pitti in a letter to Cosimo, dated 24 December 1562. See Gaye, Carteggio inedito, 3:74.
40 GRI, 14 August 1568.
41 GRI, 15 March 1565, s.f.
42 Agostino Lapini pointed out that the fountain as unveiled in 1565 was not yet adorned with figures of bronze and marmo mischio, but instead had figures "di stucco, che durò pochi mesi che tutta si guastò e diventò una porcheria." See GRI, 23 March, s.f., and 11 May 1566; Lapini, Diario Fiorentino di Agostino Lapini dal 252 al 1596, ed. Giuseppe Odoardo Corazzini (Florence: Sansoni, 1900), 128; and Else, "La maggior porcheria," 488 and 491.
Figure 4. Column of Justice, Piazza Santa Trinita, Florence, erected 1565. Photo: author.
Such trials and tribulations formed the very stuff of artistic production—procedures and processes that are seldom seen in the finished works or even in detailed account payments. These documents speak to the complexities of an artist's role, in this case, coping with the growing pains of new quarry operations and the multiple demands of building for the Medici. Each individual concern may strike us as unremarkable. But in the end, these projects that Ammannati helped make possible became the very ones used to illustrate Cosimo's achievements during his lifetime and beyond. One need only look at the subjects represented on medals by Pietro Paolo Galeotti: the Neptune Fountain, the Pitti Palace, the Column of Justice in Piazza Santa Trinita, and the Uffizi.44

**Humble Supplies for Colossal Columns**

Most challenging for an artist was procuring, transporting, and erecting giant monolithic blocks of stone. Several letters relate to Duke Cosimo's ambitious project to set up monumental columns in Florence, in this case, ones intended for Piazza Santa Trinita (fig. 4) and Piazza San Marco. These colossal markers were intended to enhance the urban landscape, recall the grandeur of antiquity, and represent specific achievements and virtues of Cosimo's reign.45 The first one, destined for Piazza Santa Trinita, was literally revived from ancient Roman ruins, a granite column from the Baths of Caracalla given to Cosimo by Pope Pius IV in the early 1560s. Afterwards, Cosimo ordered two other columns to be quarried out of *marmo mischio* from Seravezza and to be placed in strategic locations near the Palazzo Pitti and Palazzo Medici, creating a "Medicean axis" through the city.46 A number of contemporary sources have allowed scholars to patch together a chronology of events.47 The new documents help provide a fuller picture of the preparations Ammannati was responsible for, drawing attention to


45In the early 1560s, freestanding columns were planned for the Piazza Santa Trinita, Piazza San Marco, and Piazza San Felice. The column for Piazza Santa Trinita marked the spot where Cosimo received word of the defeat of Piero Strozzi at Marciano in the war with Siena and was eventually topped by Taddeo's statue of Justice. Statues representing Peace and Religion were planned for Piazza San Marco and San Felice respectively. See Paul Richelson, *Studies in the Personal Imagery of Cosimo I de' Medici, Duke of Florence* (New York: Garland, 1978), 131–46, and Detlef Heikamp, "Die Säulenmonumente Cosimo I," in Boboli 90: *Atti del Convegno Internazionale di studi per la salvaguardia e la valorizzazione del giardino*, ed. Cristina Acidini Luchinat and Elvira Garbero Zorzì (Florence: EDIFIR, 1991), 1:3–17.


run-of-the-mill procedures and equipment, which, due to the difficulty of handling stones of this size, could make or break the project.

Ammannati took responsibility for the granite column of Santa Trinita after it had arrived from Rome at Porta a Signa, an important stop along the Arno a few kilometers before Florence where boats had to unload because the river became unnavigable. To prepare for the column’s unloading and eventual transportation by land, Ammannati wrote to provveditore Caccini to have Vincenzo Ferrini send three large sturdy windlasses, “because I doubt that those which I provided myself will serve to unload the column.” As Gianluca Belli has chronicled, Ammannati spent May through July of 1563 bringing together fifteen rollers, large oak pieces, two windlasses, a hoist with a bronze pulley cast by an artillery foundryman, a specially crafted “nizza” (a type of armature fitted around the column), and large quantities of rope made by Niccolò d’Asti, a Genoese artisan in Pisa. Not long after the column started its journey, pulled with the help of oxen and windlasses set in motion by horses, a mule, and manual laborers, Ammannati wrote a brief but urgent letter to Caccini on 30 July 1563: “I have the greatest need for rope. . . . I beg your lordship as a loving and good minister that you send me my [rope] and do not delay. . . .” The urgency of the missive perhaps indicates that Ammannati fell short of rope at a truly inconvenient time, when a host of beasts and men were in the laborious process of pulling the granite on land. As Wallace has calculated, the already high cost for transporting blocks from Signa to Florence increased significantly with each additional day.

The column arrived in Florence in September of that year and was greeted with much celebration. Afterwards, Ammannati informed Caccini of the duke’s order to send to Florence other pieces of granite taken from the Baths and transported to Pisa to be used to mend portions of the column shaft. For this cargo of “due pezzi di colonna grande di granito,” Ammannati wrote to Caccini, “I immediately sent orders to Signa to have it unloaded and [to get] better men for such tasks which I had at the Pitti. . . .” These pieces weighed a total of

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48 On the transportation of the column from the Baths of Caracalla to Signa, see Belli, “Un monumento per Cosimo,” 59–62. On Porta a Signa, see Wallace, Michelangelo at San Lorenzo, 57–59.

