LANDSCAPE URBANISM

A Manual for the Machinic Landscape

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Landscape Urbanism *A Manual for the Machinic Landscape*

Hans Drexler and Christopher Duisburg

In Conversation with RUR: On Material Logics in Architecture, Landscape and Urbanism

Architectural theory, especially at Columbia, where you were teaching, has shifted away from questions of representation and issues of meaning towards the effects of architectural form. What do you think triggered this paradigm shift?

At one point there was a real hope that a truly transformative architecture would be possible through complex manipulations of representation. This came out of deconstruction and the whole legacy of semiotics in architecture. From the mid 1980s up to the early 1990s, these issues formed a central part of our project, but there was always a schizophrenic aspect to our design process. While we desired to make collage the engine of design, this was never entirely possible. For us, there was a kind of crisis that I could pin down to the work we showed in a publication called *Semiotexte Architecture*. We came to the conclusion that this kind of process was not really productive, that one was invariably going back to a more modernist way of composing or organizing, using bubble diagrams and then embellishing the project with secondary material that was image-based. Inevitably, the basic principles of organization would not and could not be linked to collage. This happened over and over again. We realized that we were just banging our heads against the wall. At that point we decided there had to be other ways of working. We were not the only ones frustrated by the process: across the board, people were becoming increasingly interested in projects that would engender change and difference within a coherent and integral system.

Has this had an influence on the role of perception of space in your design?

The semiotic approaches, of which collage is a part, primarily involved working with issues of perception and legibility. We realized that the perceptual condition was properly a by-product

of the system, rather than the generator of it. The claim we would make is that one doesn't have to worry about perception, especially perception tied to the communication of a meaning: you will get all the perceptual effects, but you shouldn't start with these as the basis of a design – the question of perception within space follows from organization. Therefore, we are not denying meaning, but rather making it the project of the user rather than of the architect.

In your IFCCA West Side project you introduce a multitude of different activities and movements so that an uncontrollable site is created. Can this be seen as an attempt to simulate a complex natural environment where unforeseen conditions could emerge?
It really wasn't so much about replicating complex systems as engendering a certain complexity in the artefact. The assumption is that, by mixing systems, there is a greater possibility for unforeseen effects to occur in the final built structure. Our way of working involves managing different material regimes and systems. It incorporates multiple systems or environments into the mix and works back and forth between them. One of the overall ambitions of the project was for interconnectivity among all parts; there was an attempt literally to weave the strata of the city together. We tried to make these realms, which are already present on the site in some form, accessible and continuous, for example by incorporating green spaces, automobile infrastructure, different scales of structural hierarchy and pedestrian flow. We at first looked at fairly simple diagrams of movement from various infrastructural sources and then tested how these movements would mix in the station, in the commercial spaces and in the large event space, etc. Thus, we were managing an only partially controllable situation. Much of it had to do with working on something, seeing what would happen and then adjusting it along the way. Sanford Kwinter compared this way of working to husbandry, cooking or the way in which aerial combat is waged.

How can the notion of function and programme be expanded and become an essential input for the design process without submitting the design to a rationalist or opportunist procedure?
One of our basic assumptions is that there isn't a tight fit between programme and form. Functionalism is in itself a myth. We have known for quite some time that programme doesn't
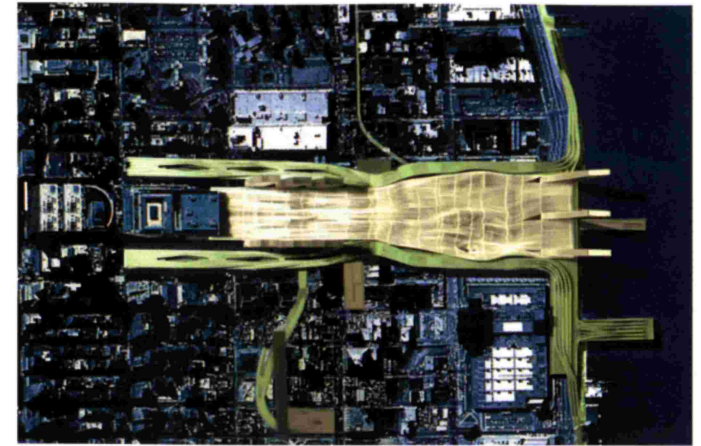
IFCCA West Side

absolutely adhere to its supposed use. Labelling a space a kitchen and assuming that the only thing that happens in it is cooking is a fiction only certain architects believe in.

