

THE "TECTONIC BUG" (THE FALL OF THE BODY IN CYBERSPACE)

CURRENT AND RECURRENT TENSIONS BETWEEN THE VIRTUAL AND THE TECTONIC¹

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Abstract

Architects have been opening up onto cyberspace for more than a decade now. In terms of disciplinary issues, at stake is our ability to inhabit this new space as "designers" and not just as spectators. In the mid 90s, two theories engaged in a major confrontation. The first valued the virtual dimension of architectural space (W. J. Mitchell, *City of Bits*, 1995³), the other valued the tectonic dimension and its constructive poiesis (K. Frampton, *Studies in Tectonic Culture*, 1995⁴). Although divergent in their view of architecture's role in the future of our technological societies, both theories revealed aspects of our relationship to the contemporary body that were, and today remain, inseparable. Where Mitchell's book clearly intends to establish cyberspace as a new playground for architects, giving convincing examples of the programmatic mutations of modern spatiality, Kenneth Frampton's work, *Studies in Tectonic Culture*, reexamines the constructive culture underlying the modern conception of space. Neither a simple history text nor a collection of technical poetry, this latter work is a manifesto developing a set of materialist ethics for the discipline of architecture. This "rappel à l'ordre"⁵ to resist the increasing dematerialization of architecture closes tentatively with Le Corbusier's classic metaphor of the acrobat: The architect, he said, must not look for truth in extremes. Rather, he must struggle constantly to maintain balance. "Nobody asked him to do this. Nobody owes him any thanks. He lives in the extraordinary world of the acrobat". Following Le Corbusier's advice, and in consideration of current and recurrent tensions between the virtual and the tectonic, what can we say today of such a delicate equilibrium?

These questions persist in this new millennium, a time when computer science refers to the grains of sand, the viruses – all those insignificant things that can bring down an electronic system or network – as "bugs". In the following pages, I will put forth a resolutely critical hypothesis that, in architecture, the "bug" inherent in digital architecture is still tectonic.

To do this, I will give several examples of one rare and persistent rule in architecture: the law of the falling body in architectural space. The question will not concern a discussion of how the tectonic is – monolithically and theoretically – a modernist philosophy of construction now out-dated in the era of virtual reality. Rather, it will concern itself with illustrating the (quasi-retrograde) modernity of the very concept of space, as it is outlined in most cyberspace and virtual space manifestos. For some writers, cyberspace is positioned as clearly more distant

from physical architectural space as modern space was from classical architectural space, the main difference being a contemporary dematerialization of bodies thereby considered as a "progress". By a curious process of transferring meaning, and a kind of historical amnesia, we have come to consider that a few algorithms would hold the secrets of contemporary spatiality. A myth analysis, although quite sketchy, of what architects can expect of cyberspace may therefore contribute to throwing some light on this issue.

A recent book published in 2004 under the direction of Neil Leach, David Turnbull and Chris Williams, called *Digital Tectonics*, is in itself (or despite itself) proof of a persisting tension revived by Kenneth Frampton's tectonic project. The expression "*Digital Tectonics*" has something that leaves us perplexed in the theoretical desert and the theoretical fog that

- 1 This paper is a translation based on a chapter to be published in a forthcoming book on tectonics co-edited by Jean-Pierre Chupin and Cyrille Simonnet: *Objets et trajets du projet tectonique*, Éditions InFolio, Geneva, 2004. The author would like to thank Zoé Blowen-Ledoux for the translation and Elsa Lam, PhD candidate at Columbia University, for the revisions and adaptations.
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Responsable du Laboratoire d'étude de l'architecture potentielle (www.leap.umontreal.ca)
- 3 William J. Mitchell, *City of Bits (Space, Place and the Infobahn)* (Cambridge Mass., 1995).
- 4 Kenneth Frampton, *Studies in Tectonic Culture (The Poetics of Construction in Nineteenth and Twentieth Century Architecture)*, ed. John Cava (Cambridge Mass., 1995).
- 5 This was the title of one of his first papers on the issue of tectonics. See Kenneth Frampton, "Rappel à l'ordre, the Case for the Tectonic," *Architectural Design* 60 (1990).

