2 Architects
10 Questions '
on Program
Rem Koolhaas +
Bernard Tschumi

Questions written by Ana Miljacki, Amanda Reeser Lawrence, and Ashley Schafer.

Re:Programming

Amanda Reeser Lawrence and Ashley Schafer

"A programme is a description of the spatial dimensions, spatial relationships and other physical conditions required for the convenient performance of specific functions." —*John Summerson, "The Case for a Theory of Modern Architecture," 1957*

"A contemporary sense of program ... might not privilege architecture in the conventional sense." —*Anthony Vidler, "Towards a Theory of Architectural Program," 2003*

Some twelve months after deciding to devote an issue of PRAXIS to the most ecumenical of architectural topics, we still find ourselves asking: what is program anyway? What began as an innocent inquiry into the status of program today—some thirty years after it was first resuscitated from modernist functionalist doctrine—quickly became a venture into labyrinthine and contested territory. The more we tried to clarify what program is and how it operates in contemporary discourse, the more elusive its definition became. For while architects almost universally address the most pragmatic understanding of program—a listing of specific uses and requirements, often accompanied by square footage allocations—this definition of program as "brief" fails to capture the range of implications the term has acquired in architectural parlance and practice. Beyond this simple and simplifying denotation of program lies a complex, ambiguous, and ultimately paradoxical set of ideas. We found that the mere mention of this issue's topic often elicited a highly contentious debate regarding its relevance and implication for designers today.

The dispute over the significance and instrumentality of program as a design consideration is not surprising given its equivocal architectural status over the last half century. By the mid-1970s, postmodernism had all but banished the term from architectural discourse, as program's association with the overly deterministic rhetoric of modernist functionalism had exhausted its agency for architects. For early modernists, program was effectively equivalent to function, with the resulting development that just as "form followed function," so too "form followed program." Post-war models of efficiency that mandated a direct correlation between form and use only further sanctioned the nearly direct translation of program into form—what John Summerson, in 1957, fittingly called "the physical conditions required for the convenient performance of specific functions." The result of which provoked the post-modern neo-avant-garde's near-total rejection of program as an obsolete vestige of functionalist polemics.

It was this debased status from which Bernard Tschumi and Rem Koolhaas 'recovered' program and imbued it with the legacy of indeterminacy that it maintained for the next thirty years. With Manhattan as their research laboratory Tschumi and Koolhaas simultaneously, but individually, recaptured the notion of program and reconceptualized its use through theories of indeterminacy and excess. In both the *Manhattan Transcripts* and *Delirious New York* (both 1978)[1], program was liberated from its affiliations with functionalism and a prescriptive relationship to form. As Tschumi wrote, "in today's world where railway stations become museums and churches become nightclubs a point is being made: the complete interchangeability of form and function, function does not follow form and form does not follow function."[2] These seminal works recast program's parameters to include multiple configurations of spaces and, reciprocally, proposed the possibility that a given form or space could house any number of programs. This new conception of program became almost the exact opposite of its linear modernist predecessor: programs could be crossed ("pole vaulting in the chapel"), superposed ("the quarterback tangos on the skating rink"), juxtaposed ("eating oysters with boxing gloves,

naked, on the nth floor"), or redeployed (using the section of the Downtown athletic club as the plan for La Villette.)[3]

While there are significant parallels in their development of programmatic theory, there are also substantial differences in both form and content. Tschumi's *Transcripts* take the form of theoretical drawings, with accompanying text, while Koolhaas's "retroactive manifesto" is a journalistic text accompanied by "fictional" drawings. Koolhaas establishes a generic, or formally indifferent, attitude toward program: all programs, however diverse, are subject to the same formal logic (witness his competition entry for La Villette in which he establishes a relentless series of dimensionally invariable bands uninflected by the program they house). Form is generic, but program is specific. In Tschumi's La Villette, on the other hand, form is specific and program generic. The grid of highly articulated red follies has no predetermined program; form and function are interchangeable. Together, these works constitute a body of research significant in that they transformed program from a spatially (and most often formally) determinant instrument to an indeterminate one, reintroducing program as a generative tool.

If these programmatic propositions no longer appear to embody the radical potential they did in the seventies, it is only because they have been fully assimilated into contemporary architecture culture. As such, we felt sufficiently indebted to these programmatic fomenters to begin the issue with an interview about their early work, as they have undeniably transformed the way we understand program today. Nearly thirty years later their programmatic speculations have been concretized: in Tschumi's "event-spaces," such as the hub of Lerner Hall and the central space at The Marne School of Architecture, and in Koolhaas's Seattle Public Library, whose shifted programmatic strips actualize the diagrammatic analyses of both the Downtown Athletic Club and his Park de la Villette proposal. These projects manifest the development from a theory of program to its application in practice. With the neo-avant-garde experiments of thirty years ago now realized as multi-million dollar buildings, the opportunity for re-assessing program has re-emerged. The actualization of these ideas in built form has liberated a new generation of architects to move beyond these prescribed solutions; paradoxically, the formalization of programmatic ideas has re-opened avenues of inquiry into program once again.

What, then, are the opportunities for program today? While virtually every architectural project addresses program as brief, the projects in this issue are unique in that they move beyond not only the modernist, deterministic application of program, but also beyond the 1970s models of programmatic indeterminacy. If Tschumi and Koolhaas repositioned program's role from the composition of spatial arrangements —in which function was prescriptively translated into form—to the generation of relational scenarios—that accommodated heterogeneous and unforeseen events—the definition of program appears to be expanding yet again. The architects in this issue of PRAXIS are reappropriating program in two important ways: one, by questioning the received architectural understanding of program, further distancing it from its modernist associations with 'use' or 'function'; and two, by elaborating various strategies for organizing and accommodating matter and information as program. Building

This new programmatic material is imbued with a particular us or function in accordance with its inherent characteristics. F example, R&Sie's dust-collecting skins, draped between whi gallery boxes to capture and envelop the B-mu museum's collecti functions, or the layered skins of VJAA's Tulane Student Cent that define a fluid and permeable zone between interior and ext rior. Beyond the incorporation of new materials into the repertoi of what is programmed, these architects are also extending the ta tics for how material is programmed, further elaborating possibi ties for developing program as an organizational strategy. In th "Program Primer," WORK Architecture Company provides perha the clearest elaboration of this approach, offering a set of code instructions that propose myriad tactics for working with, ar manipulating, various programs. In the seventies, programmat theory preceded its implementation, but today the reconceptualiz tion of program is emerging largely from practice. This is part of th reason why the term remains so problematic—not only because its complex legacy but, more importantly, because it is continuous redefined in contemporary architectural practice.

This elusive definition of architectural program is also caused a broader shift in the term, specifically to its increasingly dominal associations in contemporary culture. With the emergence of th personal computer as a household accessory in the last decad "program" has acquired an entirely new set of connotations, on reserved for computer scientists. The term is now ubiquitous understood as a function of software, and increasingly the specif and technical definition of program as "a set of coded instru tions"[4] is pertinent to architects both literally and as an operatic aligned with its deployment as an organizational strategy. Th recent transformation has empowered architects to see what w traditionally understood as a given program as something that ca be reprogrammed at will.

More than merely accommodating a fixed and passive prograr one can now choose to define the fundamental parameters of wh is to be programmed, reintroducing architectural agency into th act of programming.[5] As program's material palette expands, so the opportunities and range of operations for its architectur application, enabling it to become generative once again. Progra is longer simply acted upon but is itself active. In short, it is requa ified from a noun (a known entity) to a verb (an action latent wi multiple potentials) Armed with an opportunity to program, emerging group of designers isn't "getting with the program" it programming.

1 *The Manhattan Transcripts* was first exhibited in 1978 at Artist's Space in New York and subsequently published in 1981.
2 Bernard Tschumi, *Architecture and Disjunction* (Cambridge: MIT Press), 1996 p. 255.
3 Tschumi, *Architecture and Disjunction*, "Spaces and Events" p. 146, Tschumi, *The Manhattan Transcripts*, p. 11, Koolhaas, *Delirious New York*, p. 155.
4 The most digitally-savvy architects are literally writing codes and scripts whi program outcomes.
5 As PRAXIS editors we have also taken up the polemical challenge of rethinkin program—specifically how one might "re-program" a journal. Working with Alice Chung and Karen Hsu of Omnivore, we used this issue as an opportunity to recc ceptualize our format, jettisoning the underlying grid and adopting an organiza tional strategy based on the content itself, responding to a desire for greater flexibility and a more fluid relationship between text and image—ultimately, ava

1. What role does program play in your current practice and how has it evolved since it first emerged in your thinking and design? Has the shift of your work from paper (both writing and design) to practice changed the way you conceptualize and/or use program?

KOOLHAAS: Would it be shocking if I claimed that it is no different than it used to be? It is straightforward. My work with program began as a desire to pursue different means of expression that were similar to writing screenplays. At an interesting moment my obsession with script writing almost randomly intersected the world of constructivism, and with that I discovered an exceptionally interesting hybrid, where any aspect of daily life could be imagined and enacted through the architect's imagination.

I think that there are underlying structures in the process of architectural creation and design that critics never recognize. For instance, the difference between a competition and a commission dictates your room to maneuver and has a decisive impact on the design. As the Seattle Library was presented to a Board of Trustees it had to be understood as a linear, logical process. Porto, on the other hand, was a competition so it could be a totally irrational, insane, and surprising project. Seattle had to be diagrammatic—in order to win the commission, we had to generate material that explained it step by step as an educational process. There is a dialectic dimension to this project, which was not my motivation, but became a tool for a certain explanation of the project.
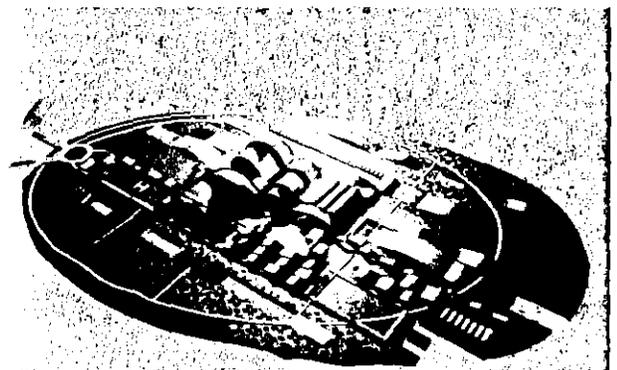
Program increasingly has another connotation for me, which is closer to agenda. I have been trying to find ways that we could circumvent or avoid the architect's passivity and by this I mean his or her dependence on the initiatives of others. However it is framed and pursued, our agenda/program is an important term for me, to the extent that—contrary to my longstanding reputation as a capitalist sell-out and cynical bystander in the process of globalization—I was actually very interested in selective participation. The key is being "selective" while also looking for strategies that would allow us to pursue (programmatically) our own interests. AMO has been an important part of that initiative, affording us a greater means to redefine the initial project brief, through the addition of political or cultural dimensions. We have just completed a competition in Dubai for a vast museum that includes components of the Hermitage, the Tate, and the Serpentine and that forms amalgamations in culture and politics. This kind of programming allows us to finally engage a practice that really interests me.

