

REDEMPTIVE TECHNOLOGIES II: THE SEQUEL (A DECADE LATER)

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Abstract. Nearly ten years ago I published an article in the Dutch journal *ARCHIS* called "Redemptive Technologies." It derived from comments I made during a conference held in New Orleans in 1994. At that point the machine aesthetic associated with the "new technologies" generated by the computer had not established a precise formal vocabulary but were generating great excitement among the architectural *avant-garde*. It addressed the limits of the imagery and data produced by this machine and the simple but very political problem of cost and obsolescence. Now the millennium is well past and the somewhat apostolic fervor that accompanied the interaction of a very expensive consumer device with architecture has cooled. Discussion has generally moved from the titillating possibilities opened up by the device, many of which have so far not come to pass, to the sorts of hard and software available. An architectural language closely associated with the imagistic potential of new programs, biomorphism, has now come and gone on the runways of architectural taste. And yet, in recent articles rejecting the direct political effect of architectural work, the potential of new programs and virtual environments are proposed as alternative directions that our perpetually troubled profession may pursue.

This paper will assess the last decade regarding the critical climate that surrounds cyber/technology. In the economic context of architectural education in which computers are still a central issue, the political issues that evolve will form a backdrop to any discussion. Furthermore, the problem of the "new" language of biomorphism will be reiterated as an architectural grammar with a 100-year history - from Catalan Modernismo and Art Nouveau, through Hermann Finsterlin and Eric Mendelsohn's projects of the 1920s, to Giovanni Michelucci and Italian work of the post-war, to Frederick Kiesler's Endless House of the late '50s, continuing through moments of Deconstructivism and Architectural Association salients, etc. These forms continue to be semantically simplistic and hard to make. Really

the difference is the neo-avant-garde imagery and rhetoric involved in their continuing resurrection.

Computer images, but also the ubiquitous machine itself, are omnipresent and often their value is assumed without question or proposed as a remedy for issues they cannot possibly address. This paper will underline the problem of the computer, of screens and the insistent imagistic formulas encourage by their use, and the ennui that is beginning to pervade the discipline after initial uncritical enthusiasm for this very powerful and expensive medium. But it will also propose other very valuable directions, those relating to reassessing the processes rather than the images that architecture engages, that this now aging "new" technology can much more resolutely and successfully address.

1. Redemptive Technologies II

"We live in a world populated by structures - a complex mixture of geological, biological, social, and linguistic constructions that are nothing but accumulations of materials shaped and hardened by history." Manuel De Landa (1997)

In the beginning of 1996 I wrote an essay called "Redemptive Technologies." (Stanton, 1997) It was published in the Dutch journal *ARCHIS*. It also appeared in the *Proceedings* of the 1996 ACSA International Conference in Copenhagen as "Redemptive Technologies: Millennialism and the Loss of History," and in the *Proceedings* of the ACSA Southwest Regional Meeting in New Orleans, again in 1996. It derived from comments I made during a conference held in New Orleans in 1994. At that point the machine aesthetic associated with the "new technologies" generated by the computer had not established a precise formal vocabulary but was generating extreme "nostalgia for the future" (Silvetti, 2003/2004, p.26) among the architectural *avant-garde*. While an uncritical almost-evangelical enthusiasm for what was then a relatively new and very commercially successful mechanism was at its maximum, the look of its product was not yet formulaic. The essay urged caution regarding the historical problem of transcendental belief in technology. It addressed the limits of the imagery and data produced by this machine and the simple but very political problem of cost and obsolescence.

Now a decade has framed the millennium and the apostolic fervor that accompanied the interaction of architecture with a very expensive consumer device has cooled. Discussion has generally moved from the titillating possibilities predicted for the device, many of which have not yet come to pass, to the sorts of hard- and software available. (It is disturbing to me that so many conversations I participate in these days with fellow practitioners