49 GRI, 25 April 1563. Ammannati and Vasari had traveled to Signa earlier, where they requested tackles from Montepulciano and wood and rope from the Opera del Duomo at Pratovecchio. See Belli, “Un monumento per Cosimo,” 62, and Gaye, Carteggio inedito, 3:110.


51 HP Kraus, 30 July 1563.

52 With each overnight stay, carters would have to feed, bed, and harness their teams of oxen. See Wallace, Michelangelo at San Lorenzo, 60–61.


54 The column excavated from the Baths of Caracalla had breaks at the base and upper portion, so pieces of the same granite from the site were sent to Pisa on a different boat to be integrated with plugs (tasselli). See Belli, “Un monumento per Cosimo,” 60–61, 66, and GRI, 27 November 1563.
thirty-six thousand-weights (migliaio) or 12,204 kg, making them more difficult to load and unload than usual, and Ammannati took a middle road on the freight charges, remarking that thirty-six scudi would be too little but that the fifty scudi that the boatman requested was too much, concluding forty scudi to be the right price. \(^{55}\) By the end of December 1563, the column was repaired, and it would be erected in the Piazza just in time for the Entry of Johanna of Austria in 1565. \(^{56}\)

Ammannati’s letters to the provveditore during this arduous stage of erecting the column show his concern for getting the right tackles, pulleys, and especially rope. In early April 1565, Ammannati had informed the duke of the possibility of procuring cables from the munitions of Pisa and Livorno, but the tackles there were not the right size, and he had no money to make the winches necessary for the task. \(^{57}\) As subsequent letters show, it was rope that Ammannati really needed—of considerable length and weight and of good manufacture. On 10 April 1565, Ammannati sent Caccini measurements for

- three main ropes at 420 braccia long (ca. 245 meters), weighing three libbre and three once per braccia (ca. 1.102 kg), for laying in the tackles composed of six pulleys
- two ropes of 300 braccia (ca. 175 m), two libbre and eight once per braccia (ca. 0.9 kg), for the tackles with four pulleys
- some cordage and rigging of thirty to forty or even eighty braccia (ca. 17.50–46.7 m) to make harnesses and fastenings \(^{58}\)

A document signed by Ammannati just a week or so later lists an increase in the quantities and measurements of the ropes, which, he stressed, “one cannot do if [the ropes are] lacking” and that “they should be good-quality rope...well made”:

- three ropes at 525 braccia long (306.4 m), weighing three libbre and three once (1.102 kg) per braccia
- four ropes of 260 braccia (151.74 m), three libbre and two once (1.07 kg) per braccia
- two ropes at 220 braccia (128.4 m), two libbre and six once (.848 kg) per braccia
- twelve ropes between 50 and 100 braccia long (29–58 m), two libbre (.68 kg) per braccia. \(^{59}\)

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\(^{55}\) GRI, 17 December 1563. Michelangelo was charged different rates for transportation, based on the number of carrate and the size of the blocks. See Wallace, *Michelangelo at San Lorenzo*, 59–60.

\(^{56}\) Belli, “Un monumento per Cosimo,” 66, 68.


\(^{59}\) GRI, 28 April 1565.
The length for the three longest ropes increased from 420 braccia to a considerable 525 braccia, about 306.4 meters or 1,005 feet, weighing a total of 578.55 kg. In a letter the following month, Ammannati asked Caccini to have Niccolo d’Asti make yet another rope of 520 braccia, weighing three and a half libbre per braccia, adding that it would be “very good if he could make it without greasing it with soap [as] I believe it would turn out better.”

Ammannati had good reason to ensure that he had plenty of rope and to be particular about the rope he used. During the transportation of the column from the Baths to the Tiber River, poor-quality ropes caused no end of trouble, breaking so often that new ones had to be made, and even those started showing signs of wear before the task was complete. In his discussion of Michelangelo’s San Lorenzo projects, William Wallace stresses that good rope was never taken for granted; when quarrying marble, it ranked among the costliest expenditures and was reused whenever possible. In an earlier letter to Caccini, Ammannati prided himself on some rope that had served him “very well because I had it made in my presence at the Pitti.” Similarly, for rope needed earlier to transport the column from Signa, Ammannati mentioned to the duke that he had urged Vincenzo Ferrini to “choose better rope” and that “someone should be present while it is made.” When the column was successfully raised on 2 July 1565, the diarist Lapini made special note of the ten large windlasses and eight large iron tackles with wheels of bronze. As these new documents show, Ammannati also made sure he had the right rope for this mammoth undertaking.

