Much has been written on the Taj Mahal, but little has been said about its architecture. There has been only one interpretation of the symbolism of the mausoleum, and the urban situation of the monument in the city of Agra has been almost entirely neglected. In brief form, this essay presents the main results of a recently completed monograph in which I address these issues.

The Taj Mahal is the Mughals’ great contribution to world architecture, and, as the contemporary sources reveal, it was conceived as such from the very beginning (fig. 1). In the words of Shah Jahan’s early historian Muhammad Amin Qazwini, writing in the 1630s:

And a dome of high foundation and a building of great magnificence was founded—a similar and equal to it the eye of the Age has not seen under these nine vaults of the enamel-blue sky, and of anything resembling it the ear of Time has not heard in any of the past ages...it will be the masterpiece of the days to come, and that which adds to the astonishment of humanity at large.

Not only was the monument to be a magnificent burial place for Mumtaz Mahal, Shah Jahan’s beloved wife (d. 1631), but also—and this is explicitly pointed out by the emperor’s main historian ‘Abd al-Hamid Lahawri—it was to testify to the power and glory of Shah Jahan (r. 1628–58) and Mughal rule:

They laid the plan for a magnificent building and a dome of high foundation which for its loftiness will until the Day of Resurrection remain a memorial to the sky-reaching ambition of His Majesty, the Sahib Qiran-Thani (Second Lord of the Auspicious Conjunction of the Planets Jupiter and Venus), and its strength will represent the firmness of the intentions of its builder.

In other words, the Taj Mahal was built with posterity in mind, and we the viewers are part of its concept.

I came to study the Taj Mahal in the context of a survey of the palaces and gardens of Shah Jahan that I have been conducting since 1976 as part of a larger survey of Mughal architecture. With the assistance of Dr. Yunus Jaffery from Dr. Zakir Hussain College in Delhi, I have established from the Persian sources a corpus of thirty-five Shahjahani palaces (sing. dawlakhânâ) and garden residences (sing. bâgh), of which twenty-four proved upon field investigation to exist in varying sizes and states of preservation. In the whole of Islamic architecture, this is the largest extant body of palaces built by a single patron.

 Entirely new measured drawings of seventeen palaces were prepared by the Indian architect Richard A. Barraud, who drew them on the basis of measurements he and I made during extensive fieldwork, which I undertook because many of these complexes are hardly or not at all recorded. Altogether, Mughal architecture, like the Islamic architecture of India in general, is not well documented. The art historian cannot rely on measured drawings to the same extent possible for the better-documented areas of Islamic architecture or for Western historical architecture in general. The pioneering surveys of the Archaeological Survey of India from the end of the nineteenth and the first half of the twentieth centuries included several Mughal sites, but only a few—such as the monographs of Edmund W. Smith on Fatehpur Sikri and on Akbar’s Tomb at Sikandra—were published. More often than not, when one wants to have an exact plan of a building one has to go and measure it. On the other hand, while establishing this basic documentation, the art historian is confronted by all the questions the discipline has developed in the span of its existence, during which the approach has moved from formal assessment and analysis towards contextual studies.

I began my survey of the palaces at Agra and, during the 1980s, spent months in the Red Fort, measuring and photographing its buildings. From here the Taj Mahal was always before my eyes at a distance across the river Yamuna, popularly called Jamna (fig. 2), and one of these views eventually became the cover image of my book Mughal Architecture (1991), in which
I dealt with the Taj Mahal for the first time, albeit only briefly. I felt overwhelmed by its perfection, splendor, and sheer size. Eventually I realized that as a scholar I was not alone in my awe of the famous building. The vast literature on the Taj Mahal comprises surprisingly few serious scholarly studies and, as I pointed out at the beginning, there is as yet no monograph or modern analytical treatise dedicated to its architecture.9

At the same time I came to realize that many answers to my questions about Shah Jahan’s palaces and gardens lay in the Taj Mahal as the ultimate project of his architectural patronage. The final incentive to study it in detail came in 1994, when the editors of the second edition of the Encyclopaedia of Islam asked me to write the article on the building.10 This started my project of newly documenting and analyzing the entire mausoleum complex; I am the first Western scholar since India gained independence in 1947 to have received permission for such an undertaking, through the generosity of the Archaeological Survey of India. With Richard Barraud I have been measuring and photographing the buildings of the complex in intermittent expeditions during the last ten years.11 The survey has brought me into the remotest corners of the Taj Mahal, and this close encounter with the architecture has revealed the contribution of the anonymous workmen who inscribed their mason marks on the stones.12

I began my analysis by looking at the entire complex of the Taj Mahal and at its urban situation. I could not help noticing that the Taj Mahal invites an approach that coincides with what since the 1970s might be termed a “deconstructive reading.” According to Jaques Derrida, the main propagator of this method of disassembling and questioning established notions, all Western thought is based on the idea of centers—Origin, Truth, Ideal Form, Fixed Point, Immovable Mover, Essence, God, and Presence—that guarantee all meaning. The problem with these centers is that they attempt to exclude. In doing so they ignore, repress, or marginalize others.13 Even those
who are tiring of deconstruction will see that the idea of center-and-margin illustrates the perception of the Taj too tellingly not to be included in this discussion. Traditionally, the white building of the mausoleum takes the position of the center in the conception of the beholder, who hardly notices the large complex at the end of which it stands. Due to the prominence of the tomb, its surrounding architecture has received very little attention—in other words, it has been marginalized.

