

# The Well Tempered drawings of a Reflective Architect

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Recognized for his teaching and research in the areas of architectural representation and imagination, theory, and design, Frascari has taught and lectured at top architecture institutions, including the University of Barcelona, Harvard University, Rensselaer Polytechnic Institute, Pratt Institute, and the Istituto Universitario di Architettura di Venezia. Before coming to Tech, he was chair of the Ph.D. program in architecture at the University of Pennsylvania.

Frascari's early professional experience began under the tutelage of Carlo Scarpa in the early 1960s. As a professional architect, Frascari's work spans the globe, from his hometown of Mantua, Italy, to Paris, Philadelphia, and Atlanta.

His projects have won several awards and honors. Frascari is also the author of "The Tell-Tale Detail," a seminal essay published in 1981 which continues to stimulate discussion as one of the most influential pieces of its kind in the past two decades. In it, Frascari invites us to think of architecture in terms of its smallest detail to develop an understanding of the whole. He also expresses the inextricable linkage between drawing and building.



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In the real project of architecture, drawings and buildings exemplify and suggest, rather than determine or impose, integrating the art of building well with the art of constructing well. Reflective architects should always concern themselves with representations. The appropriate use of representations is indispensable both to the disciplinary relationship between theory and practice, and to that between architects and builders. Representing the client, the architect cannot be the builder, but the architect rules construction with the use of well-constructed graphic representations, which mediate among the three powers governing every design: the client, the builder and the building design concept. A building can be designed only through a continuous creative, intellectual mediation between imagination and imagining. Using this bipolar condition, architects do not make a sensory phenomenon out of an idea, but on the contrary, they shape the sensory phenomenon into an idea using well-tempered drawings. Both these mediations are performed in well-tempered drawings.

Architects with their graphic dreams do not open the doors for the spirit to enter everyday life on the contrary; they raise the everyday to the imaginal world, releasing the imaginal content of physical reality. The union of dream and solid stuff in tectonic events raises to be an expression of pleasure, a subjective presence rather than an objective procedure to which both the user and the architect must be subjected and the details and the fabricated devices become playful demonstration of cosmologically constructed events in an edifice. Rejecting the pseudo-completeness and cacothecnic of many contemporary drawing techniques that cannot perform the fundamental act of establishing the indispensable cosmological relationship between material order and cultural order, well-tempered drawings are the necessary masterpieces of these inaugurations.

The most difficult assignment for architects is to draw by virtuous reflections a construction that is to extract from the empty surface of paper the inauguration of a building. This demanding task is based on the assembling in a visible drawing invisible configurations concretizing in a set of lines, marks and strokes, the potentiality of a construction, which cannot not be fully expressed but it is present in our thinking. The sapience of architectural beginnings, the core of architects' professional imagination is expressed in conjuring technometric tracings, i.e., well-tempered drawings that elaborate the relationships between the mundane, the sacred, the dream and the solid stuff in a transhistorical condition.



display of practical and poetic events, results from a relentless attentiveness to the relationship between the sublime and the mundane.

An examination of the work of an Italian architect, Mario Ridolfi (1904-1984) makes easier to advance a better comprehension of the significance of well-tempered drawing in the reciprocal relationship between architectural theory and construction. An expression of the negation of cacothecnic, the technometric magnificence of Ridolfi's drawings, a

A Roman architect, Ridolfi was labeled by Manfredo Tafuri as one of the two disquieting muses of Italian architecture. Carlo Scarpa, Ridolfi's dearest friend, was the other (Tafuri 1975, pp. LXIII-LXIV, pp. 4-34). Ridolfi worked mostly alone and in few joint ventures. Toward the middle of his career he formed a partnership with Wolfgang Frankl.<sup>1</sup> Ridolfi's architectural firm worked mostly in Rome and in Terni (Ridolfi's hometown). A charismatic figure for many of his students, Ridolfi taught at the University of Rome and Pescara.