This is something that was already visible in the nineteenth century to people like Frederick Law Olmsted. Central Park is a great example of a loose fit of programme and form. Almost no programme is spelled out, and yet you could never say that it is aprogrammatic. It is actually loaded with different kinds of programmes, even though there were no labels as such on the drawings. Indeed, it continues to accrue different uses over time. Olmsted didn't know what rock concerts were because they hadn't been invented yet, but the spaces and the relations between roads and paths already provided for that scale of public event.

The modernist avant-garde had an ideal future in mind. Your IFCCA project seems to be more engaged with transforming the present conditions. Is there a desire to actively reconfigure the urban setting in the sense of a Utopian reinvention, or is the project seen as a mere catalyst for existing forces in the sense of a modification to the system?
I guess there still would be a Utopian impulse in the project, but it wouldn't be based on a model of a *tabula rasa* or a total reinvention of reality. That sort of conception of Utopia has exhausted itself anyway. A Utopian trajectory would be initiated, at least in part, from existing conditions out of which unforeseen outcomes might emerge. Our way of working differs from an acquiescent contextualism. In the [IFCCA] West Side project we were looking at the infrastructure on the site and then incorporating new organizations and environments. This process of incorporation could in a sense be linked to a Utopian desire, but it is very much based on operational techniques and material becomings.

Do you think of your projects as having a social impact? Is there a political agenda to your design that would allow it to become performative in a social manner?
The East River Corridor is probably our most obviously political project. We were looking at the area along the eastern shore of Manhattan and realized that a major roadway, the FDR Drive, blocks the city from its waterfront. We immediately noticed that in the wealthiest areas of Manhattan they had solved this problem quite elegantly, but had also isolated those places from the rest of the island. So what we proposed, based upon the existing Sutton Place
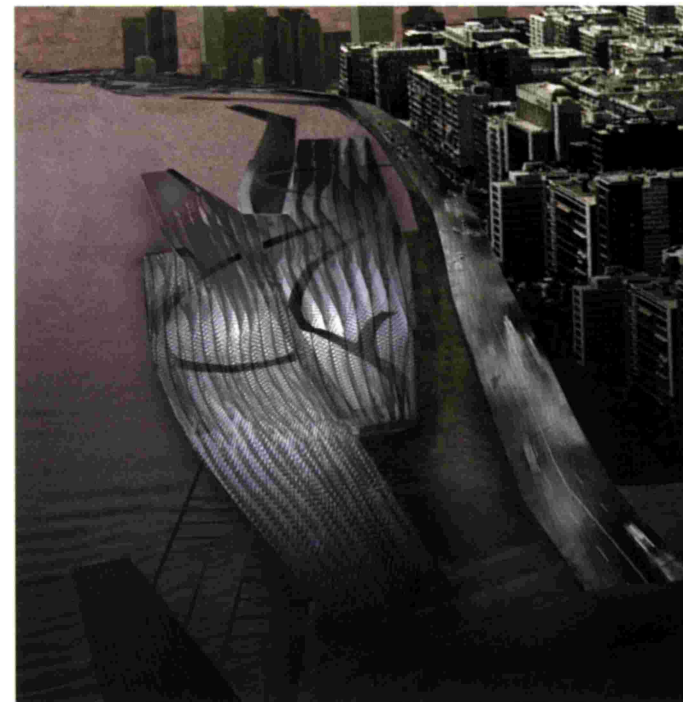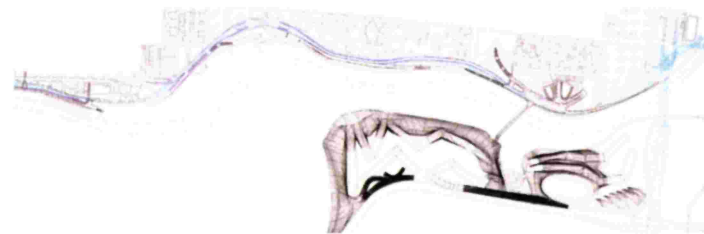

East River Corridor

solution, was to create continuity from the city to the edge. We also wanted to create a north-south continuity of public pedestrian space. This was the issue that really upset people, especially the inhabitants of the Upper East Side. In effect you would have people from Harlem and from Lower Manhattan passing freely into the areas of Sutton Place and other upscale neighbourhoods. These beautiful enclaves, the best parts of Manhattan, would be opened up to everyone on the island. In that sense the projects aren't simply abstract models: when implemented, they have a real political impact on the scale of the city. Also, at the programmatic level, it wouldn't be a matter of simply morphing one element into another. Our scheme very actively incorporates a lot of programme, which also upset people, because they would not simply get a continuous nineteenth-century park along the edge of the river. We suggested a lot of building mass and a lot of additional programme to make it a 24-hour space. The whole programme for revitalizing the edge of the city isn't simply about instituting a geometrical desire for continuous form. Equally, we don't see it as a critical approach, in the sense of merely revealing contradictions. It is an attempt to deal operatively and affirmatively with these conditions, and only then do they become political in a positive sense.