It thus seems important first to consider the entire complex, especially its subsidiary courtyards, which emerge as integral components of its design. In addition, I have extended the investigation of the surroundings of the Taj to its larger environment, to its relationship to the city of Agra.

ANALYSIS OF THE COMPLEX

The mausoleum is set at the northern end of the main axis of a vast oblong walled-in complex that measures 896.10 x 300.84 m (fig. 3), which works out to 1112.5 x 374 Shahjahani gaz. Of this complex, the tomb garden and its forecourt are fully preserved; we measured it as 561.20 x 300.84 (300) m, that is, 696 x 374 (373) gaz (fig. 4).\(^{14}\) The Shahjahani linear yard, called gaz or żirāʾ, corresponds to about 81–82 cm, or 32 inches; our field studies have shown that it was not an exact unit but a relative, proportionally used one, the length of which could vary slightly, even within one and the same building complex. For the overall length of the Taj complex, the average gaz figure comes to 80.55 cm.

The tomb garden consists of two main components: a cross-axial, four-fold garden—in the form of a classical chārbāgh (fig. 3: B)—and, towards the river, a raised terrace on which are placed the mausoleum and its flanking buildings (fig. 3: A). In this, the Taj Mahal garden follows the form of the typical garden of Mughal Agra, the waterfront garden. As I have shown elsewhere, this is a specific form of the chārbāgh developed by the Mughals in response to the

Fig. 2. Taj Mahal, mausoleum flanked by mosque (right) and Mihman Khana (left), seen across the river Jamna. (Photo: Ebba Koch, 1985)
geographic conditions of the Indo-Gangetic plain, and more specifically for the riverfront situation at Agra. Here the water source was not a lively spring on a mountain slope, as in the Mughals’ native Central Asia, but a large, slow-flowing river, from which the desired running water had to be brought into the garden by means of water lifts. Accordingly, the Mughals conceived a garden type to take advantage of this waterfront situation; the main building was not placed in the center of the garden, as in the classical Mughal chārbāgh, but rather on an oblong terrace (kursi) running along the riverfront. The garden component was on the landward side of the terrace. This shift towards the riverfront provided the main garden pavilions with the climatic advantages of running water and presented a carefully composed front to viewers on a boat or across the river (fig. 2). From the garden itself, the buildings presented an equally satisfying backdrop (fig. 1).15

URBAN CONTEXT

Mughal Agra consisted of two bands of such riverfront gardens lining the Jamna, of which only a few survive today. The key to my reconstruction of this riverfront scheme, which formed the urban context of the Taj, is a plan of Agra dating from the 1720s, in the Maharaja Sawai Man Singh II Museum in the City Palace in Jaipur; to my knowledge it is the earliest plan of the city (fig. 5).16 It shows forty-four garden complexes (including the Agra Fort) along the river and gives their names, which are usually those of their owners, in Devanagari script.17 Information about these gardens can also be pieced together from the Mughal histories and eulogistic descriptions of Agra, in which gardens of members of the imperial family and of nobles are occasionally mentioned, especially in the context of an imperial visit. Another source is topographical descriptions of Agra written in Persian by local informants for British administrators after the British took Agra in 1803. In his Tafríh al-‘imárát (1825–26), Sil Chand describes the gardens of Agra by the same names as feature on the Jaipur plan.18 The main owners of the riverfront gardens of Agra were the emperors Shah Jahan and Aurangzeb, members of their imperial family, and their nobility the amirs and mansabdars. Even Mumtaz Mahal had a garden at Agra, which she bequeathed to her daughter Jahanara; what is left of this Bagh-i Jahanara is now known by the corrupted name Zahara Bagh and lies south of the Ram Bagh, originally Nur Jahan’s Bagh-i Nur Afshan (fig. 5: 3 and 4; fig. 6).19 The evidence indicates that most of these gardens followed the riverfront design, with the main building on a terrace overlooking the river and a chārbāgh on the landward side.20

ANALYSIS OF THE COMPLEX RESUMED

The design of the Taj garden thus introduces an established Mughal residential garden type into the context of a monumental imperial mausoleum. The waterfront scheme not only determines the shape of the funerary garden of the Taj, it is also a key element in the planning of the entire Taj complex. At the part of it to the south of the garden is a large rectangle (fig. 3: C) whose central square forms the Taj forecourt, called jilawkhana by Shah Jahan’s chroniclers, the officially appointed court historian ‘Abd al-Hamid Lahawri and Muhammad Salih Kanbu, who wrote on his own account. Both provide us with almost identical detailed descriptions of the entire Taj Mahal complex, on the occasion of its official completion on 17 Dhu ‘l-Qa‘da 1052 (February 6, 1643).21 Both historians are remarkably consistent in their use of architectural terms; I follow their terminology.

