

## **‘TRANSPARENT CONTRADICTIONS’: PEI’S PYRAMIDE AT THE LOUVRE**

Stephen L. Rustow

*Paper given at the Annual Meeting of the Society of Architectural Historians*

*Boston, 29 March, 1990*

---

The several projects known collectively as the ‘Grand Louvre’ represent the most significant alteration of the palace since the realization of the Visconti and Lefuel’s plans over 120 years ago. Indeed, in terms of total construction, the work presently underway dwarfs the ‘achèvement’ of the Louvre envisioned by Napoléon III for the Paris World’s Exposition of 1867 as the apotheosis of his capital and his empire.<sup>1</sup>

Briefly put, the Grand Louvre proposes a dramatic enlargement and a thorough reorganization of every part of the museum. Gallery space is to be doubled to a total of 70,000 square meters; space for reception and orientation of visitors will be increased nearly twelve-fold with the creation of many new facilities, an auditorium, several restaurants and a new museum store among them. Technical storage and support space is to be greatly expanded as well, all of it connected to the palace by a system of tunnels and served by new delivery docks. A major new laboratory for art restoration forms part of the complex.

Parallel projects, not directly tied to the museum but of considerable importance to the life of the Louvre include an underground car park and tour bus garage, a new amphitheater for the museum school, new library reserves and a commercial gallery, a controversial public/private joint venture designed in part to help subsidize a portion of the enormous investment: 5.4 billion francs or roughly 750 million dollars.

The reading of the palace interior will also change with the incorporation of several important archaeological finds and the opening of historic rooms once closed to the public. The façades of

---

<sup>1</sup> Louis Napoléon undertook the completion of the Louvre upon his succession to full power in 1852. His first architect, Louis Visconti, prepared the basic plans for the connection of the Tuileries palace to the Cour Carrée on the north with the creation of the Aile Richelieu (originally intended as offices for the burgeoning Second Empire bureaucracy and, from 1875 on, the Ministry of Finance). The basic construction was completed in four and a half years, an extraordinary achievement that required three thousand laborers organized in teams working day and night.

Visconti died in 1853 and was succeeded at the Louvre by Hector Lefuel who modified little of his predecessor’s basic plan but elaborated a decorative style for the treatment of the façades and the grand interior spaces quite unlike anything in Visconti’s work. Indeed, Lefuel may be said to have originated at the Louvre the style recognized as *Deuxième Empire* which was to reach its fullest incarnation in Charles Garnier’s Opera of 1861 – 1875. Lefuel’s alterations, notably of the Tuileries and the southern half of the wing along the quai as well as the Carrousel were completed, barely, for the Paris Exposition of 1867 – 1868.

The ‘achèvement’ lasted precisely three and a half years, the time remaining to the empire itself. On the 23<sup>rd</sup> May 1871 the Commune set fire to the Tuileries and the first intimations of the plan of the 20<sup>th</sup> century Louvre were apparent. The burnt shell of the building remained in place for another twelve years while the Assemblée debated its fate. Lefuel had prepared elaborate schemes for its rehabilitation (and considerable transformation) but had finally to content himself with the simple refinishing of the end pavilions, Flore and Marsan. He died two years before the senators finally voted to raze the ruins. It was Garnier, who had been designated to continue the studies for the palace upon Lefuel’s death, who supervised its demolition.

the entire palace will be cleaned and restored. Finally the grounds will be redesigned from the forecourt in front of the Colonnade to the gates of the Tuileries.

If all of this seemed terribly ambitious when first announced at a presidential news conference in 1981, none of it was terribly new. The Louvre had long been a national embarrassment, recognized as once of the most poorly organized and least adequately equipped of the world's major museums. Expansion under the courts had first been proposed in the fifties and the redesign of the entry and public services had already been the object of several studies in the sixties and seventies. The integration of the Aile Richelieu, the former Ministry of Finance, into the museum as gallery space had for years been an article of faith almost universally accepted.

What was new was the scope and ambition of the socialist cultural program. The Louvre was clearly intended as the brightest star in the pléiade of the 'grands projets' proposed in 1981, destined to become simply "the largest and most beautiful museum in the world".<sup>2</sup> The populist rhetoric in which these ambitions were couched could not veil their truly imperial scope. And that it was the Socialists who would transform the former symbol of monarchy and patrie, the very avatar of elitist, conservative values, was an irony lost on no one.

