Paper, Rock, Scissors: analog and digital pictures in architectural design

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In order to focus on pictures in architectural design in general, as well as the recent turn in architecture from analog images to digital ones in particular, I want to begin by briefly considering a building that is before my eyes every day. I live in a modernist apartment in Vienna with an all-glass façade oriented towards the Uniqa Tower (2004) by Heinz Neumann. The tower is the result of a competition, in fact the middle one of three competitions for buildings along the Danube canal.

The first one, back in 1994, was won by Hans Hollein with a design that includes a couple of his signature postmodern moves, including a gazebo with a roof that looks like a flying carpet, and St. Mark's lion set on a very high pedestal at the entrance. The latter icon commemorates the original client, the Generali Group, headquartered in Trieste, that chose the lion as its symbol as far back as 1848. Unfortunately, the project exceeded the budget to the extent that Generali was forced to rent out the finished building to the News-Verlag, a magazine publisher that had previously resided in a nearby high-rise called Galaxie. The new occupants renamed the building "Media Tower" and crowned it with what was described at the time as the biggest media screen in Europe—a total of 60 sqm.

Hollein's facades responded to the immediate surroundings in a rather extreme way: the building was in effect a picture of the neighboring houses. But this contextualism was not the reason why he received the first prize in the competition. The jury justified its decision by explaining that Hollein's entry established a gateway to the second district. This aspect was enough to let the jury overlook Hollein's violation of the brief: instead of respecting the height typical of the second district, as the competition rules demanded, the architect inserted a much taller element of 71 meters which in its slim proportions creates an illusion of an even greater height.

The next competition took place in 2001; the site is located a few blocks away from the Media Tower. Chaired by Hollein, the jury awarded first prize to Heinz Neumann who had also been invited to the first competition. With its 22 floors above ground (and another five underground), Neumann's high-tech glass tower was four meters taller than Hollein's building. Instead of reflecting the facades of surrounding buildings in the manner of the Media Tower, the Uniqa Tower seems to take its cue from the site plan, mapping the orientation of the adjacent bridge and recalling in its configuration the massing of the nearby Urania building (1910) by Max Fabiani. Some people have seen in the Uniqa Tower the figure of a bank building desi-

Fig. 1: Heinz Neumann, Uniqa Tower, Vienna, 2004

Fig. 2: Hans Hollein, Media Tower, Vienna, 1994–2001 (left) and Georg Lippert, Bundesländerhaus, 1959–62 (right)

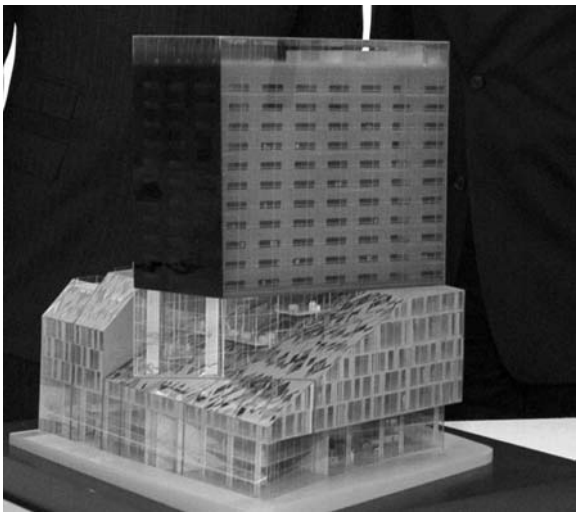

Fig. 3: Jean Nouvel, Hotel Praterstrasse 1, Vienna, 2005–09

gned by Hollein that was at the time in construction in Peru,[1] but that is probably a misperception: the jury said it gave the first prize to Neumann because his design created a gateway to the second district.

Upon the completion of the new Uniqa Tower in 2004, the old company building next to the Media Tower had lost its function and become an empty image—which led to the third competition in 2005. This time, there was a height limit defined by Neumann's tower, 75 meters. The winner was Jean Nouvel who had already participated in the first competition. The judges praised Nouvel's design because the patterns on the roof looked to them like the roof of St. Stephen's Cathedral or the paintings by Gustav Klimt. In addition to these pictorial references that are certainly appropriate for a building that will serve as a hotel, Nouvel's entry was compelling in that it defined a gateway to the second district.

Seeing the light

The jury reports give the appearance that the judges had made their decisions on the basis of a few mental images. In the big picture, however, architectural and urban aspects may actually be overshadowed by economic considerations. As regards the Uniqa tower, it could well be that the jury was less concerned with defining an asymmetrical gateway than finding a project that would eclipse the Galaxie tower 200 meters down the street, a highrise designed in the early 1980s by Josef Becvar for an obscure group of international investors. Unfortunately for the Uniqa corporation, a competition had been organized in 1998 for the renovation of the Galaxie; it was won by Martin Kohlbauer who designed new facades for the old building and also added a six-storey cylinder (with a slightly elliptical plan) on top. Realized in 2000–2002, Galaxy 21

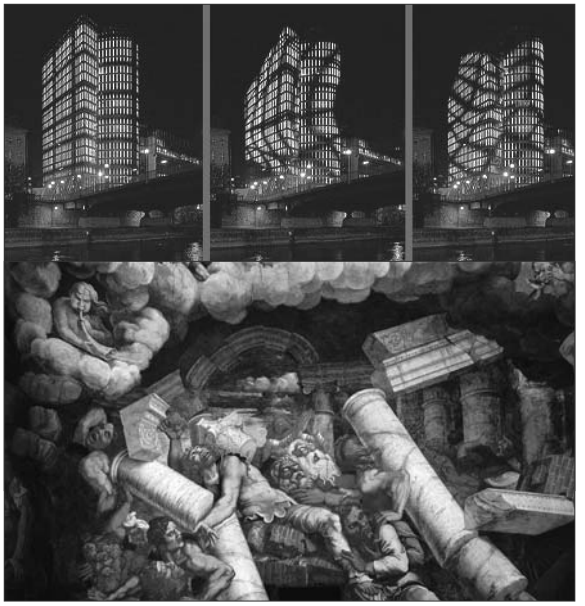

Fig. 4: Licht Kunst Licht, "Twists and turns". Uniqa Tower, Vienna, 2005 (above); Giulio Romano, "Fall of the Gigants". Palazzo del Té, Mantua, 1530–32 (below)

reached the same height as the Uniqa Tower would, a total of 75 meters. In the presentation material provided by the Uniqa Corporation for architectural magazines, the Galaxy tower had been airbrushed away, but in reality other means were needed to make the Uniqa headquarters truly unique.