and academics focus on the material aspects of this one very minor aspect of our complex endeavor.) Biomorphism, an architectural language closely associated with the imagistic potential of new programs, has now passed on the runways of architectural taste. And yet, in recent articles rejecting the direct political effect of architectural work, the potential of new programs and virtual environments are still proposed as alternative directions that may redeem our perpetually anxious profession. In a recent one Michael Speaks dismisses architectural theory as having "lost its allure and all connection to the real world," and "not just irrelevant but was and continues to be an impediment to the development of a culture of innovation in architecture." (Speaks, 2005, 74) This simplistic condemnation of theory in the last decades appears to be politically complicit with very American and neo-conservative anti-intellectual agendas that dismiss thought as essential to action. His accusations of leftist irrelevance, apparently leveled at the entire body of late-20th-century architectural discourse, seem to reflect market concepts and regime strategies as they now exist. Speaks makes the strangely tautological statement, "Few, however, have recognized that we don't just need a new 'theory,' but instead we need a new intellectual framework that supports rather than inhibits innovation." (Speaks, 2005, 73) It is clear that this is not a rejection of theory but of his immediate predecessors, whom he names specifically, and of their *avant-gardist* leftist version of theory as he defines it. In a predictable reaction to the "anxiety of influence," (Here I sample Harold Bloom. The poetic struggle against the strong figures that shape immediate creative action is perhaps most clearly described in Bloom, 1973)

Speaks is attempting to make room for his brand of "operative criticism," his own form-friendly theory in other words. (see all of the work of Manfredo Tafuri but particularly Tafuri, 1976 and Passerini, 1992) The insistence on innovation also clearly reiterates the mantras of *avant-gardism*, but the rejection of a critical or resistant role for that innovation then places it in the service of the marketplace, a seminal contradiction that much of the neo-*avant-garde* seems to overlook or even accept. (Stanton, 1992, & Stanton, 1998) In order to do this Speaks ends up agreeing with the large conservative element of the profession that rejects the clearly essential ideological aspects of our work in favor of a practice-friendly business model in better accord with late-capital. After several pages of easy dismissals of the very complex and rich formulations that have critically redefined our discipline, Speaks then predictably turns the discussion toward computer applications, to "...new, digitally driven forms of prototyping, where the prototype, which can be analyzed, tweaked, and adjusted, becomes a tool of innovation and not just a version of the final design." (Speaks, 2005, 75) His proposal for a theory after theory is again one in which software seems to provide the answer to the problem of architecture's

increasing irrelevance - much the same promise I encountered more than a decade ago in New Orleans. In the economic context of architectural education in which computers are still a central issue, the politics that evolve form a backdrop to any discussion.

Certainly, in the ensuing decade, the computer has replaced the drawing table. Occasionally one finds a dust- or document-covered board in some corner of an architectural firm but now the workspace for designers has been transformed into a simulation of that of other workers in the cyber-office, an isolated cubicle with computer as focus. The distinct and romantic vocational environment of the architect, and of other designers, is gone and we take on the universal attitude of late-capitalism's generic laborer, a setting that extends to the home and the commute to work (screens, isolation, spun information, gadgets). The implications of this are alarming of course in the basic context of labor relations and environment as they have manifested themselves in the 21st century but they also generate specific questions in relation to architectural practice. Was there a value to drawing and model-making? Has that value, if it existed, been supplanted by greater value generated by working with mouse, keyboard and screen? Given my generation's experience and love of the craft of design, I certainly believe in the importance of the physical interaction with form that occurs when one represents in two or three dimensions. The connection of hand and eye, passing through the intellect, seems to be a crucial one to me. In order to draw the designer had to access either visual information or the imagination or generally both, filter it through a perceptive sieve and then act with the hand to produce image. To replace that with the automatic translations that can be made by the computer, which replaces not so much hand or eye but brain in this formula, must be questioned. My students no longer sketch even when I ask them to, either as a design tool or when we travel for study. They take photos instead, often digitally to download and doctor on computer afterwards. This has its value as a recording but plainly does not enable the connection of eye, brain and hand, and the mnemonic possibilities inherent in that relationship, to flourish as sketching did. This may partially explain some of the recent tendency throughout the architectural critical community to downplay the importance of the given and the past, as was the unfortunate tendency before the Post-Modern period made its most valuable if short-lived contribution, that of reclaiming history. The formats of cyber-work tend toward a floating bite-drenched present.

Very clever programs tend to do a lot of the work for us and I have found that most designers who depend primarily on the computer as a design device are ready to abdicate a great deal of responsibility to the automatic formats and extrapolations that these programs provide. Certainly one can suppose, and this is always the argument given by enthusiasts, that these programs empower to greater acts of imagination and more creative formal

interpretations but, in office and as an educator, I have found this not to be the case so far. Instead I have found that the instrument often tends to control the product, given the ease with which form can be extrapolated and the exponential permutations that can be produced almost instantly. As with all laborsaving devices, we tend toward complaisance in the gentle embrace of their systems. We have replaced the learned and personal interpretations that representation forced on the individual designer for somewhat generic choices of pre-packaged formats provided and already crafted by the software we adopt.