characterize the turn of the century. Let us admit right off that the expression is oxymoronic in its association of two incompatible terms. Certain oxymorons vibrate like a poem: the “obscure clarity that comes to us from the stars⁶”. Other oxymorons are nothing but artificial paradoxes and, to be blunt, simple contradictions. Assumedly, it is not just to assign “digital tectonics” to the realm of either semiotic pole. An attentive reading of the book sheds some light on the subject. It is introduced as a manifesto – note the unadged modernity of the term – and certainly not a distant analysis of an emerging paradigm. Rather, the authors’ objective, as put forth in the introduction, is to provide us with a manifesto for a new digitally tectonic culture in an articulation that attempts the performative. In this communal introduction, Leach, Turnbull and Williams refer to Frampton’s book, *Studies in Tectonic Culture*, as a useless argument against digital culture. According to the authors, such a controversy could have been meaningful a decade ago: “With time however, computer technologies have infiltrated almost every aspect of architectural production, and are now being used to offer insights even into the realms of the tectonic. In particular, they are allowing us to model – with increasing sophistication – the material properties of architectural components.” The authors conclude that “this volume, then, marks a particular moment in the history of architecture when the old opposition between the digital and the tectonic has begun to collapse, and the digital is beginning to be used increasingly in the service of the tectonic. A new tectonics of the digital – a *digital tectonics* – has begun to emerge.”⁷

It is striking to realize that the various authors brought together for this manifesto – in the same way that twenty years earlier several important figures assembled around the word “deconstruction” – agree to appreciate a “new gothic spirit” identified with the Catalanian Gaudi’s architecture. Much could be said also of a renewed interest in hanging chain models and in mathematical parallels as acknowledged by the final round table discussion entitled: “An Aesthetics of Calculus”. Here, we will not consider the questions (however interesting) of new and fruitful interactions between architects and engineers such as the Toyo Ito-Cecil Balmond (ARUP) tandem that are perhaps as ingenious as they are extraordinary. But we should pause over the assumption that the tension between digital culture and tectonic culture has collapsed or has already been resolved, made without considering the respective relationships of these concepts to “space” and to the fall of the body (either physical or theoretical). In historical terms, the new aesthetics of calculus may very well be a reenactment of some ancient avant-garde myths, the concept of space remaining a major hinge in architectural theory.

Indeed, most architectural theories of the 1920s have focused on the concept of space. Modernity has long sought to distinguish

itself from the weight of classical doctrine by emphasizing the axonometric representation of space and by neutering the ideal of isotropic space⁸. As such, it sought a break with phenomenological space and perspectival space. Such a shift can be explained first and foremost, Frampton explains, as artists and architects prolonged their fascination with world views developed by Lobachevsky, Riemann and, of course, Einstein. To complete Frampton’s assertion, we recall that the “futurist” artists of the avant-garde movements were the first to explore the possibilities of theories of movement and speed, long before architects. However late, architects’s fascination with the notion of space was to be a long lasting one. Frampton rightly insists upon this reorientation in doctrine when he states that: “Space has since become such an integral part of our thinking about architecture that we are practically incapable of thinking about it at all without putting our main emphasis on the spatial displacement of the subject in time⁹”. Without seeming to deny the volumetric character of the architectural form, Frampton’s approach to the tectonic seeks to “mediate and enrich the priority given to space by a reconsideration of the constructional and structural modes by which, of necessity, it has to be achieved¹⁰.” From this tectonic point of view, architecture obviously echoes the corporal condition.

The space of cyberspace

Where are we to locate the notion of cyberspace in a critical history of contemporary architecture? Is it a deliciously retro pipe dream, a wink at seventies science fiction, a finally successful marriage of cybernetics and infinite space? Or more seriously, is it rather a new avatar, a reincarnation (in the true sense of the word) of the modernist mythology centered on space? If so, can cyberspace demonstrate a truly architectural thought or does its principle reveal the unique science of computation and information calculation? The present confusion reigning at the very heart of architectural studies is not a vague, illustrated magazine question, but rather a theoretical and pedagogical challenge. Our traditions of human edification locate our corporal condition in juxtaposition with the constructed, the instructed, and the translated. The apostles of cyberspace present pretensions proposing a universe of parallel life should be measured with this constitutive triad: the center of gravity of which remains the human body.

However, cyberspace completely defies the laws of the corporal world. In consequence, under this model modern architecture and its secret attachment to the tectonic falls from its status of social utopia to that of pathetic anachronism. This is evidenced in the positions taken by William J. Mitchell developed systematically in his first book¹¹ *City of Bits* and reiterated controversially in the collective work directed by John Beckman, *The Virtual Dimension: architecture, representation, and crash*

6 A famous oxymoron from Corneille’s play : Le Cid.

7 Neil; Turnbull Leach, David; Williams, Chris, *Digital Tectonics* (London, 2004). p. 4

8 In isotropic space physical proprieties are identical in all directions.

9 Digital Tectonics. Introduction.

10 Ibid. Introduction. p. 2.

11 Mitchell, *City of Bits (Space, Place and the Infobahn)*, William J. Mitchell, *E-topia, Urban Life* (Cambridge Mass., 2000), William J. Mitchell, *Me++The Cyborg Self and the Networked City* (Cambridge, Mass., 2003).