Technologically and ecologically, the Uniqa building was quite progressive for its time, although architecturally some details appear unresolved. For example, the skin does not really connect too well to the volume; it is like a mask or an image. Today, however, such details hardly matter anymore. When construction was all but completed, the board of directors decided to equip the building with a media façade even though it had not been part of the architect's concept nor agreed with the recommendations of the competition jury.[2] Now the Uniqa Tower would really stand out.

The lighting plan was made by Licht Kunst Licht who decided to install 182.000 individually controllable RGB LED video pixels onto the façade, creating a continuous screen of about 7,000 sqm that is capable of processing 25 video images per second. For the most part the program is an abstract reflection on surfaces, including moments when the façade seems to turn into a textile blowing in the wind or it looks like rain falling down. The patterns are almost invariably abstract and usually in motion. Occasionally, the full color range is used, but most of the display programs are dominated by an elegant tone of blue.

The building does not simply serve as a neutral screen, however: often the imagery is related to the actual shape of the building. In the video "twists and turns" by Holger Mader, Alexander Stublic and

Heike Wiermann, the display begins by articulating the structure of the real building, e. g. imposing a grid that seems to agree with the real structure, and then distorting, twisting and shearing the pattern in order to virtually demolish the tower. With such a pictorial *Aufhebung* of architecture, the artists are repeating a Mannerist and Baroque motif. The most famous precedent is Giulio Romano's fresco, "Fall of the Giants," in the Palazzo del Té (1530–32), announcing the imminent collapse of the great edifice of architecture. It may not impossibly be that Victor Hugo was wrong with his announcement, *céci tuera céla*: architecture was not to be killed by the printed book, but rather by the picture.

Get the picture

In his essay, *The Age of the World Picture*, Martin Heidegger argues that what distinguishes the essence of the modern age (*Neuzeit*) is that the world becomes picture. With 'world picture' he does not mean a picture of the world but the world conceived and grasped as a picture.[3] That means that the Being of entities is sought and found in their representedness; they come into being in and through representedness.[4] The representedness implies that man becomes the relational center of everything that is as such; man puts himself into the picture or into the scene as a normative foundation. This implies also that man becomes a subject that sets things before him (*vor-stellen*) in order to conquer the world.[5] Although Heidegger points out that Plato's definition of the beingness of entities as their *eidos*, that is 'aspect' or 'view,' was a long-hidden precondition for the world's ultimately having to turn into a picture, he nonetheless maintains that for the ancient Greeks the world could never become a picture in this sense.[6] The Hellenic man did not cause things to come into being by looking at them but rather he was the one looked upon by that which is. Modern man, by contrast, makes himself into the setting in which whatever is must set itself forth, must present itself, i. e., be picture.[7] The world is understood as that which presents itself to us or as that which we can see.

Heidegger dates the beginning of the age of the world picture to Descartes, but Karsten Harries has suggested that Leonbattista Alberti's theory of perspective already contains the essence of the world picture, i. e. the loss of the transcendental dimension (the gods), the separation of subject from object and the human being from the world and attempt to rationally organize and control nature. Certainly, subjective vision became central in many domains of science long before Descartes; the medical treatise of Vesalius is a striking example. A visual orientation characterizes also the architecture of the cinquecento.

One of the reasons why Sebastiano Serlio's *Libri* and Giambattista Vignola's *Regola*—rather than, say, Alberti's *De re aedificatoria*—became best-selling architectural treatises has to do with both authors shunning verbal arguments and relying primarily on graphic illustrations. This way, they were able to widen their audience to in-clude builders whose classical training was not very profound. Indeed, Serlio says he uses pictures because he wants to present the rules so that they are comprehensible not only to the more intelligent but also to those who are less ingenious.

It was the invention of the printing press, as Mario Carpo has argued, that made it possible for Serlio and Vignola to rely on illustrations. Although Alberti advocates the use of drawings in design, he insisted that his treatise must never be illustrated because the images could be distorted in unpredictable ways by later copyists.[8] Printed images, by contrast, would reproduce the original much more accurately. Carpo concludes that it was not visualization per se, but coupled with the technology of printing that prompted the transition of architecture from geometry to numeracy—from ruler and compasses to graduated ruler and algorism during the Renaissance.[9]

Of course, the printing press also made books (and drawings) more affordable than ever before. In 1483, the price of a manuscript copy of Ficino's translation of Platos *Dialogues* cost 300 to 400 times the price of the printed version of the same.[10] The illustrations were also an indispensable help for those architects who were not able to study ancient ruins in person—which explains why Serlio's books were a sensational success in particular in the North.

In addition to reaching a larger public, visually oriented textbooks may also have changed the way architects thought about design. Carpo claims that Serlio's 'typographical architecture' defined a set of infinitely reproducible elements or ready-mades that only needed to be recombined to generate new designs.[11] Equally important are the techniques of visualization. Although in the fifteenth century Alberti theorized about perspective, he claimed that only orthographic projections were of use to an architect. Indeed, Alberti's designs are not tuned to particular points of view. By contrast, Vignola—who wrote but did not publish a treatise on perspective, *Le due regole di prospettiva pratica*—uses perspectival devices to great effect, for example, in the Villa Farnese in Caprarola. However, the visual turn in the cinquecento is not only about how buildings are perceived by observers. More important is that architects consciously work with two-dimensional images. Alberti explains that he explored, considered and measured every ancient building—and then compared the information through line drawings.[12] This concentration on the

drawing made it possible for the architects to move from one representational mode to another as a means of generating their designs. Translations from elevations to perspectives or vice versa are only one of many strategies used by Renaissance, Mannerist and Baroque architects to compose with culturally sanctioned *Vorbilder*. In the age of the world picture, architecture turns increasingly into an art of image manipulation, as opposed to the shaping or reshaping of three-dimensional buildings.

Paragons

Some sense of this visual turn in Renaissance architecture can be obtained by studying the works of Andrea Palladio, another architect who also published an influential treatise, copiously illustrated with images of ancient monuments on the one hand and his own designs on the other. This juxtaposition of ancient and modern architecture has prompted many art historians to read Palladio's designs in a particular way. In *Architectural Principles in the Age of Humanism*, Rudolf Wittkower, for example, views Palladian churches in Venice as combined images of classical monuments, the Pantheon and some others. The churches in question, San Francesco della Vigna, San Giorgio Maggiore and Il Redentore, each have a façade with a pedimented middle part, resembling a classical temple front, and two lower side elements articulated with half-columns. According to Wittkower, what we see is a superimposition of two temple fronts, the higher one in the middle being the house of God and the lower one "behind" it being the house of man.