The letters regarding the column for Piazza San Marco tell a similar story. In this case, timber is the issue, needed in various forms for multiple purposes. Ammannati had successfully extracted a “colonna grande” of marmo mischio at Seravezza and, in anticipation of lowering it from the quarry to the marina, had the street widened and started getting the necessary equipment together. On 16 April 1569, Ammannati informed provveditore Francesco Busini that some of the materials needed “to pull the great column at Seravezza” had been sent to Porta a Signa, where he wanted them loaded onto boats headed for Pisa, specifying that one leg of the “nizza,” or armature, be put on one of the better boats. The letter continues with instructions about different woods to be sent to Seravezza: twenty rods of pine; pieces of oak, either one at nineteen braccia in length or two at nine-and-a-half braccia each; and wood to make a hundred rollers that should

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60 GRI, 26 May 1565.
61 Belli, “Un monumento per Cosimo,” 61.
62 Wallace, Michelangelo at San Lorenzo, 45–46.
63 HP Kraus, 17 April 1563.
64 Letter dated 15 July 1563, from Gaye, Carteggio inedito, 3:114.
65 Lapini, Diario Fiorentino, 145.
66 Giannalisa Feltrinelli Library, 20.
be cut a few days in advance from sorbs (a type of fruit tree or service tree) grown at Monte Massimo (near Livorno). On 10 May, the artist asked Busini to make the necessary payments to Piero di Marco Cambi for bringing the two legs of the nizza to the capocavallo, a large-scale hoist, at Pisa. He assured the provveditore that newly made ropes were on their way and confirmed that the oaks and sorbs were being cut properly at Seravezza. On 24 May, Ammannati urged Busini to inform him item by item on what had been sent to make sure nothing got left behind at Signa and was especially keen to have the rods of pine sent to brace the nizza from below. Since work on the street had been completed, Ammannati would soon be going there and would need to have all the timber in place.

No amount of preparation could have prevented the disaster that awaited Ammannati. While being lowered from the quarry, the column had broken in half, “caused by the cracks that it had from nature.” The duke declared that Ammannati was not to blame and that he should extract another large block to replace it and lower a smaller column he had already quarried, presumably the one intended for Piazza San Felice. Two other letters in this new corpus show the artist’s preparations to lower the second large column, “l’altra colonna grande,” quarried shortly afterwards, giving similar instructions for cutting sorb trees to make rollers. As before, Ammannati wrote to Busini that the duke ordered the sorbs cut in advance “so that they might be half green when they are used.” He specified further that 120 rollers were needed, at least four-and-a-half braccia long, in order to extend half a braccio beyond the column set in the nizza. Several months later, Ammannati wrote again to Busini for this wood, making it clear that the grand duke wanted to see some progress: “His Most Serene Highness desires that soon we go to Seravezza to lower the large column and conduct it to the marina, and thus he ordered me anew to write to you to hasten cutting the stumps of sorb to make rollers.” The letter continues with decreased measurements for the rollers and a request for pinewood “to make the legs of the armature” that would need to be at least nineteen to twenty-one braccia in length. This time Ammannati’s preparations paid off, and the column was successfully transported to the marina on 2 October 1570. However, as scholars have documented, the column made it to Florence but literally never got off the ground—by 1628, it had broken in half. These new documents inform about an important

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68 HP Kraus, 16 April 1569, a longer letter signed by Ammannati.
69 HP Kraus, 10 and 24 May 1569.
70 Letter dated 1 July 1569, in Gaye, Carteggio inedito, 3:276. “Colonna grande” usually refers to that of Piazza San Marco, thought to be around twenty-one braccia, while “colonna piccola” refers to Piazza San Felice, which measured sixteen braccia. See Belli, “La pietra delle colonne,” 77–78; Zangheri, “I marmi dell’Ammannati,” 323; and Vasić Vatovec, “L’impegno di Cosimo,” 332–33.
71 HP Kraus, 27 January 1569, s.f., and 8 April 1570.
73 Lapini, Diario Fiorentino, 180; Richelson, Studies in the Personal Imagery of Cosimo, 145–46n26; Heikamp, “Die Säulenmonumente,” 10–16; Zangheri, “I marmi dell’Ammannati,” 323; and
but unfulfilled project for which Ammannati and the duke paid special attention to seemingly minor details like the quantities and types of wood, even specifying when and where to cut the trees. There may be some irony that it was a rotten piece of wood that eventually caused the column’s final fatal split years later.74

**Beyond Florence: A Makeover for the Duke’s Port City**

The revitalization of Pisa, Tuscany’s outlet to the sea, was one of Cosimo’s most important initiatives. The duke spent several months out of the year there, making it a secondary capital city, where he could observe progress on his expanding maritime front. From the earliest years of his reign, Cosimo had attended to a renewal of this strategic port city on a number of fronts—academic, architectural, military.75 Water management was fundamental to the whole undertaking, and Cosimo appointed engineers to drain and cultivate the Pisan swamplands by diverting river courses and building canals.76 These letters hold new information on Ammannati’s role in helping transform this port city by making over two of its most important structures, the Pontevecchio and the Ponte a Mare.77 Ammannati’s design and construction of the Santa Trinita bridge in Florence ranks among his most celebrated works, and he also participated in the restoration of the Ponte d’Arbia near Siena.78 This correspondence helps to expand understanding of Ammannati’s engagement in this often overlooked field of work, one which required a mastery of engineering and hydraulics, skills that the duke valued highly.79

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77Giannalisa Feltrinelli Library, 14, 19, 21.