culture (Princeton Architectural Press, New York, 1998¹²). In an article explicitly titled "Antitectonics: The Poetics of Virtuality", Mitchell writes ironically about the "satisfying thud" of Frampton's sizeable book as it hits the bottom of the library returns box. He contrasts this noise with the weightlessness of the electronic version of his own text, accessible on-line. In a manner perhaps too homophonic to be honest, he goes on to contrast the tectonic with the electronic, concluding that "Electronics now rule. The architectural profession can face this new condition as an increasingly irrelevant, resistant rump – insisting on materiality and practicing a nostalgic modernist revivalism while potential clients vote with their feet. Theorists can take solace in Heidegger, and construct loftily disdainful texts about all things technological. But it is more productive, and certainly a lot more fun, simply to retire the exhausted dogma of architectural composition and construction as our world is rewired. Here, for those who want to try it is my top-ten checklist¹³:

Retired	Re-wired
Tectonics	Electronic
Craft	CAD/CAM
Hand tools	Software
Local tradition	Global organization
Facade	Interface
Ornament	Electronic display
Helvetica	<i>Emigre</i>
<i>Parti</i>	Genome
Permanence	Reconfigurability
Learning from Luxor (stone)	Learning from Luxor (VR) ¹⁴

Attacking Frampton so fundamentally by bringing the virtual into opposition with the tectonic, Mitchell is clearly seeking to reiterate the quarrel between the Ancients and the Moderns, even if the Modern is paradoxically supposed to be the Old in this case. Beyond this generational pseudo-conflict, we should be aware that the relationship of the body to architectural space has a possible contemporary mutation: that of the image of the architect's body designing cyberspace's immateriality.

Architecture and the body, again and again

Edification always commits the body, even as it seeks to surpass terrestrial limits. This is evident in the paradigmatic case of the cathedral and Gaudi's *grand oeuvre*, still in construction in an age of satellites and computers – no exception of the embarrassing weight of the human condition. If construction in the physical world is indeed a stoic battle against the gravitational pull on the body, can the conception of cyberspace escape this by reducing the body to a mathematical variable?

As a precedent, let us recall the first editions of Vitruvius' *Ten Books* appeared like stars against the animist and hierarchical backdrop of the Aristotelian cosmos when they first appeared during the Renaissance. In this world view, the architect, in Hermes' image, attempted to transmit, translate and interpret a

nature that was shifting and worrisome. Caution was appropriate because the corporal condition remained omnipresent. Of course, the humanist theory of architecture (whether inspired by the Roman engineer or by Alberti) was never entirely spoiled in the building-body axiom (the *axiome de l'édifice-corps* to borrow Françoise Choay's expression); it did not shirk its responsibility in order to accompany mortals.

Too often, we have interpreted the renascent image of the body in light of emblematic projections inspired by Léonard de Vinci or Durer, while reducing these static figures to principles of geometric transposition (symmetry or hierarchy of the head, torso and limbs, etc.). The myth of Dinocrates thus seems to be the ultimate model for the architect, using his own body as inspiration to plan the building. In reality, most of these metaphors resided at the very heart of complicated analogical references. To interpret the Dinocrates myth as mere anthropomorphism would be to ignore the innumerable and sought-after correspondences between the microcosm and the macrocosm. As shown by the recurring debates over the necessity of optical corrections, it is not simply the visible image of the body and the face that we project onto an idealization of the building, but also the very fragility of human perception. Architecture echoing the body, the building finds itself in intimate relationship with human limitations, at the risk, of course, of putting them to the test by exceeding them. In such a world view, the building is an extension of the individual or social body of a deeper nature. In a recent and cleverly illustrated book on biological metaphors in architecture, Georges Hersey takes the risk of talking of the "Building as Extended Phenotype"¹⁵.

Architecture had to wait until the Newtonian revolution for the double Aristotelian and Platonic image of the body (already fairly weakened by 18th century medicine) to fall into the immensity of *infinite space*, the very place from which the Renaissance believed it had extirpated it. Paired with the social rupture of the French Revolution, Newton's discoveries would inspire Étienne Louis Boullée to propose the surprising, and thus "unbuildable", project of a cenotaph dedicated to his memory. But let us not be fooled: Modern space was not yet present for architects. Although Boullée's project was assuredly a-tectonic, it was not anti-tectonic.

As already mentioned, modern painters were to show architects the potentials of exploring space through axonometric representation at the very beginning of the 20th century. This help from the artists was needed in order to drop the fig leaf behind which the infinity of perspective had been modestly hidden (to use Erwin Panofsky's amusing expression). In an article entitled "Avatars de l'axonométrie" [Avatars of Axonometry] Yve-Alain Bois demonstrated quite aptly that the modern birth of axonometry in architecture dates very precisely to the "De Stijl" exposition in October 1923 in Paris, where Van Doesburg's and Van Eesteren's drawings provoked stupefaction¹⁶. Van Doesburg did not miss the opportunity to point out their immediate effect on Bauhaus architectural drawings. Yve-Alain Bois adds that Lissitzky, who had used axonometry in his series entitled *Prouns* since 1919,

12 John Beckmann, ed., *The Virtual Dimension (Architecture, Représentation, and Crash Culture)* (1998).

13 Ibid pp. 215-216.

14 Ibid p. 216.

15 George L. Hersey, *The Monumental Impulse: architecture's biological roots* (Cambridge, Massachusetts, 1999). See introduction.