Unfortunately, in Palladio's writings there is little to support Wittkower's brilliant interpretation and a lot to counter it, in particular the rules of proportion. Should we extend the side elements of the façade to make a pedimented temple front, its proportions would be most peculiar. In San Francesco della Vigna, for example, the pediment of the "lower temple front" would actually be taller than the columns supporting it.

Wittkower's reading of Palladian villas is even more famous than his interpretation of the church facades but it also has some problems with the notion of proportion. Palladio designed a number of villas based on the same concept: a sparsely decorated vernacular block with a symmetrically positioned classical temple front. In his reading, Wittkower concentrates on the plans of the villas. Even though they are all different, he finds a shared pattern, a kind of genotype, behind the superficial variation. He claims that a relatively simple, symmetrical tartan grid organizes all the plans, even though it is nowhere visible in its entirety. He insists that it is this geometrical keynote which is "subconsciously rather than consciously perceptible to everyone who visit's Palladio's villas and it is this

Fig. 5: Andrea Palladio, San Giorgio Maggiore, Venice, 1566–1610

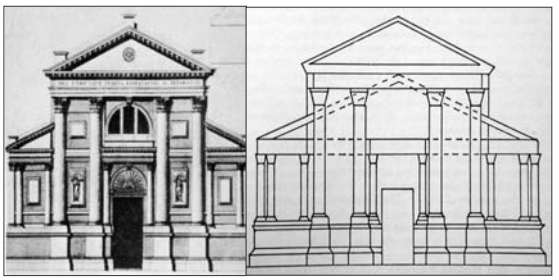

Fig. 6: Palladio, S. Francesco della Vigna, Venice, 1562 (left); Rudolf Wittkower, "Architecture in the Age of Humanism", 1947 (right)

that gives his buildings their convincing quality."[13]

In 1949, coinciding with Le Corbusier's promotion of the Modulor as the scientific basis of modern architecture, Wittkower's book sparked an intense debate on proportion; in the sixties, his claims inspired Bill Mitchell, George Stiny and a host of other CAD experts to proclaim the era of automatically generated architecture, based on similar geometrical principles as Palladio's villas. Yet, there are a few points to be made against this reading as well. On the one hand, not all of the villas which have the alleged grid are of equal value; on the other hand, quite a few Palladian masterpieces have no such grid. Moreover, we can recognize the architectural excellence of the Villa Rotonda even if we have not visited any other Palladian villas and so could not have intuited the tartan grid embodied in the *Gesamtwerk*. Hence, there is no reason to believe that (some of) Palladio's villas are great architecture because of the invisible grid, a part of which they contain and which a visitor unconsciously perceives.

Arguably that what the visitor consciously appreciates, determines his or her aesthetic experience to a higher degree. Despite the subtle similarities that Wittkower has discovered, there are also striking differences in the handling of the symmetrical plans and the details in each villa, although

most of them juxtapose a classical temple front with a vernacular block. In the Villa Malcontenta, for example, a virtual temple seems to travel through the block, leaving a trace of a former presence in the back facade and projecting two and a half columns beyond the front plane of the block. A model for this composition of interlocked volumes as well as the unusual arrangement of stairs may have been provided by a fifth-century church in Spoleto, known as the Temple of Clitumnus, the plan and elevation of which Palladio shows in his *Four Books*. In the Villa Rotonda, by contrast, the composition does not emphasize the contrast between the vernacular block and the classical temple but merges these fundamentally unequal elements together. The classical portico has sidewalls that seem to belong to the block rather than the temple; moreover, these walls have arched openings.[14] Historians have claimed that this unusual solution was derived from the Porticus Octaviae in Rome, but the argument is not convincing.

The Octavian gate is a conventional portico *in antis*, a configuration that Palladio also uses in his Tempietto in Maser, whereas the Villa Rotonda features six free-standing columns in the front, with the sidewalls closely behind the flanking ones.

Instead of the Octavian portico, the model may be found in the Pantheon. Of course, the Villa Rotonda can be seen as a variation of the Pantheon in that both feature a rotunda coupled with a temple front, and the dome Scamozzi added to Palladio's original design only makes the resemblance more striking.[15]

However, also the unusual portico may have been inspired by Hadrian's temple. In his elevation drawing of the Pantheon, included in his *Quattro Libri*, Palladio shows very clearly the two niches in the back wall of the portico even though on site or in photographs of the building they are hardly visible. Now, looking at Palladio's drawing of the Pantheon, we can imagine rotating these niches at a right angle and turning them into windows in order to complete the Villa Rotonda portico. In this case, then, the elevation drawing appears to dominate the real building and also allow for surprising and unorthodox ways of manipulation and misreading. To put it in the language of a children's game, paper covers rock and scissors cut paper.

The same drawing of the Pantheon may have been the basis for Palladio's façade for the Il Redentore church in Venice, as well. Wittkower seeks to explain the façade by constructing a sequence of attempts to reconstruct the ancient basilica in Fano, the only known building by Vitruvius. In the *Ten Books*, the basilica is described as having a "double arrangement of gables" but in the absence of images it is hard to determine what this means.[16] One illustration of the Fano basilica is provided by Cesare Cesariano in his 1521 edition of Vitruvius.

Fig. 7: Palladio, Villa Rotonda, Vicenza, 1553–89 (left); Palladio, Porticus Octaviae, Rome, from "Four Books", 1570 (right)

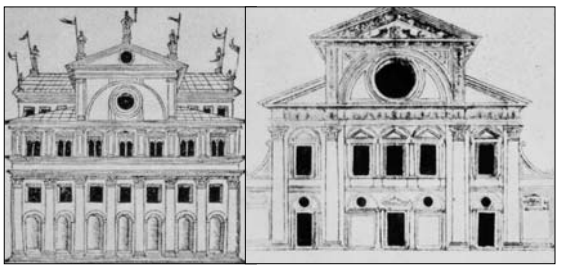

Fig. 8: Cesare Cesariano, Reconstruction of the Basilica in Fano, 1544 (left); Donato Bramante, S. Maria presso S. Satiro, Milan, 1480 (right)

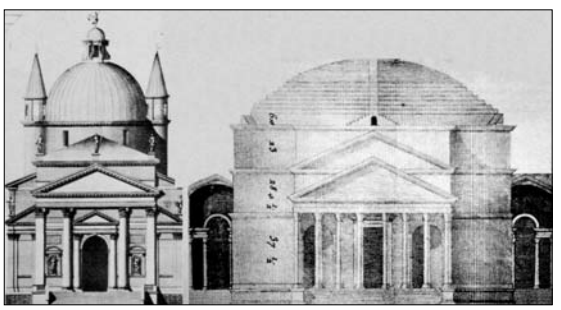

Fig. 9: Palladio, Il Redentore, Venice, 1577–92 (left); Pantheon, Rome, from "Four Books", 1570 (right)

Fig. 10: Palladio, Il Redentore, Venice, 1577–92 (left); Pantheon, Rome, 118–125 AD (right)

Fig. 11: G .B. Vignola, S. Andrea in Via Flaminia, Rome, 1552–53

Wittkower observes that this drawing looks similar to Donato Bramante's unbuilt facade for the church of Santa Maria presso San Satiro in Milan (1480), and suggests that already Bramante had been attempting a reconstruction of the Vitruvian basilica.