The Pontevecchio and the Ponte a Mare were located in the heart of Pisa, spanning the Arno river, corresponding roughly to the present-day Ponte di Mezzo and the Ponte a Cittadella, respectively (fig. 5). In the case of the Pontevecchio, the duke had wanted the bridge paved with *pietre forte* from Monte Oliveto, a quarry near Florence above Porta San Frediano. For this task, Ammannati sent several letters to *provveditore* Caccini, working out the logistics of loading and transporting this material by boat to Pisa. As explained in a letter of 4 December 1562, scripted by Laura Battiferra, Ammannati had just visited Monte Oliveto, where they were to quarry three hundred *carrate* of *pietre forte*, in pieces measuring one-quarter, one-third, and one-half of a *braccio*, which he would have transported to the bank of the Arno. To help speed things along, Ammannati requested that Lorenzo Corboli, secretary of the Otto, issue an order that these stones had to be transported before any other boat loaded with *pietre forte* could pass the city gates. To ensure that "good *carrate* be done," that is, the cartloads contain the right quantity of material, Ammannati put one of his assistants on guard.

Getting the right means of transportation for these stones proved to be more complicated than usual. Cosimo sent instructions to load the stones onto boats carrying grain for the Magistracy of the Abbondanza, the governing body responsible for the distribution of grain. As its boats were scheduled to depart Pisa for Florence, the Abbondanza was asked to load and transport the *pietre forte* on the return journey. While negotiating with the Abbondanza's ministers, Ammannati had to keep an eye on fluctuating water levels and ensure that the stones were safely loaded and accounted for. On 10 December 1562, the artist wrote to Caccini that the boatmen should carry a bill of lading indicating the number of pieces loaded, so that one could compare it with the number from the quarries. Since the water levels were too low, he requested that Caccini consult with His Excellency on whether they should wait until the water rises or pay

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80 The Pontevecchio has been rebuilt many times since the eleventh or twelfth centuries, replaced with the present-day Ponte di Mezzo following World War II. The Ponte a Mare, first set up in the fourteenth century, had also been rebuilt over the centuries until 1869, when it was replaced by a bridge set further downstream, now the Ponte a Cittadella. See Tolaini, *Pisa*, 65, 121–23, 154, 162–63, and Francesco Gurrieri, Lucia Bracci and Giancarlo Pedreschi, *I ponti sull'Arno dal Falerona al mare* (Florence: Polistampa, 1998), 233–36 and 239–41.

81 On *pietre forte*, which had been quarried since the days of the Republic, see Goldthwaite, *Building of Renaissance Florence*, 227, and Wallace, *Michelangelo at San Lorenzo*, 147.

82 HP Kraus, 4 December 1562. *Carrate*, literally cartloads, were units of weight of approximately 850 kg, or the amount one ox can pull on a level surface. See Wallace, *Michelangelo at San Lorenzo*, 60.

extra to transport some of the stones on land. Also in this corpus of documents is Caccini’s letter laying out the orders of His Excellency to the Abbonanza dated 19 January of that year, a copy of which was sent to Ammannati. The Provviditore stipulated that “in order that the said boatmen . . . not flounder en route, dump them [the stones] or any other of the malices that they usually do, Bartolomeo Ammannati . . . will place a man where they unload and will take note of the pieces that they load and make a bill of lading and will send us the invoice. . .” By 23 January, Ammannati seemed to be losing his patience, as the water levels were lowering, but only one boat had arrived, which he dutifully loaded. He had spoken with Luca Fabroni, Cancellerie of the Parte, urging that these boats be loaded soon and, according to his letter to Caccini, “I have gone . . . every day to the Parte to hasten them to use diligence because of the water there, and if one cannot send those pieces, that will be contrary to what His Illustrious Excellency desires.” By April, the stones were finally on their way, and, as far as we know, Ammannati’s participation in the project was complete. While his role in this project focused on a seemingly mundane task, he managed the delivery of a large quantity of stone, totalling over 255,000 kg, or 255 metric tons, in a short period of time. Thanks to his efforts, Cosimo would see this important bridge in the center of Pisa clad in one of the most distinctive building stones of Florence, the same material donning the city hall and ducal residence of the Palazzo Vecchio.

The Ponte a Mare was a more complicated project, a substantial reworking of the bridge that required setting up support structures and diverting river water. The Ponte a Mare served an important defensive role as Pisa’s outermost bridge, linking with the fortifications bordering the seafront. Two of its stone arches needed to be taken down and redone, and Ammannati sent instructions on making cuttings and placing supports on the bridge in a letter to Provviditore Caccini of 16 December 1570. He advised that three rails (sbarre), measuring about eleven braccia in length, be set under the arches and incisions made in the arches to keep support props (punegli) locked in place, securing the area of breakage. For the arch facing the sea, one should use about five or six sup-

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84 HP Kraus, 10 December 1562.
85 HP Kraus, 19 January 1562, s.f.
86 HP Kraus, 23 January, 1562, s.f.
87 A letter of 4 April 1563 stated that the total quantity of stones conducted to the Arno and loaded onto boats was 333 carrate, with the exception of three large pieces. Three subsequent letters written in April refer to carrate transported along the Arno. See HP Kraus, 4 and 17 April 1563, and GRI, 25 and 30 April 1563.
88 Total based on 300 carrate at 850 kg, equalling 255,000 kgs (562,178 pounds), or 255 metric tons (281 standard tons).
89 Florentine structures made with pietre forte included the Palazzo Vecchio, the Bargello, and the Badia. By 1637, the Pontevecchio had collapsed. See Wallace, Michelangelo at San Lorenzo, 147, and Tolaini, Pisa, 121–23.
90 On the military importance of the bridge and the need for restorations in the sixteenth century, see Gurrieri, Bracci, and Pedreschi, I ponti sull’Arno, 239.
ports, locked in firmly, and, for the arch turned toward Pisa, make a cutting to hold a support of about four braccia. After "lifting the small one and setting the larger one," presumably the arches, the supports would need to be extended and reset. Ammannati alerted Caccini to a pile that was damaged and urged him to take "very great care" not to cut off pieces so large that it would cause too much damage.\textsuperscript{91}