16 Yve-Alain Bois, "Avatars de l'axonométrie," in *Images et imaginaires d'architecture*, ed. Jean Dethier (Paris, 1984).

would confirm axonometry's role "by the dazzling text that he designated to the processing of space across the ages, "*K und Pangeometrie*", in *Europa-Almanach* by Carl Einstein and Paul Westheim (1925). The effects of this text were such that a scholar as little suspect of Modernism as Panofsky made the effort to study it before refuting several points¹⁷."

What was at stake was no less than the emergence of Modern Space. "Suprematism caused the extremity of the visual pyramid's point to retreat into infinity", Lissitzky writes "... if we define the picture's surface by zero we can symbolize the *direction of depth* by a minus and the *direction of relief* by a plus or vice-versa..." What fascinated avant-garde architects (the constructivists even more than the futurists) was the assurance that the axonometric image was reversible when not shadowed; ambiguity was absolute because the space represented would then be theoretically isotropic. Malevitch would employ this ambiguity generously, precisely for its potential for optical illusion. We must note that even if constructivists adhered immediately to the new models of space, they were never to renounce the debate over tectonics. They distinguished clearly between *tektonika*, fabrication (*faktura*) and construction (*konstruktivii*) as Alexei Gan's *Constructivism* testifies, for instance (1922).

Once again, what is at stake in the *symbolic form* of axonometric space (as was the case in the symbolic form of perspective space¹⁸) is the cosmological positioning of the body as it was traditionally and analogically relayed by architecture. We might agree with cyberspace designers that the images of Le Corbusier's modular body, Schlemmer's energetic dancing body, Max Ernst's collages of the psychoanalytical body, Baumeister's surrealist body, or simply Steinberg's caricatural and cynical body are no longer pertinent as our vision of the body. But even so, can we say that cyberspace radically reforms our corporeity by subtracting the image of the body from qualitative orientation? In a revealing (or simply aestheticist) fashion, the "Peace and Love" rhetoric of the seventies (embraced, for instance in the Superstudio manifestos) is often used to demonstrate that cyberspace in its current state would have already accomplished the most farfetched of egalitarian dreams. If the undifferentiated grid of Superstudio's emblematic images was a somewhat naïve political project (no frontiers, no limits, no land properties) what can we expect of cyberspace utopias?

New modernists running after modern space

A while ago, much the same question could have been addressed to neo-modernists and their nostalgic, yet intellectually refined, attempt to prolong the reflection about space that was undertaken by the avant-gardeists. The New York Five, with Peter Eisenman at their head, were not wrong to put into question the tools used to conceive of space. Eisenman's *EI Even Odd* house, which is presented as an axonometric house, is in this sense an intermediary project between physical space and represented space. In final analysis, it constitutes an ironic criticism of the drawing's machination

of the architect's mental space. The fate of the axonometric project is analogous to that of Jesuits' anamorphosis, which sought to provoke an abolition of the pretensions of perspectival space in order to put man back in his modest place in the divine plan. It nonetheless posited a "privileged" point of view among others. Peter Eisenman's point of view is most often a criticism of the limitations of architectural representation. For example, commenting on the uncanny graphics in Daniel Libeskind's "Chambers Works", Eisenman wrote in 1983:

"Within the realm of orthodox architectural drawing perhaps only Aldo Rossi has achieved such a critique of drawing today – an inversion of the mode of representation where a realized building becomes a representation of a drawing. Libeskind, however, is not interested in inversions nor in mere representation. He is interested in de-assembly. De-assembly is for drawing what de-construction is for writing; it is a knowing use, an emphasis of the fact that drawing is always in part writing."¹⁹

It is particularly ironic in this statement that Peter Eisenman is not content to comment on Libeskind's work but rather produces, even fabricates, a "deconstruction" in his architecture, establishing a common ground between de-assembly, design, deconstruction and writing. But this shared element also functions by implicitly fabricating semantic chiasms such as De-assembly: Deconstruction; Drawing: Writing. However, even more than Eisenman and long before building his first project, Libeskind proposed a convincing deconstruction of the architect's body as it had fallen into the meanders of design thinking. When reading Voltaire's *Micromégas*, he confronted the paradoxes of scale ratios, exploring human scale and the vertigo caused by fragmenting space. If contemporary space can no longer be completed or even inhabited in a uniform manner, why would it be designed with an illusion of harmony?