The jilawkhana square (fig. 3: 11) is framed on both of its shorter sides by two smaller courtyard enclosures. An open bazaar street (fig. 3: 12a, 12b) divides these courtyards and provides the main access to the jilawkhana and, beyond that, through a monumental gateway (fig. 3: 9), to the tomb garden. The northern pair of courtyards contained the residential quarters for the tomb attendants, the khawāspüras (fig. 3: 10a, 10b). The southern pair contained subsidiary tomb gardens of lesser wives of Shah Jahan, whose identity is still under debate (fig. 3: 13a, 13b). These tomb enclosures echoed the design of the main tomb garden on a smaller scale because they followed the characteristic waterfront scheme of a cross-axial chārbāgh combined with an oblong terrace on which stood the tomb structure and its flanking buildings. (These buildings, with one exception, are no longer preserved.) On the outside of the Taj complex are three buildings, two to the west (fig. 3: 20, 21) and one to the east; the latter represents another subsidiary tomb complex of this type (fig. 3: 13c).

The waterfront scheme is thus transferred to a landlocked situation in these miniature replicas of the main garden. Not only that, but the waterfront garden is also used as the ordering scheme for the entire sub-
Fig. 3. Site plan of the Taj Mahal with terms derived from the Persian descriptions by Lahawri and Kanbu of 1643: A. riverfront terrace (kursi), B. tomb garden (bāgh), C. complex of the forecourt (jilawkhana), D. complex with cross-shaped (châr sū) bazaar and four caravanserais (sara‘āt), 1. mausoleum (rauza), 2. mosque (masjid), 3. assembly hall (mihmān khāna), 4a–f. wall towers (burj), 5. pool (hawa), 6. first temporary burial site of Mumtaz Mahal, 7a, b. garden wall pavilions (‘imārat) popularly called Nauhat Khana (Drum House), 8. double arcaded galleries to the south of the garden (twān dar twān), 9. gate (darwâza), 10a, b. quarters for tomb attendants (khawâficīra), 11. forecourt (jilawkhāna), 12a–f. bazaar streets (bāzār), 13a–c. subsidiary tombs (maqbara) all popularly called Saheli Burj (Tower of the Female Friend), 14. gates (darwâza): 14a. popularly called Fatehpuri Gate, 14b. popularly called Fatehabad Gate, 15. gate (darwâza) popularly called Sirhi Darwaza, 16. caravan
serai (ṣarāʾiʿ) known since the eighteenth century as: 16a Katra (Market) Omar Khan, 16b. Katra Fulel (Market of Perfumes), 16c. Katra Resham (Silk Market), 16d. Katra Jogidas, 17. central square (chawk), 18a, b. west and east gates of the bazaar and caravanserai complex, 19. south gate of the bazaar and caravanserai complex popularly called Dakhnay Darwaza, 20. outer western tomb, 21. mosque popularly called Fatehpuri Masjid. (Drawing: Richard A. Barraud and Ebba Koch)
In order to understand the complete design, we must turn to contemporary description and look at eighteenth- and nineteenth-century plans (compare figs. 3 and 7). From these it becomes apparent that south of the jilawkhana there was another courtyard complex with a cross-axial arrangement (fig. 3: D). It was formed by open, intersecting bazaar streets (fig. 3: 12c, 12d, 12e, 12f), which corresponded to the walkways of the garden, and four squarish sarais, that is, caravanserais or inns (fig. 3: 16a, 16b, 16c, 16d), taking the place of the four garden plots. We meet here with a unique and highly creative transfer of a chahargh design onto a complex of utilitarian civic architecture. Hence the configuration of the rectangular unit containing the jilawkhana and the cross-axial unit to its south echoed the waterfront scheme of the Taj garden. The entire complex of the Taj Mahal thus consisted formally of two units following the waterfront design—that of the Taj garden, a true waterfront garden, and that of the landlocked variant of the subsidiary units.

The tomb garden and the subsidiary complex were...
connected not only formally but also functionally. The utilitarian unit serviced the funerary unit of the tomb garden. By imperial command the upkeep of the tomb was financed by the income generated from the bazaars and caravanserais, in addition to that of thirty villages from the district of Agra. The service unit was the counterpart (qarına) of the tomb complex, linked to it by design and function.

The two zones, the funerary and the “wordly,” relate also to the dialectics of the Islamic concept of din wa-dunyā’, the domains of the spiritual and the material life. Furthermore, the addition to the mausoleum complex of quarters for merchants and foreign travelers ensured “that the whole world should see and admire its magnificence,” in the words of the French jeweler and traveler Jean-Baptiste Tavernier, who was in Agra in 1640–41, and again in 1665. Its reception through world travelers—jahān-nawādān or rawandahā-
yi ʿālam, as the Mughals called them—thus forms an integral part of the concept of the Taj Mahal.