As a further step in the direction of Palladio's solution, Wittkower mentions Baldassare Peruzzi's Cathedral at Carpi (1515): the facade uses giant pilasters for the nave and a smaller order for the aisles. There are many curious things about this reading, beginning with the fact that in the only example that was demonstrably intended as a reconstruction of the Fano basilica, there is no double arrangement of gables but simply one gable in the middle, corresponding to the nave, and a hip roof above the aisles. Cesariano's design resembles Bramante's façade in an elevation drawing but would appear quite different in a perspective or as built.

Of course, Wittkower is right in stressing the problem of finding a legitimately classical façade for a basilica section. Yet the idea that Palladio would have been trying to reconstruct the basilica in Fano is hard to defend. In his reconstruction of the Basilica of Maxentius and Constantine (which he calls the Temple of Peace), Palladio shows intersecting pediments, but there is no resemblance to his churches. Wittkower himself finally acknowledges that the Pantheon also has another kind of a "double arrangement of gables" and also a high attic that seems to reappear in the Redentore.

From the piazza before the Pantheon one cannot see the second pediment or the attic, and the drawings of the Pantheon made before the cinquecento show only the pediment of the temple front. In the measured drawings of the Pantheon made in the 16th century, including two façade drawings by Palladio himself, both pediments and the attic are shown. What makes the argument about drawings even more plausible is that the elevation drawing of Palladio's church also has two triangular elements on top of each other, much like in the Pantheon, even though the higher is in fact not a vertical pediment but a part of the hip roof and thus not visible as one stands in front of the church. In other words, the resemblance between the Pantheon and Il Redentore exists in elevation drawings only, and cannot be experienced in situ, looking at the real buildings.

Il Redentore is not the first Renaissance church to play with a flattened elevation of the Pantheon. Not surprisingly, similar exercises were also rehearsed by Vignola. His small *Tempio*, the church of Sant' Andrea in Via Flaminia, Rome (1552–53) is another mannerist attempt to square the circle. While the ancient rotunda is based on the same circle in plan and section, S. Andrea's plan and section are derived from the same oval figure, constructed according to Serlio's first method, but embedded in a rectangular container. As one approaches the church, it shows itself as an unadorned box with an oval drum and a low dome, but in frontal view the building transforms itself miraculously to an unmistakable image of the Pantheon. The facade shows a flat motive of a pediment with an attic, and the high drum of the oval dome appears in perspective similar to how the dome of the Pantheon looks like in a facade drawing.

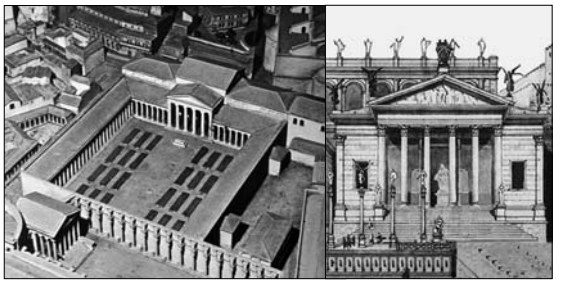

Fig. 12: Temple of Peace, Rome, 75 AD (left), Temple of Concordia Augusta, Forum Romanum, 10 AD (right)

Fig. 13: Giovanni Buora, Mauro Docussi, Pietro & Tullio Lombardo, Scuola Grande di S. Marco, Venice, 1437, 1485–95

Insofar as the elevation of Il Redentore is seen as varying an orthogonal projection of the Pantheon rather than the building itself, Palladio's other double-gabled church facades, San Giorgio Maggiore and San Francesco della Vigna, could perhaps be seen as variations on another elevation: a Roman temple flanked by the colonnades around the forum. Here, one can reconcile the different sizes of the columns with Palladio's proportional rules. An even closer match is the Temple of Concordia August on the Forum. Not only does the Temple of Concord anticipate Palladian villas in combining a temple front with a larger block; if a frontal perspective view of the temple is misread as an orthographic elevation, we get something very similar to the façade of San Francesco della Vigna. Insofar as we assume that Palladio was consciously misreading elevations and perspectives, another aspect of Il Redentore begins to look like a concetto about drawings versus buildings: by using shining white marble in the facade, Palladio visually separates the facade from the red-brick church behind it, further emphasizing the nature of the facade as a billboard showing the Pantheon flattened into an elevation drawing. In other words, Hadrian's three-dimensional monument is first made two-dimensional by bringing the two gables to the same surface and

then the two-dimensional image is stretched out in four steps to create a new building.[17]

Projections

Il Redentore is not the only building in Venice that engages in a complex interplay between the flatness of a drawing and the implied depth of perspective or in the thematization of real vs. virtual space on the facades. The facade of St. Mark's in Venice can also be seen as a flat representation of the quincunx configuration of domes behind it.[18] In later Venetian buildings different projective techniques are sometimes involved in striking contrast. An example is provided by the Scuola di San Marco beside the Church of St. John and St. Paul. Designed in 1487–90 by Pietro and Tullio Lombardo, the Scuola further heightens the play on two versus three dimensions.

Like the basilica of San Marco, the facade of the Scuola relies on the orthographic projection of domes on the flat surface of the facade. Furthermore, two-dimensional perspectival representations of receding three-dimensional space are applied to the orthographic surface in bas-relief sculpture. In the technique of flattening three-dimensional space onto a two-dimensional surface, and then reinsinuating three-dimensionality through perspectival means, the Scuola resembles many altar tabernacles bearing perspective reliefs that date from the fifteenth and early sixteenth centuries, including, for example, the perspective tabernacle of 1450 by Bernardo Rossellini, now San Egidio in Florence, and the tabernacle of 1461 for San Lorenzo in Florence by Desiderio da Settignano.