Beyond Peter Eisenman's conceptual models, we realize today that the criticism of the Eighties was premonitory of upcoming concerns regarding the infiltration of architectural design by programming languages and computer-aided design. The language games inspired by Derrida certainly deconstructed the semiotic imitations of post-modernism, but they did not reform architectural pedagogy, so often trapped in the meanders of instrumentality. Even when Eisenman acknowledged being inspired by the Boolean cube (as is the case for the Carnegie Mellon research institute project of 1989) and even though he legitimized this by referencing the role of Boolean calculations in the field of artificial intelligence, the least we can say is that neither architectural space nor its theorization were turned upside down. For if there was a bug in Eisenman's architecture of that period, it was not of an electronic nature but simply related to the fact that the scale of the model (either wooden or digital) was not analogous to tectonic apprehensible in the wholeness of corporal experience: for the body is as much memory as it is flesh.

With the installation/performance of a bridge for Giulio Camillo's Theater of Memory in one of the pillars of the Brooklyn Bridge in New York (1986), Elisabeth Diller and Richard Scofidio

¹⁷ Ibid p. 30.

¹⁸ See Erwin Panofsky's seminal work: *Perspective as Symbolic Form*.

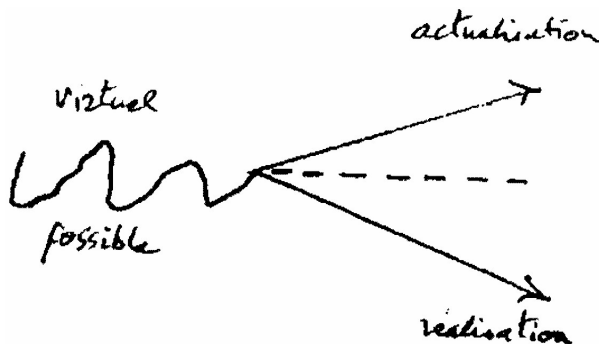
¹⁹ Peter D. Eisenman, "Representations of the Limit: Writing a "Not-Architecture", in *Chambers Works (Architectural Meditations on Themes from Heraclitus)*, ed. Daniel Libeskind (London, 1983). p. 7.

demonstrated that the biggest risk remains the fragmentation of memory (formerly regulated by spaces) occurring simultaneously with the maintenance of the illusion of a computerized reunification of the world's memory. The following year, the same artists worked on an installation based on Duchamp's *Grand Verre*. The corporal and spatial performance elicited Georges Teyssot's comment that Diller and Scofidio would come to stage architecture's mutant body. He would invite us to examine their work for its revelation of the distance remaining before architects mastered the means of representation, without getting stuck on the most subtle levels of embodiment²⁰.

The double imposture

When William J. Mitchell superimposes Nolli's 1748 city plan of Rome with a portal from the Apple world, he intends to illustrate his apology for the digital city. A comparison by substitution, he describes a virtual city that would finally respond to the great labyrinth of the human condition; the myth of Dedalus thus remains the source of his architectural aspirations. By making such a parallel — by implying that the E world replaces the old one, in the same way than a plan on a computer screen replaces Nolli's plan of Rome — Mitchell commits a double imposture.

1. The space of the city plan (the only host of urban ideas) is still the more virtual of the two images. Playing a mediating role between the designer's experience and that of the inhabitant, the plan is an artifact that allows modification and intervention in the real world. It is more virtual because it is truly potential. In the sense coined by Gilles Deleuze in his book *Le Pli* (1988), virtuality is not opposed to reality, for it can be either actualized or realised. The image of the *E world* is nothing more than a simiesque interface that is **interchangeable** according to graphics charts and banks of icons. In a childish way, this image is testimony to the frustration of computer specialists and the constraints of graphic artists in creating a comprehensible image of something that, theoretically, has no scale, no figure and no reference gauge. Furthermore, any action in cyberspace remains a visual illusion if it is not an anonymous, albeit criminal, attack directed against the systems (as hackers know very well).



(Gilles Deleuze, *Le Pli*, Paris 1988)

²⁰ Georges Teyssot, "The Mutant Body of Architecture," in *Architectural Probes*, ed. Diller + Scofidio (New York, 1994).

²¹ For deeper developments on a comparison between stereotomic dry point lines and CAD lines and on the issue of embodied geometry in De l'Orme's theory see: Jean-Pierre Chupin, "Hermès' Laugh: Philibert de l'Orme's Imagery as a Case of Analogical Edification," in *Chora: Intervals in the philosophy of architecture*, ed. Steve Parcell Alberto Perez-Gomez (Montréal, 1996), Jean-Pierre Chupin, "'Ventre affamé n'a pas d'oreilles'," in *L'architecture au corps*, ed. Chris et al. Younès (Bruxelles, 1997).