Perceptive to the implications of the power of tectonic elements, Ridolfi conceived architecture interacting between local and critical realities. He handled magisterially the elegant, the rough, the concrete, the abstract, and the dynamic factors and characters of building elements using evocative construction drawings. Ridolfi's freehand drawings are representations of virtuous and cosmological processes of edification. They stand for both themselves and their reason by portraying the material object, its instrumental, final, formal and material causes fused in one technographic event: a construction and its possible interpretations. These acts of graphic conjuring recount possible built worlds. They are divination on paper. Ridolfi used layers of heavy tracing paper (*carta da lucido*) and a pencil and a pen. He drew on both sides of the paper and the drawings were completed and edited with a skillful use of scissors and adhesive transparent tape. Ridolfi's use of freehand drawing ranged from first sketches to refined perspectival presentation, and from dreamy site planning to precise construction documents. The style is vibrant and has the magic-realistic qualities of the astonishing background delineated by George Herriman for the comic strip *Krazy Kat*.<sup>2</sup> The intense and vibrating pen etching imparts to the drawings an appearance that is at the same time hyper-realistic and magic; the dream and the solid stuff integrates within the same substance of expression.



Analogical expressions of the processes of construction, Ridolfi's drawings are visual descriptions of invisible processes. They are conceived not to be read as prescriptions, but as visual suggestions and evocations that carry out a multi-layered display of tectonic intents. They are a building on paper, a lucid constructive dream on *carta da lucido* to which a building on site will later concur.

*Consider my work almost as a **building on paper** and all at full scale, unconcerned with the large quantity of paper necessary. Because only in this manner one can be ... drawing ... as it is my habit, which pushes me to ascertain and to consider every aspect of building, and to give oneself the joy of working and to the builders, the indispensable tool for its execution (Ridolfi 1977, p. 2).*

Ridolfi's freehand drawings solve one of the most difficult tasks of design, since they give the measure of the building by orchestrating joints, reveals, courses, frames, slabs, girders, I-beams, joists, rafters, cornices, moldings, friezes, beams, duct, doors, skylights, glass, windowpanes, doorjambs, fascias, bricks, floorboards, baseboards, parterres, domes, baseboards, canopies, ceilings, nails and wires — all in a well integrated assemblage that maintains human imaginativeness.

During his very active professional life, Ridolfi undertook the compilation of a thesaurus of architecture, an encyclopedia of tectonic images. An illustrative effort that started back in 1940 as a collection of building details, it was finally published as the *Manuale dell'Architetto* (Architect's Manual), in 1946. Ridolfi was the chief editor and he personally drew over 70 of its plates. The Manual was a gift of USIS [United States Information Service] to the reconstruction of Italy. In its original political intention, the Manual was supposed to be an Italian version of Ramsey and Sleeper's *Architectural Graphic Standards*, a way of putting Italian architecture—facing the problem of post-war reconstruction of the architectural patrimony of the country—on track with industrial construction procedures.<sup>3</sup> Nonetheless, Ridolfi converted the *Manuale dell'Architetto* into a unique contribution by rejecting industrial standards in favor of tectonic norms.

A non-empirical work, Ridolfi's manual is a map of the imaginal landscape of Italian tectonics, an atlas of a wunderkammer of architecture. A superficial reading will position the *Manuale dell'Architetto* among the visual products of after-the-war Italian Neorealism, ranging — in film production — from the artistic highs of Rosellini's *Roma Città Aperta*, to the lows of *Pane Amore e Fantasia*. However, the *Manuale dell'Architetto* embodies a subtle approach that characterizes another famous movie of the period: the mundus imaginalis of De Sica's *Miracolo a Milano*. The manual's plates are images of an architectural lexicon based on construction details transparent in their transhistoricity. The plates are a collation of details not unlike the ones gathered within the memory of an artisan, a scrapbook of overlapping and intermixing images demonstrating how a collage can pass beyond the threshold of a rational understanding to become a set of transparent visual cognitive notations aiming to intellectual reconstruction.

*Pupils should learn to represent objects in such a way that they can be reconstructed ...  
I tell them that they should see the opaque objects as if they are transparent. They  
should learn to see also beyond them to be able to draw them in a constructive manner.*  
[Ridolfi in Polo & Casadei, 1972, pp.4-7)

For Ridolfi, it is clear that it is one thing to apprehend directly an image as an image, and another thing to shape ideas regarding the nature of images in general cognitive representations of constructive processes. A tense constructive reality, a tectonic pathos is at the core of the sequence of well temperate designs branded the "Cycle of the Marmore," a sequence of designs indicative of the power of what Kenneth Frampton has called Critical Regionalism. Ridolfi, who later become blind and tragically took his own life, elaborated these designs during an untroubled period of his intense professional life.