Of this two-part service unit, the southern cross-axial component is the great mystery of the Taj Mahal: we do not really know how much of it survives. Hardly anybody who walks through the southern gate of the jilawkhāna (fig. 3: 15) and enters the narrow street with the marble inlay workshops realizes that this area, known as the Taj Ganj, was originally part of the Taj complex. Here a densely built city quarter has grown up in which the architecture of Shah Jahan has been buried almost entirely; today one can make out only fragments of the wings of the original bazaars and caravanserais. The four gates of the central square or chawk are preserved (although two only in part) and protected by the Archaeological Survey of India (fig. 8).

The Taj Ganj is, however, an integral part of the Taj Mahal, an indispensable component of its planning. It has been lost, but there is no doubt that it should be given back to the Taj by some means. I am planning to do this in the form of an architectural model that will reconstruct the entire complex of the Taj Mahal, the River Jamna, and the imperial garden called Mahtab Bagh on the opposite side of the river. The model will enable visitors to understand that the Taj is unique not only because of the grandness of the tomb building but also because of the carefully planned creative design, the scale, and the multifunctional complexity of the entire compound. It will also draw attention to the Taj Mahal as a constituent part of the urban scheme of Agra. I envisage placing the model in the new Visitors’ Center at the Taj Mahal, in the eastern and western courtyards of the khwāsśpūras (fig. 9), today called, respectively, Fatehabad Gate Court and Fatehpuri Gate Court. The Taj Mahal Visitors’ Center is part of a new initiative for “the conservation and restoration…of the Taj Mahal and surrounding areas and a new site visitor management,” realized since 2001 in a partnership between the Indian government, represented by the Archaeological Survey of India, and the private sector—the Indian Hotels Company Ltd., that is, the Tata Group of Hotels. The project is monitored by the Taj Mahal Conservation Collaborative, directed by the conservation architect Rahul Mehrotra and by Amita Baig, and advised by a body of global experts of which I am part.
THE TAJ MAHAL: ARCHITECTURE, SYMBOLISM, AND URBAN SIGNIFICANCE

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THE TAJ AS BUILT ARCHITECTURAL THEORY

The reconstruction of the original complex of the Taj establishes the determinant role of the waterfront garden in its planning. The complex of the Taj Mahal not only explores the potential of the waterfront garden as an ideal funerary and a utilitarian worldly form, it also expresses canonically the architectural principles of the period.

We have no texts to turn to because the Mughals had no written architectural theory, and one wonders to what extent they were affected by the ancient Shastric tradition of building theory. The Sanskrit texts translated in an extensive program under Akbar did not include the outstanding Indian genre of art and architectural theory, the shilpa shastras and vastu shastras, respectively; theorizing about art was not a Mughal literary preoccupation. True, it was hardly a major theme elsewhere in the Islamic world, but one would have expected the Mughals to become interested in the ancient Indian textual tradition of art theory, all the more since, like the Muslim dynasties in India before them, they continued to absorb Indian artistic conventions into their art and architecture, and even newly revived them. However, the fact that no texts exist does not mean that architectural theory was absent from Mughal thinking, especially in the time of Shah Jahan. My investigations have shown that theory was laid down in the architecture itself. As in painting—and I have tried to establish this for the historical images illustrating Shah Jahan’s history, the Padshahnama—the ruler’s buildings and formal gardens express these concepts so systematically that we can derive them from their form itself. The Taj is

Fig. 8. Taj Mahal, bazaar and caravanserai complex (fig. 3: D), gate of the central chawk (square) leading to the northeastern caravanserai today called Katra Fulel (fig. 3: 16b). The area is now built in and over by the city quarter Taj Ganj; in the background can be seen the gate of the Taj Mahal garden, behind it part of the mausoleum, and to the right the Mihman Khana. (Photo: Ebba Koch, 1999)
“built architectural theory,” which can be read almost like a literary text once we have mastered the grammar and vocabulary of the architectural language. The buildings speak to us “with mute eloquence” (bazâbân bîzâbânî), as Lahawri puts it. 30 We note here the purest expression of a consistent formal systematization characteristic of the entire art of Shah Jahan; it represents a distinctive and outstanding contribution specific to this period.

The principles of Shahjahani architecture, which interact closely with one another, can be identified as follows:

1. Geometrical planning.
2. Symmetry. Favoured in particular is bilateral symmetry, for which we even have a term in contemporary descriptions of buildings, namely, qarîna. 31 an Arabic word that expresses the notion of pairing and counterparts but also of integration, thus fitting conceptually into the ideas of universal harmony that played a great role in the imperial ideology of Shah Jahan. In a typical Shahjahani qarîna scheme, two symmetrical features, one mirroring the other, are arranged on both sides of a central, dominant feature.
3. Hierarchy. This is the overriding principle, which governs all the others.
4. Proportional formulas expressed in triadic divisions.
5. Uniformity of shapes, ordered by hierarchical accents.
6. Sensuous attention to detail.
7. Selective use of naturalism.
8. Symbolism.