To conceive and set in motion this reinvention of a national and cultural symbol, an architect was sought whose previous work, especially in the domain of museum additions, struck a chord which managed to combine both elitist and populist overtones. At Syracuse, Ithaca, Boston and most especially Washington, I.M. Pei had created buildings which garnered the acclaim of museum trustees and the public alike, an architecture for the arts which seduced both the Mellons and the masses.<sup>3</sup> Known to be distrustful of competitions, Pei's previous work so impressed the French that the project was awarded directly by presidential proclamation, the only one of the 'grands projets' to benefit from such a 'droit du prince'.

The first phase of this enormous transformation, the work in and under the Cour Napoléon, was opened to the public in 1989. Although the Grand Louvre will not take final form until the end of the century it is not too soon to formulate some critical judgments on what will inevitably be regarded as the a synecdoche for the entire undertaking. Entry, symbol, functional heart of the new museum, the pyramid, with the hall it shelters and the courtyard it dominates, henceforth represents the Louvre as a whole. Clearly a project as complex and ambitious as the Grand Louvre presents many critical problems only a few of which can be dealt with here. I shall restrict my remarks to a consideration of the formal qualities of the first phase.

---

<sup>2</sup> The other 'grands projets' announced were the Opera de la Bastille (arch. C. Ott); the Grand Arche de la Défense (arch. J.-O. von Sprekelson); the Parc de la Villette (arch. B. Tschumi); the Institut du Monde Arabe (arch. J. Nouvel); the new Ministry of Finances (arch. P. Chemetof and B. Huidobro); and the Paris World's Fair of 1989, planned to celebrate the bicentennial of the Revolution. The latter was the silent star of the constellation, cancelled two and a half years later as the projected costs surpassed the entire budget for the six other projects combined.

The Musée Picasso (arch. R. Simounet); and the Musée d'Orsay (arch. ACT Architecture and G. Aulenti), both projects planned prior to Mitterrand's election, were continued and incorporated into the Socialist program.

<sup>3</sup> Everson Museum of Fine Arts, Syracuse, N.Y. 1968; Herbert F. Johnson Museum of Art, Ithaca, N.Y.; Museum of Fine Arts – West Wing, Boston, Massachusetts 1985; National Gallery of Art – East Wing, Washington, D.C. 1978. The work of I. M. Pei & Partners includes at least six other major buildings for museums or academic art facilities.

\*\*\*

The decision to place the entry to the transformed Louvre in the center of the cour Napoleon was taken by the museum for programmatic reasons. What had been the long 'L'-shaped progression of galleries would thus be radially reorganized into a compact scheme of three roughly equal wings around a primary circulation hub. But coupled with Pei's decision to leave the facades of the Cour Napoléon untouched and not to build connections at grade, this decision set the project a typological problem for which few precedents, classical or modern, exist, namely the creation of a major public hall underground and an entry sequence which moves the visitor down into the earth.

The project offers a complicated response to this fundamental problem, proposing by turns an apparently rigorous geometrical organization of the site and a series of spectacular visual effects. If the first response seems to address the intrinsic difficulties of the problem, the second seems designed rather to seduce the visitor into ignoring them.

Two distinct formal strategies are articulated in the design. The first strategy is based on the development of existing visual and compositional axes. The second is based on a reductionist exercise in planar geometry, the manipulation of rotated squares in plan. The axial strategy may be seen as derivative or contextual, that is largely determined by external site conditions. The second strategy is, on the contrary, autonomous, self-referential, even, at times, defiant of the setting. Complimentary and contradictory by turns, these two strategies are present at every level of the project, from the integration of the entire plan at the urban scale to the detailing of the stone walls and the concrete ceiling of the hall: throughout one finds the systematic interplay of axes and rotated squares.