Observed during the cycles of times, through the reoccurring of seasons and the occasions of the ever-changing everyday life in the various instants of distract inhabiting, these edifices offers glimpses of the marvelous reality that is attained in the transcendent moments of beatific life. The details, the building elements and the constructional devices turn into vigorous and playful demonstration of arcane and inaugural events, which had been both consciously and unconsciously embodied in an edifice by the architect. The realization of these constructions is based on a set of concerns with artisanship or workmanship and with the quality and quantities of the physical and mental materials employed. Hinged between decoration and tectonic expression, between local and traditional system of construction and modern manufacturing, between reality and dream, in these buildings and drawings takes place what Massimo Bontempelli asks in his manifest for magic realism:

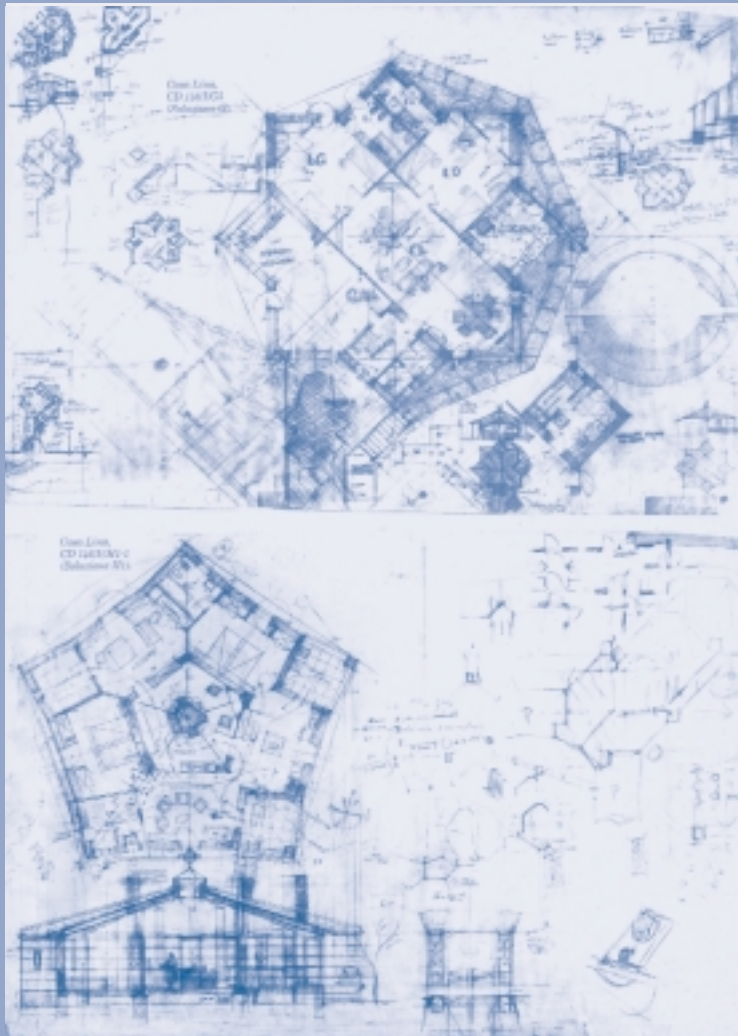
*I would like to see the most normal and everyday life as an adventurous miracle as a  
constant risk.*

For Ridolfi, the adventurous miracle takes places in the design and inhabiting of Casa Lina, the house he designed for himself. The design of Casa Lina is the inaugural masterpiece of the Cycle.<sup>4</sup> With its 125

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freehand drawings, drafted 1:200 to 1:1 scale, this design is the foundational technometric setting where Ridolfi refines his powerful method of technographic descriptions for cosmological design. He has defined this construction as his "design paradigm."