Brief is merely an architectural word, but for me program is a word that exceeds that sheer limitation. I am not suggesting that we are not interested in briefs—we are highly literal about briefs. In fact, in a certain way, we are earnest and innocent, maybe too earnest and innocent. In Porto, the Berlin Embassy, IIT, and Seattle we literally pushed the brief in a particular critical direction to produce specific effects. In that sense I wouldn't claim any sophistication or uniqueness in our approach.

TSCHUMI: My current practice explores a number of different issues and concepts. Program is only one of them. Envelopes, movement vectors, and, more recently, a new questioning of contexts are among our lines of research. The shift from paper to practice really happened with the shift from *The Manhattan Transcripts* of 1978-81 to La Villette in 1982-83, since I had consciously entered the La Villette competition in order to move from "invented" programs to a "real" program, from pure mathematics to applied mathematics.

What strikes me is that some of the theoretical themes from years past are still present in our work today, but now practice precedes theory as often as theory once preceded practice. It is a very fluid relationship. For example, the recent foreword on "Concepts, contexts, contents" in *Event-Cities 3* was my conscious attempt to post-theorize what I had learned from our practice.

In our recent projects, concepts often begin as much with a strategy about content or program as with a strategy about contexts. For example, in our conceptualization of Dubai, a "cultural island" with an opera house, we purposefully revisited an earlier programmatic concept (the strips of our opera house in Tokyo of 1986) by combining it with our recent research on double envelopes.
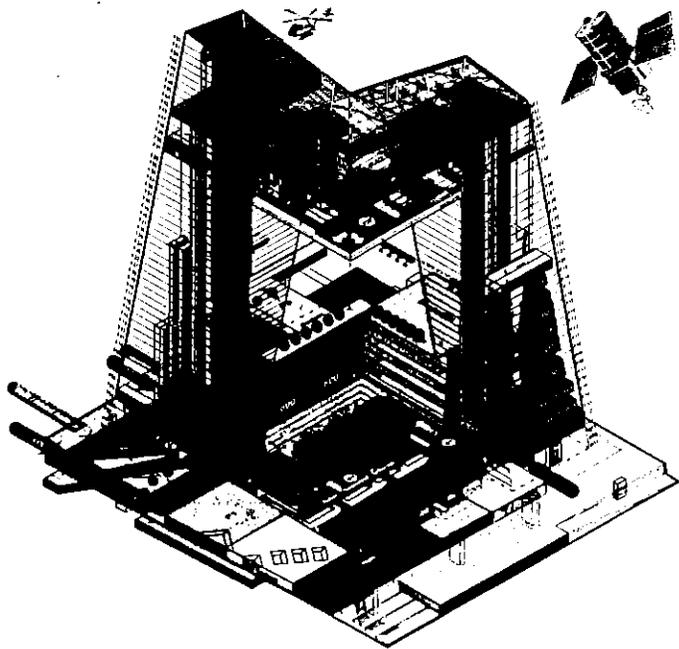
Born, Lausanne, Switzerland

Graduates from ETH, Zurich

Begins teaching at the Architectural Association, London

2. What is the relationship between program and form? And event? And politics? (Feel free to answer any one or all three of these questions)

We have learned that there is no given relationship between program and form. In the past three years we've engaged in radical experimentation that at times produced an extreme relationship between program and form while at others produced no relationship, which simply shows how unbelievably unstable, unspecific, and also inconsistent it can be. It is impossible to abstract from these projects a single direction for the office, but the relationship of form and program is always a large preoccupation. The fact that the users of these projects have appropriated them all with relish is incredibly significant to me. None of them suffers from the slightest dysfunction or offense to its users. The Dutch Embassy employees are unbelievably happy to use it the way it was intended to work, even though that was not obvious when it was designed.

Although form and politics is a tempting subject, I'll address your question about program and politics. Contrary to our official stance as cynical bystanders, we have been trying to find ways to create positions that enable us to address what interests us rather than being an extension of the market economy or developers' desires or individuals' desires, which intensely begs the question of politics. For instance there is a very strong connection to politics in the CCTV building. No other political system today would collect so many programs together in a single structure and create as many interconnections between different components in a single entity. In the West, the equivalent of the CCTV program would have been dismantled and distributed, while in China, the consolidation is relished. There is a direct correlation between centralization of program and the presence of the state. We are not so much flirting with authoritarian regimes as investigating the world and what systems enable what type of architecture.

The relationship between program and form can be one of reciprocity, indifference, or conflict. Let me explain. Reciprocity is when you shape the program so that it coincides with the form, or shape the form so that it reciprocates the configuration you gave to the program. Indifference is when a selected form can accommodate any program, often resulting in a deterministic form and an indeterminate program. And with conflict you let program and form purposefully clash—i.e., pole vaulting in the chapel or the running track through the library reading room—so as to generate unexpected events.

But you must decide which one to use. That's where architecture begins. There is no value judgment here. All three are fine, depending on your objectives for a given project.

A program is never neutral. The people who draft it are full of preconceptions. The first thing an architect needs to do is to dismantle that program and redirect it. As an architect, you need to have an agenda. My agenda is often about generating public spaces or spaces of encounters, like the generators and the courtyard in the Miami School of Architecture or the central linear court in the Athletic Center in Cincinnati. Program is not the only issue to address, but it is often what you start with.

Events? Events are different from programs. A program relies on repetition and habit; it can be written down and be prescriptive. In contrast, an event occurs unexpectedly. Your design may contribute to conditions for some future, unknown event to occur, but you do not "design" the event. Programs and politics? Programmatic configurations are always political: a house with a corridor serving private rooms has different political implications than a house as a large loft space without doors.

3. How would you trace the genealogy of program?

[...] the genealogy [...] programs [...]
[...] general [...]
[...]
[...]
[...]

[...] form organization in [...]
[...] balance between form and [...] or between [...]
[...] and independence. Organization is the [...]
[...] and the tension that programs [...] between [...]
[...] and independence. When layered with script [...]
[...] and constructivism, this tension lead me to a particular [...]
[...] of program, borne out of a particular moment. This [...]
idea of program is very similar to the program of *Delirious*
New York, rather than the generic term of program that could [...]
[...] any contents. During my time in New York, I was trying to
[...] that the city, or its architecture, did not just have a pro-
gram but was in fact a program. That was the intention and
ambition of the book.

Programs are as old as architecture. The first Greek temples began with [...] gram, not form. Most architects are blinded by form and ignore the poten[...] programs to generate forms. Think of department stores and railway stati[...] the 19th century: programs came first. It's the same with the merging [...] ports and shopping malls today.

What struck me early on was that most architects are unbelievably pa[...] towards programs. They accept them in a completely uncritical way, dress up with forms, and thereby miss major opportunities. I admit to having beer irritated vis-à-vis the prevalent ideologies of the seventies, whether the[...] ernist "form follows form" dictum or the subsequent "form follows historica sion" of architectural postmodernism. The programmatic dimension had be[...] an abandoned territory since the days of the early 20th century avant-ga[...] including constructivism and surrealism. In my case, I was also interested i[...] oretical issues of intertexuality—mixing spaces and uses in odd or unexp[...] configurations, intersecting spatial envelopes with movement vectors.
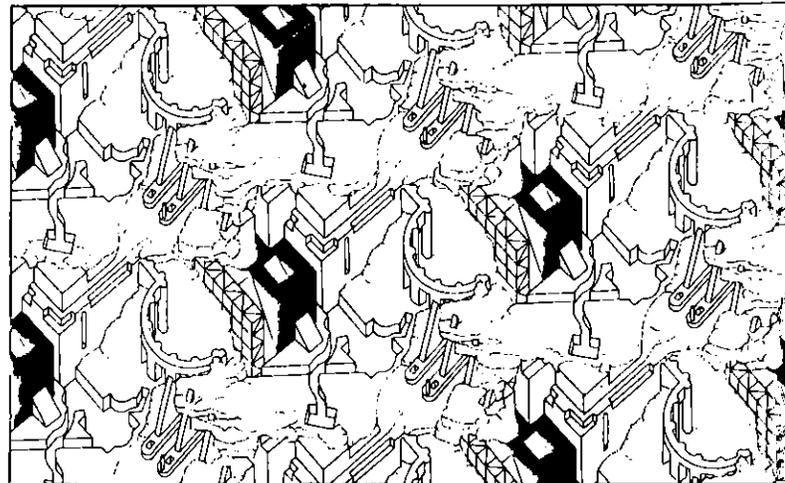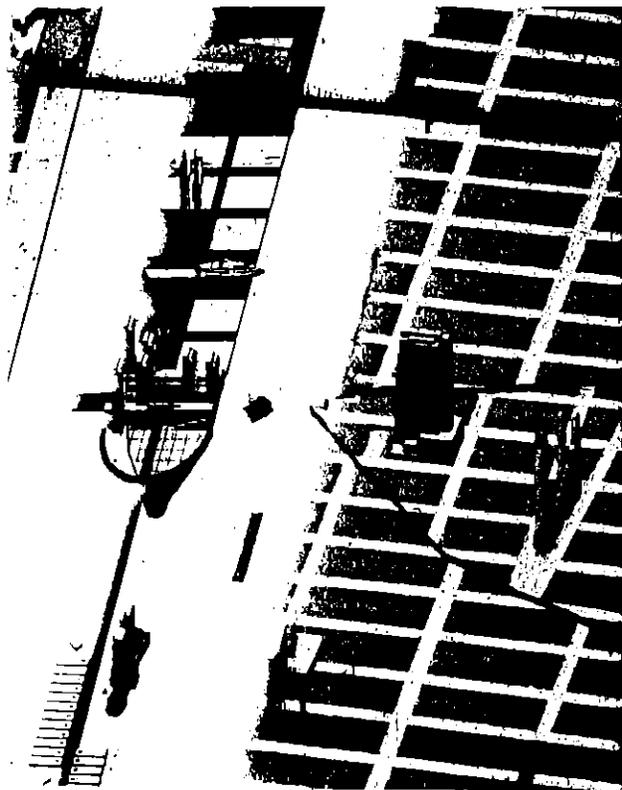
COMPETITION
Parc de la Villette,
Paris. Winner
Completed, 1998
"At La Villette (or any-
where else for that
matter) there is no
longer any relation-
ship possible between
architecture and pro-
gram, architecture
and meaning."