The labor involved in learning to draw and in devising personal systems of representation had great value. The time it took to draw generated a form of image-responsibility, a conciseness that more accurately reflects the difficulties and costs of construction. When one had to draw a thousand windows one thought about their applicability and modularity. Now a button will replicate and another distort. Until construction can reproduce the slickness of this process, there will be grave disparities. This can be seen in the fissure that has formed between incredibly complex designs generated by new software and the failure to construct those designs or the poor results and shortcuts taken when they are constructed! (see the discussion later in this paper of the Korean Presbyterian Church built in Queens in 1999 by Douglas Garofolo, Greg Lynn and Michael McInturf.) It may be possible however that the synaptic value lost with drawing will be replaced by other synaptic values generated by mastering the complex processes and methods that computers demand of their users. More polemically it might be said that the same processes are really in place in drawing and computing. Attempting to resolve vision, in both its meanings, with an image produced, is a procedure of arriving at visualized form but also of allowing its representation to enter into a critical relation with the original vision. It is indeed possible, although only intermittently realized, that the formats offered by new technologies are a launching-point for intense and novel investigations on a formal or methodological level. They certainly facilitate the more mundane aspects of architectural production. For instance, the assembling of contract documents has undoubtedly been made more efficient both to initiate and to change due to computer applications. Construction and reactions to changing conditions while constructing are vastly more efficient now due to the new technologies. Communication and work from different locations are likewise facilitated. But the more complex interaction of new softwares with design work and the often numbingly ersatz nature of renderings done by computer need to be further perfected to arrive at generally satisfactory levels.

Those who easily shrug off the potential damage done by computers to architectural design often compare it to the decade-earlier effect, or lack of effect, of word-processing programs on the field of writing. This comparison

ignores a crucial issue. Writing is a means to an end in most cases. The words on the page communicate by association. Our art on the other hand is producing form, the end product of our endeavor, by hand or computer. Therefore, since the final result is affected by the means of representation and since, in this final product has visual and artistic qualities, many other issues come into play, aesthetics only being one among others, formal, ideological and symbolic. I would continue with a similar argument to that made by Alan Colquhoun about the then-trendy introduction of literary critical models, in particular semiotics, into the discussion of meaning and form in architecture in his seminal article from 1972, "Historicism and the Limits of Semiology." (Colquhoun, 1981) The ease issue in the comparison of writing and design softwares is probably apt. It has become easier to edit than it used to be and this does not seem to have damaged the art of writing particularly, although I am sure some literary purists believe that the rigor and responsibility entailed in hand-writing or typing a text has been abdicated in the smooth world of cut-and-paste grammar-check. It is also the ease of certain quotidian architectural processes not unlike editing that may be so far the greatest value of this very expensive and pervasive device, not the ease of making strange forms or luscious visualizations but in the ease with which working drawings can be changed and react to changing construction parameters for instance.

"...the investigation and application of technology by architects must consider the ramifications of the potentially reckless and uncritical coercion of technology's powers into architecture." Peter Zellner, (1999)

In the decade following my first article, the call for "new technologies" gelled as a relatively homogenous global representational system facilitated by flexible visualizing and rendering programs such as Maya, 3ds Max, Rhino, ArchiCAD, Form Z, Softimage, etc. The agenda of much architectural discourse seems to be to arrive at novel forms. While this direction is historically problematic it is also compelling. In 1994 I wrote "For all the intellectual subtlety demanded by the internecine practice of architecture, our community remains very literal in its hermeneutics. Connective tissue of a critical-productive sort is lacking, and theory itself remains largely formalist in its excavations and conclusions. Should an interpretation of Gilles Deleuze's meditations on the Baroque in *The Fold* (Deleuze, 1988) legitimize a formal strategy for making folded buildings? Do cultural chaos or fragmentation call for their doubles in architectural form? These exact transpositions are problematic and they again indicate that the search for pure form remains a primary and problematic goal of theory. Shouldn't it find parallel or analogous constructs rather than identical forms? Literalness both in the interpretive actions of theory and in the

perceptions of its audience affects the possibility of an active link between theory and making, and tends to contribute to a severe skepticism on the part of the latter toward the former, its very essential discursive other half." (Stanton, 1994.)

