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CYBER(inter)SECTIONS

Looking into the Real Impact of the Virtual in the Architectural Profession

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"I don't think we can understand the implication of ... [the information revolution] on our practice . . . We're going to have to define our learning and our practice not in terms of the old ways that we used to process information, but in terms of the new ways. We can't design our systems of education and practice for that old technology . . . But the problem is we can't visualize what the new technology is going to be any more than a medieval knight in armor could envision the Industrial Revolution. However, we have to struggle with that, and it's probably useful for us to do that together."

Chuck Thomsen [1]

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Introduction

As both the skepticism and 'hype' surrounding *cyberspace* vanish under the weight of ever increasing power, demand, and use of information, the architectural discipline must prepare for significant changes. For cyberspace is remorselessly *cutting through* the dearest structures, rituals, roles, and modes of production in our profession. Yet, this *section* is not just a detached cut through the existing tissues of the discipline. Rather it is an *inter-section*, as cyberspace becomes also transformed in the act of *piercing*. This phenomenon is causing major transformations in at least three areas:

1. Cyberspace is substantially altering the way we *produce* and *communicate* architectural information. The arising new working environment suggests highly hybrid and networked conditions that will push the productive and educational landscape of the discipline towards increasing levels of fluidity, exchanges, diversity and change.
2. It has been argued that cyberspace-based human and human-data interactions present us with the opportunity to foster a more *free marketplace* of ideologies, cultures, preferences, values, and choices. Whether or not the in-progress cyberincisions have the potential to go deep enough to cure the many illnesses afflicting the body of our discipline need to be considered seriously.

3. Cyberspace is a new place or environment wherein new kinds of human activities demand unprecedented types of architectural services. Rather than being a passing fashion, these new architectural requirements are destined to grow exponentially. We need to consider the *new modes* of practice being created by cyberspace and the education required to prepare for them.

This paper looks at these three intersecting territories showing that it is academia and not practice that is leading the profession in the incorporation of virtuality into architecture. Rafael Moneo's words come to mind. [2]

" . . . it is not the architectural schools that follow the trends set by the professional firms, but now it is the professional firms that follow the trends set by the architectural schools."

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Hybridizing Practice & Education

The past 5 years have witnessed an astonishing shift in the way architecture is produced. Today's architectural firms are working environments dominated by rows of desks filled up with computer workstations and print-outs. Gone or pushed to hidden corners are the tables with drawing and modeling instruments. The old chaos of handmade production has been replaced by a highly pristine and hygienic working environment. The noisy murmur of people interacting has been substituted by silent cyberspace communication and isolated machine-operator dialogues. The architectural studio has become a corporate office.

Academia has reacted to this trend by moving to the full integration of computers into their curricula. The results stand in sharp contrast with the path that offices have taken. Instead of doing away with the analog tools that have driven architectural production for centuries, schools have embraced a strategy of convivial between old and new systems of architectural making. This productive environment allows a naturally fluid interface that foster unconstrained media iterations and dialogue. The fact that academia has chosen this road largely out of financial limitations and not visionary zeal is to an extent irrelevant. What counts is that the resulting approach to media is highly promising.

For, cyberspace notwithstanding, architecture is grounded, and defined by materiality. This ontological character cannot be ultimately by-passed by electronic simulation. In other words, no matter how evolved our digital tools and environments may become, and there is every reason to believe that they will be quite sophisticated, the physicality of architecture will always demand some direct reference to the analog world.

What we are likely to see in the near future is an increased but healthy competition between analog and digital media until some symbiotic relationship is reached based on each system's specialization in doing what it does best. Thus, and against what many believe, the challenge is not to rush to digitize all architectural work but instead to develop a liminal productive space allowing representational-media interactions. This means at least two things.

First, it implies the need to systematically study this matter. This is a perfect job for academia. Lacking the market pressures of practice, schools are in a good place to examine this situation and develop a knowledge base that pushes the profession to a new level of competence. Research on design theory and methodologies, pedagogy and representation are destined to take a leading role.

Second, offices will have to revolt against the dictatorship of the digital and replace it with a multi-

representation/media democracy. The old analog tools will re-turn to practice albeit transformed by a new understanding of their strength and use. So, very much like the recent graduates of a few years back lead the digitalization of practice, the graduates of today and tomorrow will bring the analog back to those same offices along with a clearer understanding of digital media.