Publishes
Spaces and
Events
"There is no space
without event, no
architecture without
program."

4. New York, 1976: You were pursuing research and developing theories of program that spawned what became for both of you seminal publications: Delirious New York and The Manhattan Transcripts. What was so urgent about the issue of program at this moment? What made New York such fertile ground—both as a working environment and as a subject—at that particular time?

Today there's a total banality of travel and intellectual traffic that didn't exist in the seventies. As a very technical European, I am deeply influenced by almost any of the "isms" that have comprised Europe's history. Therefore I was ambitious enough not so much to want my own "ism" but to look at the world in terms of "isms." On the one hand, I felt a real disenchantment with the slackening of modernity that was an outcome of 'flower-power' or the emergence of postmodernism. And yet I was simultaneously keenly aware of how manifestos themselves had introduced so many failures that the whole typology could not be rescued.

So I approached New York indirectly, with a manifesto that consisted of a volume or quantity of pre-existing evidence. I took a journalistic but also a personal approach, which I had to shield behind America. Bernard Tschumi's project seems much more clearly a manifesto, or at least it more openly uses the traditional methodology and appearance of a manifesto.

I came to New York from London because of an interest in the art scene, which seemed to be in extraordinarily creative flux at the time. Many artist friends, including Robert Longo, David Salle, Cindy Sherman, and Sarah Charlesworth, had come to New York about the same time. For me, architecture was a blank page: everything seemed to need to be invented. I became obsessed with New York City itself, a city in which everything seemed possible. I also watched a lot of black-and-white B-movies at the time. I was struck by how space and buildings could also be protagonists in the action. Performance art seemed a natural extension of conceptual art. These two forms of art practice echoed my definition of architecture: as concept and experience, or the definition of space and the movement of bodies within it.
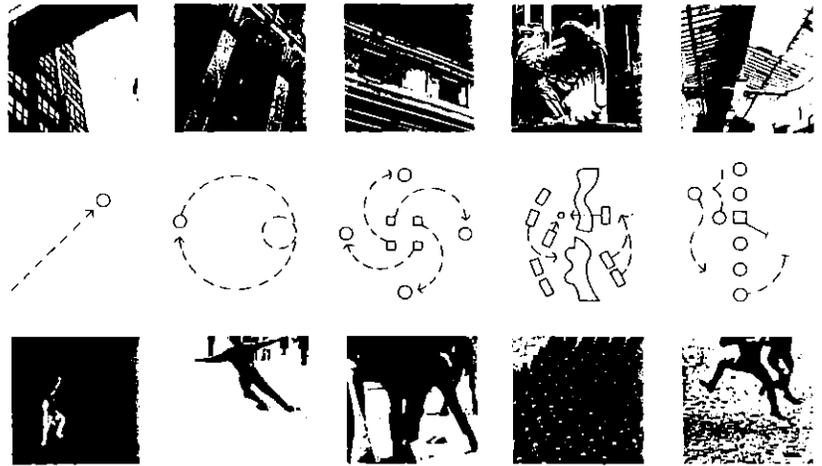
COMPETITION
New National
Theater and
Opera House,
Tokyo, Japan
Second Prize
We abandoned tradi-
tional rules of compo-
sition and harmony,
replacing them with a
mode of organization
based not on "form
follows function,"
"form follows form" or
even "form follows
fiction" but rather on
breaking apart the
traditional compo-
nents of the theater
and opera house...No
more artful articula-
tions among the audi-
torium, the stage, the
foyer, the grand stair-
case; a new pleasure
lies in the parallel jux-
taposition of indeter-
minate cultural mean-
ings...

Appointed Dean,
Columbia
University, GSAPP

5. Tell us about your time at the Institute for Architecture and Urban Studies and how it influenced your development as an intellectual and as a designer? Who were your allies there?

It was a time when the Institute was probably much less rigorous and much less rigid in its alliances. There was not a single person in that period in New York that I was not at some point, or to some extent, sympathetic to or involved with, or who did not in some ways influence what I was doing.

The big unknown in this story is the influence of Matthias Ungers. I spent a year (1972) at Cornell prior to going to New York, which was significant. There were two phenomena that made it important. First, studying with Ungers exposed me to his way of thinking, particularly his conceptual abilities to think about cities. Michel Foucault also happened to be teaching there that year, as well as Herbert Damisch, another French intellectual with whom I became close friends. He introduced me to Foucault, so even before arriving in New York I spent a year in America immersed in French Intellectual culture, which reinforced my already considerable involvement with Roland Barthes' work.

Weirdly enough I think I was more intellectual than any of them, but I was working on a project that seemed less intellectual than any of their ideas. They were all outside architecture, and so that was a kind of double, an interesting stereo that was more literary than architectural. Maybe Delirious New York is about architecture, but it is more a literary creation—more writing than thinking.

The Institute for Architecture and Urban Studies, with its conjoined publications, was one of the only architectural settings at the time that grasped architecture as part of a rigorous intellectual discourse. But many of the interests of the Institute were quite distant from my own. Again, I felt close to the New York art scene of the time. I was at the Institute for just one year, 1976. Perhaps being there sharpened my desire to challenge the formalized discourse on the primacy of form. I began The Manhattan Transcripts immediately after leaving the Institute. Allies? Ironically enough, the key people at the Institute really became my friends only after I left.

6. What was the status of program in this laboratory of Eisenman-inspired formalism?

I wrote Delirious New York when I returned to London. I did the research for it in New York, but I couldn't write there. Back in London, I gave a series of lectures at the AA that then became the basis of the book. And in terms of allies, Peter has a rare and unbelievable generosity to create and support a field in which other people flourish. Probably he is partially motivated out of a kind of perverse sense of curiosity of what will happen to them. It was simultaneously a stimulating field, a test bed, and an accelerated aging procedure. He was extremely skeptical, but also extremely supportive.

At that time I also had the luxury of being the only person in almost the entire New York scene—except the Greys—to be involved in American issues. So I had the great advantage of invisibility, as no one was interested in the material I was researching. I was an intelligent person dealing with the debased material that nobody could understand. I had the best of both worlds.

In the early Institute years, Eisenman wrote an editorial in Oppositions called "Postfunctionalism" which dismissed program and function as part of a 500 year old, pre-industrial humanist practice. So a redefinition of program was certainly not part of the Institute's agenda. Yet, as is often the case, what is hidden is as interesting as what is in full view. Anthony Vidler's texts and lectures on Boullée, Ledoux, and Lequeu were extraordinarily perceptive, for example, showing programmatic rituals and spatial sequences in the architecture of Lequeu's lodges. Far from being pre-industrial, his lectures suggested bridges to the most contemporary art practices, including modes of notation used in performance art. But the Institute's prevalent discourse then was autonomy. My inclinations were more towards intertextuality.

EXHIBITION
Deconstructivist Architecture, MoMA, New York

88

COMPETITION
Bibliothèque Nationale de France, Paris
"Transprogramming."
Combined two programs, regardless of their incompatibilities, together with their respective spatial configurations. Reference planetarium + roller-coaster."

COMPETITION
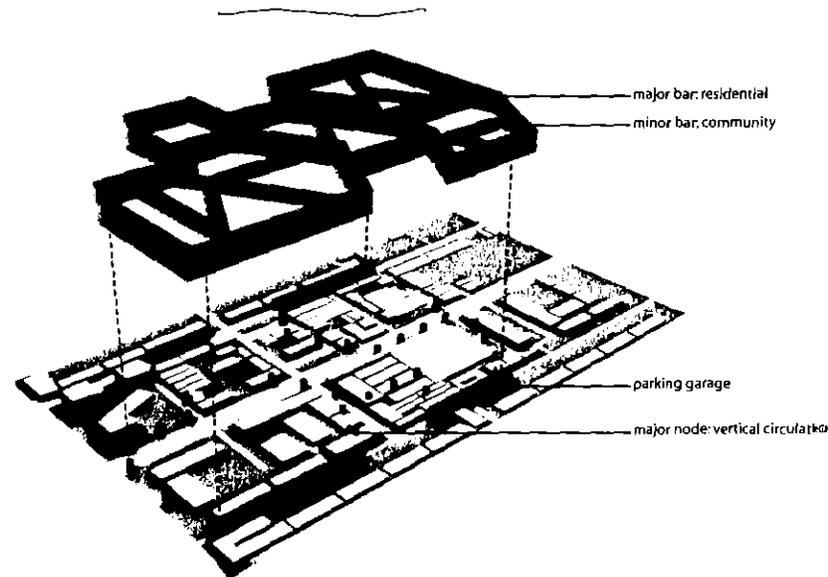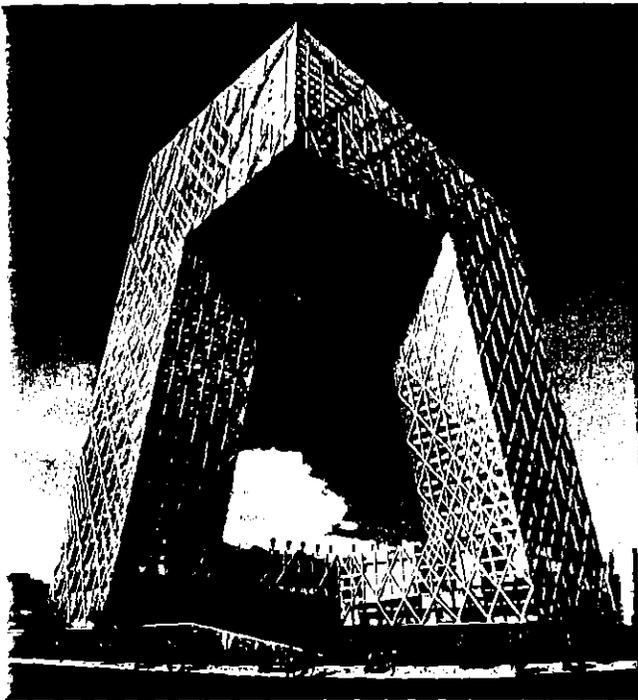Center for Art and Media Technology, Karlsruhe
3rd Prize

89

Glass Video Pavilion, Groningen, The Netherlands

90

7. What was the relationship between this early research and writing and the radical reconceptualization of program evidenced in your design for the Parc de la Villette?