2. The second imposture is that cyberspace, which we often present as the labyrinth of labyrinths, is not one that is uniformly complex, nor without political hierarchy. There are tyrannies, dukedoms and citadels, the mob, the suburbs and the shanty towns, and it is not always certain which is where. Cyberspace is a democracy without debatable rules, which is to say that it is a *douce tyrannie* (another oxymoron).

But the world of computer science never lacks for metaphor or memory gaps. The complexity of a computer code is often referred to as architecture. System Engineers often call each other Network Architects. Such a metaphor generally ignores that part of the etymological root of architecture is *tekton*, denoting the artisan and the mythical carpenter. Amnesia can very often be much more comfortable than memory.

The comfortable amnesia of digital lines

To conclude, we can take a last example, drawing on two formally similar images to posit a final architectural parallel. On the one hand, let us take one of Philibert de l'Orme's stereotomic representations (c. 1567), and on the other hand, a digital view of Frank O. Gehry's project for the Nationale Nederlanden in Prague (1993-1995). This comparison can serve to illustrate a new historic deal, for not only can digital lines work on totally undifferentiated matter, but they allow for software users to forget even the most profound corporal implications and repercussions of materialization. On the one side, we have the depth of the stereotomic embodiment; on the other, the intrinsic amnesia of the digital line that, theoretically, has no gauge of its own. Stereotomic lines were first and foremost informed by matter and experience; they were never geometric devices that were autonomous and universal. In fact, they were so dependant on human experience and the body's memory that presumably De l'Orme would have encountered considerably difficulty in writing a treatise that would provide nothing but the method for their use, without presenting the co-existing ethics. Here, we see that this is fundamentally opposed to the descriptive geometry that would later emerge independently from artisan learning, although it would remain fairly tributary of a sort of manual intelligence. If for Philibert de l'Orme's contemporaries the question was above all to give a stable shape to matter in perpetual change (the Aristotelian *physis*), we are confronted with the opposite challenge: giving flesh and bones to the instable figures of our conceptions²¹.

Towards the end of the seventies, Bernard Tschumi, in a rather radical but very efficient manner, addressed issues of decay to qualify the bodily dimension in architecture. In a series of *Advertisements for Architecture* dealing with issues such as the state of decay then being experienced by the Villa Savoye, he called for a reappraisal of the death of modernity. Among the issues at stake, the "question of space" and its embodiment in the space of the human body took the form of a black and white still from the B-movie *The High Window* (1947), inspired by a Raymond Chandler novel. "To really appreciate architecture,

Tschumi wrote in bold letters, you may even need to commit a murder²². This bold displacement of references reminds us that architecture is the fall of the body in space because "Architecture is defined by the actions it witnesses as much by the enclosure of its walls. Murder in the Street differs from Murder in the Cathedral in the same way as love in the street differs from the Street of Love."

Today, it seems that designers of cyberspace should beware of a "return to the repressed." In the desire to go without the body and its fragile flesh, cyberspace design may bring back old nightmares. On the other hand, the possibility for a new dive into human interiority could very well prove the fascinating aspect of this new territory woven together by networks and new technologies, if it addresses our contemporary relationship to the body. This opportunity is an existential quest made all the more necessary by the weight of physical space, which is so binding and, existing in the day-to-day, often incites us to delay its execution. Perhaps the most interesting part of the cyberspace adventure is not its possible "habitability", but rather the call to vigilance – the *rappel à l'ordre* – that it induces, which could result in creating architecture increasingly more carnal and hospitable: i.e. more human. If such is already the case for some young architects, then cyberspace could play out a potent role as myth. Ancient myths are not necessarily obsolete: we can of course recall the story of Dedalus and Icarus as one that brings together architects and engineers. Practical intelligence, practical ethics and technological inventiveness are as inseparable as virtuality and tectonics. In this particularly instructive myth, the ingenious inventor continues his flight, but he must live with the horrible memory of his son's death by the mortal fall that he precipitated.

In a less dramatic and more critical manner, the "neo-scientific" novel by Alfred Jarry entitled *Gestes et opinions du Docteur Faustrol 'pataphysicien*, first published in 1911, offers a way out in his paradoxical "science of imaginary solutions". ["Instead of pronouncing the law of the fall of the body towards a centre, said Doctor Faustrol, we should prefer the law of the ascension of emptiness towards a periphery...]. Let us admit, therefore, that is only from our experience as bodies in contact with the hard materiality of architectural space that, for the moment, we can imagine a cyberspace that escapes matter, gravity, time and weather. This "tectonic bug" will persist as long as we exist in bodies. We will need to be patient to sustainably inhabit cyberspace.