Much of the excitement generated by the images offered by the computer was for those 3D images produced, rather than for the myriad other ways this instrument could invigorate practice, resolving complex issues on a statistical basis or aiding in various organizational tasks. (Stanton, 1997; Stanton, 2001; Stanton, 1996; Stanton, 1994; Stanton, 1994.) In a field in which the finality of image is teleologically inevitable and in which all the formats of presentation emphasize the look of the end-product, perhaps it is inevitable that our critical community should be focused on this particular aspect of an incredibly complex discipline. It is certainly not wrong to make or try to make form, as the strangely puritanical anti-formalist movement seems to imply. Form is the bottom line of our practice, not philosophy nor social responsibility although both obviously have a relation to forms produced. The problems inherent both in the development of a distinctly image-based theory paradigm and its antithetical relation to a very superficial and often self-serving call for "social" architecture couched in a rejection of the inescapable image-nature of architectural form is the topic of another discussion but one that should be engaged rigorously since it seems to pull architectural work in two extreme and dubious directions. (see an approach to this issue in my discussion of the archtypical struggle for the *avant-garde* mantle between Peter Eisenman and Diane Ghirardo, in Stanton, 1999; Stanton, 1998; Stanton, 1998.)

Whatever discursive flack may surround this phenomenon, computer imagery, but also the ubiquitous machine itself, are omnipresent in our field and now consume large sectors of office and school budgets. Often their value is assumed without question or proposed as a remedy for issues they cannot possibly address. This paper underlines the problem of the computer, of screens and the insistent imagistic formulas encourage by their use, and the ennui that is beginning to pervade the discipline after initial uncritical enthusiasm for this very powerful and costly medium. But it should not be seen as a simple rejection of this consumer device and all it offers and stands for. While encouraged by the modern age and Manfredo Tafuri toward skepticism I am not a Luddite. This paper will propose other potentially valuable directions, those relating to reassessing the processes rather than the images that architecture engages, that this now aging "new" technology can much more resolutely and successfully address.

Jorge Silvetti said in 2002 "...the sudden outburst appeared strange, a few years ago, of shapeless creatures, seemingly from outer space or some bad intestinal condition...The computer intimated that it could produce forms that not only do not have precedent, but more perplexing, may not even have

referents! Freedom from semantics, history and culture was perhaps made possible for the first time in civilization." (Silvetti, 2003/2004) Among the Dutch adherents are Lars Spuybroek and Ben van Berkel, but not Claus en Kaan, MVRDV or Wiel Arets. Few Swiss seem involved. London and Paris have some enthusiasts. Graphic design seems to have had a profound effect on new architectural form-making in its embrace of bubble-formats and soft corners in emulation of the work of the '70s. Americans are thinly represented and those who are, are mostly connected to the superb architecture schools at Columbia University and SCIArch in Los Angeles.

Biomorphism is not new. In fact, as a representational system, it may be as old as human culture itself. Perhaps it has always been present as a foil for the hard-edged and right-angled and their very arbitrary appropriation of human aspirations toward rationality and order. Certainly the very first attempts at depiction that still exist were dominated by images of animal and human activity portrayed in a semi-abstraction that acknowledged the soft lines that characterize the biological world. It was the first images of centralized culture, those of the Egyptians and other cultures of the Middle East, that presented a more rigid format for describing the rituals and hierarchy of court life and divine intervention. From then on a dialogue between the corporeal and the right-angled took on the accepted responsibility for projecting the "natural" and the "rational", themselves both extremely artificial cultural constructs. (Stanton, M., 1991) In Classical Art this dialogue is thematic and intense. It carries especially into the somewhat contrived polarities established between the Gothic and its Renaissance "other." Particularly, the attempts to place religious imagery with one or the other has tended to blur the arbitrary semantics they have accrued. This was particularly embodied in the regionally ubiquitous and structurally problematic form of the dome with its references to both flesh and the heavens. The dome's elaborate constructional prerequisites placed it firmly in the realm of engineering and its rationalisms while its transcendental allusions and sensual form set it against them. The biomorph has thus been positioned firmly in opposition to the lines and angles related to hegemonic order, and has joined forces with all the manifestations of expressionism against what have been designated as society's favorite forms for control and reason: the grid, the Platonic figure, the parallel and perpendicular.