Moreover, the two strategies are consistently made to serve an objective independent of each, a condition or quality which may best be termed transparency. Transparency is the recurring motif in the design, the qualitative metaphor which is used to counter the troubling ambiguities of the underground part and it provides an analytical concept with which to examine the project's strengths and weaknesses. With appropriate apologies to Colin Rowe, we may distinguish between the various ways in which transparency is used in the project, giving it a meaning by turns literal, functional, metaphorical and perhaps even moral.<sup>4</sup>

---

<sup>4</sup> C Rowe (with R. Slusky), "Transparency: Literal and Phenomenal", 1955, first published in *Perspecta*, 1963, in C. Rowe, *The Mathematics of the Ideal Villa and Other Essays*, 1976.

In Rowe's terms, Pei's pyramid uses transparency in an essentially literal way, making manifest the material condition of being pervious to light. Rowe is clear on the positive moral overtones which adhere to 'transparency' in critical discussion and its normative uses as a source of "meaning and misunderstanding".

Rowe builds his case for phenomenal transparency in part on definitions first proposed by G. Kepes in *Language of Vision* in which transparency is posited as one quality of a broader spatial order, that which admits interpenetration without an optical destruction. For Rowe, by Kepes' definition, "... the transparent ceases to that which is perfectly clear and becomes, instead, that which is clearly ambiguous".

Without meaning to annex the whole of Rowe's subtle and brilliant argument, it might be suggested that Pei's design partakes of this second, non-literal transparency in the relationship it establishes with the existing façades of Lefuel's Louvre. Simple, material transparency is used to create a historical superposition, the readings of which are clearly ambiguous and while this ambiguity does not function spatially, as in the buildings which Rowe examines, it functions metaphorically, and in ways that are only controlled to a limited extent by the architect's stated intentions. In Pei's project there is a deliberate confrontation of historical moments and consequently of our thinking about them and of what they

It is in the pyramid and the hall that the two strategies are most subtly combined. The major compositional axes of Lefuel's pavilion façades create a crossing in the center of the three-sided court, which is used to fix the position of the summit of the pyramid and the center of the new reception space nine meters below grade. The plan of this grand hall is a rotated square covering twice the area of the base of the pyramid. The midpoint of the diagonal walls of the hall are notched by the four cruciform columns which support the beams that carry the metal superstructure to which the glass is fixed.

\*\*\*

On the surface the rotated square of the subterranean plan is repeated in the positioning of the inner pools which surround the pyramid on three sides; the endpoints of this second square are marked by three smaller pyramids, themselves rotated squares relative to the main axis. These serve to reinforce the connection between the axes of the major pyramid and the existing pavilions thus, in Pei's phrase, 'locking' their larger relation in place, while generating a system of diagonal granite bands on the surface paving which spread out from the center to the four edges of the court.<sup>5</sup> The implication is thus clear that it is the pyramid and its basins that organize the court. A final rotation of the square, this time with no subterranean echo, positions the outer set of basins, their edges parallel to the palace facades, the small pyramids marking, in turn, their midpoints.

Thus the compositional device of rotated squares in plan is used to establish a correspondence between surface and underground levels of the project. Similarly, the axes on which the courtyard is composed are repeated below grade by the passages which connect the new hall to the vaulted basements of the museum. Indeed, the organization of the court may be seen as having been projected and formalized below grade. The small pyramids again serve to reinforce the connections between the two levels, between interior and exterior, offering the visitor an upward view to the center of Lefuel's pavilion at the precise moment that he discovers the entry to the crypt directly below it.

The treatment of the hall further develops the interplay between the contextual and autonomous formal strategies. Burgundy limestone of the same honey color as Lefuel's façades and a finished concrete tinted to match are used to evoke the tactile qualities of the palace above. The stone, although but a 2-inch veneer, is dressed to create the consistent appearance of mass and the coffers of the ceilings are contrived to suggest great depth in what is in fact a very shallow space. The net effect is a room seemingly carved from a singly block. The formal language with which these materials are worked continues the exercise of rotated squares which are to be found everywhere, at different scales, in plan and elevation – indeed the repeated motif stops just short at times of becoming a reflexive, space-filling device.

---

represent ideologically. The transparency of the pyramid comes to stand for a kind of guilelessness or honesty, its bright reflections scowling judgmentally at Lefuel's shadowy, opaque façades, implicitly closed, dishonest, hiding something. Standing on the 'belvedere', looking out on the 19<sup>th</sup> century palace, we have then the shining promise of latter-day heroic modernism becoming additionally the looking glass through which history is seen. Not for nothing was Pei Gropius' favorite pupil.