Soon afterwards, Ammannati brought up concerns about the project raised by Francesco and Cosimo. On 23 December, the artist wanted an update from Caccini on whether work had started on the bridge because Prince Francesco had been asking him about it, telling him that "one was not to begin cutting those arches so far as there was danger of flooding."\textsuperscript{92} Less than a month later, Ammannati informed Caccini that he had rethought his approach to the bridge in an effort to accommodate the will of His Highness. While the grand duke's exact demands are not entirely clear, Ammannati's letter addressed how high "said arch" was to be raised, pointing out that the armature could be used to take

\textsuperscript{91}GRI, 16 December 1570.
\textsuperscript{92}GRI, 23 December 1570.
the weight at the old arch and to fortify the side so that it may be safe to place it lower. Ammannati then commented about maintaining a good rapport with the grand duke: "I do not wish to render a reply against His Highness, who I know is very agreeable and in the past I did not always follow his will... thus your lordship will do me a favor and not show him that design, as we will bear in mind to accommodate as much as His Highness desires." Just how much Ammannati had to change is unknown, but what is clear is that this project was important enough to warrant some scrutiny from the Medici rulers themselves. Not only was the bridge of great significance to the city, but it would have been within a stone's throw of the Grand Ducal Palace, Cosimo's Pisan residence along the Arno.

The remaining letters, written from mid-January to early February 1571, concern the delivery of a tromba, a conical-shaped tube that served as a hydraulic pump for diverting water, and the hiring of pickmen to work on the bridge site. In January, Ammannati let Caccini know that the tromba he sent had reached the first new mill outside of Porta a Prato although the boatman "wanted to bargain with me" because his freight was paid only according to weight, and the cargo did not weigh much but was difficult to handle. Ammannati arranged the hiring of pickmen from Figline di Prato, preparing a letter to be taken to the Podestà of Prato and sending word for them to go directly to Pisa. In addition to the correspondence to the Provveditore, this corpus contains Ammannati's letter to the head of the pickmen at Figline, Francesco Pini, informing him of the need for his services. The missive, dated 14 January 1571, is clear and to-the-point, both firm and reassuring:

The Most Serene Grand Duke wants to begin immediately taking down and redoing the Ponte a Mare in Pisa... be content... to take your pick axes and iron tools you and your sons and one other... go to Pisa and present yourself to M. Giovanni Caccini... and do not fail because His Highness wants it so and you present this my letter to M. Giovanni [and] you will be well treated and will see His Highness all day [because of] which you will work all the more happily.

Given the proximity of the bridge to the Grand Ducal Palace, Ammannati may not have been exaggerating when he claimed that these pickmen would be in sight of Cosimo himself, though one has to speculate if that would alleviate their arduous labor. A couple of weeks later, Ammannati responded to a letter sent by

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93GRI, 3 January 1570, s.f.
94The Grand Ducal Palace, purchased by Eleonara da Toledo in 1558, corresponds to the present-day Palazzo Reale. See Tolaini, Pisa, 114-15.
95Tolaini, Pisa, 12 and 13 January 1570, s.f. In a letter of 12 January, Ammannati wrote that the tromba was accompanied by two sacks of leather, one of which was fastened to a plunger, and that he had not yet agreed on the freight.
96GRI, 14 January 1570, s.f.
Provveditore Busini regarding wages for the pickmen, writing that “I have not had a price from another letter which amazed me; on the contrary I do not know what pickmen are there... neither have I had a response about a tromba that I sent....” For the pickmen working long days (giorni grandi), Ammannati wanted to give thirty-two soldi a day to Francesco Pini and to certain others between twenty-eight and thirty but told Busini to send him the names of those who are there so he can then let him know how much to request.  

There is no further correspondence about this project, and we might assume the work was able to be completed while Ammannati worked on other ongoing projects in Florence. For both this bridge and the Pontevecchio, Ammannati’s role was not so much to design and build as he had done for the Ponte Trinita but to advise and coordinate resources, making every effort to accommodate the grand duke’s concerns and make the most out of his money.

BEYOND TUSCANY: POLISH EXPERTISE AND THE PROMISE OF RICHES

One document stands out from the whole collection, a formal proposal and presentation drawing for a canal embankment. While it should not surprise us that Ammannati was involved in such engineering projects, the inspiration behind the proposal should—the shipping and trade networks of Poland. This document relates to Cosimo’s interests in water management, which, in this case, draws on a world beyond Tuscany and the Mediterranean. This documents presents an entirely new aspect of Ammannati’s intellectual makeup, one tied to geography and maritime trade. The proposal bears a lengthy, neatly scripted description addressed to “Your Most Illustrious Excellency” on one end and a drawing in lead point, pen and brown ink, and watercolor on the other (fig. 6). As suggested in the Christie’s sales catalog, this proposal was intended for Duke Cosimo, dated around 1565, perhaps for a canal project around Pisa or Livorno.