There is a very direct relationship. I explained La Villette as a kind of horizontal skyscraper. The relationship to *Delirious New York* was so unbelievably literal that, as our practice evolved, it has inevitably become more indirect. At first those ideas worked as an example or prototype, but then it became simply an influence or area of attention. I still notice occasionally that the early research returns in an almost literal way, certainly in CCTV. So it's a source that we feel free to ignore, but there's always a pull. Except when there's a kind of anti-pull. Or when it has no relevance whatsoever. For instance when I work on a house, it's totally in abeyance.

But I also consider it as a historical given, and so in texts like 'Generic City' and "Junkspace" it remains a reference, but a reference we constantly suppress or refine.

My work on *The Manhattan Transcripts* began with a tripartite definition of architecture as space, action, and movement. The resulting mode of notation was used throughout the *Transcripts* and led directly to the La Villette principle of superimposing points (of activities), lines (of movement), and spaces (of appropriation). The precedent for my point grid was interesting in its relationship to programs. In the mid-1970s, I used to give my students at the AA excerpts from Kafka, Poe, Borges, and Joyce as programs. In order to organize the complexity of Joyce's text with a number of students, I gave them a point grid that announced the one at La Villette. It proved a great way to explode the park's programmatic complexity and reorganize it around the points of intensity of the folies. Simultaneously, I was writing more theoretical texts—"Architecture and Limits" and "Violence of Architecture"—which addressed the issue of program directly.

91

COMPETITION
JR Rail Station
Kyoto, Japan
"Disprogramming:
Combining two or
more programs,
whereby a required
spatial configuration
of program A con-
taminates program B
and B's possible con-
figuration. The new
program B may be
extracted from the
inherent contradic-
tions contained in
program A, and B's
required spatial con-
figuration may be
applied to A."

92

COMPETITION
Le Fresnoy,
Tourcoing,
France,
Winner
Completed, 1998

93

94

Event-Cities
(Praxis) published
"...the cause-and-
effect relationship
sanctified by mod-
ernism, by which
form follows function
(or vice versal needs
to be abandoned in
favor of promiscuous
collisions of pro-
grams and spaces, in
which the terms
intermingle, combine,
and implicate on
another in the pro-
duction of a new
architectural reality."

8. Some critics have written about the return of the megastructure, not only your practice but also in other architect's designs. Do you agree, and to wh would you attribute the recuperation of this type? How is this 'new' megastru ture different from its sixties predecessors?

There's a very seductive and potentially very naive form of looking at the past fifteen years, whereby you begin by saying that architecture meets megalomania, and megalomania is debased. But fortunately the force of the market flushed it away with the unfortunate commitment to postmodernism. Then in the 90s the market seemed to parallel and even sponsor or support radical redefinitions of form. In the late 90s, together with the destruction of the World Trade Center, form was discredited, and perhaps also the possibility for architects' participation and complicity with the market economy. Now we're all looking for something which gives us not so much power—because I don't think many people are nostalgic for power, and it's still a very dirty word—but perhaps a larger scope of what architecture could do, or could say.

The recent Factory 798 project in Beijing started with our wish to save t liveliest cultural center in China from being razed to make way for ten mill square feet of residential towers. After talking to the artists and galleries there, we proposed to keep the art program below and put the housing p gram above, hovering over the existing art neighborhood. The vertical supp points were located anywhere we could place them between the existing bui ings on the ground, so that the resulting "random" grid became a lattice. T project generated an enormous amount of media coverage since people sa as a way to keep the old while moving forward with the new. Maybe in part d to the response to our project, the government decided not to go ahead wi demolition. So maybe we saved the neighborhood but ultimately lost a proje

I do not think the project could have been done elsewhere but China. Fre market economy and megastructure are two terms that rarely go togethi Who will pay for megastructures? Today's capital is transient, while mega tructures are not. So maybe you can call the newest megastructures a resu gence of criticality. (What an ugly word!) Megastructures often act a manifestos. Our Factory 798 project was a buildable manifesto.

- major bar: residential
- minor bar: community
- parking garage
- major node: vertical circulation

COMPETITION
MoMA Expansion,
New York
Finalist
(The Garden's)
Programmatic flexi-
bility and social
space provides
places for activities
and art forms that
are not easily con-
tained within conven-
tional exhibition gal-
leries. Our concept
extends this quality
throughout the
Museum in the form
of multiple courts."

97

HEADQUARTERS
CITY LIBRARIAN
CREATIVE DIRECTOR VISION
RESE ATTRACTION ODICALS

READING ROOM

BOOKS ART MULTILINGUAL BOOKS
RELIGION GENEALOGY
PERFORMING ARTS TECHNOLOGY
PHILOSOPHY LANGUAGES MATHEMATICS
MUSIC HISTORY LAW BOOKS BUSINESS
BIOGRAPHY ENVIRONMENT NATURAL SCIENCE

MIXING CHAMBER ATTRACTION

ASSEMBLY TECH LEARNING
ELECTRONICS PRESS CONFERENCE
REMOTE LEARNING AUDITORIUM

LIVING ROOM ATTRACTION

STORE DOWNTOWN BRANCH BROWSING
COLLECTION SERVICES LEAP RECEIVING
FICTION VIDEO MAGAZINES
GOVERNMENT PUBLICATIONS NEWS ATTRACTION MULTIMEDIA

SECURITY
BREAK GRAPHICS
PARKING ACCESS RECYCLING PRINT SHOP
OPERATIONS WORK WORK SHOP
PARKING CAR CAR TRUCK CAR CAR CAR
CAR CAR 4X4 CAR CAR CAR CAR VAN CAR

9. How does the above drawing represent program? Is this a diagrammatic device, an operative tool, a formal construct, a descriptive idea, or a combination of these or none of these?

Not that I have a particularly high regard for diagrams, but this one is simply an illustration to enable others to understand our process. It's not at all a diagram, but a drawing that came after the fact. Hidden in it is a more simple reading of which elements of a particular kind of building can be stable, and which have to remain volatile. This is simply an end product, a retroactive illustration of what, in a more private sense, is a way of thinking.

The real diagram is the one that addresses stability and instability. In other projects there were diagrams, barcodes of stability and instability, or defined and undefined spaces.

All of the above. Most projects start with a program. First, you have to understand the program's intricacies, but also what you want to do with it. So you explore possible configurations and relations. I do not mean bubble diagrams here, but spatial connections or sequential routes. The quickest way is to diagram it, i.e. to conceptualize what you want to do with that program. There are many potential programmatic concepts. Sometimes that's it: your programmatic concept becomes your architectural form.

At Lerner Hall, we had to put in 6,000 mailboxes, an auditorium, music rooms, and so on. I wanted a central meeting space (which was not in the official program) so that all the parts of the program would be visible and accessible—a vertical social space of sorts. But a program always has to be inserted into a given site, which often has multiple constraints, whether physical or otherwise; in other words, it has a context. That in turn affects the selection or the expression of the programmatic concept. At Lerner, there were many specific site constraints, including historicist ones, but I could take advantage of one of them, namely, the fact that the campus is half a level higher than Broadway. I could link these two levels by a ramp and continue the ramp to the top of the building, assembling the pieces of the program with its 6,000 mailboxes along the ramp. Program? You need to figure it out, literally. That's what this diagram is.

99 COMPETITION
School of
Architecture,
Florida
International
University
Miami, Florida
Winner,
Completed, 2003
"Here, what a building does becomes as important as what it looks like. The building must act as a generator, activating spaces as well as defining them."

01 COMPETITION
Downsview Park,
Toronto, Canada

EXHIBITION
Wexner Center
for the Arts
Perfect Acts of
Architecture

02

10. Recently, various critics have argued that you are responsible for inspiring an entire body of work regarding program, both pedagogical projects and also trends in architectural production outside of academia. What is your reaction to this type of 'blame:' acknowledgment, or attribution?

I can't deny that I'm perversely interested in these 'attributions.' I have such a vast attention span that I can't deny that I follow them. But I think that at this point it is not attribution. The extent of media coverage has reached complete insanity. It is sad that the discipline is so dependant on one group of people to provide its subject.

I'm still totally dedicated to the discipline, in terms of working in it, but since 1995 I've effectively left the discipline. I have almost no friends left in architecture. My intimate friends used to be architects, but now they're all outside the discipline because I need nourishment and within the field there is an almost infernal circle of regurgitation. And that of course makes everyone who is regurgitated bitter. So that even if you produce something good, there is a cynical view of it from the beginning. So while I'm increasingly disenchanted with the practice of being interviewed, I hope this questionnaire produces something new or at least something less than totally predictable.

Look, I do not think that architecture must begin with form. It begins with a concept or an idea. Some of these concepts or ideas may be programmatic. Architecture is the materialization of a concept and I feel no qualms about calling the program a material, much as concrete walls or glass enclosures are materials. You can also use programs the way Malevich or Mondrian transformed painting, or Joyce and Schönberg transformed writing and music. Most interesting, however, is to design new conditions for living, whether urban or otherwise.

03 Factory 978, Beijing, China "Acknowledging the inevitable confrontation of old and new, the proposal is intended as an alternative to the wholesale demolition of the existing arts facility...The project, thus, is about a strategy of inbetweens."

04

05 Event-Cities 3 (Concept vs. Context vs. Content) published "There is no architectural space without something that happens in it, no space without content. Most architects begin with a program, that is, a list of users' requirements describing the intended purpose of the building. At various moments in history, it has been claimed that program of function can be the generator of form, that "form follows function." or perhaps that "form follows content." In order to avoid engaging in a discourse of form per se or of form versus content, the word "form" is replaced here with the word "concept." Can one therefore substitute "form follows function" with an alternative formulation, namely, "concept follows content"?

06

Program Primer v1.0
A Manual for Architects

Brought to you by Dan Wood and Amale Andraos of WORK

Introduction: About the Primer

Program is back! After years of postmodern whimsy, paper architecture, blobs, and countless other formalist tendencies, we have come full circle back to good old form that originates in function. Or have we? In buildings such as the Seattle Public Library a new, broader definition of "function" has given rise to an unbelievable array of spatial configurations and formal expressions. This more inclusive definition of the architectural program encompasses ecological concerns, cross-disciplinary collaborations, new technologies and virtual spaces, exploitation of the temporal and seasonal, and any number of combinations, juxtapositions, manipulations, and reinventions of the simple list of spaces and areas that heretofore bore its name.