Looking at your IFCCA project, it seems as if the ideas of a performance-related space are influenced by an analysis of infrastructure. Do you use an instrumental logic to approximate your architecture to infrastructure?

There is an aspect of instrumentality in all of our work. In the design process, you need a certain level of determinacy in order to make a decision and to move ahead, but that doesn't mean that the end result would be absolutely deterministic. A building is organized by a whole series of hierarchical conditions of scale and use. We might have, for example, an infrastructural element at one scale and then try to mix it with other kinds of material and programmatic conditions. Naturally, these kinds of procedures require clear quantitative information that would then condition the development of formal and organizational strategies.

We were talking earlier about the flow of forces in the IFCCA project. How would these dynamic forces live on in the building?

Again, the question arises of how to deal with a dynamical system. We have increasingly
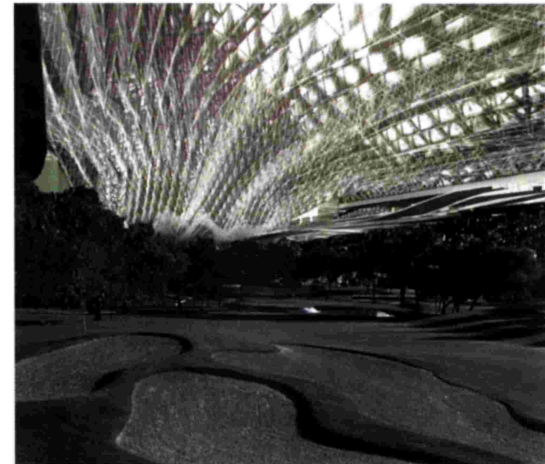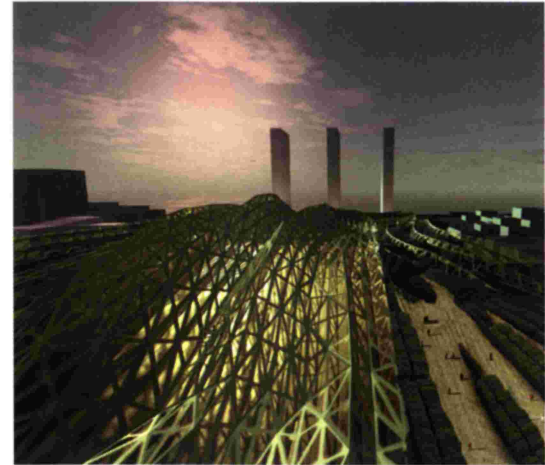
IFCCA West Side

moved away from a vectorial relationship between force, geometry and a derived materialization – which is what Greg Lynn would be interested in – to focus us towards working with the way matter computes itself. It is possible to create a dynamical field while operating on a physical model. Dynamics, although necessarily arrested in built structures, live in a very literal sense at the structural level.

This can be a way of shifting from dynamical organization into something that, even though static, is actively influencing organization and use beyond that of structure per se. This is not a metaphor; it is about a behaviour with which you could then manage architectural organization. For example, with the West Side project we were working back and forth between the programme within the roof and the roof structure itself by mixing the domains. The models were structural models, but we were already contaminating them with formal and organizational material. Thus force becomes a tool, an engine with which to influence and design in a structural field.

So it wouldn't be a purified structure, and it isn't really about innovative structural design either. You would not arrive at the most efficient structure possible given a certain span, but it would be as efficient as it could be given the inclusion of these other influences. So a modernist structural designer would probably consider what we were doing as impure and maybe irrational. We were trying to mix what, within a modernist framework, had been distinct realms.