Fig. 9. Taj Mahal, view from the roof level of the gate towards southeast onto the khawâspûra (quarter of attendants) now called Fatehabad Gate Courtyard (fig. 3: 10b) and the subsidiary tomb to the east of the jilâwkhânâ (fig. 3: 13b). (Photo: Ebba Koch, 1995)
A palace wing of the so-called Machchhi Bhawan (1630s) in the Agra fort illustrates these principles very clearly (fig. 10). The wing consists of uniformly shaped arcades with a hierarchical accent in the center, in the form of the emperor’s marble baldachin. The central feature and the identical arcades on both sides express in a triadic division bilateral symmetry, or qarnína. The baldachin attains its hierarchical accentuation by the use of nobler material—namely, white marble—and with selective naturalism: it is formed of organic baluster columns, decorated with naturalistically sculpted acanthus leaves that also appear in stucco as decoration of the interior cupola. These elements are shaped with sensuous attention to detail and are in stark contrast to the plainer arcades of the wings. The organic plant forms of the baldachin symbolize the emperor, whose throne stood below it, as the generator of blossoming and wellbeing. This is underlined by the pot with overflowing leaves out of which grows each of the four columns—a pûrna ghata or pûrna kalasha, in Indian architecture an ancient symbol of growth, fecundity, and prosperity (fig. 11).

This example is meant to suggest that the same principles govern the entire architecture of Shah Jahan—palaces, gardens, mosques, and mausoleums. They are, however, expressed most grandly and most consistently in the Taj Mahal, whose architecture epitomizes the Shahjahani system.

THE PRINCIPLES OF SHAHJAHANI ARCHITECTURE AS EXPRESSED IN THE TAJ MAHAL

First, a rational and strict geometry is ensured by the use of grid systems based on the Shahjahani gaz. Different modules are used for the garden and the subsidiary
complexes, and even individual buildings have their own grid. The unit of the garden and the riverfront terrace is based on a grid with a 23-gaz module, and the unit of the jilawkhāna and bazaar and caravanserai complex on a 17-gaz module. In the planning of the mausoleum a 7-gaz module is used and in that of the gate a 3-gaz module.34

Second, there is perfect symmetrical planning with emphasis on bilateral symmetry (qarīna) along a central axis on which are placed the main features. The main axis running north-south is represented by the garden canal and the bazaar street in its extension. On it are set the dominant features: the mausoleum (rawża) (fig. 3: 1), the pool (hawż) (fig. 3: 5), the gate (darwāza) to the garden (fig. 3: 9), the forecourt (jilawkhāna) (fig. 3: 11) and its southern gate (fig. 3: 15), the square (chauk) (fig. 3: 17), and the southern gate of the bazaar and caravanserai complex (fig. 3: 19). These elements are flanked on both sides by pairs of identical buildings: the mosque (masjid) (fig. 3: 2) and the assembly hall (mihmān khāna) (fig. 3: 3), two garden wall pavilions (‘imārat), now called Naubat Khana (fig. 3: 7a, 7b), and, to accentuate the corners of the enclosure wall and the terrace step, three pairs of tower pavilions (burj) (fig. 3: 4a, 4b, 4c, 4d, 4e, 4f). The elements of the subsidiary unit (fig. 3: C, D) are arranged in the same mirror symmetry.

Integrated into the overall qarīna symmetry are centrally planned elements, namely the four-part garden (bāgh) (fig. 3: B), the four-part bazaar-and-caravanserai complex (fig. 3: D), the miniature chārbāghs of the subsidiary tombs (fig. 3: 13a, 13b); the individual buildings of the mausoleum (fig. 3: 1) and gate (fig. 3: 9) are raised over central plans (compare figs. 3 and 4). Each element plays an indispensable part in the composition; if just one part were missing, the balance of the entire composition would be destroyed.

Bilateral symmetry dominated by a central accent has generally been recognized as an ordering principle of the architecture of rulers aiming at absolute power—a symbol of the ruling force that brings about balance and harmony. For Earl E. Rosenthal, this is expressed in the palace built into the Alhambra in Granada by Charles V in 1526 as a statement of the Christian Reconquista of Spain, “a striking symbol of the stratification of aristocratic society under centralized authority.”35

Third, triadic divisions bound together in proportional formulas determine the shape of plans, elevations, and architectural ornament of the Taj. A leitmotif is the tripartite composition consisting of a dominant feature in the center flanked by two identical elements; the configuration relates in turn to hierarchy as well as to qarīna symmetry (figs. 1 and 12).