Casa Lina and all the buildings of the Marmore Cycle are highly developed elaborations of the concept of central plan. Renaissance architects codified and advanced central plan buildings as the cleverest expression for mirroring the sublime encompassed by the influential correlation existing between cosmos and humanity. A cosmographic depiction of universe, these edifying built representations were intended to



make possible a spatial understanding of things, concepts, conditions, processes or events in the human world, within a full understanding of our position in the universe. These magnificent Renaissance edifices, mostly churches or palaces, draw us through their emblematic representational nature into the cosmology of the sacred, where every bound can be outdone until even self-consciousness is obliterated. However, Ridolfi, with a particular use of the central plan which he developed especially for a single family dwelling, moves us into the sphere of the mundane, the territory of material necessity, where every task has to be completed with skill, and small mistakes can have far-reaching consequences for the *vita beata* of its inhabitants.

In his central plan designs, Ridolfi weaves the mundane of sleeping, eating, working and resting. The everyday is not a banal absence of diversity or pleasure, as it is assumed to be in Modernist depictions of bureaucratic order;

Ridolfi's mundane has its own aesthetic perfection tied to its norms of aptness which have been developed by imbricating sublime and ordinary into details. Living this dialectic between inside and outside, between virtuous and profane, the inhabitants of these edifices take in all of that but also experience powerful humor changes, visions of affirmation, acts of magnificence in the minute, and moments of collective consummation.

Designed at the beginning of the sixties, Casa Lina, is an extensive design reflection on the use of a central plan for the everyday living, a theatre for the quotidian taking place in the human comedy of the *vita beata*. The plan is generated using cosmological tactics rather than functional strategies. In an early version of the design, the plan is generated by two interlocking squares, an octogram, which later on Ridolfi will use in the design of other houses of the Cycle. The octogram is a traditional figure of

cosmological representation; Vitruvius uses Athens' octagonal Tower of Winds to present in an imaginal manner his cosmological theory for an ideal city.<sup>5</sup> Many baptisteries and churches were designed using this geometry, and an octogram is the cosmological figure used by Filarete in his planning the city of Sforzinda. In subsequent elaborations of the design, Ridolfi changed the rotational geometry of the double square into a pentagonal plan with a spatial core enclosed by an annular enfilade of slightly trapezoidal rooms and quadrangular service areas. The functional use of the rooms and services results from tempered and prudent considerations of their orientation both physically and culturally.

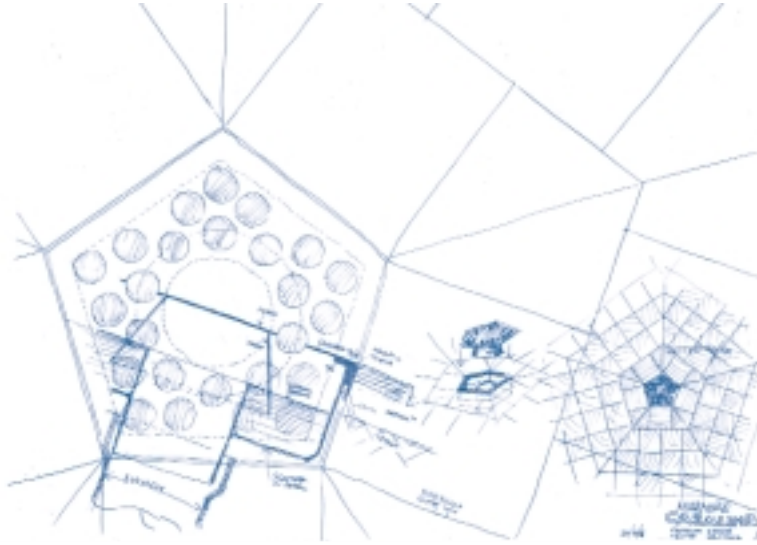
In this pentagonal version of the design, the key detail studied by Ridolfi is the internal door and its hinges, especially when located on the radial wall separating the whirling enfilade of rooms. This detail, trying to relate the geometry of orthogonal rotation of doors with the slanted geometry of a pentagonal layout, demonstrates the transhistorical permanence of the products of the art of living well and the art of building well in tectonic condensation. The poignancy of details and building constructs as an effective edifying presence results from what Aby Warburg has identified as the "pathos formula" (Pathosformel). Warburg sees the work of art as "stored energy" (Energie-Konserve), containing in itself the powers of its own regeneration which transcends the boundaries of time and space." In architecture through tectonic pathos, the energy embodied in artifacts is reactivated beyond the threshold of rational understanding.