<sup>5</sup> For a discussion of the small pyramids see F. Chaslin, *Les Paris*, 138. (Where other sources are not given all citations are from conversations with the present author).

The vertical translation of the axial system from the surface to the space below is marked by the square central column which supports the entry platform or belvedere. The stark simplicity of this unmodulated shaft of concrete surprises at first by the contrast with the four cruciform columns which support the pyramid. The contrast is even sharper with the three elements of vertical circulation which actually bring the visitor from the surface to the hall: a bank of escalators, a spiral stair and an open, circular lift.

Each of these is developed as an independent structural and visual *tour-de-force*, almost sculptural in treatment. Indeed, they prove to be the most spectacular visual elements in the entire composition, willfully breaking the restraint exercised elsewhere to celebrate, and to dissimulate, the uneasy descent from surface to hall. All three elements are focused on the potent fifth column and turn the visitor towards it as he descends. The column is thus offered in some sense as the symbolic essence of the parti and the point of intersection of the two strategies: the pillar that marks the crossing of the axes and the original square from which all others are derived.

But spatially the column poses a serious problem as it obliterates the center by occupying it and obscures the reading of the axes just as it marks their crossing. Its plainly functional aspect also seems to compromise its potency and its proportions are rather clumsy. It should be noted that the size of the shaft was increased very late in the design process for technical reasons and, more importantly, that it was always intended that the column be capped with a major sculpture from the museum's collection (Pei's choice, successfully opposed by the curatorial staff, was the Nike Samothrace and several other candidates were seriously considered.) While this might have made for more masterful showmanship, the change from column to pedestal compromises the meaning of the design and risks turning the pyramid into the world's largest walk-in display case.<sup>6</sup>

The pyramid may be seen as the formal element which reconciles the paired design strategies of axial deduction and generation of rotated squares just as its transparency may be seen as the quality which figuratively and literally establishes the relationship between the surface and underground levels of the project. The pyramid is both the lens that focuses the existing geometry of the court and the prism which translates that geometry into the subterranean space.

But the question of the symbolic content of the pyramidal form must also be posed and with it the question of sources or references. Pei has insisted on the abstract, geometrical nature of the pyramid and on its realization in modern materials as asserting its independence of specific precedents. To critics who cite Boulée or Brogniart, or a generalized 19<sup>th</sup> c. French passion for

---

<sup>6</sup> The automatic transformation of any object placed on the pedestal into readymade symbol of the Louvre explains the long hesitation in selecting the particular sculpture to be so 'honored'.

Among the other options seriously considered were the Diane d'Anet, a compromise choice which never received sufficient support to carry the day; the Venus de Milo, manifestly undersized; the original maquette of the Genie de la Bastille, eliminated as redundant and perhaps iconically a bit suspect; the Chapiteau d'Apadana from the temple of Darius at Suze, a very strong choice formally and in terms of its scale but ultimately considered by the museum's administration as unrepresentative of the 'grand tradition' of the collections of the Louvre; Rodin's *Penseur*, the personal choice of president Mitterrand who was not to be dissuaded before a secret, full-scale, in-situ mock-up suggested conclusively that the view from the hall nine meters below might be disconcerting; and a projected cast of an unfinished late work by Brancusi, the 'Coq', which had patriotic appeal and might well have been executed had the director of a well-known American museum not remarked in a chance conversation with a Louvre curator that, of course, his museum would never dream of buying an ersatz Brancusi. Finally several contemporary creations were proposed including two by Jean Tinguely.

Egyptian motifs, or again the two pyramid monuments, to Marat, and a century later to Gambetta, actually erected in the court, Pei has always countered with the universality of the form.<sup>7</sup> So too, the nearly precise correspondence between the glass pyramid's proportions to those of Cheops' is explained as coincidence rather than quote, the result of a deductive formal process which takes as its starting point the Cour Napoléon site, as we have seen.

\*\*\*

In rejecting the specificity of the references, Pei also rejects the specificity of their associations. The material transformation is seen as performing a symbolic transformation as well: the change from stone to glass, from opacity to transparency, is seen as purging the form of its historic and cultural connotations.