Fourth is the hierarchical grading of material, forms, and color down to the minutest ornamental detail. Particular striking is hierarchical use of color: the only building in the whole complex faced entirely with white marble is the mausoleum. All the subsidiary structures of the Taj complex are faced with red sandstone; special features such as domes may be clad in white marble (figs. 1, 2, 12). This hierarchical use of white marble and red sandstone is typical of impe-
rial Mughal architecture, but here it is explored with unparalleled sophistication. It represents the clearest link to pre-Islamic Indian Shastri concepts and expresses social stratification. The Mughals elaborated here an architectural praxis that already had been adopted by the early sultans of Delhi and that conforms to older Indian concepts laid down in the Shastric literature. The Vishnudharmottara, an authoritative compilation composed in Kashmir in about the eighth century, recommended white-colored stone for Brahmin buildings and red for those of the Kshatriyas, the warrior caste:36 “White, it would seem, is opposed to red as the purity of the Brahmin is opposed to the ruling power of the Kshatriya.” The synthesis of the two colors had an auspicious connotation.37 By using white and red in their buildings, the Mughals represented themselves in the terms of the two highest levels of the Indian social system: architecturally speaking, they were the new Brahmans and the new Kshatriyas of the age. Until Aurangzeb, the Mughal emperors were concerned to define themselves as rulers in Indian as well as Muslim terms; the historian ‘Abd al-Qadir Bada’uni (d. 1004/1595–96), who was an orthodox Muslim and wrote a history of Akbar on his own account, criticized the emperor for letting himself be addressed as an incarnation “like Rama, Krishna, and other infidel kings.”38

Fifth is the uniformity of shapes, ordered by hierarchical accents: for instance, only one type of columnar support—the Shahjahani column—is used in the entire complex. It has a multifaceted shaft, a muqarnas capital, and a base formed of multicurved-arched panels39 and is always combined with a multicurved arch. The proportions and details of the columns may vary according to their position in the complex. In the galleries on both sides of the gate (fig. 3: 8a, 8b) they form monumental arcades (fig. 13, and cf. fig. 10); on the roof level of the mausoleum similar arcades on a smaller scale are set in the back sides of the pîštîâqs (portals), and Shahjahani half-columns
flank the pillars of the four marble chhatris (kiosks) surrounding the main dome (fig. 14).

This uniformity is true of the entire architectural vocabulary and its decoration; it applies to the paneling of the walls with shallow multicusped niches and cartouches, and to the treatment of vaults. One type of decorative facing is used for the main vaults and the half vaults of the mausoleum and gate (figs. 15, 16)—a network developed from points arranged in concentric circles, which Shah Jahan’s authors described as qalib kārī, or mold work, because in the original plaster form of the vault the pattern was applied by means of molds (fig. 15). The design was transferred into marble in the central dome and half vaults of the pishtāqs of the mausoleum (fig. 16).

Sixth, the principle of sensuous attention to detail is expressed most exemplarily in the flowers of the mausoleum dado and in the exquisite pietra dura (literally, “hard stone”: gemstone inlay) decoration of the cenotaphs of Mumtaz Mahal and Shah Jahan and the screen that surrounds them (figs. 17, 18, 20, 21).

Seventh, in the Taj the selective use of naturalism emphasizes hierarchy. The most naturalistic decor appears in the chief building of the entire complex, the mausoleum (figs. 17, 18, 20, 21).

Eighth, the sophisticated symbolism in the architec-
Fig. 15. Taj Mahal, garden gate, half vault of the southern **písháq** showing plaster facing with *qālib kārī*, that is, a network forming kite-shaped compartments developed from stars arranged in concentric tiers. (Photo: Ebba Koch, 1996)

Fig. 16. Taj Mahal, mausoleum, central dome with *qālib kārī* in marble relief. (Photo: Ebba Koch, 1996)
natural program expresses, as I have suggested, the concept of the mausoleum as earthly realization of the mansion of Mumtaz in the garden of Paradise. This is clearly formulated by Lahawri in the official history of the emperor’s reign:

…the exalted mausoleum, which imitates the gardens of Rizwan [the guardian of Paradise], and which gives an impression of Paradise (literally, the holy enclosures) (rawa-i mu'allā ki az riyāz-i Rizwān hikāyat kard wa az hazā’ir[rat al-] quds nishān dahad). 40

Mughal eulogistical references have a complexity of their own; while they may represent a purely literary convention, they can also have a direct bearing on the work of architecture or art that they praise. In order to arrive at their meaning, the metaphors used in such eulogies thus have to be carefully evaluated against the evidence brought forth by formal analysis.41

In the Taj Mahal, every aspect of the architecture supports the concept of the paradisiacal mansion. It is expressed in the overall planning of the entire complex. The waterfront garden, a typical residential garden form of Agra, was realized in ideal forms and brought to its ultimate monumentalized design; thus it was raised to a level above the sphere of mortals.