On an architectural scale, Bramante applied similar perspectival illusions in Santa Maria presso San Satiro from 1479–80.[19] Charged with enlarging an existing church on a constricted urban site, he began by turning the nave into a transept for his new church, but space did not permit him to develop the chancel as the fourth arm of the cross. Instead, he simulated a full-length altar space in the depth of a few decimeters by using techniques of perspective drawing to contract the built form. Bramante's solution remained unusual in church design, but Palladio applied similar devices for example in the Teatro Olimpico in Vicenza in order to create a perfect stage illusion. In the Baroque period the manipulation of perspective became a popular device in both palace and church architecture. In 1654, Carlo Rainaldi designed a perspective scene behind the statue of Saint Agnes in the north transept of Sant'Agnese in Piazza Navona; the design was built ten years later. At around the same time, Carlo Fontana reflected the general interest in perspective effects for the windows and doors at the church of S. Rita da Cascia near the Campidoglio.[20] The most perfect of the spatial illusions was, however, the gallery in the Palazzo Spada, designed in 1652–53 by Francesco Borromini and the Augustinian architect Padre Giovanni Maria Bitonto on the commission of Cardinal Bernardino Spada.[21] A decade later, Gianlorenzo Bernini used similar perspectival distortions in the Scala Regia, connecting the Vatican Palace to St. Peter's basilica.

Yet, the Baroque is not only about creating illusory spaces through perspectival distortions. Rather, the discourse on flatness and depth is developed further as a means to communicate an iconographical program. The much-maligned facade of St. Peter's in Rome by Carlo Maderno is an example. When Maderno was put in charge of St. Peter's in 1603, he had to complete the nave and design a façade. Originally, proposals had been made by leading Renaissance architects for a centralized church but only a part of Michelangelo's design, including an innovative concept for a double-shelled dome, was actually realized. The magnificent dome plays a part not only in the general concept of the basilica but also in the urbanistic context of Rome. From the Vatican gardens, designed by Pirro Ligorio, the dome appears as one of the garden pavilions while the rest of the gigantic church disappears from the view. The dome appears as a kind of Tempietto also from the Quirinale where the pope resided. The façade of St. Peter's may make further use of this idea.

The central part of Maderno's façade is articulated with half-columns with varying intercolumnia so that the middle columns are furthest away, the next ones a little closer and the third pair even closer together. This arrangement simulates the appearance of a round temple, flattened as if in an elevation drawing. At a certain distance from the façade, the virtual rotunda and the dome match to form an image, this time not of the Pantheon but rather of the Tempietto in Trastevere. The small rotunda, properly known as the San Pietro in Montorio, was designed by Bramante and judged to be so perfect that it was included by Palladio in his *Quattro Libri* as the only non-classical building apart from his own designs. That San Pietro in Vaticano should make reference to the San Pietro in Montorio is logical: the church was built over the grave of the apostle while the small Tempietto marks the spot where he was executed. The means by which this reference is made—the elevation drawing mounted on the façade—was new.

In his design for the magnificent square before the church, Bernini relied on more traditional kinds of image manipulation. There is a quick sketch in his hand depicting the piazza as Jesus embracing the believers – but the brutal disfiguration of Christ's arms make it clear that the form comes from another source.[22]

It is likely that the new center of the Christian world was meant to evoke and replace the symbo-

lic center of the pagan world, the Colosseum. Not only are the dimensions of Bernini's square very close to those of the Flavian amphitheater; the architect even had his square paved with stones removed from the ancient monument. Geometrically, however, there is a difference. While the plan of the ancient structure is close to a true ellipse, Bernini's design is based on the mystical diagram of *vesica pisces* or the bladder of a fish.[23] This diagram—two circles arranged so that the center of each is intersected by the perimeter of the other—is meant as a symbol of Christianity. The bladder is a synecdoche for the fish, while the fish in Early Christian tradition reads as an acronym of the Greek phrase, *Iesous*, *Christos*, *Theou Huios*, *Sótêr*. In this chain of signification, then, Christ is represented by a verbal description ("Jesus Christ, Son of God and Savior"), which is first transformed according to purely notational rules of acronyms that let a new cryptogrammic meaning (fish) emerge, only to be translated into another medium, a picture, or in this case a visual semblance of a part of the animal, the bladder, which finally is substituted for a geometrical diagram.

Fig. 14: Carlo Maderno, S. Pietro in Vaticano (with the tympanon removed), 1607–25 (left); Bramante, S. Pietro in Montorio (Tempietto), 1502 (right)

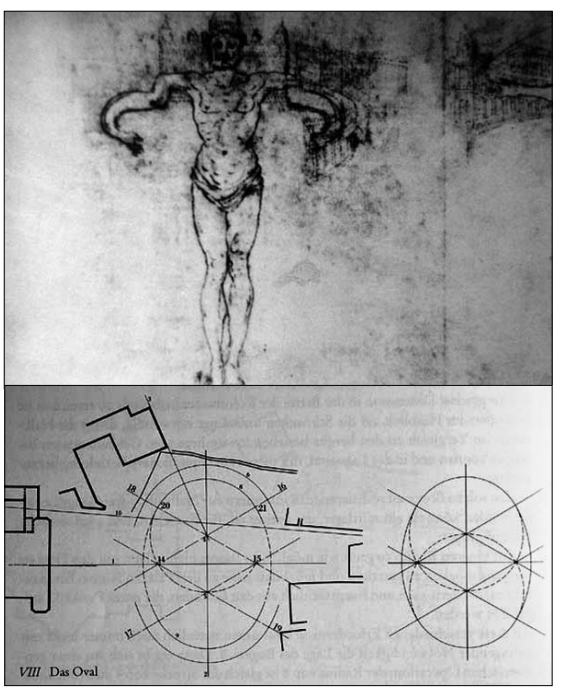

Fig. 15: Gianlorenzo Bernini, sketch for St. Peter's square, Rome, late 1650s; Massimo Birindelli, "Piazza San Pietro", 1981

Perhaps it is important to add that Bernini was not the first architect to make a reference to the Christian religion in this way. For example, the oval plan of the church of St. Gereon in Cologne (ca. 380) is derived from the same diagram, as were the plan and section of Vignola's San Andrea in Via Flaminia. In the early 1930s, Marcello Piacentini and Antonio Muñoz applied the vesica pisces diagram to redesign the Piazza Venezia for the Fascists. In fact, they projected the plan—both the shape and the exact dimensions—of the Piazza San Pietro onto the different location. As a result, the Vittoriano on the Piazza Venezia appears as the *terzo braccio*, the third colonnade of the Piazza S. Pietro that Bernini was unable to realize.