The source which Pei has acknowledged is the garden design of Le Nôtre, citing especially his admiration for Vaux.<sup>8</sup> And at first glance at least the parallels seem strong for Le Nôtre's plans can well be described in terms of the same strategies: axial composition framed by elaborate permutations of simple geometries. Visual effect also reinforces the comparison, especially in Pei's use of broad, flat pools of water to capture reflected light; indeed the glass sides of the pyramids seem at times to dissolve in the light and thus to become virtual pools. And finally the reference seems apt: where better to find an echo of Le Nôtre than on the canted end of the famous 'désaxement' for which his garden provided the unwitting impetus?<sup>9</sup>

But the analogy cannot be sustained and it is the pyramid that breaks it. For if the essence of Le Nôtre's axial system is an uninterrupted extension to infinity and the order that such a view imposes on nature, the pyramid subverts Le Nôtre's scheme by making itself the focus and terminus of all axes. For Le Nôtre's space Pei substitutes an object, for infinite expansion, containment. The only way to imagine otherwise is to mistake the pyramid's transparency for invisibility.

---

<sup>7</sup> See, for example, B. Suner, *Ieoh Moing Pei*, Paris, 1988, 115.

<sup>8</sup> Pei in interview with P. Jodidio, "Ceci est le Grand Louvre", *Connaissance des Arts*, no. 391, 1984 and Suner, *Pei*, 116.

<sup>9</sup> The response of Pei's design to the formal problem posed by the 'desaxement' can only be briefly summarized here. The desaxement or misalignment of the two axes is most visible in the progression of set viewpoints from the West. Pei introduces two formal devices to mediate the 7 degree rotation. The first is the large, planted rond point which moves the observer off the Champs Elysées axis once he passes the Arc du Carrousel of Percier and Fontaine, to discover in a gradual curving movement the shifted alignments of the Cour Napoléon.

The other device is the lead cast of Bernini's equestrian statue of Louis XIV, which has been positioned as a terminus to the 'axe triomphale' in the front portion of the Cour Napoléon. Here it works as a welcome contrapuntal element in the otherwise rigidly axial composition and there is no question that it materializes the 'aftershock' of LeNôtre's axis read from west to east far more effectively than did the clump of chestnuts planted by Lefuel a hundred years earlier to obscure it. One may also appreciate the symbolic justice of this dark facsimile landing a stone's throw from where Bernini had intended to put the original marble that Louis so loathed. But one must ask whether the cast has the formal or the moral weight to hold its own against the axis. An attentive observer may conclude that with the demolition of the Tuileries palace the possibility of a formal urban solution to the desaxement was irretrievably lost and that, indeed, it is precisely this unresolved/unresolvable quality that ultimately marks the true significance of the misalignment to our century.

We arrive finally at the question of the pyramid itself, its literal and symbolic character and the role that this plays in the design as a whole. There can be no question of its importance. De Maupassant ate at the Eiffel Tower because, he said, it was the only place in Paris where he didn't have to see it.<sup>10</sup> In the smaller universe of the Louvre the pyramid is equally omnipresent – the only way to stop seeing it is to go inside and then, of course, we are constrained to look at the world through it.

With the pyramid structure Pei has combined technical prowess and an exacting selection of materials and given them heroic and distinctly modernist overtones. The remarkable tensile-compressive net is open and explicit, the size of all of the members has been reduced to the absolute extreme; the connections are strongly articulated with an expression derived of technical necessity; the whole is proudly functional, shorn of the extraneous or simply ornamental, indeed structure and ornament have been fused. Here one can sense an attempt to give transparency a kind of moral, or at least moralizing weight. Pei has characterized Lefuel's architecture as the last gasp of a dying tradition and transparency becomes the stick with which to beat it.<sup>11</sup> (But it is perhaps not pushing too far to see here as well a polemical response to a more recent historicizing of the post-modern variety, in 1984, when the project was first designed, still a horse to be flogged, however wobbly on its feet.)

What Pei proposes then is an architecture seemingly made from the minimum: from the diameter and density of the steel rods and cables which comprise the structure to the color and thickness of the glass, all has been treated so as to dissolve the materiality of the constituent parts of the pyramid and to create a structure which is meant – simultaneously – to astonish and to disappear.