Ammannati proposes the construction of timber embankment walls to repair an area along an unidentified river. The text first lays out details on the manner and cost for “questo riparo.” A framework of fifty beams, each ten braccia long and one braccio high, should be stacked horizontally in groups of five, costing a total of 100 scudi to cover a hundred braccia. Twenty chestnut posts with ends fitted with iron would fasten these beams in the ground at “a price of 20 scudi. Rows of trees, costing 80 scudi, were to be planted nearby so that the timbers will be covered by water and will endure much... it will serve as an embankment on the river of such stability and firmness that one will not know

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97GRI, 4 February 1570, s.f.
98This document, measuring 77 x 48 cm, is now part of the HP Kraus holdings, cited as HP Kraus, 1565 presentation drawing. On the verso, an unidentified nineteenth-century hand attributes the design of the proposal to Ammannati and the scripting of the text to Benedetto Giramonti. The proposal is addressed to “Vostra Eccellenza Illustissima,” which, as the sales catalog notes, was the title used for Cosimo before he became grand duke in 1569. See Giannalisa Feltrinelli Library, 18, 24-25.
Figure 6. Canal embankment proposal, by Bartolomeo Ammannati and Benedetto Giramonti, ca. 1565. Drawing in lead point, pen and brown ink, and watercolor, and manuscript on paper. 77x48 cm. Private collection, HP Kraus,1565 presentation drawing. Photo: author.
if it might be made from Art or from Nature.” To cover three thousand braccia, about a mile (miglia) long, with this framework, the cost would be 6,000 scudi.\textsuperscript{99}

In the subsequent text, Ammannati reveals that his ambitious design is based on an even larger structure set up in the kingdom of Poland near the “very rich city of Danisca,” the present-day port city of Danzig or Gdańsk. The retaining walls there were comprised of beams of pine stacked twelve high with a foundation twelve to fifteen braccia in length. Running a course of no less than five miles, this canal funneled the waters of the Vistula and the Motulaio (Motlawa) Rivers through Danzig and out to the Baltic Sea, reducing the water’s span from two and a half miles to a little over a mile. To drive home the benefits of his proposal, Ammannati commented on how a variety of ships entered through the canal, bringing profitable trade to the region. The mouth of the river at this port city provided access to the German Sea, “where yellow and white amber is fished,” and the Sarmatico Sea, “which freezes every year.”\textsuperscript{100} Entering the canal were all kinds of ships, “conducting fruits like almonds, muscatel, raisins, rices, sugars, medicinals, spices, salt in very great quantities, oils, Malmsey, wines, cloths, linens, armor and many other things which those northern countries are lacking.” Poland, Masovia, Russia, Livonia, and Lithuania could enjoy these imports and export their own goods on these ships, including grains, rye, various legumes, apples, wax, crimsoms, various furs, including those of sables, of martens, . . . of tanned hides of does and goats, of gray leathers of oxen, of trees and lateen-yards for galleons and other large ships and of woods of Yew trees for making arches, of white herrings and salted cabbages in barrels and many other things that abound in those countries.

In conclusion, Ammannati declared “how great a commodity” such a project would be, indicating how one can see “the profits made by those kingdoms and provinces.”\textsuperscript{101}

A drawing accompanies the proposal on the remaining portion of the sheet, represented the other way around from the text (fig. 7). It shows an elevation of three sections of the timber walls with twelve pine beams set in place by large posts reinforced with metal ends. To enliven his illustration, Ammannati depicted two of the walls flanking the river course, rendered with dynamic, undulating waves highlighted in blue. Three distinct types of boats make their way along this strip of water, echoing Ammannati’s description of the “great quantities of each kind of ship coming from different parts.” On the left appears a typical merchant vessel, a

\textsuperscript{99}HP Kraus, 1565 presentation drawing. Three thousand braccia calculates to roughly 1.75 km or 1.09 miles.

\textsuperscript{100}The German Sea refers to the present-day North Sea and western portions of the Baltic Sea. The Sarmatico Sea corresponds to the area of the Baltic Sea near present-day Lithuania, Latvia, and Estonia.

\textsuperscript{101}HP Kraus, 1565 presentation drawing.
type of round ship with square sails and a large, deep hull. In the center, two men make their way on a simple punting boat. On the right, a galley is represented with a brightly striped awning, a set of oars, and a lateen-type sail as well as the longer, shallower proportions of a barge or even a long ship used in warfare.\footnote{The Christie’s sales catalog describes the ships as a sailing barge, a punt, and a barquentine. See Giannalisa Feltrinelli Library, 24. On round and long ships, see Frederick Lane, Venetian Ships and Shipbuilders of the Renaissance (Baltimore: Johns Hopkins University Press, 1992), 1–53.}

In this remarkable presentation document, Ammannati incorporated more than a description of the proposed repair, evoking an array of tantalizing goods and maritime traffic from far-off lands.