We created a catenary field and then influenced it by impinging on it from many directions with lines of force. The idea for the catenary field came from a suggestion made by our structural engineer, Ysrael Seinuk. Antoni Gaudí used similar models in the design of the Sagrada Familia, though he was working solely with gravity forces, using loads on chain models that create simple parabolic arch forms automatically. Our situation was far more complex. We had generated a rough geometric model in the computer using the Alias modelling program (a program with the capacity to emulate forces on a geometry in a multidimensional field). The problem we were facing was that the computer model, while geometrically complex, was only a crude approximation of structural behaviour. Physical catenary models have the advantage of being able to compute geometry and structure simultaneously, with a high degree of precision. We proceeded to construct a two-metre-long

chain model acted on by weights and pulleys. We were pulling on the chains from a number of directions in order to get them to correlate to the formal and organizational strategies of the building. This shaping resolved the organization of programmatic elements and the structural capacity of the field itself. The interesting part is that one could always be assured that any expression in this field was structurally sound. It is a material computation. A productive feedback existed between the material model and the work we were producing in the computer.

In your more recent projects, like the Kansai Library competition, your designs seem largely based on using the computer as a tool for the investigation and representation of three-dimensional structures.

We constantly work back and forth between physical models and computer models, only we generally haven't shown the process models in publications. We come from a slightly older generation that doesn't really trust computer-generated perspectival views. We are much more interested in the metrical space than in perspectival space, especially during the design process. We always want to have an artefact in front of us that can be inspected and measured.

For Kansai we initially used a bubble diagram as a model of connectivity among different programmatic zones. We then looked at the relationship of different slopes of floors and specific programmatic elements that would relate to those slopes. A provisional physical model was made from wax, which connects the topologies of these various surfaces of the ramp system. This was remodelled in the computer and analysed in terms of heights. After that we worked manually on a secondary scale by developing smaller organizations on the slopes as if we were working on a landscape project. So there is a constant alternation between media and methods, rather than a linear process.

Is it important to you that the process of form-generation and the forces that influenced it can be read and understood in the final project?

That is the kind of discussion we have had with Greg Lynn and Jeffrey Kipnis. It isn't so important for us to show the history of the project as a rational development. You know as
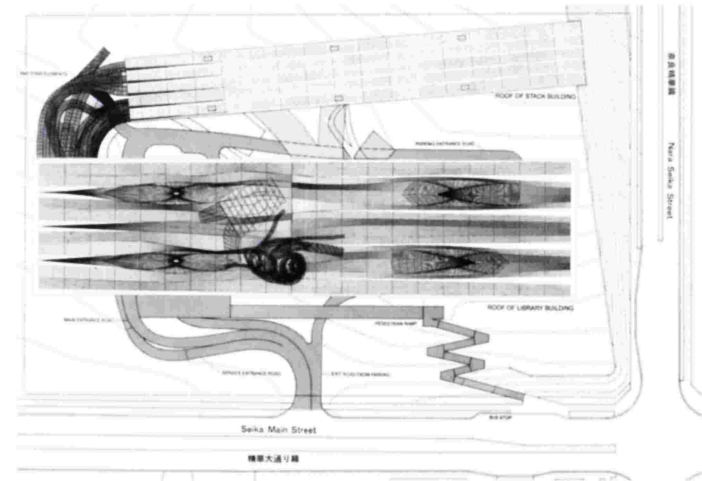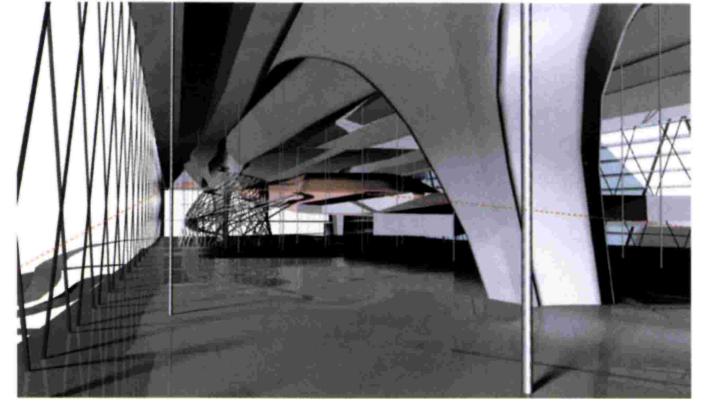
Kansai Library

well as I do that most of these are falsified histories anyway. The design is done and then a cosmetic history is presented that appears retrospectively as being rational. It is simply rhetoric to produce sanitized and rationalized histories, but it makes people feel better. That is not how our office works. The important thing to us would be to have those influences embodied in the project and not to simply make them a form of argumentation or description of a process. It doesn't have to be an illustration of those forces. I guess at the end it's about the project in terms of its actual effects and not the history of its process.