Through a tectonic-pathos, formula of construction, ancient insight, modern conception and the classical perception overlap and intermix for the architectural beholders at a later period in a different cultural setting. In Ridolfi's edifice, the detailing of the doors makes them *lanuae*; *lanua* is the Latin word for door and is connected with *Ianus* (Janus), the Roman god of doors, gateways, and beginnings, who the Romans believed ensured also good endings.<sup>6</sup> The pre-Classical Romans had a *frugi religio*, or in modern terms, an infra-ordinary-fructuous religion, and they thought their gods resided in everything. These unpretentious, familiar *numina*<sup>7</sup> filled the Roman world and as their adjective-names confirm — *Flora* (Flowery), *Pomona* (Gardenlike), *Vaticanus* (cowlike), *Argentarius* (silvery), etc. — presided over each subsection of Roman life and buildings. The ordinary individual situated the whole of religion in the doing, making, connecting and setting of the infraordinary within extraordinary things (*re- + ligare = thing-tying/selecting*) in his or her construction of a cosmological and imaginal world.

Janus' main temple in the Forum had doors facing east and west for the beginning and ending of the day; his other temple in Rome, *Ianus Quadrifrons* (Janus four faced), looked toward the four cardinal directions, a cosmological pivot placed on earth and water. Romans sought Janus' help mostly in domestic undertakings and that was why the opening of the doors of his temples marked the periods of wars, the most fearful times for domestic life. *Cardea*, the goddess in charge of hinges,<sup>8</sup> was Janus' wife and presided over domestic health—especially chest affections. In the Roman city layout, the North-South main axis street is the *Cardus Maximus*, a cardinal pivot line cast during an equinox and used as main reference for tracing the city. Named after *Cardea*, the *Cardus Maximus* was the hinge of the city, the solar plexus of its chest. Both Janus, and *Cardea*, unassuming custodians of a cyclical universe, reveal the cosmological insight and the tectonic pathos hidden by Ridolfi in *Casa Lina*. After the pentagonal designs, an alternative sequence of annular designs, based on a cosmography of circular rooms arranged in cycles and epicycles, furthermore confirms Ridolfi's search for a logic of coincidence between a tectonic religio and the hidden sense that building elements acquire through their making.

In the final stage of the design of *Casa Lina*, Ridolfi's tectonic and edifying insight is carried on by a restatement of the pentagonal cosmography. In this final form, the layout becomes an affirmation of multiplicity in a unity. Using two interlocking pentagons, Ridolfi generates a decagonal layout for the perimeter and the interweaving of the rooms. However, the central space stays pentagonal and houses the *omphalos*.<sup>9</sup> This tectonic umbilical axis is revealed in a sequence of mundane details. First, at the bottom of the house, it is marked by the metal pentagonal cover of the central drain that with its 25 holes and five sides becomes the geometric standard for the radial pattern of the terracotta tiles paving the basement. On the main floor, the marking of the *omphalos* is accomplished by a wooden five-pointed star held in place by

a metal button and as in the case of the basement drain plate, the configuration of the star becomes the standard for the layout pattern of the hardwood floor. On the rooftop of the house, centered on the plumb line of the axis mundi marking the omphalos, there is a pentagonal louver topped with a weathervane--a classical black metal rooster. This small pentagonal ventilation and illumination tower sets the standard for the terra cotta tile covered roof. A special terra cotta ventilation tile devised by Ridolfi is used to make the



louvered openings. Composed with two interlocking square pipes, this hollow tile is a transformation of a traditional building component in an elegant tectonic element. Ridolfi's ventilation tile results from an elaboration of the shape of a traditional extruded terra cotta tile generally used for erecting ventilation screens in most of the Central-Italian vernacular barns and stables. Ridolfi worked out a slanted cut of the clay-extruded tile. This cut, a penne-pasta-like cut, negates the orthogonality between outside planes and

inside surfaces by interweaving transcendent and commonplace. This tectonic detail does not allow rainwater to stagnate inside it, and at the same time, modulates the substance of light cast within the pentagonal central place.<sup>10</sup>