The incentives described in this proposal were the kinds of things that floated Cosimo’s boat, literally. Water management featured as a concern throughout the duke’s reign, and scholars have discussed how Cosimo took aggressive action to combat the “problema delle acque” throughout Tuscany and constructed aqueducts and public fountains in the city of Florence itself.\footnote{On the “problema delle acque,” see Spini, “Introduzione Generale,” 32–46; Cerchiai and Quiriconi, “Relazione e rapporti,” 187–257; Casali and Diana, Bernardo Buontalenti; William Parsons, Engineers and Engineering in the Renaissance (Baltimore: Williams & Wilkins, 1939), 345–46; and Gurrieri, Bracci, and Pedreschi, I ponti sull’Arno, 52–56. On aqueducts and public fountains in Florence, see Felicia M. Else, “Water and Stone: Ammannati’s Neptune Fountain as Public Ornament” (PhD diss., Washington University in St. Louis, 2003), 225–68.}

The revitalization of Pisa relied on water control, and the duke invested great resources in developing a naval fleet for military, religious, and commercial reasons.\footnote{On the development of the navy, see Marco Gemignani, “The Navies of the Medici: The Florentine Navy and Navy of the Sacred Military Order of St. Stephen, 1547–48,” in J. Hattendorf and R. Unger, eds., War at Sea in the Middle Ages and the Renaissance (Woodbridge: Boydell Press, 2003), 169–85.}

Like the letters documenting the Pontevecchio and Ponte a Mare in Pisa, this proposal expands knowledge of his involvement in engineering and water management projects and is the only known example from him of a detailed design for a canal embankment. While much of the proposal drew its inspiration from a foreign model, one element—the planting of trees to stabilize the embankment—reflected a practice advocated by fellow architect and engineer Bernardo Buontalenti. In one report, Buontalenti wrote, “The most useful thing that can be done along river courses is to make plantings to absorb moisture . . . so long as there are tree plantings in the valley of the Arno, the city [Florence] will never run any risk from floods.”\footnote{Quotation from Parsons, Engineers and Engineering, p. 355.}

The duke’s ambitions for maritime supremacy can be found in numerous works of art by Ammannati and his peers. Vasari painted the duke in the Sala di Cosimo of the Palazzo Vecchio supervising fortifications for the island of Elba, through which, the painter explained, “His Excellency has brought maximum security to his state and his seas” (fig. 8).\footnote{Jerry Lee Draper, “Vasari’s Decoration in the Palazzo Vecchio: The Ragionamenti Translated with an Introduction and Notes” (PhD diss., University of North Carolina at Chapel Hill, 1973), 360–61.} Ammannati, in fact, would have still
been working on the Neptune Fountain (fig. 1), probably Cosimo’s most grandiose public statement proclaiming supremacy over the waters and, like the canal project, one linked to trade and material gain. As one contemporary remarked, the Neptune Fountain signified “the profit and advantage that will accrue in a short time to the city from the waters that the duke is constantly engaged in bringing to her.” Ammannati’s proposal for the canal embankment speaks to the artist’s breadth of knowledge and responsibility, both instrumental in making these idealized artworks a reality. Ammannati’s remark that “one will not know if it might be made from art or from nature” reflected a broader fascination held by writers and artists of the sixteenth century in the relationship of these two concepts. Cosimo’s own garden villas invoked a dialogue between art and nature, one which purposefully conflated one with the other.

This proposal suggests that Ammannati knew more than how to design a strong timber embankment. He made references to material goods that he knew would tempt the patron’s palate. The fact that amber could be found in the German Sea, which Ammannati duly noted in his proposal, was mentioned in such ancient texts as Pliny the Elder’s *Natural History* and in contemporary atlases. In fact, the Medici collected amber, believing it to have special protective powers. The value they invested in this luxury item is reflected in the decoration of the studiolo in the Palazzo Vecchio, commissioned by Francesco I in 1569. In this room, amber featured among the valuable treasures stored in the cupboards along the wall dedicated to the element of water.

It is the reference to Poland that strikes those familiar with Ammannati’s life and works as most unusual. Certainly, he had never visited the region and had no known direct ties to it. While artists had some knowledge of the Holy Roman Empire owing to the political ties between the Hapsburgs and the Medici, the

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Kingdom of Poland was outside of this domain, in the process of uniting with the Grand Duchy of Lithuania to form the Polish-Lithuanian Commonwealth.\textsuperscript{111} The city of Danzig held special status in this area as Poland's only port on the Baltic Sea, a wealthy commercial center with ties to Holland, England, and other countries. The mouth of the Vistula and the port of Danzig required constant care to control the accumulation of sediment and silt. Since the fourteenth century, "pile servants" and port superintendents supervised these waters, and special buoys marked a fixed route for ship traffic. As Ammannati's proposal suggests, boats of many types entered this port, primarily barges powered by oars as well as smaller rafts.\textsuperscript{112} While the presence of an embankment specifically fitting Ammannati's description cannot be confirmed, the artist's list of wares, particularly grain, rye, timber, furs, wines, salt, and preserved herrings, accurately reflected trade goods

\textsuperscript{111} Anita Praźmowska, \textit{A History of Poland} (New York: Palgrave Macmillan, 2004), 88–108.

important to the economy of Poland and other nearby regions.\textsuperscript{113}

Ammannati got his information from somewhere, and a look at another ongoing project provides some clues. During this time, court cosmographer Egnazio Danti was painting accurate and up-to-date maps of Europe, Asia, America, and Africa in the Guardaroba Nuova of the Palazzo Vecchio, where the duke stored many of his own precious goods from distant lands (fig. 9).\textsuperscript{114} As Francesca Fiorani has argued, these maps were intended to reflect the geographic origins of the goods stored in the cabinet behind them. The legend on the map of Livonia and Lithuania, which cites Poland as a subsidiary territory, lists the goods and resources relating to that location, some identical to those in