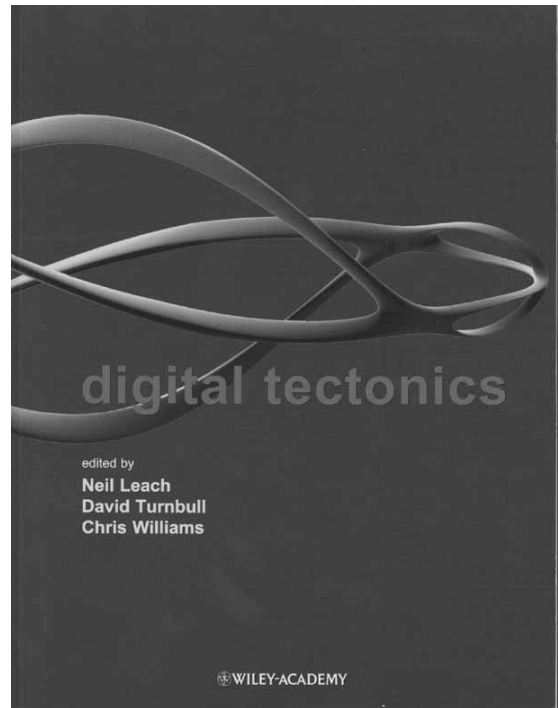


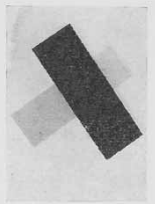
Fig. 1: Front cover of "Digital Tectonics" (2004)



Fig. 2.: Front cover of "Europa Almanach" (1925)

22 Bernard Tschumi, "Advertisements for Architecture", 1978.

In diesem Raum werden die Entfernungen nur durch die Intensität und die Lage der straffbegrenzten Farbflächen gemessen. Der Raum wird in den eindeutigsten Richtungen gegliedert. Vertikal-Horizontal oder -Diagonal. Es ist ein Positionssystem. Diese Entfernungen können mit keinem endlichen Maßstab gemessen werden, so wie die Gegenstände im planimetrischen oder perspektivischen Raume. Die Entfernungen sind irrational, sie können als ein endliches Verhältnis zweier ganzer Zahlen nicht dargestellt werden.



MALEWITSCH

IRRATIONELLER RAUM

Ein Beispiel der Irrationalität ist das Verhältnis der Diagonale eines Quadrates zu seiner Seite, es ist $\sqrt{2} = 1,4$ oder genauer $= 1,41$ oder noch genauer $= 1,414$, und so weiter immer genauer bis in die Unendlichkeit.

Der Suprematismus hat die Spitze der endlichen Sehpyramide der Perspektive in die Unendlichkeit versetzt.



Er hat den „blauen Lampenschirm des Himmels“ durchbrochen. Für die Farbe des Raumes hat er nicht den einzigen blauen Strahl des Spektrums genommen, sondern die ganze Einheit — das Weiße. Der suprematistische Raum läßt sich sowohl nach vorne von der Fläche, als auch in die Tiefe zu gestalten. Wenn wir die Fläche des Bildes als 0 bezeichnen, können wir die Tiefenrichtung — (negativ) und die Vorderrichtung + (positiv), oder umgekehrt nennen. Wir sehen, daß der Suprematismus die Illusionen des planimetrischen 2 dimensionalen Raumes, die Illusionen des 3. dimensional perspektivischen Raumes von der Fläche weggefegt und die letzte Illusion des irrationalen Raumes mit unendlicher Dehnbarkeit in den Tiefen- und Vordergrund geschaffen hat.