Transformations

Despite his ingenious combination of traditional symbolic diagrams with the contingencies of the site in the Vatican, Bernini was criticized by Juan Caramuel y Lobkowitz for not going far enough in adjusting the ideal geometry of classical architecture to the contingencies of perception. Bernini arranged the double colonnade around the Piazza Obliqua so that from the centers of the circles one only sees the inner row of columns. Caramuel, however, demanded that the columns themselves should also have been perspectivally adjusted to the oval geometry of the design. Indeed, in his book *Architectura civil recta y oblicua* (1679), Caramuel discussed architectural design as a geometrical problem[24] He demanded distorting the shape of orthodox architectural elements according to their position in a building, turning squares into rhombuses and circles into ellipses. Thus, Caramuel proposed that balusters on a staircase must be deformed so that all their rings and mouldings lie parallel to the inclined plane of the flight and not parallel to the ground.[25]

An example of Caramuel's intentions may be the Cathedral of San Tecla in the small town of Este near Padova, built by the Venetian architect Antonio Gaspari in 1690–1720. Tourists visit the church mostly to see an image, G. B. Tiepolo's 1759 painting of Santa Tecla saving Este from the plague. However, the church is quite interesting in its own right. Instead of the ovals that Italian architects experimented with ever since Baldassare Peruzzi, the cathedral of Este has a real elliptical plan. What is somewhat unsettling are the four chapels arran-

ged radially around the central space: these spaces are curiously distorted so that they have no right angles. Their distortion is, however, related to the ellipse in a straightforward manner: if the plan is stretched along the cross-axis so that the ellipse becomes a circle, the chapels assume an orthogonal shape.[26] What is radical in this concept is that here the anamorphic distortion is not based on any perceptual corrections or illusions. Rather, it is a purely geometrical operation that is easy to perform on a drawing but which is rather confusing in the building.

The sixteenth-century visual turn in architectural theory and design sponsored these and other experiments in which architects intentionally played with various pictorial, projective and graphic techniques in order to develop their design concepts. Perhaps the simplest is the reduction of volume to outline. A good example of this strategy are the 'ear-forms' that Filippo Borromini uses in his door and window frames, such as the surround of the balcony door on the main façade of the Oratory of San Filippo Neri. A continuous line forms a simple rectangle which under the architrave widens up into a strange curve which looks like a human ear. Commenting upon the Oratory, Borromini explains that he has chosen "rather to indicate than to ornament or perfect the members and parts of architecture." What is being indicated or depicted by the ear-forms are the volutes of Renaissance window frames: the ear-form traces the outline of a volute but since the line is two-dimensional, it can only show the volute in profile, as if set sideways along the wall, or as a shadow cast by a volute.[27] Such transgressions have remained popular ever since, including the twentieth century. Alvar Aalto's church in Wolfsburg illustrates an idiosyncratic pictorial strategy. The most distinguishing feature of this church is the fan-shaped ceiling. An early idea sketch for the building already shows the ceiling but the sketch is ambiguous: it could just as well represent another, roughly contemporaneous Aalto design, namely a detail of a chair leg joint.

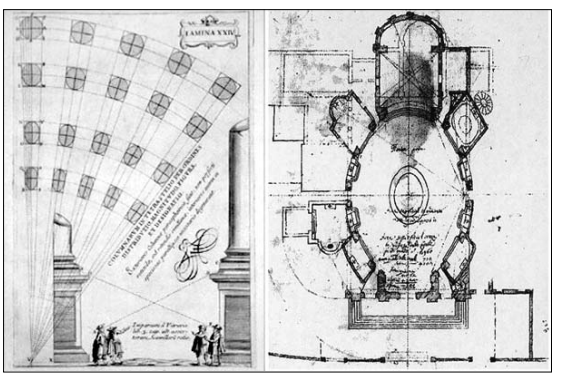

Fig. 16: Juan Caramuel, Proposal for St. Peter's square, Rome, 1678 (left), Antonio Gaspari, Cathedral of S. Tecla, Este, 1690–1720 (right)

Both the chair leg and the Wolfsburg ceiling are fan-shaped, divided in five segments and executed in natural wood; the difference is that the chair leg is convex and the ceiling concave. Such a transformation that involves both a radical change of scale and the inversion of depth comes naturally through the medium of drawing but it is hardly conceivable if one thinks in terms of real, three-dimensional buildings. Again, the materiality of paper exceeds that of stone.

The foundational role of representations was well understood by the deconstructivist architects in the 1980s. From early on, Peter Eisenman experimented with misreading various projective techniques, even manufacturing an axonometric model of House X, and developed a number of processes, including various kinds of scaling and folding, in which architectural from is generated directly from techniques of drawing and image manipulation. As digital techniques became available, they were incorporated into the design process as driving forces. A decade ago, for example, Greg Lynn argued that architects should use complex curved and folded planes simply because recent advances in computer modeling have made topological descriptions of such forms accessible to non-mathematicians.[28] Indeed, the evolution of the "blob architecture" has been strongly influenced by the capabilities of the modeling and rendering programs.

Analog versus digital

The Uniqa Tower, however, has nothing to do with this kind of "topological architecture." Instead of generative methods, Neumann relies on more traditional drawing strategies. The suggestion was made earlier that the plan of the Uniqa Tower might have to do with the site. Not so, corrects the architect. He asserts that the shape of the tower is based on a drawing, the company logo from which the three-dimensional gestalt is simply extruded—or rather "projected" since such a reliance on brand identity is certainly more a part of the "projective" than "critical" practice.

The strategy is, then, a simplified version of what Bernini did with the *vesica pisces* in the Piazza San Pietro. The unusual thing about the Uniqa building is that the plan is based on an analog image but the facades shine with digital ones.

Media facades are attractive to some architects because they promise to deal with two main dogmas of modernism in a new way. The first is the functionalist principle that a building should be designed from the inside out so that the façades, instead of being an independent, artistic and public or urban part of the building become reflections of the inner distribution of functions. The second is related to the first. It rules out any use of ornament in architecture because ornament is never a repre-

sentation of real functional or structural conditions but a matter of symbolic expression or aesthetic beautification.[29] While modernism thus outlawed ornament and dismissed the façade as a legitimate design concern, media façade technology suggests a way how an architect can bring back ornament and come up with an attractive façade without betraying the modernist ethos. The solution is simple: by giving up their control.

Media facades tend towards richly colored ornamental effects. Partly this is due to the novelty of the technology: one wants to demonstrate its potential. Subtlety will only follow later—or perhaps never, for it is precisely their ornamental exuberance that has made media facades popular among the general public that has been starved by the purism of modern architecture. The Uniqa Tower is also quite popular in Vienna, but for architects sets a problematical precedent.