\textsuperscript{114}Vasari supervised the overall scheme of the room, today called the Sala delle Carte Geografiche, with Egnazio Danti in charge of the maps. Much of this project was never realized, and many maps were completed later by Stefano Buonsignori in 1577. See Ettore Allegri and Alessandro Cecchi, Palazzo Vecchio e i Medici: Guida storica (Florence: S.P.E.S., 1980), 303–13; Egnazio Danti, Stefano Bonsignori, and Gemmarosa Levi-Donati, Le tavole geografiche della Guardaroba Medicea di Palazzo Vecchio in Firenze (Perugia: Benucci, 1995); and Fiorani, Marvel of Maps, 17–137.
Ammannati’s canal proposal. Danti’s text observes that the marshes there freeze each winter, recalling Ammannati’s reference to the Sarmatico Sea freezing each year. Similarly, Danti notes that these countries are “very abundant in apples and wax and most beautiful hides, especially sables and ermines.”\textsuperscript{115} Danti had incorporated the information on this map and that of Moschovia from recent travel reports. These relatively unknown lands, Fiorani emphasizes, “fired the imagination of readers and map users, who fantasized about the richness of its products and the stellar gains to be derived from a possible northern trading route.”\textsuperscript{116} Given this context, Ammannati’s inclusion of the goods from these specific lands would have reflected a side of the artist that has not been explored, a knowledge of international trade and hydrography. And it leaves as many questions as answers. Had Ammannati consulted with a court advisor, a cartographer, a fellow engineer or his wife, Laura Battiferra? It is not even clear if Cosimo

\textsuperscript{115}Fiorani, \textit{Marvel of Maps}, 67–70. My thanks to Francesca Fiorani for her transcription of this map legend. The legend for Moschovia similarly describes “abundantissima di mele et cera.”

\textsuperscript{116}Fiorani discusses the influence of Anthony Jenkinson’s travel reports and maps of Russia, Livonia, and Lithuania, published between 1560 and 1562 and reprinted in Ortelius’s \textit{Theatrum orbis terrarum} in 1570. Jenkinson mentioned the abundance of apples, wax, and sable as well as how these regions froze over. See \textit{ibid.}, 109–11.
ever received this proposal, and it is curious that Ammannati did not identify the river course in question, given the host of other locations that he specified. This remarkable document is a fascinating case study in which can be seen the dynamics of engineering, geography, and commerce at play. It also illustrates a rich intercultural dialogue, but with a twist—the ingenuity and economic riches of the Baltic north fuels the imagination of artistic Florence.

A Different Type of Ideal

Cosimo’s forging of a Tuscan empire brought new challenges to all who strove to serve him, a new Augustus who had his eyes on the high seas and on the account books. The new corpus of documents shows Ammannati’s importance in this scheme and provides a glimpse into the daily grind of artistic production, from one taskmaster to another. Detlef Heikamp pinned the shortcomings of Ammannati’s Neptune Fountain on the fact that, like Vasari, he had many commitments under way at the same time, employing a well-organized workshop but a labor force not “high in talent.”117 Whatever one might think of the Neptune Fountain, the comparison with Vasari holds well in that both artists supervised numerous projects and worked closely with ducal advisors and ministers. Indeed, these documents show that Ammannati was not only involved in his commissions at a greater level of detail but that he was responsible for more projects than previously thought. His managerial and supervisory role, especially in quarrying marble, might also be reminiscent of Wallace’s analysis of Michelangelo’s activities at San Lorenzo, a comparison that likely would have pleased Ammannati.118 There are several unsung heroes brought out in this correspondence—people like Giramonti, provveditori Busini and Caccini, even the troublesome bargemen—who were key to the whole operation but do not have much of a place in the biographical writings of Vasari or Cellini. Such fields as engineering, water management, and geography also emerge as being of great import to the duke though they often fall outside mainstream art historical discussions. Ammannati does not so much reflect the standards of artistic genius championed in Vasari’s Lives but rather fits another ideal of the ducal court, one dedicated to accountability, organization, negotiation, and a breadth of knowledge and skill. In this way, Richard Goldthwaite’s observations of a report written by Ammannati bear special relevance. Composed as part of a 1568 inquest on the price of kiln products, Ammannati’s analysis stood out for its clarity and comprehensiveness, eliciting Goldthwaite himself to proclaim: “It would do justice to a modern bureaucrat’s notion of what a good report should be.”119 Such an achievement could hold no

118 Wallace, Michelangelo at San Lorenzo.
119 Goldthwaite, Building of Renaissance Florence, 205–7. This report, which Goldthwaite observes to be written in “an extraordinarily careful and neat hand,” was probably scripted by Laura Battiferra (Kirkham, private conversation).
greater appeal to someone like Cosimo and stand in no greater contrast to the hot headed Cellini, who, as Cochrane points out, "had never heard of submitting reports, setting prices, and going through channels." These were some of the very things Ammannati did well, employing the right balance of patience, perseverance, caution, and courtesy to keep him from losing his marbles . . . and by extension, the duke's. \[120\]

\[120\] Cochrane, *Florence in the Forgotten Centuries*, 67.