The use of this tile reveals how the successful merging of the sublime and the mundane is a deep characteristic of architecture. The conceiving of this detail shows how the inter-penetration of these two attitudes results from a canny tactical intelligence gained through technical skill, vigilance, indirection, flair, and other attributes suited to competitive advantage when contending amidst natural or social manifestations of life. The lure of the sublime and the call of the mundane worlds are both opposites and complements within the intelligence that guides architecture, a tectonic expression that registers how humanity is dwelling in a world of economy and awe, technique and terror, physics and metaphysics.

In Casa Lina, the interaction among the interlocking shapes reveals that the dominant edification is produced by an architectural transformation of a curiosity for light, a quasi-material power. For instance, Scholasticism argues that light is an influential substance that emanates from even the humblest material: glass is made from sand and ashes, fire comes from coal and wood and a polished stone shines. In Ridolfi's designs, light is materially embodied spirit; the substance of light supplies divinity to all details. The substance of light as a distillation of pathos triggers the internal power of architectural aspirations both in the drawings and in the built artifact. This happens on the paper in the contrast of the etching rendering the surfaces with the lines marking the canons and the instructions for construction. In the building the stone sponga—a local material—and the baked clay of the bricks with their natural porous filigrees allow the same powerful play of dark and light evoked by the chiaroscuro of the pencil and pen traits, revealing an internal light source, an arcane lume materiale.

Ridolfi's technographies result from architectural curiosity, a design procedure based on a divestment of habits of beliefs which will consent to consider future tectonic events with insightful wonder. Architectural curiosity is a speculative, or better yet, a reflective procedure that takes care of the constructed world. The reflective taking care of construction is always based on the idea of scrupolositas, a concern for minutiae. This concern for details is at the basis of one of the most powerful tool left to architects for ameliorating

their own tectonic imagination. The attention to minutiae, in relationship to a cosmological framework, develops a visual clarity that also causes a peculiar lulling of the mind. The aim is to lead the distracted inhabitants of architecture to their limit of visual clarity. The consequence is that edifices move us as we enthused them. Architecture is a curious discipline, which deals with the metamorphosis of the constructed environment by producing significant images, which unifies the natures of the dwellers with that of dwelling.

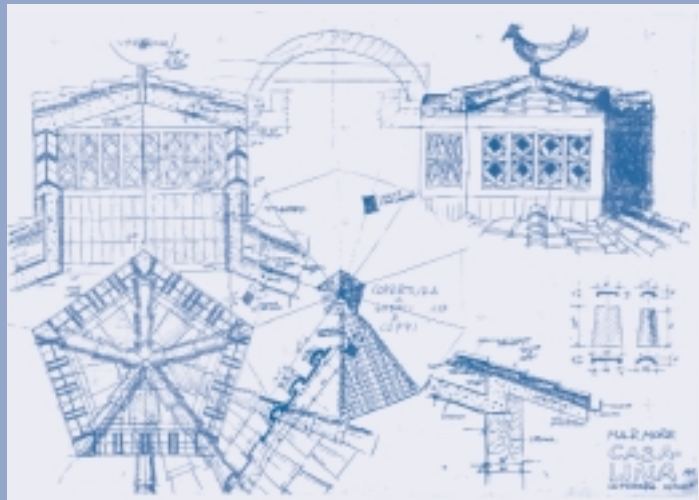
Transmuting thoughtfulness is the main resource the non-linear path demarking the complexity of growth and change embodied in Ridolfi's vocation to construction as an act of powerful tectonic imagination. This powerful act not only creates thaumaturgic and beatific private buildings, but also it transmutes the vision for a vita beata from the realm of private to the negotiation of the public realm, from the infraordinary of dwelling to the extraordinary of monuments. In a true architectural opus, this vision, which can be attained only for very brief moments, when listening to rain and wind blowing against a brick wall or when contemplating its shadow under the slanted sun of a late summer sunset, becomes the necessary canon for any other work.