The next historical step, taken at the dawn of Modernism, was an automatic association with freedom, even revolution, tending toward perpetuations of the random and wild dear to the classical *avant-garde* and embodying all the contradictions inherent in the relation of the *avant-garde* phenomenon to the bourgeois culture that it was both part of and antithetical to. (see, among many texts, Poggioli, 1968). In the Modern Age the antagonism of the biomorphic to the more orderly representational disciplines has taken on an even more emphatic and sometimes simplistic

demeanor. It is a grammar with a 100-year history in Modern Art, from Art Nouveau to the blob. A particular example from the late-19th-century is Catalan Modernismo, not just the well-known work of Antoni Gaudí but also that of Lluís Domènech i Montaner, Josep Puig i Cadafalch and others with whom Gaudí was a collaborator. This tendency in Barcelona continued throughout the history of Modern Architecture there influencing Josep Antoni Coderch and resulting in the extraordinary contemporary work of Enric Miralles and Carme Pinós, Elías Torres and José Antonio Lapeña, and of younger Catalans who have devised a response that is surprisingly independent and preemptive of the computer-generated forms evident in other less-traditional expressionist locales. To my knowledge, before his untimely death in 2000, Miralles never used the computer as a design tool in fact and rarely for any professional applications. A large triangle placed at any angle on the drawing board substituted for the parallel rule that was obviously not applicable to his work.

Expressionism's close relation to the "new" forms generated by computers should be noted. This is not to discredit their novelty. Through their unique permutations, all forms are novel and, at the same time, almost none are, in the sense that they refer to, or extrapolate from, existing models. Both the ideological and formal manifestations of anti-rationalism continued and increased in volume during the early Modern period and the apex of Expressionism immediately following the horrors and vast social upheavals brought about by World War I. In painting Wassily Kandinsky innovated with both abstract and explosive forms. In direct complicity with an international *avant garde*, Hermann Finsterlin's, Hans Scharoun's, early Mies van der Rohe's and Eric Mendelsohn's architectural projects of the 1920s, juggle jagged and visceral forms in clear resistance to the orthogonal associated both with Classical form and the rational. These may have found a more comfortable place in the less mimetic media of architecture rather than in the fine arts where figuration remained preëminent. Artistic Expressionism tended to remain distortedly representing know objects and conditions. (It is obvious that architecture does imitate things other than buildings, even sometimes directly, in reference to mountains [setback skyscrapers] or tools and machines [from Claude-Nicolas Ledoux to Neil Denari and Shin Takamatsu] for instance. In a slightly less direct way this is a theme conveyed from Marc-Antoine Laugier through Gottfried Semper to the current semantic/syntactic controversies. Nevertheless the drive to imitate is more compelling in the fine arts and the direct attempt at mimesis that characterized them until this century has had to be less overt in architectural work whose forms, controlled somewhat by practical constraints and often intense tradition, are primarily self-referential rather than capable of imitation universally.)

The dominance of Rationalism in Modern architecture is more of a critical construct than a universal fact, even at the most ostensibly doctrinaire Weissenhoff-Siedlung times. Furthermore, many of the most committed proponents of Rationalism were clearly experimenting with more expressionistic, primitivist or surrealist modes by the 1930s. The Purist painter Le Corbusier in the Pavillon Suisse, the Bestegui apartment, the Maison du Weekend, etc., was employing all three and moving toward the organic and away from the engineering references that were even compromised in his early villas and projects of the 1920s. (Here I use *organic* without the various references to naturalism, vernacular culture, pastoral and new age enthusiasms, health and goodness, hippies and conservationists, anti-authoritarians, etc. that have become attached to the term. Instead I refer directly to the organs, to the materially visceral, both formally and in relation to the emotional and behavioral conditions that are associated to the guts and to the senses other than that of sight to which they respond.) In Le Corbusier's works like the Maison La Roche-Jeanneret, the Villa at Garches and the Villa Savoye, the white and orthogonal is always set in juxtaposition to curvilinear shapes and intense colors, sometimes, as in the master bath at Savoye, recalling both body and landscape. The rise of a truly-abstract expressionism was again provoked by the even-more-drastic horrors and implications of World War II and was centered in New York. (Stanton, 1994; Stanton, 1994 [2]; Stanton, 1993; Stanton, 1992; Stanton, 1991; Stanton, 1985.) The effect of the works of Willem de Kooning, but also of abstract organicists like Isamu Noguchi and Constantin Brancusi and their contemporaries is historic. Expressionist architecture followed by Brutalism adopted a language intensely tactile and non-rational, sometimes irrational. The names of Eero Saarinen, Paul Rudolph, Oscar Niemeyer and Le Corbusier of the Ronchamp period are obvious but far from comprehensive.