Some of the models for your IFCCA project contain three-dimensional flow diagrams. The architecture seems no longer to refer to a Cartesian model of a geometric, homogeneous and static space, but to be based on a notion of nomadic or transitory space.
Yes, that is substantially true. Essentially we are dealing with locales that are part of a vast global system, the transportation corridor. It is this movement corridor that concerns us, rather than the object itself moving. If we approach from the direction of the global logic – that is, from the vehicular side of things – then yes, the vectorial expression in the project as built form is actualized in use. However, from the standpoint of a pedestrian, that same formal development would appear to be more localized and more traditionally expressive.

But more generally, if we're talking about transition and the departure from static space, then time becomes a function of spatiality. Movement among temporal material regimes becomes a natural outcome of taking up the notion of the diagram as a productive procedure. Many different material dynamics begin to enter into the work, because now it is possible to move fluidly among them. So it is about a kind of extreme artifice – that is what I would call it. There is always the problem of representational thought, especially among critics. When critics say, you know, 'All of them are looking at weather', well, we are not really looking at weather. We are looking at weather in terms of its dynamics. But it always has to be expressed in the terms that are possible in the material construct of architecture. And in that sense, one could further claim that such diagrams do not really originate in weather either, that there is a vectorial dynamic that crosses many different material systems. This, of course, did come up in the sciences: one of the realizations in thermodynamics was that there was a way of generalizing apparently disparate kinds of material and physical behaviours through a

common dynamic. So we could make a similar claim, especially since we consider architecture to be another material system, even if it is an artificial one, consciously created rather than found in nature.

The Water Garden project is a special case of diagrammatic behaviour, for the effects of water were manipulated directly (what Jeffrey Kipnis terms diagrammatic 'realism') and also carried over into the organization of other materials, like concrete and grass. It was in effect an attempt to harness a range of different kinds of geometries in relation to the behaviour of the water. First we established a cross-sectional geometry that is really distinct from the way the grooves of the garden are projected. These grooves, an ogival geometry in a cross section, belong more to the Cartesian side of the geometry, except that it already has built into itself a kind of acceleration. From the base to the point of the ogive there is an effect of acceleration as the water rises or lowers. So there is a mixing of the use of a Cartesian type of geometry and a topological geometry, which was expressed in the projection of the ogival cross-section as they comprise the form of the grooves. Above all, our interest was to produce certain effects of flow in the medium of the water as well as in the garden itself, so that there would be an indexical relationship between the static form and the flows within it.

How can a building be active and have a potential for activity, and how can time become operative within the IFCCA project as built architecture?

Infrastructure is inherently connected to flow and quantity (10,000 people an hour flowing into and out of the station, etc.). In the crudest possible analogy, if you are handed a high-pressure hose with water flowing out of it, it's not a question of imagining its activity and force but of what to do with it and how to direct it. Therefore architecture, although physically static, enters into these conditions through organization. Equally, there are effects that, while tied to quantitative conditions, are in themselves not reducible to pure data. The time that becomes operative in a building, for example, is not clock time, measurable like time on a stopwatch, but rather duration, which is about how environments affect experience. However, we would contend that quantitative material organization is generative of these experiences, but not the other way around.

Finally, it must be emphasized that time, especially in relation to activity or potential

activity in a project, is unthinkable and becomes an empty abstraction when separated from an actual site or proposal. We do not subscribe to the concept that time or any other value or series of values can be manipulated or staged without an intersection with material conditions. A rather extensive body of work by a number of contemporary practitioners has dealt with datascapes as a way of approaching the design of cities. I believe this direction in architecture was first put forward by Rem Koolhaas, in his well-known diagram coordinating time and use in his proposal for the city of Yokohama. What is important there is the fact that this early datascape was generated in parallel with the proposal or indeed after the design was under way. It was not in itself generative. Adherents and followers of this method have attempted to utilize these sophisticated graphing techniques as the sole basis for urban design projects. Inevitably a crisis ensues in such work when it comes to formalizing the proposal. In the worst of cases the data is reified – essentially building the graph. At best it becomes an impoverished preliminary to designs that in reality can never be reduced to the datasets themselves. But to get back to the issue of the temporal: time, like any other quantity, is inherent in any material field, be it a field of battle or a field of flowers. Indeed, the city is just such a field. Urban proposals, in order to be effective, must arise from the ebbs and flows of a field that incorporates the exchanges between data, proposition and place.