## Conclusions

Well-tempered drawing procedures cannot be abstractly constructed or described; they can be exclusively exemplified through moral tropes, geometric ordering and constructive analogies embodied in buildings. We can master these elegant design procedures only through what Pascal has called "esprit de finesse et esprit de geometrie." Fostered by fluid mental attitudes, these procedures dwell between the classical dichotomies proposed by philosophy and the mystifying but powerful structure of thinking by images. Well-tempered drawings are the only locus where this condition between rationality and non-rationality results in a cosmography that sustains the making of places. They are instruments capable of integrating both the solid stuff of the space encircling us with the dream stuff, which takes shape in our mind.

In architectural design, there are no perceivable differences between sacred and mundane actions, as we sensible moderns believe to be. Every action, no matter how mundane — plowing, sowing, reaping, brewing, building ships, waging wars, playing games, system of weights and measures, building a brick wall, laying a floor, dancing on it, opening a door—

has to be viewed as an "earthly" symbol for a specific "divine" activity. No aspect of this knowledge can be divorced from any other aspect, which makes architectural design a difficult task. Architectural conjuring is not just manual skill, but manifestation of a design faculty acquired through appropriate techniques of prudent visualization and temperate exercises of architectural storytelling. Only through this thought-provoking procedure, drawings become callimetric technographies which are "just the weaving of thoughts into images," (Bloom, 1996:113) wonderful projections of buildings, tempered and prudent analogical places which make possible the construction of a vita beata in edifying edifices.





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## FOOTNOTES

<sup>1</sup> Son of the distinguished Architectural Historian Paul Frankl, Wolfgang Frankl, is the young partner of the firm. Frankl joined officially the firm of Ridolfi in 1948—although his collaboration with Ridolfi began before the II World War. Frankl contributed to the firm's tectonic view of the architectural project with his German tradition of *Werkgerechtheit*, the aesthetic of a proper building art.

<sup>2</sup> George Herriman (1880-1944) is considered among the top cartoonist ever printed in America's newspapers. The favorite cartoonist of William Randolph Hearst, Herriman elaborated a well-tempered drawing technique that remains an influence on any freehand draftsman internationally. Herriman created "Krazy Kat" in 1910.

<sup>3</sup> Presently, the Architectural Graphic Standards is a platonic book—the Sweet Catalogue being its Aristotelian counterpart—providing only standards and carefully avoiding any concern for the relationship existing between cosmological and tectonic norms. This is true only of the post-war editions of the Graphic standards. The first edition of this manual was carefully grounded in a cosmological vision. Its first plate—paid by the Bricklayers Association—was a cosmological diagram of site location beautifully decorated with twelve Art Deco side vignettes of the Zodiac signs.

<sup>4</sup> Casa Lina initiated an intriguing sequence of construction, mostly of single-family houses, designed by Ridolfi during the last period of his life.

<sup>5</sup> To fully understand Vitruvius' cosmological theory, his account of the Hellenistic Tower of Winds has to be read together with the explanation of the layout of theatres.

<sup>6</sup> Janus, the door, when personified, was represented with two faces; originally, one face was bearded while the other was not (probably a symbol of the sun and the moon). Later both faces were bearded. In his right hand, he holds a key. The double-faced head appears on many Roman coins, and around the 2nd century BC even with four faces. He gives the name to the month of January (the eleventh and last month of the Roman Calendar).

<sup>7</sup> At the beginning of Rome, the divinities were mysterious *numenae*, they did not have a persona but they were not less influential. The idea of anthropomorphized gods came later, with the establishing in Rome of the Greek gods, who had human appearances.

<sup>8</sup> Ovid says of Cardea, apparently quoting a religious formula: "Her power is to open what is shut; to shut what is open." To continue with a Warburg-like tracing of images: *Cardo*, the door-hinge, is etymologically connected with the word *cerdo*, craftsman. In Irish mythology, the god of artisans specialized in hinges, locks and rivets was called Credne, the inventor smith who claimed the goddess Cerdo or Cardea as his patroness.

<sup>9</sup> Apollo's Temple in Delphi contained a famous rounded stone called an *omphalos*, which was believed to be the center of the world. *Omphalos* is the Greek word for navel, or umbilical button.

<sup>10</sup> This tile was conceived by Ridolfi and used for the first time in making a small apartment building in Via Vetuloni in Rome.