Many architects today are interested in incorporating this new approach into their designs, but are unsure about how to do it. After years of toiling away on napkin sketches and then looking for inspiration in the beautiful crumple of the rejects, it is understandably difficult to set aside your self-image as an *artiste* and start designing by Excel. This Primer will help you get started with a simple series of exercises and examples designed to open up your mind to the new possibilities for creative expression through programmatic exploration. In no time, you will find yourself doodling diagrams and graphs and—hopefully—creating the next generation of masterworks that combine both programmatic variation and formal elegance.

How this Primer is organized:
+ Program Basics
+ Program Exercises
+ Beyond Architectural Tools
+ Ten Changes You Can Expect from Program

Program Basics

1. The Definition of Program

The traditional definition of the program is "the formal, written instructions from the client to the architect, setting out the necessary requirements for a building." For our purposes, we are interested in expanding that definition to include the informal and the unwritten as well as alternate sources of "requirements": from mechanical and structural engineers to artists, technology experts, consultants, authors, users, builders, and—most importantly—the architect. By thinking creatively about certain *performative* requirements for architecture, and through careful and clever manipulation of the input of all of the other interested parties, the architect can actively participate in the redefinition of program every time a project is begun.

2. The Evolution of Program (see John McMorrough, "Notes on the Adaptive Reuse of Program," p. 102-110)

3. The Eight Great Principles of Program

+ **Diagram** The generation of strong concepts—simple enough to incorporate the huge number of complex relationships that exist in every architectural project—through the drawn, written, or spoken "diagram": a quantitative and qualitative means of expressing a set of spatial relations and describing experiential needs without any overt reference to form, using only iconic elements, words, or numbers.
+ **Shuffling** The utilization of architects' capacity for complex mental manipulation of three-dimensional space to shuffle and recombine programmatic elements instead. What used to be called "deconstructing" can be utilized as a critical reading of program where parts are omitted, others are recombined, new parts are created, relationships are broken, and others established.
+ **Sampling** The ability to insert events, expertise, technologies, and programs outside the common field of architecture into a project.
+ **BreakBeat** A non-linear approach to design where "this" does not necessarily follow "that"; one that embraces uncertainties, clash, and the unexpected.

+ **Critical Distance** Maintaining the energy and discipline required to reimagine, reinvent, and recombine elements of the client's program, no matter how detailed, boring, or complete the document they hand you seems.
+ **Range of Motion** Finding potentially interesting aspects of a project unaddressed in the client's official program and making them integral to the project.
+ **Flow** The ability to quickly switch back and forth between the quantitative aspects of a program and the qualitative ones, identifying and finding the potential for synergy between the two.
+ **Opposition** The staging of disparate elements towards the formulation of a concept: adjacency tensions, negative/positive, three-dimensional figure-grounds, power relationships, etc.
+ **Dieting** Weeding through the reams and reams of a written program in order to find the essential kernels of use, activity, performance, or function that will transform an ordinary building into a lean, program-driven machine.

4. What You Need To Get Started

+ **Pentel sign pens or sharpie markers** Throw out those fine liners; programmatic expression is about clear concepts and integrating the quantitative. A broad pen aids in this broad-brush approach.
+ **Plain paper** If you are going to have fresh ideas, why trace over something old? Put those rolls away.
+ **Model-making materials** In the end, we are creating three-dimensional space. Working with diagrams, graphs, lists, and charts can sometimes allow you to get carried away. By immediately and often translating your programmatic ideas into spatial ideas, you will never lose sight of the goal.
+ **A project** This is up to you. Go get one!
+ **And some imagination** Make that a lot. Never underestimate the power of a good idea.

Program Exercises

The Twist

*Combining two or more programs in a single form*

Take two programs whose co-dependency is either unex-
pected or so unquestioned as to be banal and twist them
together in such a way that the resultant combination cre-
ates an entirely new sequential experience and form. Like
Mr. Softee's chocolate-vanilla swirl, the excitement is in
the combination, and how it was achieved, rather than the
fact that you now have two flavors in your cone. Nicholas
Grimshaw's first project, a tower of bathrooms for a stu-
dent hostel in a group of buildings without plumbing, is
such a project. The pre-fabricated WC and shower units
are arranged around a spiral ramp that accesses each
floor. The genius of the solution is in this ramp. It cre-
ates—through what on the surface appears to be purely
functional means—an incredible social space for the hos-
tel. Student residents, in their search up or down for an
available unit, encounter other students from other floors
and are almost forced to interact. The fact that most are
in their bathrobes makes an already-charged atmosphere
even more so...
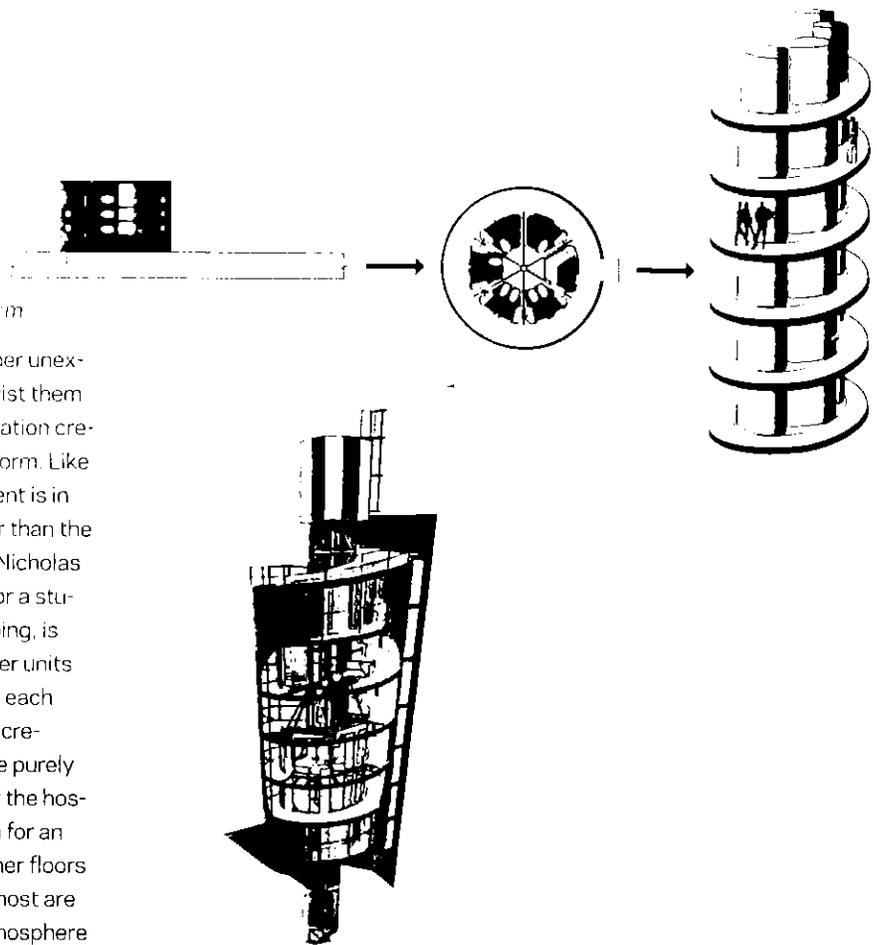
The Square Tomato

Creating new forms for programs

An Italian engineer realized that shipping tomatoes was a tricky business, with a lot of wasted product. His solution was to grow
them within boxes, creating perfect cubes for easy stacking and shipping. Never mind that people did not want to eat square toma-
toes—they did pack like a dream. Any form can be reinvented and improved. Try to rethink form from a programmatic perspective
and the results can be revolutionary. PLOT's design for a municipal swimming pool is a case in point. Their circular design not only
provided for an exciting building, it also allowed for continuous lane swimming by running the main lap pool around the perimeter.
No more bumping into that lady in the flowered bathing cap as she tries to execute the perfect turn off the wall...
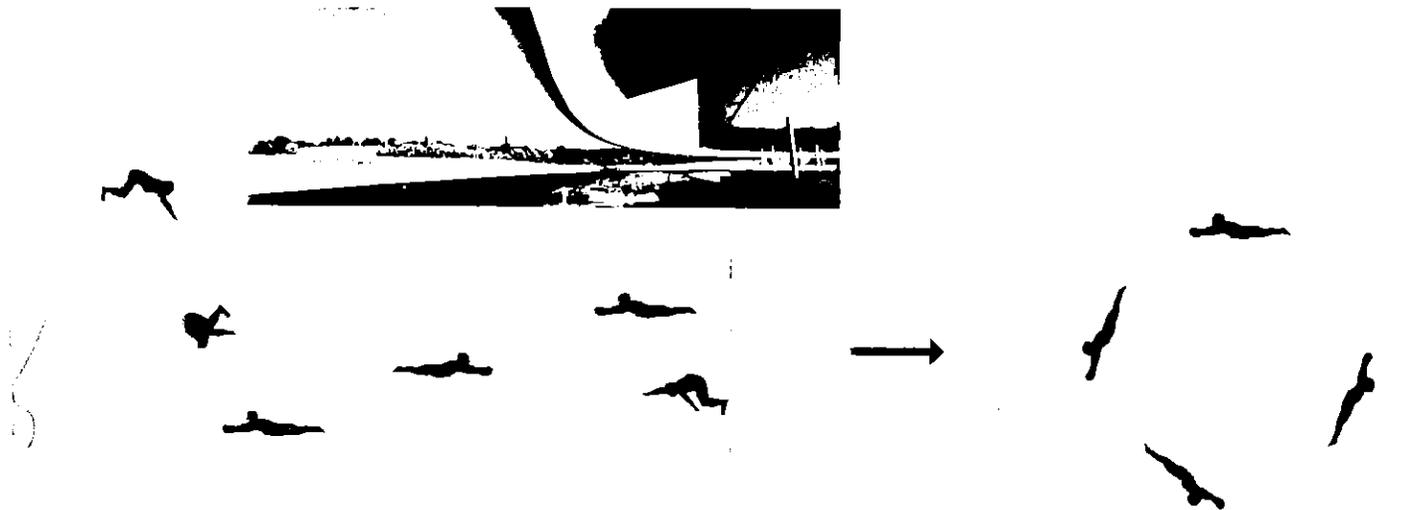
The Swan