In Italy more than most places this occurred with unusual finesse and acknowledgment of history as is typical. Luigi Moretti and his contemporaries developed a reaction to the controls levied on architecture during the Fascist period, controls that nevertheless produced extraordinary syntheses. I wrote "In the Fascist era the service required of architecture was clear, if numbingly contradictory. To simplify the criteria of a complex mandate, the Futurist-Classical requirements set forth, the simultaneous call for progress, in its early-20th-century force, and alignment with the Roman Empire, in its imperial promise, led to the tense juxtapositions and compromises that made the architecture of the period between the World Wars so rich in Italy." (Stanton, 1997[3]) Giovanni Michelucci's church of San Giovanni Battista on the Autostrada in Florence of 1962 is such a reaction. Its facades are contorted and sculptural but it is the interior, with reference to bones and flesh, that is most extraordinary. I wrote "This design

of 1960 by Michelucci does indeed evoke the dynamism of the highways in its winged and tent-like forms, and it refers to the nomadic nature of the both site and of religious myth. The rough stone of the base contrasts with the flowing, bronze-sheathed roofs. Upon entering the building, the visitor is swallowed in an organic surround. Columns and roof form bones, joints and skin. Poured concrete hangs on the sharp and cracked structural network. More literally than at Ronchamp, the body of the viewer and the broken body of the building are compared directly. Mortality is stressed and stillness echoes within the frame of the chapel." (Stanton, 1995)

Frederick Kiesler's Endless House of the late '50s, whose particular relation to Frank Gehry is seminal, more emphatically refers to the bodily organs or their contents. Gehry's particular use of the computer is inventive and practical. Early sketches and trash models are converted to cyber-forms that are then adjusted in relation to analog investigations. When these forms have to be frozen as built-form, sophisticated programs take over and convert them into modules and surfaces that can be communicated directly to machines to mill, extrude or cut, producing unique surfaces within the constraints of material, gravity and structure. Zaha Hadid also seems to largely design in an analog practice and to use computers for construction and development purposes. The production of forms like those generated in Gehry's or Hadid's offices or in other more-computer-influenced practices has proved to be very difficult given the unique nature of episodes within the total compositions and the complex and expensive fabrication and construction processes that entail. In Gehry's case in particular, the use of computers has concentrated on immediate relation of form-making to construction and to make the impossibly complex possible to construct.

Biomorphs and expressionism are inescapably allied when discussing the imagistic formats enabled by computer rendering techniques. Deconstructivism was the reinvention of these historic attitudes in the period following historicist Post-Modernism and just before the computer tsunami. Preceded by Architectural Association salients including the early work of Hadid and OMA elaborating expressionist form as social action Deconstructivism revived many of the ideological formulas and forms elaborated so far in this paper. The work of Cedric Price and Archigram, the epistemological mentors of Koolhaas and company, was an elaboration, in nonsculptural terms, of the monolithic objectification of Brutalism. The domineering object became the mobile, but equally domineering, event. Thus the neo-Brutalism that is dominating our contemporary architectural stage has direct roots in the exciting if overbearing textures and forms of the late '50s and '60s: from rude organic concrete to rude event to the excesses of metropolitan "bigness." Deconstructivism's historic reference back to Russian Constructivism clearly ignored all the subsequent development of what was a dominant theme throughout the 20th century. The reason was

ideological. Constructivism was literally revolutionary, in service of a real and extremely violent revolution, while the forms of artistic expression that followed tended to be personal, surrealistically psychological, or in the case of Brutalism in the West, directly in the service of capitalist economy. To jump back past all this compromised representation to the jagged vocabulary of '20s Soviet form placed the "discovery" of Philip Johnson and Mark Wigley, and its *couture*-Bolshevik discoverers, comfortably in the center of neo-*avant-garde* discourse.