The architectural practice and education of tomorrow is not *ahead* in the digital but *between* the analog and the digital; and not in *one* medium/approach but in *many* media/approaches. In other words, *hybridity* and *multiplicity* share the road to the future.

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Networking Practice & Education

By allowing immediate, nominally free, and multimedia-rich communication linkages across the globe cyberspace, for the first time in history, makes complex modes of interaction between people possible regardless of geographical, political, economical, and social boundaries (at least in theory). The widespread accessibility to the net within academic and professional environments coupled with its ease of use create an unstoppable force that is de-facto shaping our architectural curriculum, pedagogies, and modes of practices.

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Economic/Market Implications

Cyberspace opens powerful professional and educational opportunities. Two examples may suffice to demonstrate this statement. First, intra and inter nets allowing the sharing of information as is being produced (shared documents) or stored (canned NCD ROM or distributed N.i.e., web memory) offer the profession the opportunity to recover some of its leadership in the construction industry. By giving direct access to appropriate information, architects may be able to manage/direct/coordinate the construction process via cyberspace. In this context, Tom Fisher's concept of architect GP (general practitioner) is revealing. The GP would gather and direct teams of specialist to pursue a particular project. At the same time, this GP function points at the 'real' relevance of architects as knowledge workers in an information driven society: [3]

"We must begin to see our education as more than training in the design of buildings, what we really learn is how to assimilate large amounts of disparate information, how to order this information, and how to apply it to a particular problems."

Second, cyberspace makes the 24 hour, multinational, and virtual studio a reality in conjunction with access to a global clientele and workforce. The impact of this development for the already growing architectural businesses overseas cannot be underplayed. The net may provide the ultimate tool/environment to develop and capture foreign markets, most likely in association with local firms. Something similar is occurring in education. The explosive growth of foreign exchange programs among schools of architecture around the world as well as the increasing educational collaboration between them come at great time appropriate opportunities for preparing future architects for a networked practice.

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Socio-Cultural Potential

Cyberspace undoubtedly requires us to carefully think again the premises and modus-operandi behind the way we communicate and interact among ourselves and others. In a way, this ties to the ongoing discussion surrounding the nonhierarchical and open nature of interactions of the web.

Recent experiments in globally networked design studios seem to support this impression. These experiences suggest that the traditionally isolated, local, hierarchical, and individual-centered atelier model needs to be modified to follow what might be termed a *network paradigm*. At this point this seems to mean the creation of a working/learning environment in which a virtual community of diverse individuals engages in the collaborative production of architecture using an open access information policy along with largely horizontal decision making processes. While it is tempting to believe that the Jeffersonian ideal of free access, construction, and dissemination of information to and by the people appears closer than ever, it would be naive to believe that the same ills afflicting society are not imported and thus present on the net. For they obviously are. We also know that there is no neutral technology. There are politics, economics, and all sorts of bias already built in the technology of the web itself. And yet, cyberspace gives us the chance to reconsider those very ideological, gender, cultural, and social bias that we have constructed and are too often unaware of. In the building of any new world, in the use of any new technology there is the humanist plight to make our world and society better, to improve on what went wrong in the previous try. Cyberspace gives the architectural community the opportunity of a new beginning. And in doing so it creates the responsibility for building more just (virtual and real) communities. This is reason for hope that needs not be naive but intentional and sophisticated.

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Implications for School Administration

The adventment of cyberspace comes at a remarkable political-economic time in the history of American higher education. We daily witness cries for more and deeper cuts in university budgets that are to be compensated with the higher efficiencies that the "cyberization" of teaching would bring. The serious feasibility studies of the 'virtual university' concept and the strong support behind on-line/distance learning programs are realities that are going to affect *all* university programs soon. Should these policies prevail, they would dramatically alter one of the most cherished foundations of architectural education: the apprenticeship model involving the direct relationship between teacher and student. Needless is to say that this would have an ever lasting impact in architectural education. The question before us is simple: is cyberspace really capable of supporting such direct relationship? or is this dematerialized environment going to devoid architectural education of its most powerful component (praised by the Boyer Report)? Is there hybrid models that will allow us some positive alternative should the political climate continues its ongoing swing? This issue needs to be carefully examined by educators and practitioners at large.