Beauty, not the band

Architecture is full of ugly ducklings. There is vast un-mined potential in air conditioning ducts, grease traps, boiler rooms, and the like. Take the most unbelievably boring, maudlin, or ugly program and try to re-conceptualize it as something beautiful, productive, or inspiring. Artist Joep van Lieshout's "Total Faecal Solution," for example, tries to maximize the benefits and aesthetic potential in the most base of human activities. A toilet is set high enough off the ground to incorporate a collection tank below. Methane gas is siphoned off, water is filtered to the point of potability, waste is compacted, and compost is created. An adjacent garden and strategically placed portholes provide evidence of the process. The resultant structure—in van Lieshout's trademark style—is both visually arresting and strangely beautiful. It becomes a true shrine to human waste...and human responsibility.
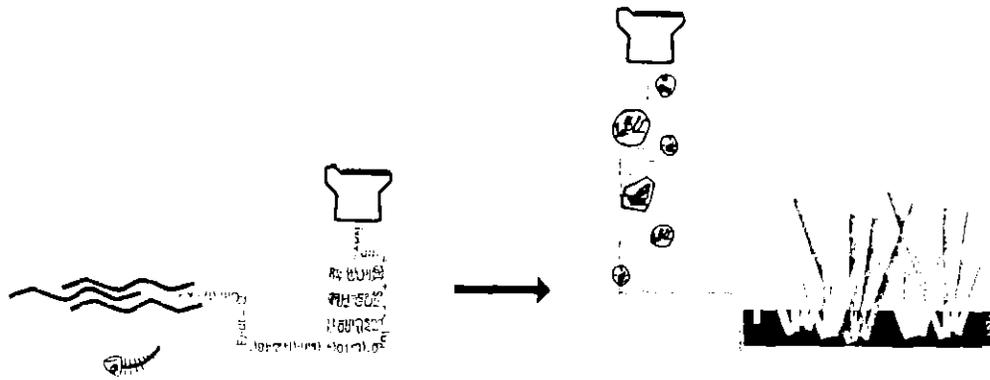
The Wedge of Swans

Take the Swan and scale it up

Making beauty from detritus is even more challenging at the large scale, but can also create amazing opportunities for spatial and programmatic experimentation. In the competition for "un-city," a huge development in New York, the team of OMA, Toyo Ito, Davis Brody Bond, 2x4, and KPF teamed up with D.I.R.T. Studio's Julie Bargman to try to imagine an ecologically sensitive/ celebrative two million sq ft development. The result— with grey water recycling running alongside ten-story escalators, a permeable asphalt parking structure, and an atrium combined with "inlet" to cleanse water from the development and the East River—was, in the end, too much for the competition sponsors to take. Unfortunately.
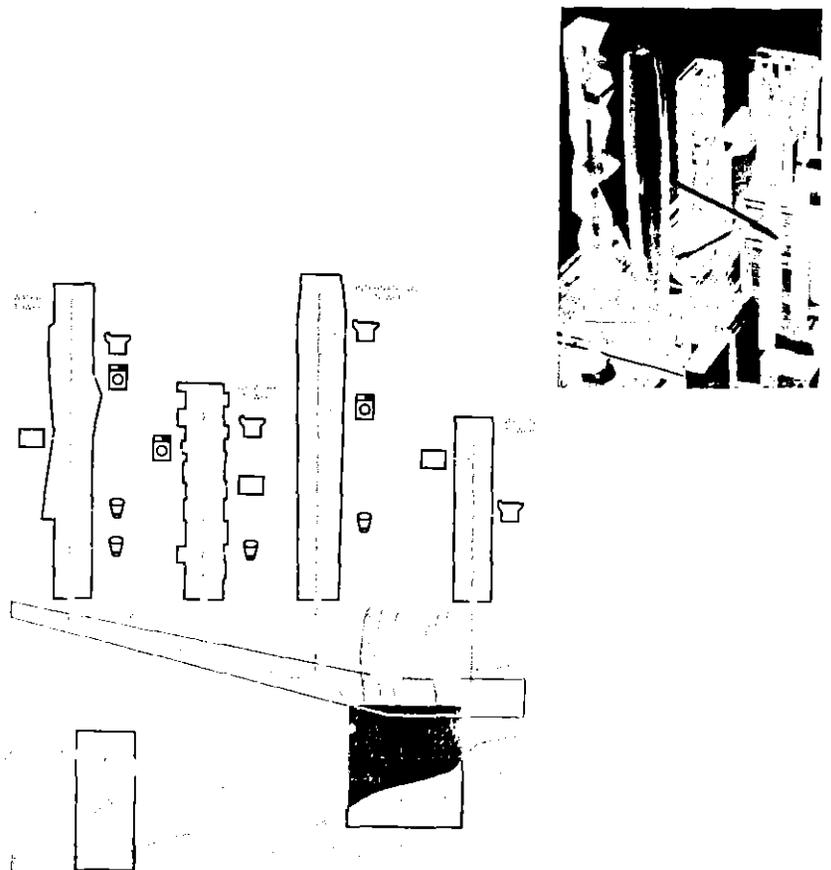
Pearl in the Oyster
Play between the generic and the specific

Many buildings and projects feature repetitious spaces or large areas of space
where the opportunities for architectural expression are limited. By searching
out areas of specificity and exploiting them strategically within the expanse
of generic program, the interplay between the generic and the specific can
create interesting and dramatic tension. OMA's Universal Building employed
this strategy at an enormous scale by concentrating not only all of the "ugly
duckling" specificities (see "The Swan" p.114) of risers, elevators, emergency
stairs, etc. within four enormous cores, but also by including all the architec-
turally interesting spaces there as well: double-height "lofts," courtyards,
meeting rooms, executive suites, etc. The bulk of the building, generated
through research into the most efficient office planning modules and require-
ments, was left open as a horizontal plane; the four "towers" of specific
program cut through this plane to provide vertical architectonic relief from
potential corporate monotony.
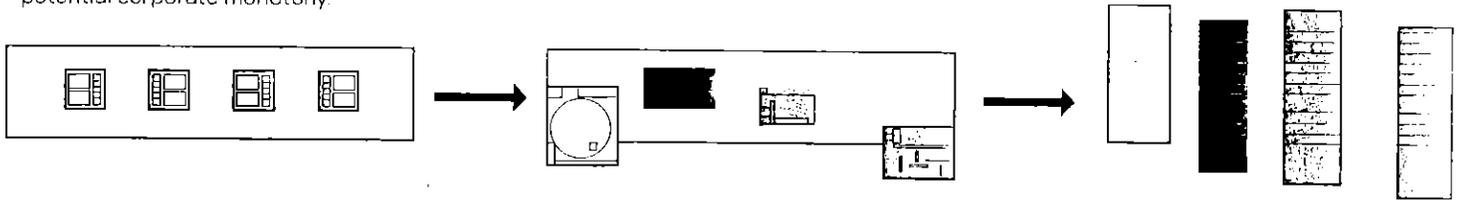
The Time Share
Different uses at different times in the same place

Find ways to exploit uses which do not overlap in time; spaces can be used for
different things during the night and the day, from one season to the next, or
periodically throughout a single day. Universal space, the dream of the mod-
ernists, does not have to be so ponderous and empty—think of the high school
gymnasium that sponsors dodgeball as well as commencement, the holiday
pageant at night, and mystery meats in the afternoon. The most innocuous
coincidences of time can sometimes be exploited to create enormous cultural
change. The longest drought in LA history, the invention of new types of resin
plastics for wheels earlier that year, and a small gang of disaffected surfers, all
came together in a series of dry pools one summer to change sports, fashion,
and the face of teenage cool forever.
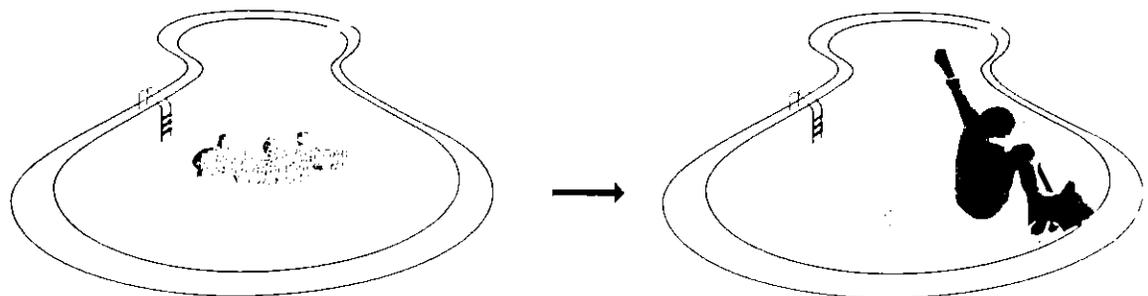
The Better Mouse Trap
Re-thinking the ordinary

Sometimes it is worthwhile to take the plunge and simply reinvent something no one had previously considered worthy of reinvention. A healthy degree of skepticism that everything that can be invented has been invented is necessary. To be a good program driven architect, you must be able to imagine yourself in the shoes of your client or the people who will inhabit your building and re-imagine the ways that spaces can accommodate activity. In our own work, we have tried to do this even when our clients do not wear shoes. The Villa Pup was a commission for a doghouse wherein we tried to imagine the ultimate home for the "urban dog." A combination of treadmill, video screens, and an odor machine allowed the urban dog to experience some of the prosaic canine joys of its rural cousins—chasing mailmen, Frisbee tossing, barking at cats—during the long days cooped up in the apartment. Other scenarios included boosting the urban dog's self-esteem—the Chihuahua racing the greyhounds, for example, and winning.
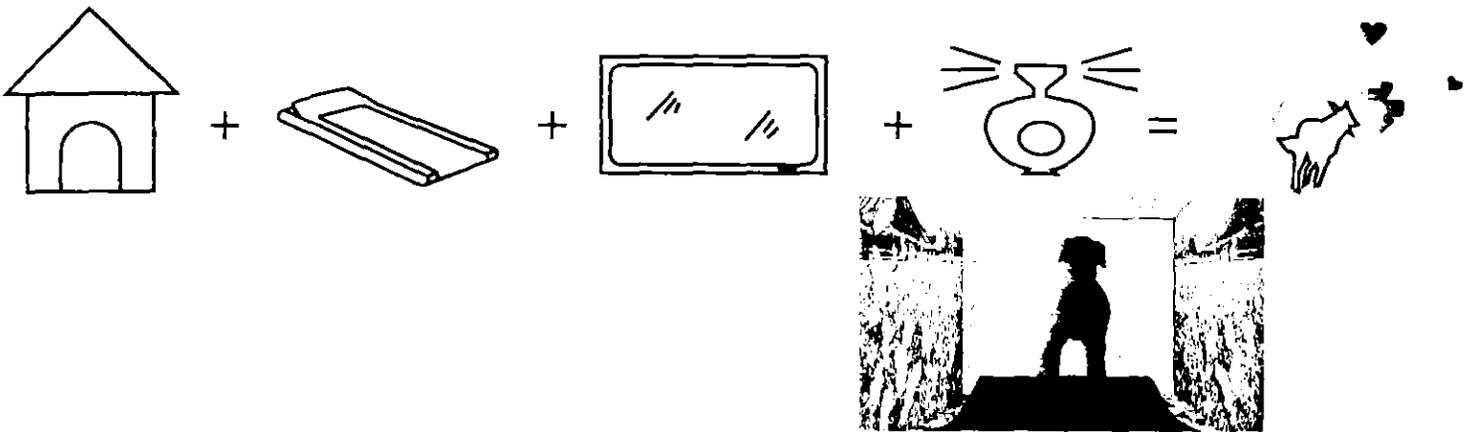
Simile
One program defining another