The concept of the eschatological house also governs the elaborate program of the inscriptions, designed by Amanat Khan Shirazi. Z. A. Desai and Wayne Begley have shown that passages of the Qur’an selected for the inscriptions focus on themes of the Last Judgment, divine mercy, the reward of the faithful, and Paradise (fig. 19).42 Such themes are entirely fitting for the mausoleum in their evocation of the abode prepared for Mumtaz in Paradise. Begley, however, uses the evidence for another, less close-at-hand reading and sees in the Taj Mahal an architectural realization of an Islamic cosmological scheme—namely, the concept of the Throne of God on the Day of Judgment, as envisaged and recorded in a diagram by the thirteenth-century Spanish mystic Ibn al-'Arabi in his Futūhāt al-Makkiyya (1238).43 Why then, as Maria Eva Subtelny has pointed out,44 is the famous Throne verse (Qur’an 2:255) extolling God’s majesty45 absent from the inscriptional program of the Taj Mahal? Begley’s interpretation ignores not only that, but also the use of an established Agra garden plan for the layout of

Fig. 17. Taj Mahal, pāštāq of mausoleum, marble dados with rows of naturalistic flowers representing heavenly flowerbeds. (Photo: Ebba Koch, 1978)
the mausoleum. He also disregards another highly relevant aspect, that is, the floral decoration that forms an integral part of the building.

In a direct appeal to our senses, the concept of the paradisiacal garden house is expressed in the delicate flowers that appear on the dados, at the eye level of the beholder. They are carved in sensuous detail and represent naturalistic but not necessarily identifiable botanical species that transform the lower walls of the mausoleum into ever-blooming paradisiacal flowerbeds (figs. 17, 18).

The naturalistic decoration culminates in the interior, in the central ensemble of the cenotaphs of Mumtaz and Shah Jahan and the screen that surrounds them. These are covered with spectacular flowers and plants inlaid with semi-precious stones, in composto (composition) di pietre dure; the Mughals called the technique parchin kārī (literally: “driven-in work”) (fig. 20). The poet Abu Talib Kalim tells us that the painterly effects that could be obtained with parchin kārī made it possible to create the desired naturalistic flowers, permanent and thus superior images of their counterparts in nature:

On each stone a hundred colors, paintings, and ornaments
Have become apparent through the chisel’s blade.
Fig. 20. Cenotaphs of Mumtaz Mahal (1632) and Shah Jahan (1666) in the main tomb hall. (Photo: Ebba Koch, 1981)

Fig. 21. Cenotaph of Shah Jahan in the lower tomb chamber (“crypt”). Detail of poppies and yellow flowers set in cartouches, inlaid with semi-precious stones in *pietra dura/parchin kārī* technique. (Photo: Ebba Koch, 2002)
The chisel has become the pen of Manī. Painting so many pictures upon the translucent marble (āb-i marmar).

Pictures become manifest from every stone; In its mirror behold the image of a flower garden.

They have inlaid flowers of stone in the marble: What they lack in smell they make up with color.

Those red and yellow flowers that dispel the heart’s grief, are completely out of carnelian and amber.

When of such stones the surface of a tomb is made, The deceased will [want to] clasp the flower pictures to her heart.

On both cenotaphs of Shah Jahan, which were placed next to those of Mumtaz after his death in 1666, the decoration with paradisiacal flowers was given preference even over inscriptions. Inscriptions had decorated the sarcophagus-like element of both cenotaphs of Mumtaz, the one in the lower and the other in the upper tomb chamber, and full flowering plants appear only on the platform of her upper cenotaph. But both of Shah Jahan’s cenotaphs are covered all over with flowers (figs. 20, 21); the only epigraphy appears in the form of a brief historical epitaph at the south end of each cenotaph. The weight given to floral decoration is in tune, on the one hand, with the overall concept of the mausoleum as paradisiacal garden house, but the exclusively floral decoration of the emperor’s cenotaphs makes a more specific statement, relating, even after his death, to the use of flora in his court settings to express imperial propaganda. The court poets and writers tell us that Shah Jahan was “the spring of the flower garden of justice and generosity,” the renewer (mujaddid) under whose rule “Hindustan has become the rose garden of the earth,” and his reign “has become the spring season of the age in which the days and nights are young.”

CONCLUSION

From our investigations, the reign of Shah Jahan emerges as a time when the visual arts were most consistently and systematically explored as a means of promulgating imperial ideology. The written texts and the arts were seen as equally necessary means to represent the ruler and his state for a wider public and to provide a lasting memorial to his fame. Strict formal principles served to express within each work of art and each building the hierarchy and timeless order of Shahjahani rule. With their successful appeal to our senses, the seductive aesthetics make the message the more persuasive. It is the fusion of the intellectual and the sensuous that has made the Taj Mahal such a successful monument up to the present day.

Lastly, the close connection between form and meaning in Shahjahani art makes it a methodological exemplar of general art-historical relevance; it reminds us that formal analysis should not be in opposition to a contextual approach but rather a starting point for art as history.