When the media display is as extensive as it is on the Uniqa Tower, the appearance of the building is no longer determined by the architect. Today, this is true only in the dark, but soon the displays will be bright enough to work in daylight as well. Hence, it is pointless for the architect to design the façades in any detailed way because one cannot know in advance what anything will look like. For example, the nightly appearance of the Uniqa Tower has very little in common with Neumann's original intentions or the project that the competition jury premiated in 2001. Having already lost much of their once leading role in the construction of buildings, architects may also lose the aesthetic determination of a building's appearance to the media façade specialists and the artists who conceive the videos. However, architects may attempt to defend their territory by complicating the skin through architectural means, as in the case of the Uniqa Tower.

The irregular oval shape can be seen as a permanent advertisement for the company, a Venturian duck or a specifically architectural representation in the most traditional sense. However, two points should be made. Firstly, the similarity of the plan to the logo may be recognizable from the plan drawings and from the air but certainly not from the street. Secondly, not only is the origin of the shape hard to decipher, the complication in the surfaces also reduces the expressiveness of the media façade. There are no TVs with screens curved like the facades of the Uniqa Tower because the public does not want the broadcast image be compromised by the shape of the screen. The 4,500 sqm LED display that Element Labs designed for the 2006 Asian Games in Doha, Qatar is an example of what a giant media screen would look like if the picture content is the primary consideration.[30]

When a building assumes a complex sculptural form, one cannot use realistic images since they would appear distorted. Thus, such buildings as the Uniqa Tower—or the blobby Peter Cook and Colin Fournier's Kunsthaus in Graz, for example—are better suited for abstract patterns or simple, graphic logos and other images that can be recognized on the basis of a part only. A box building can be completely consumed by a media façade in the sense that it essentially becomes a compilation of flat screen TVs. A blob, by contrast, tends to exclude many of the possibilities inherent in media façade technology and reduce them to an abstract decorative patterns or ornamentation.

The complex sculptural shape of the Uniqa Tower serves not only to claim a certain area of design for the architect, but also to protect the

Fig. 17: Francesco Borromini, Oratory of San Filippo Neri, Rome, 1638–50 (left), Sebastiano Serlio, "Fourth Book", 1537, Fol. 49 (right)

Fig. 18: Alvar Aalto, Sketch and interior of the Church of the Holy Ghost, Wolfsburg, 1962; Aalto, Fan leg stool X600, 1954 (right)

Fig. 19: Logo of the Uniqa group, Neumann, Uniqa Tower, Vienna, 2004

domain of architecture as one of the fine arts, instead of a branch of commercial advertising. The use of the company logo as a plan diagram, unrecognizable except from the air, guarantees no normal TV ads can be played on the media facades. Being against advertising in this sense does not mean, however, that the Uniqa Tower would support public space. Its oval shape is aggressively anti-urban: it needs to be a free-standing tower. In tighter urban conditions, media façades tend towards flat screens. In fact, in Singapore, Hong Kong, Tokyo and many other metropolises of Asia there are streets lined with one building after another with bright display facades, looking rather like a TV showroom in a giant scale. And this is the direction in which media facades will be going as they become more affordable. Compared with an iconic and unique blob à la Bilbao, a box with media facades is more attractive to investors because its identity can always be adjusted to any occupant without exorbitant cost or delay.

Instead of pointing the way to the future, then, the Uniqa Tower marks a transitional point, a hybrid between traditional architecture and the media façade. Its effects are predicated on its singularity in the urban fabric, both in terms of its figural shape and its abstract, artistic display—and this singularity is hardly justified by the position a headquarters of an insurance company occupies in public space. Once the media technology becomes available to more buildings, experiments with shape and content will gradually give way to competition with other means.

Describing Paris in the nineteenth century, Walter Benjamin claimed that artificial lighting had made the city streets into a house for all citizens.[31] Even more graphically, media facades will turn urban space into a simulacrum of a bourgeois apartment. Every night my living room is flooded from one direction by the flickering lightshow of the Uniqa facade and from the other by similar, colorful spectacles from my giant flatscreen TV; the main difference between the two is that the Uniqa does not yet come with a soundtrack. Once media facades become common, our urban environment will be determined by the same set of interests and values that inform broadcasting today. Bright lights, big city – and, as C. K. Chesterton commented after having seen the neon lights of Broadway: "How beautiful it would be for someone who could not read!"

Notes:

1 These critics also like to point out that Hollein and Neumann had cooperated on a number of projects before, including a competition entry for the National Grand Theatre of China in 1998.

2 *DBZ*, April, 2005; Uniqa Marketingdirektor Carl Gabriel.

3 Heidegger, Martin, *The Age of the World Picture*, tr. William Lovitt, in *The Question Concerning Technology and Other Essays*, New York: Harper Torchbooks, 1977, pp. 115–154, here p. 129: "'Picture' here does not mean some imitation, but rather what sounds forth in the colloquial expression, 'We get the picture' [wir sind über etwas im Bilde] concerning something. This means the matter stands before us exactly as it stands with it for us. 'To get into the picture' [sich über etwas ins Bild setzen] with respect to something means to set whatever is, itself, in place before oneself just in the way that it stands with it, and to have it fixedly before oneself as set up in this way."

4 Heidegger, pp. 129–130.

5 Ibid., pp. 127, 134.

6 Ibid., p. 131.

7 Ibid. p. 131.

8 For a discussion, see Carpo, Mario, *How Do You Imitate a Building That You Have Never Seen? Printed Images, Ancient Models, and Handmade Drawings in Renaissance Architectural Theory*, in *Zeitschrift für Kunstgeschichte*, 64 Bd., H. 2. (2001), pp. 223–233, here p. 225. Alberti explains that copyist can already make a mess when copying simple letters and Roman numerals, and his own treatise is a case in point. One of his revolutionary ideas, the notion that a row of columns as nothing more than a wall perforated and opened in different places, may be the inadvertent result of a spelling error. As John Onians has observed, in one of Alberti's sources, the encyclopaedia De Universo by Hrabanus Maurus, there is a chapter where the author discusses walls, columns and many other elements of buildings; still, the chapter is titled 'De parietibus' or "On Walls." In turn, Hrabanus had used Isidore of Seville's earlier encyclopaedia 'Etymologiae' as his model. The contents of 'De parietibus' in De Universo are practically the same as those which Isidore put under the heading 'De partibus aedificatorium' or "Parts of Buildings": both discuss walls and columns, among other things. The difference between Isidore and Hrabanus, then, is not much more than the mistake by an anonymous scribe, of inserting an extra 'ie' in the title either in the manuscript copy of E*tymologiae or De Universo*, Onians, John, Bearers of Meaning. Princeton, N. J. : Princeton University Press, 1988, p. 148.

9 Carpo, Mario, *Drawing with Numbers: Geometry and Numeracy in Early Modern Architectural Design*, in *The Journal of the Society of Architectural Historians*, Vol. 62, No. 4. (Dec., 2003), pp. 448–469; here, p. 463.