Fig. 3: E Lissitzky's demonstration on suprematist theory of space

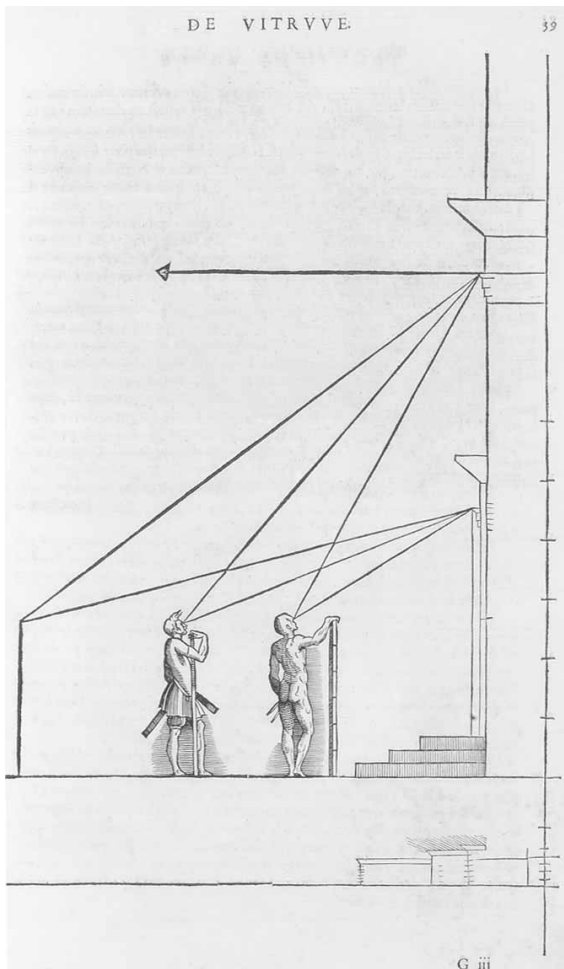
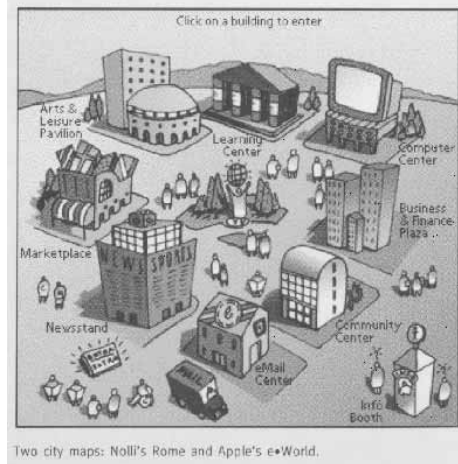
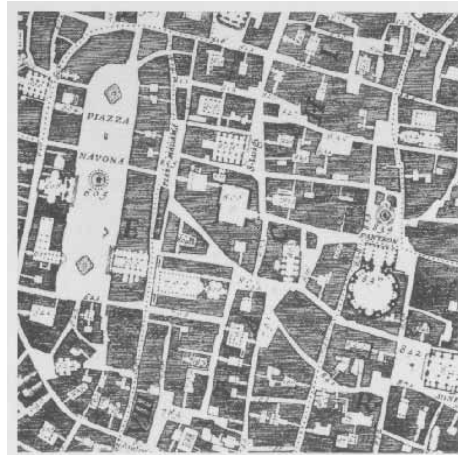


Fig. 4: Demonstration of the need for optical corrections in the first french edition of Vitruvius' Ten Books. Martin et Goujon. (1547)



Two city maps: Noll's Rome and Apple's eWorld.

Fig. 5: "Noll's Rome and Apple e world". From W. J. Mitchell's City of Bits (1995)

To really appreciate architecture, you may even need to commit a murder.



Architecture is defined by the actions it witnesses as much as by the enclosure of its walls. Murder in the Street differs from Murder in the Cathedral in the same way as love in the street differs from the Street of Love. Radically.

Fig. 6: Bernard Tschumi. «Advertisement for Architecture». (1978)

Références bibliographiques

Beckmann, John, ed. *The Virtual Dimension (Architecture, Representation, and Crash Culture)*: Princeton Architectural Press, 1998.

Bois, Yve-Alain. "Avatars de l'axonométrie." In *Images et imaginaires d'architecture*, edited by Jean Dethier, 129-135. Paris: Centre Georges Pompidou, 1984.

Chupin, Jean-Pierre. "Hermes' Laugh: Philibert de l'Orme's Imagery as a Case of Analogical Edification." In *Chora: Intervals in the philosophy of architecture*, edited by Steve Parcell Alberto Perez-Gomez, 37-68. Montréal: McGill-Queen's University Press, 1996.

_____. ""Ventre affamé n'a pas d'oreilles"." In *L'architecture au corps*, edited by Chris et al. Younès, 122-146. Bruxelles: ouisia, 1997.

Eisenman, Peter D. "Representations of the Limit: Writing a "Not-Architecture"." In *Chambers Works (Architectural Meditations on Themes from Heraclitus)*, edited by Daniel Libeskind, 6-8. London: The Architectural Association, 1983.

Frampton, Kenneth. "Rappel à l'ordre, the Case for the Tectonic." *Architectural Design* 60, no. 3-4 (1990).

_____. *Studies in Tectonic Culture (The Poetics of Construction in Nineteenth and Twentieth Century Architecture)*. Edited by John Cava. Cambridge Mass.: The MIT Press, 1995.

Hersey, George L. *The Monumental Impulse: architecture's biological roots*. Cambridge, Massachussets: The MIT Press, 1999.

Leach, Neil; Turnbull, David; Williams, Chris. *Digital Tectonics*. London: Wiley - Academy, 2004.

Mitchell, William J. *City of Bits (Space, Place and the Infobahn)*. Cambridge Mass.: The MIT Press, 1995.

_____. *E-topia, Urban Life*. Cambridge Mass.: The MIT Press, 2000.

_____. *Me++The Cyborg Self and the Networked City*. Cambridge, Mass.: The MIT Press, 2003.

Teyssot, Georges. "The Mutant Body of Architecture." In *Architectural Probes*, edited by Diller + Scofidio, 8-35. New York: Princeton Architectural Press, 1994.