Pei almost pulls off just such a disappearing act. It is tempting to imagine the pyramid hermetically sealed, surrounded on all four sides by reflecting pools, enclosing a great void without belvedere, entry, escalators, stairs and lifts, without a central column awaiting a sculpture – tempting to imagine it, in other words, truly empty, useless, unencumbered by all that makes it a building. Such an object, liberated of the functional obligations which entry imposes might well have better served the Grand Louvre in symbolic terms.<sup>12</sup> For if there is one part of the design which most thoroughly subverts its formal and symbolic intentions, it is the entry itself.

---

<sup>10</sup> The story is related in Roland Barthes's essay on the Eiffel Tower. R. Barthes, *The Eiffel Tower and Other Mythologies*, N.Y. 1979, (American edition).

<sup>11</sup> Pei interview, Jodidio, "Grand Louvre" 60.

<sup>12</sup> Such a 'useless' pyramid might, in time, come to fulfill the conditions Barthes stipulates as fundamental to the mythic quality of the Eiffel Tower. For Barthes it is precisely the uselessness of the Tower that is key to, "its prodigious propensity to meaning", an inutility vaguely scandalous, at once, "precious and inadmissible". Like the Tower, the pyramid is, "... an object when we look at it, ... a lookout in its turn when we visit it. ... The Tower (and this is one of its mythic powers) transgresses this separation, this habitual divorce of seeing and being seen; it achieves a sovereign circulation between the two functions; it is a complete object which has, if one may say so, both sexes of sight.: Barthes, *Eiffel Tower*, 3 – 5.

The analogy must not be pushed too far, if only because the Tower dominates all of Paris and the pyramid is hidden from the City by the very buildings which it dominates from within. And, in accepting the function of the entry Pei has missed the chance to realize the "zero degree of monument" which Barthes analyzes. Nevertheless, the potential of a sealed-up pyramid assuming the "glamorous" role of a "pure signifier" and of its emptiness becoming an invitation to dream provides perhaps an idealized model which resonates over the much humbler ambitions of the building as actually built.

Pei has conceded that the entry as finally treated is simply “the least bad of several bad alternatives”, a solution chosen for its discretion, and that finally, the pyramid is a form which “does not want to be entered”.<sup>13</sup> Both statements are remarkable given that the initial justification for the pyramid was precisely that it be the new entry to the museum. Several other possibilities were considered during the development of the design including a pavilion added in front of the pyramid and the creation of a long, gradual ramp in the forecourt which would have brought the visitor in directly at the lower level, obviating the need for the belvedere and completing the symmetry of the pyramid. The first alternative was rejected as sacrificing the purity of the design, encumbering the pyramid with an extraneous form. The second was rejected because displacing the level of entry would inevitably create a vertical plane, a virtual façade which would risk a reading of the pyramid as a simple roof for a building that had been submerged under ground. (Curiously, a vestige of this façade is to be found inside in the glass handrail that protects the visitor from no precipice but merely keeps him away from the edge of the structure.)

As treated the entry is a compromise which contradicts the formal language of the pyramid itself. The supposed discretion of the simple cut in the glass in fact severely distorts the structural and visual integrity of the cables and rods that support it. A poorly proportioned space-frame segment was required to counteract the disequilibrium created by the cut. An oversized set of mullions, a ‘supergrid’, on the glass surface seems but a weak attempt to attach the entry to a larger visual order, hardly convincing. But the most disconcerting aspect in the treatment of the entry is that we pass through the shimmering wall of glass at all, and that the illusion of immateriality so carefully contrived for the pyramid seems to be violated by our passage and succumbs to the very real exigencies of condensation gutters and revolving doors.

\*\*\*

To point to the contradictions of the pyramid is in no sense to deny it its achievements and to suggest that ultimately it is a design that seduces more than convinces is to take nothing away from its very considerable charms. To suggest that its apparent rigor is more style than substance is in fact to propose that it is a more complex building with greater nuance than it would first have us believe. And if finally the pyramid with its hall and courtyard succeeds in creating an architecture which transcends mere momentary political ambition, it will be at least in part because it makes its contradictions transparent.

---

<sup>13</sup> Chaslin, *Les Paris*, 138 – 139.