Whatever their complex history might imply, biomorphs and expressionist explosions continue to be hard to make. The lessons of Brutalism, largely produced in poured concrete with complex form-work that allowed a ductile material to take shape, seem not to apply to current computer generated shapes. Shouldn't the computer itself aid in the formation of emerging techniques for construction of organic forms? So far it seems to only have been intermittently applied to this purpose. The extensive and portentous publishing of the rather ordinary and scattered Korean Presbyterian Church built in Queens in 1999 by Douglas Garofolo, Greg Lynn and Michael McInturf, was often accompanied by the excited claim that it was designed entirely on computer and in interaction between geographically separate designers. Hasn't this been standard corporate practice for at least a decade? The real difference is the neo-*avant-garde* imagery and rhetoric involved. The church's actual making, in the reduction of curved forms into faceted ones that can be constructed more readily with the straight members that characterize quotidian building in the U.S., seems to not have innovated where innovation would have really made a difference with intense formal consequences, in the making of the thing. The early drawings of this building, soft, amphibious and beguiling, became radically altered when built. Ways of production and material permutations have to be addressed in conjunction with the revival of, and reassessment of, organic form in this period of technological transformations.

Given the reluctance on the part of the building industry to adapt to new formal requirements and the unwillingness of the design community to investigate these images beyond their tantalizing shape, these forms continue to be hard to make. The moment of blobs seems to have passed without much production, like Deconstructivism did before for similar reasons, as Rem Koolhaas described "undone by one section of the present *avant-garde* in compositions of almost laughable pedantry and rigidity, behind apparent wildness." (Koolhaas, 1995) Economy and inertia in relation to the making of buildings have made refined realization of biomorphic form very difficult if not next to impossible in this era. The complex computer translations used by Gehry somewhat contradict this, but at dizzying cost.

Strangely, in other periods of similar syntactic interest like those of Modernismo and Brutalism, much more "primitive" technologies were

effectively brought to bear to produce tactile realizations. Perhaps this is because, in those instances, the "new technologies" of the era were addressing the ways and means of construction while in this era it is imagery that is the focus of experimentation. This is a real shame because, while these forms are no longer revolutionary or even particularly radical, they do set up a counterpoint to other design strategies and, if they could be effectively made they could expand the possibilities of both the appearance and, more importantly, of the methods of architectural work, as did their Brutalist progenitors 40 and 50 years ago through the reinforced-concrete technology with which they were realized. Shouldn't new or different forms be made in new and different ways? And isn't our tired and retrograde discipline badly in need of such ways?

Why not use the computer to analyze and reform the way we do things in the office; labor relations, production cycles and human resources, client interaction, economic flow, etc.? This instrument is really skilled in these arenas in which statistics and impossibly complicated assessments can be easily made. Here, on a methodological level, architectural theory will find a firmer base than the formal investigations that so often require damaging compromise or post-rationalization in the leap from idea to image to built form?

"The second strategy, disappearance, transcends the question...of massive presence - through an extended engagement with simulation, virtuality, nonexistence." Rem Koolhaas (1995)

Computer imagery, but also the ubiquitous machine itself, are omnipresent. Obsolescent cyber-gear, usually only a few years old and put out of business by cunningly escalating software, litter the landfills. At architecture shows, the viewer is invited to sit at monitors and browse more flashy formats. In other words, one is asked to exchange the "aura" of the exhibition for the quotidian one of office or home. While this is possibly an interesting shift in representation, in an exhibition it seems almost entirely tedious and alienating. Who goes to a great exposition to sit at another computer? This underlines the problem, of screens and the insistent imagistic formulas encourage by their use, and the ennui that is beginning to pervade the discipline after initial uncritical enthusiasm for this very powerful and expensive medium.

Finally, like other innovations in representation, technology, methods of production and the critical formats that accompany them, the computer will change what we do, just as the elevator, Socialism, steel and reinforced concrete, Expressionist art, parallel rules, one- and two-point perspective, air conditioning, French theory, Andy Warhol, etc. have done, for better and worse in each case. It is necessary, as I urged ten years ago, to weigh the

inherent values of this pervasive new medium, for we should search for value in all innovation and not just accept it as good as has been the custom throughout the Modern era with its *avant-garde* cult of novelty. Again as I urged, now that "nostalgia for the future" (Silvetti, 2003/2004) has become real-time, we must realize its inherent position at the center of turn-of-the-century consumerism whose cycles of obsolescence, software and hardware incompatibility, etc., have begun to engulf all other academic and professional budgets. Is it worth it? How can it be made most cost-efficient? How can it best be directed to address the cultural dimensions of our very engaged discipline? Should we give up all other hand operations to the mouse? This may lead to real innovations in the relation to practice, method, even form.

"What criticism ought to ask about architecture is, instead, in what way does it, as an organized institution, succeed or not in influencing the relations of production." Manfredo Tafuri (1974)

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