10 Carpo, Mario, *How Do You Imitate a Building That You Have Never Seen?*, see note 8, p. 233.

11 Carpo, Mario, *Architecture in the Age of Printing: Orality, Writing Typography, and Printed Images in the History of Architectural Theory*, tr. Sarah Benson. Cambridge, Mass.: MIT Press, 2001, ch. 4.

12 Alberti, Leonbattista, *On the Art of Building in Ten Books*, tr. Joseph Rykwert, Neil Leach, Robert Tavernor. Cambridge, Mass.: MIT Press, 1989, VI, i, p. 155.

13 Wittkower, Rudolf, *Architectural Principles in the Age of Humanism*, New York, London: W. W. Norton, 1971, p. 72.

14 Graf, Douglas, *Diagrams*, Perspecta 22. In the Villa Cornaro, Palladio uses a similar solution, although the portico has two floors.
15 Also the vertical subdivisions of the Villa Rotonda façade closely approximate those of the Pantheon.
16 Wittkower, see note 13, pp. 89–97; Vitruvius Pollio, Marcus, *The Ten Books on Architecture*, tr. Morris Hicky Morgan. N. Y.: Dover, 1960, V, i, 10.
17 The conceptual separation of the façade from the body of the building is a frequent theme in the cinquecento, despite Alberti's insistence on the corrispondenza. Discussing Carlo Maderno's project for a square before St. Peter's and Carlo Fontana's facade for Sant' Andrea della Valle, James Smith Pierce detects a conception of the facade as an independent element. Smith Pierce, James, *Architectural Drawings and the Intent of the Architect*, in *Art Journal*, Vol. 27, No. 1. (Autumn, 1967), pp. 48–59.
18 However, the facades of St. Mark's contain more complex plays on representational conventions: projected on a hemispherical surface over the northwestern door of the facade, there is a depiction of the exterior of the basilica as it existed in the eleventh century.
19 See Marder, T. A., *Bernini's Scala Regia at the Vatican Palace*, Cambridge: Cambridge University Press, 1997, p. 298n64; Bruschi, Arnaldo, *Bramante*. Foreword by Peter Murray. London: Thames and Hudson, 1977, pp. 122–141, 171–173, 751–757; and Borsi, Franco, *Bramante*, Milan: Electa, 1989, pp. 173–177.
20 See Varriano, John, *Italian Baroque and Rococo Architecture*, New York, 1986, pp. 151–152, fig. 91.
21 Pleased with the perspectivally distorted gallery in his Palazzo, the Cardinal admitted in a conversation to having the fantasy of introducing a similar perspective in the apse of a Roman church. He was the protector of the Minim order at SS. Trinità de' Monti, renowned across Europe for their expertise in mathematics, geometry and perspectival representations, including a virtuoso anamorphic projection by Niçeron, the great theorist of perspective, who was also a member of the order at Trinità. See Neppi, Lionello, *Palazzo Spada*, Rome: Editalia, 1975, pp. 214–216, 230, 231.
22 Vatican Library, cod. Chig. J VI 205, f . 36r. Reproduced in Brauer, Heinrich, and Wittkower, Rudolf, *Die Zeichnungen des Gianlorenzo Bernini*, Berlin, 1931, 11, pl. 62b.
23 For the exact geometry, consult Birindelli, Massimo, *Ortsbindung. Eine architekturkritische Entdeckung: Der Petersplatz des Gianlorenzo Bernini*, pb. Ulrich Hausmann, Braunschweig/Wiesbaden: Friedr. Vieweg & Sohn.
24 The façade he designed for the church of San Ambrogio in the Piazza Ducale in Vigevano is an illustration of some of this ideas. As in many designs by Borromini, including the Filippian Oratory or S. Maria dei sette dolori, the facade has been complete disengaged from the axis and volume of the church behind.
25 Joseph Connors points out that such oblique baluster forms are rare in architecture, but they are common by-products of the lathe. Connors, Joseph, *Ars Tornandi: Baroque Architecture and the Lathe*, in *Journal of the Warburg and Courtauld Institutes*, Vol. 53. (1990), pp. 217–236. By contrast, Jorge Fernández-Santos Ortiz Iribas claims that Caramuel's oblique architecture can only be understood in the context of stereotomy. He points out that "Caramuel writes about the shape of columns in terms of cuts (cortes), betraying the decisive role of stonemasonry for his theory of oblique architecture. In a manuscript draft he wrote, "cutting and carving marble is the first task of Architecture." Fernández-Santos Ortiz Iribas, Jorge, *Classicism Hispanico More: Juan de Caramuel's Presence in Alexandrine Rome and Its Impact on His Architectural Theory*, in *Annali di architettura* 17/2005.
26 By contrast, Bernini's Sant' Andrea al Quirinale is a complex composition derived from two ellipses, one defining the central space and the rectangular chapels, the other the exterior walls and the oval chapels. Irrespective where they are positioned along the edge of the interior ellipse, the chapels are equally deep. Caramuel's illustration XXIII in the Architectura obliqua proposes something comparable. The plan is an oval surrounded by a ring of columns. While the ring has a constant thickness, the columns vary in width so that from the center of the oval, they will appear to have the same width.
27 Here, Borromini may propose a pun on Alberti who twice in his Ten Books uses the word 'ear' to describe standard door-framing volutes, claiming their shape resembles "that breed of dog with a keen scent and a fine sense of hearing." Alberti, *On the Art of Building in Ten Books*, VII, 12 (p. 225) and VIII, 9 (p. 286). See Shawe-Taylor, Desmond, *Walls Have Ears: Some Aspects of Roman Baroque Architectural Decoration*, in *Architectural History*, Vol. 36. (1993), pp. 19–45.
28 Lynn, Greg, *The Dynamics of Surface*, in Johnson, Philip, *Turning Point*, Ausstellungskatalog. Springer Verlag Wien, New York 1996, p. 9f.
29 Although these principles have often been endorsed by modern and contemporary architects, there seems to have been a partly hidden desire to reintroduce ornament through the back door – through complicated design processes, opulent materials, over-articulation of structure etc.
30 http://images.google.com/imgres?imgurl=http://www.elementlabs.com/img/post_images/doha/thumbnail.jpg&imgrefurl=http://www.elementlabs.com/category/projects/page/2/&h=169&w=300&sz=33&hl=en&start=16&tbnid=sM4aVXDyMPnpkM:&tbnh=65&tbnw=116&prev=/images%3Fq%3Dkhalifa%2Bstadium%2Bled%26gbv%3D2%26svnum%3D10%26hl%3Den%26sa%3DG