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NOTES

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5. I thank Dr. S. M. Yunus Jaffery for his continuing assistance in reading and translating Mughal source material.
6. My field research provides the material for a constantly expanding archive, which today comprises several hundred architectural drawings prepared mainly by Richard A. Barraud and ca. 50,000 photographs taken by myself.


10. Koch, “Tādī Mahāl,” fig. 4 presents my new overall plan of the complex for the first time. A brief assessment based on our measurements and photographs illustrating this article are part of this survey. All plans and photographs illustrating this article are part of this survey.

11. We measured the buildings with metal and plastic tapes and with a laser measuring instrument called Disto Basic, made by Leica. Based on our survey, Richard Barraud did the scale drawings by hand; I took the photographs with a Nikon FS Photomic. All plans and photographs illustrating this article are part of this survey.


14. The width of the complex at the southern, *jilawkhānā*, end measures 300.84 m; at the riverfront it is 300 m. This is explained by Richard A. Barraud in his pioneering study “The Modular Planning of the Taj Mahal,” based on our measurements and illustrated with three drawings, in Koch, *Complete Taj Mahal*. Barraud refutes Begley’s assumption that the planning of the Taj can be reconstructed by putting a decimal grid over the whole complex and explaining away the features that do not fit into it. See Begley and Desai, *Taj Mahal: The Illumined Tomb*, figs. 13–15, and W. E. Begley, “The Garden of the Taj Mahal: A Case Study of Moghal Architectural Planning and Symbolism,” in *Mughal Gardens: Sources, Places, Representations, and Prospects*, ed. J. L. Wescoat, Jr. and J. Wolschke-Bulmahn (Washington, DC, 1996). In earlier publications I have given differing measurements of the complex. In Koch, “Tādī Mahāl,” 58, a misprint occurred in the rendering of the gas equivalents of the preserved part, which are indicated as 690 x 313 gaz instead of 696 x 374 gaz. In my essay in *Seventy Architectural Wonders*, 61, the overall length of the complex is given as 897.3 x 300 m, because we took it from the outer face of the southernmost gate, which projects 1.20 m from the enclosure wall. From this comes the overall length of 1114 gaz cited in Koch, “Tādī Mahāl,” 58, which differs from the one given here as 1112.5 gaz.


16. Cat. no. 126. The plan is painted on cloth and measures 294 x 272 cm. I have studied it since the mid-1980s and discussed it in several publications: see Ebba Koch, “The Zahara Bagh (Bagh-i Jahanara) at Agra,” *Environmental Design* 2 (1986): 30–37; idem, “The Moghal Waterfront Garden” in M. C. Beach, Ebba Koch, and Wheeler Thackston, *The King of the World: The Padshahnama: An Imperial Moghal Manuscript from the Royal Library, Windsor Castle* (London: Azimuth Editions and Washington, DC: Arthur M. Sackler Gallery, Smithsonian Institution, 1997), cat. no. 29, 185–87 and cat. no. 45, 209–10, fig. 132. I thank Dr. B. M. Jawalia, Keeper of Manuscripts, for assisting me in reading the inscriptions of the plan in July 1985 and Feb. 1986, and Dr. Ask Kumar Das, then Director of the Maharaja Sawai Man Singh II Museum, Jaipur, for the permission to study and to publish it.

17. As no. 45 on the line drawing of fig. 5 I have added a further complex, which represents the Chhatris of Jasswant Singh (d. probably 1678), a well-preserved funerary complex that does not appear on the Jaipur map.


22. The first dated plan of the entire complex is by the British landscape artists Thomas and William Daniell, who had it prepared in Agra in 1789 and published in their *Two Views of the Taj Mahal at the City of Agra in Hindostan Taken in 1789* (London, 1801). A similar plan, but painted on cloth, is in the
For the term, see below.


I pointed this out in Mughal Architecture, 99; and in “The Mughal Waterfront Garden,” 143–44, repr. in Mughal Art and Imperial Ideology, 196; but I could not convince Laura Parodi, “‘The Distilled Essence of the Timurid Spirit’: Some Observations on the Taj Mahal,” East and West 50, 1–4 (Dec. 2000): 535–42, in particular 539, where she considered my interpretation of the “ideal paradiisical garden for the deceased” as “reductive” and preferred Begley’s Throne of God hypothesis. I have come back to the issue in the introduction to Mughal Art and Imperial Ideology, xxiv. Both Begley and Parodi overlook the fact that, however spectacular their realization, the themes of Shahjahanī art were conventional, as befitting a ruler aspiring to classical equilibrium.


The founder of the Manichaean sect, and in Persian lore the ultimate painter.

Abū Tālib Kalim, Pašḍhānāmā, Persian ms., BL APAC, Ethē 1570, fol. 164a margin; my translation differs somewhat from that of Begley and Desai, Taj Mahal: The Illumined Tomb, 83. I thank Sunil Sharma for his advice.