If something looks just like something else, or reminds you of something else, maybe it could be something else. Use a program, or an entire project, to define another in an efficient and architecturally-scaled metaphor. Someone was smart enough to note that, "hey—this new Fiat factory is going to be as big as the testing track" (or noted that the testing track was as long as the factory) and architectural history was made.
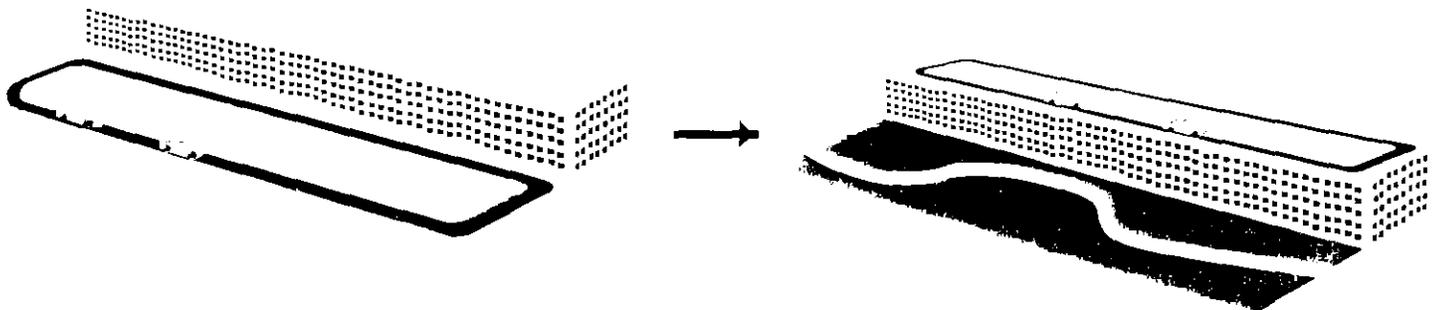
Bondage
Using budget or other constraints as programs in their own right

"Creativity" in architectural practice often seems like a technical impossibility. Between building and zoning codes, client insecurities, budgets created by dreamers, rigid requirements for adjacencies and hierarchies, the limitations of construction and contractors, and the simple tendency of everything to head inevitably towards that lowest common denominator, it is often difficult to come up with any ideas that can get built. Since the best defense is often a good offense, one of the main tactics of program-based architecture is to use these constraints as the departure point for design. In our project for a residential tower in Beirut we quickly realized that—contrary to almost everything else in the city—the building rules were incredibly constricting: the zoning envelope forced the building to sit at the very back of the site, away from any possible views of the Mediterranean; every room required either a "primary" or "secondary" view with strict definitions; balconies were mandated, etc. Our solution consisted of building our "ideal" building, facing directly towards the sea, until the point at which the zoning envelope cut in, and then sitting the mandated building on top, creating a building whose fifth and sixth floors were more desirable than its seventh and eighth and allowing our clients to maximize their profits in the what are usually the least desirable lower floors.
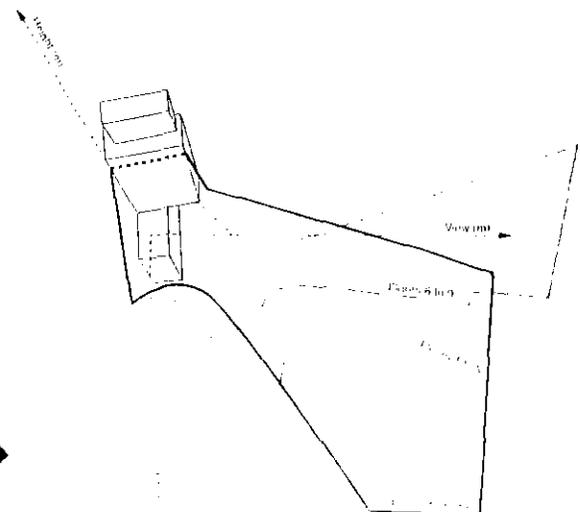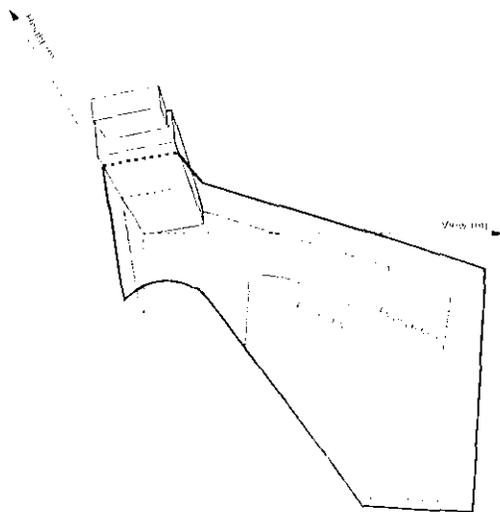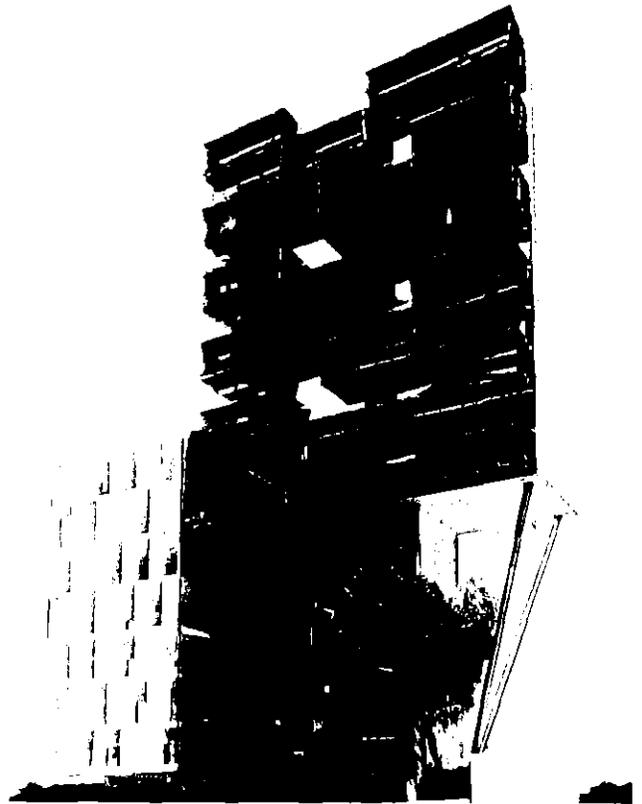
The Mermaid

[illegible subtitle]

Mythology is filled with lasting images of strange combinations [...illegible...] "surrealist object"—the unexpected element [...illegible...] can create extremely interesting conditions. Most of Atelier Bow-Wow's [...illegible...] Mermaid. In their guidebook, 'Made in Tokyo', the group records the numerous urban conditions in Tokyo [...illegible...] terms of an additive equation of unrelated parts: 'Vampire Park = public square + donation park', [...illegible...] restaurants + golf practice range + apartment building + car parking, etc. In their Furnicycles project, Atelier Bow-Wow [...illegible...] household furniture element to a series of bicycles, allowing for a small group of riders to come together and create [...illegible...]
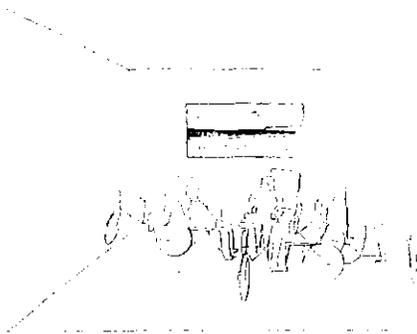
Roll Out

Repeating a single program over and over with subtle variations

The architect's version of "staying on message" can at times be as effective as it is for our politicians. Sometimes a brilliant idea is best expressed through repetition. This repetition is often most sublime when it is doggedly pursued through the stages of monotony, boredom, and ad nauseum to a point where its power cannot be denied. In One Architecture's planning project for Judenburg-West, they discovered that, in Europe, significant subsidies exist for introducing much safer traffic circles, rather than intersections, as connectors for new residential districts. These subsidies in fact outweigh the costs of construction, allowing developers to use the money to introduce things like old-age housing, public facilities, and the like. One's natural reaction was therefore to create a plan whose driving concept was to introduce as many traffic circles as possible, finding a number of ingenious ways to occupy their centers and peripheries.
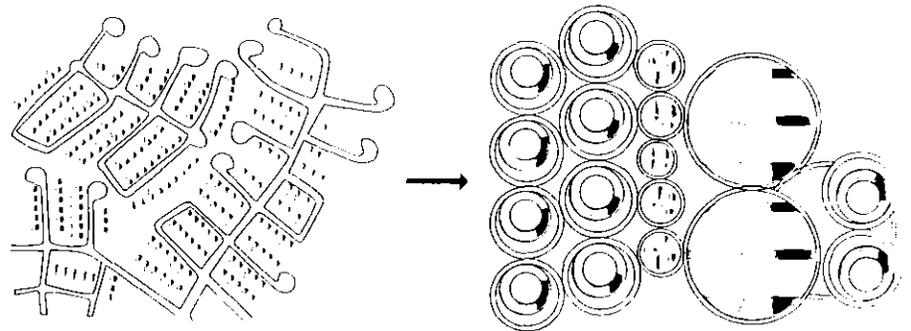
The Dive
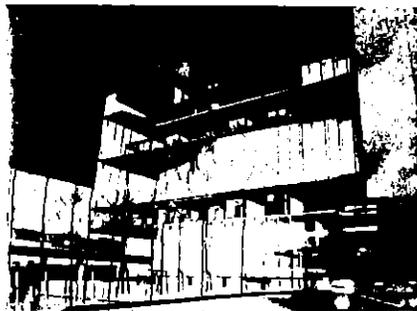*Using a program to generate a single swooping form*