Since some kind of cyberspace teaching is inevitable given the foreseeable political climate, we better begin collecting facts and developing good arguments to preserve the best of the traditional way (i.e., highly personalized) of conducting architectural education. It goes without saying that contrary to what central administration believes, networking architectural education implies making things more and not less complex and spending more and not less time in articulating and managing its necessary components.

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Towards a New Architecture

Population and economic growths have always imply increasing architectural demand. If this rule applies to cyberspace (and there is every reason to think it does), we have to get ready for what may arguably

represent the largest frontier opened to architectural thought and practice since we first walked on Earth. The 40+ million user strong Internet is the fastest growing population on the planet that by early next century will have more 'citizens' than any single country except India or China and reach business transactions surpassing 100 billion per year (and this is a conservative estimate) .

Since people daily work, meet other people, seek entertainment, find-generate-store-communicate information, and sell-purchase goods and services within cyberspace, one would expect that this environment, like its physical sibling, requires planning, design, construction and continuous updates. Architecture, whose historical role has been to deal with such matters, is the appropriate discipline to address these very real needs of the virtual. The fact that the resulting constructions and environments are made of information and not of matter is ultimately irrelevant.[4]

Architecture services aimed at cyberspace are already growing fast and there is ample evidence that this trend will only intensify. We are all aware that more and more of our students and colleagues are being recruited to work in the expanding markets involving electronic gaming and entertainment, art installations, virtual reality applications, 3D GUI's research, interdisciplinary visualization, database construction, educational software, complex website design, etc. The recent arrival of 3D interfaces to cyberspace is only pointing to the obvious: architects need to embrace and develop the expertise to tackle the great architectural potential of virtuality.

While cyber-environments may not replace the built environment as a major architectural market, it is clear that they will increasingly and significantly compliment it, thus strengthening the entire architectural profession. Faced with this impending development, educational programs and the profession must begin to seriously craft a new vision of architectural work and adapt their services accordingly.

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Conclusion

By now it should be evident that, whether we like it or not, cyberspace will play a major role in the future evolution of architectural education and practice. The market forces behind it are just too strong to stop or ignore, particularly when our discipline is highly dependent on their strength and direction.

By exponentially extending our communication, representation, and mnemonic capabilities while creating a new networked socio-spatial environment, cyberspace poses amazing challenges and opportunities to our profession. As evolutionary theory teaches us the best strategy of survival is diversity, flexibility, and awareness.

The path will not be easy. For we are not moving towards a simpler and easier future wonderland but instead to a hybrid, messy, and complex reality, one that is closer to the images of Blade Runner than the hygienic, pristine, and modern scenario of 2001. And yet, the hinge point in the history of architecture provoked by cyberspace offers us the opportunity to revisit the premises and ways underling contemporary architectural education and practice and ponder how we can make them better.

In this sense, there is every reason for hope and excitement. This is a great time to be architects, specially if you are in academia. As this paper has pointed out, what is happening on campus is far more advanced and promising regarding the assimilation of cyberspace into architecture than what we find in the 'real world'.

But no matter whether we find ourselves in a school or an office, there is something clear: the necessity for reflecting on the virtual has never been more real than today.

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References

[1] Chuck Thomsen, the *AIA National Convention*, Minneapolis, May 10-13 1996

[2] Rafael Moneo, quoted in Bernard Tschumi, "1, 2, 3, Jump...", *Newsline*, Summer/Sept/Oct., 1994, p.8

[3] Tom Fisher, the *GSD symposium on Architectural Practices* (Harvard University, Cambridge: MA, 1993)

[4] Marcos Novak clarifies this point: "To the extent that this development [i.e., the creation of cyberspace] inverts the present relationship of human to information, placing human within the information space, it is an architectural problem; but beyond this, cyberspace has an architecture of its own and, furthermore, can contain architecture. To repeat: cyberspace is architecture; cyberspace *has* an architecture; and cyberspace *contains* architecture." (emphasis in the original). Marcos Novak, "Liquid Architectures in Cyberspace"; in Michael Benedikt (ed.), *Cyberspace. First Steps*. (Cambridge, MA: The MIT Press, 1991, pp.225-254) p.226

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