It is somewhat of a rule for those of us not named Frank Gehry that the strange shapes you can imagine are never as exciting as the strange shapes you find, often in the most unlikely of places. Form that is derived from program often outshines even the blobbiest of blobs. In their theoretical project for Dubai, L.E.F.T proposes three high-rises in the midst of the desert whose forms are entirely driven by the program they have chosen for the future of Dubai: landing for international planes. The extruded and twisted runway patterns—taken from actual airport runway designs—create stunning forms in the desert.
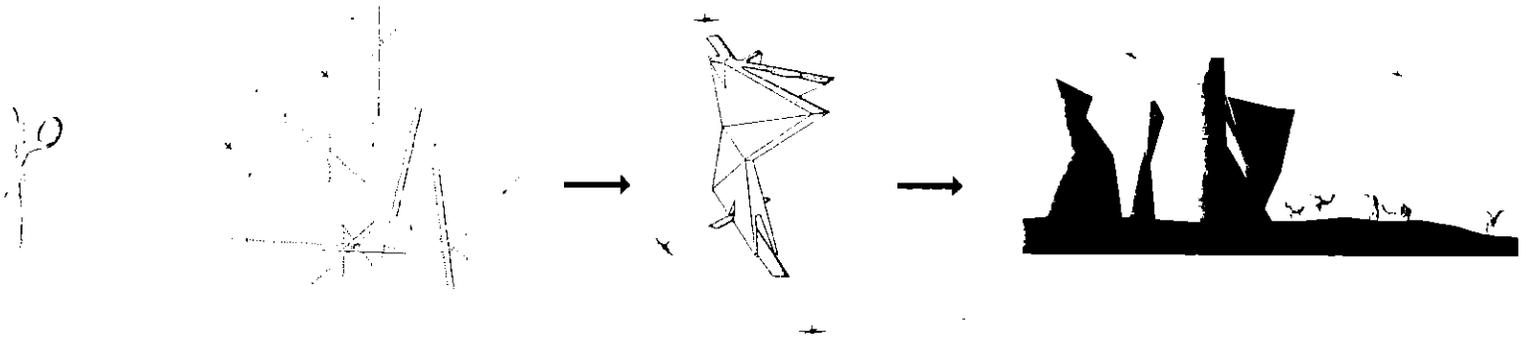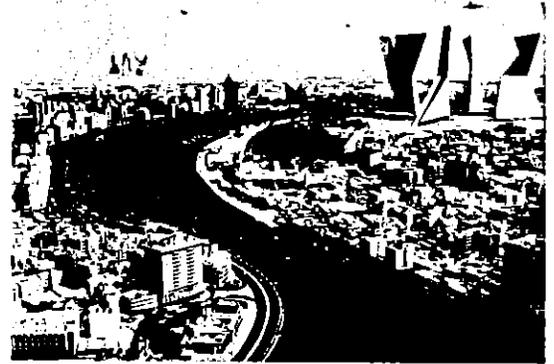

Distribution of Wealth
Maximizing the effects of the best programs

Many buildings are primarily composed of repetitious elements that can overwhelm the more interesting parts of the program. By sprinkling these interesting spaces through-out the building, however, every repeating floor or room can be energized with a new activity. In their Hotel Pro Forma project, nArchitects appropriated the most public and exciting part of the hotel program— the lobby—and distributed it equally in between every floor, creating an alternating section of bedroom floor / lobby floor dia-gram which brings the excitement of a public lobby to every bedroom floor.

The Blind Men and the Elephant

[illegible subtitle]

Complex agglomerations of program can present a unique challenge as they become increasingly hard to center and present multiple identities to the world. The trick is to exploit this multiplicity while retaining harmony and identity in order to avoid a kind of schizophrenic pastiche. In our competition entry for the new Montreal Cultural and Administrative Complex, we combined Montreal's long love affair with the megastructure with the stated desire that the disparate occupants of the building all retain their unique identities: the Provincial Government, a school for the performing arts, and the main concert hall of the city. Uniqueness was created by establishing different entrances and conditions for the three programs, each one facing a street appropriate to its program. (The concert hall entered from a grand boulevard, the school from the hip shopping street, and the administrative tower discretely from a side street.) To provide an overall concept, the program was laid out in three parallel bands that were then combined into a continuous ring of program around the building's new centerpiece, the glass-roofed concert hall.

Program   Identity   Connections
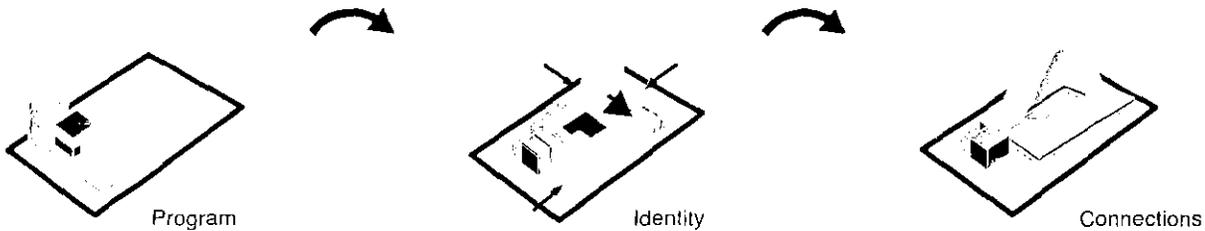
Fusion
Creating power through fusing disparate elements together

While gourmet chefs and minimalists may disagree, a lot of excitement and activity can be generated through the introduction of many different ingredients to a project and fusing them together with a common thread. In our competition project for a new plan for the sleepy town of Akureyri, Iceland, we created a continuous pedestrian loop connecting the main sights of the city. We then infused the loop with three programs: density, the introduction of new housing typologies based on density of units; activity, a series of paths and routes allowing people to ice skate, walk, rollerblade, kayak, jog, swim, or ski around the loop, and ecology, a series of green spaces "curated" by the city's botanical garden plus a loop-wide concentration of alternate energy sources, from wind-powered streetlights to solar collectors.
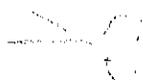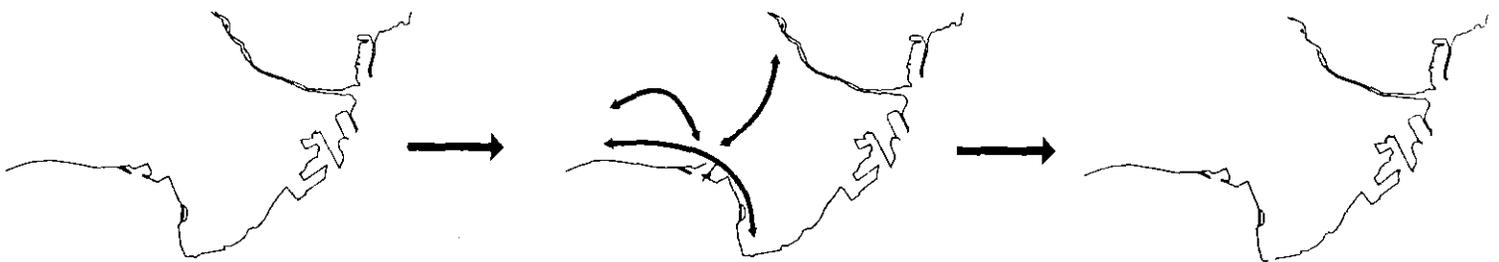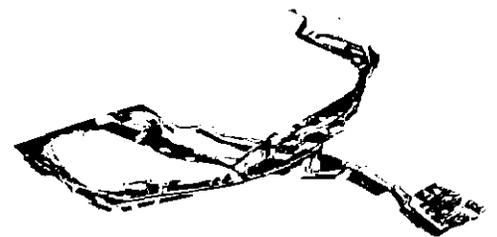
Beyond Architectural Tools: Equipment and Accessories

+ Foam Never Felt so Good: the Foam Cutter

The hot wire foam cutter allows even the youngest intern to crank out an unending stream of architectonic concepts within an extremely short time. Its power is awesome, allowing any idea to be immediately expressed in three-dimensional form, cheaply and efficiently. Have you noticed that European architecture these days is a little more daring and expressive? It's no coincidence that there is not a single good manufacturer of small hot-wire foam cutters in the US.

+ Abracadabra: Design by Excel

It's not just for MBA's an more. Not only can a mastery of Excel help break the ice with your developer clients (and don't be afraid to ask for tips, those guys are spreadsheet kings) it can also aid immensely in the abstraction of program and the rapid manipulation of sizes, adjacencies, and distribution. It can help manage your fees as well.

+ Size Does Matter: Expanding and Contracting Program with AutoCAD

Budget cuts getting you down? Try "scale all 98%" to your program diagrams to effect an across the board value engineering coup. Things not exciting enough? Selectively beef up certain programs while slimming others; the difference will only be noticeable in the improved quality of the finished product. The "Stretch" command is also handy.

+ For Help Doing the Exotic Stuff

Don't be afraid to call in experts, especially people who are not architects. You would be amazed at how inspiring a theoretical discussion with a mechanical engineer can be...no one has asked them anything except vent locations and shaft sizes for years.

Ten Changes You Can Expect From Programmatic Design

+ A Firmer and Leaner Project

You'll be amazed how your project sails through client reviews, value engineering, and approvals processes once it has been imbibed with a strong and simple programmatic concept.

+ Better Posture

You'll be able to better defend your positions when others can easily understand the ideas you want to express in your architecture.

+ More Flexibility

If you start a project by creatively reimagining its programmatic elements, it becomes easy to quickly do so throughout the process as unexpected problems or conditions arise.

+ Better Balance

Weighing options and variations eventually becomes second nature and you will find your decision making abilities streamlined.

+ Less Back Pain

By cross-training—moving from Excel to the foam cutter to AutoCAD to meetings outside the office—you will find less strain on your body.

+ New Friends

Eventually you will find yourself surrounded by non-architect friends and colleagues. You'll find them much less intimidating than you once imagined.

+ Social Skills

Instead of peppering your conversations with vague architecture-speak, working with real world programmatic elements will give you a broad range of new subjects to talk about.

+ Staying Power

If you are able to convince your client of the strength of your concept, you will be surprised at the amount of ideas that will remain in the project until the end.

+ More Fun

Admit it, it is more enjoyable to read a well-crafted story than poetry... you know it

+ More Profit

Just kidding... you're still an architect!