The work of Rem Koolhaas/OMA has long been identified with the attempt to break with architectural ideologies embodied in spatial programs. Programmatic innovations include the production of fields of social encounter, new functional juxtapositions, and forms of spatial segmentation. These are designed to resist the role of architecture in reproducing social roles and structures—to enable certain freedoms. This paper is a spatial analysis of two recent projects that reveal both achievements and limits to this project. Koolhaas’s work succeeds through a certain magic; and some of the freedoms are illusory.

**Introduction**

*Koolhaas’ designs are blatantly straightforward. . . . One and only one cultural aim drives the work . . . to discover what real, instrumental collaboration can be effected between architecture and freedom.*

Kipnis

The success of the work of Koolhaas/OMA in professional discourse rests strongly on the claim to be an architecture of emancipation. This paper is an examination of this claim and a critique of two of his buildings through the lens of an adapted method of spatial syntax analysis. This may seem an odd coupling because spatial syntax analysis, as developed by Hillier and Hanson, is a structuralist critique of buildings and urban structures that would surely be anathema to Koolhaas. yet our adaptation of such methods is not intended to be reductionist. Rather, it is an interrogation and excavation of the spatial program and a critique of the ways in which architectural ideologies may have been deconstructed, reconstructed, or reproduced. To do this, we will first set aside any formal critique of Koolhaas’s work except as it informs this task, not because such formal expression is any less interesting or innovative, but because it is better theorized. Indeed, it is all that many critics see of his work.

**Buildings as Spatial “Fields”**

The works of OMA have been termed the “social condensers of our time.” This reflects a return to the early modernist imperative toward an architecture that would remake the habitat and habitus of everyday life. However, this is not a return to the social engineering reflected in ideas like the “social condenser.” Rather, it is a vision fueled by the formal and social multiplicities of urban life, a vision reflected in the name of the Office for Metropolitan Architecture, which we read as both an architecture of the metropolis and an insertion of the metropolis into the architecture. Koolhaas’s work is strongly ordered by trajectories of movement through the building. The role of vertical movement via escalators, stairs, ramps, and lifts is a key to the order that is set up, as they become the modes of access to fields of encounter or “event-fields.” Koolhaas is inspired by the notion of an architecture of liberation in terms of the multiple “freedoms” for new forms of action that architecture is seen to make possible. Space is programmed for indefinite function and chance encounter. Koolhaas seeks an architecture that can resist the imperative to become a diagram of social and institutional structure, which he terms *social mimesis*. For Kipnis, Koolhaas’s version of “freedom” is not an overt resistance to authority but rather a form of programmatic sabotage:

More like a sadist than a surgeon, he has begun to knife the brief, hacking away its fat, even its flesh, until he has exposed its nerve. . . . The focus on these reductions is always on *disestablishment*, that is, always on excising the residues in the project of unwarranted authority, unnecessary governance and tired convention. Reductive *disestablishment* provides the crucial stratagem in each of Koolhaas’ recent projects, the intellectual *modus operandi* by which the architect begins to transform the design into an instrument of freedom.

Koolhaas seeks an architecture that encourages an irruption of events, social encounters, and opportunities for action. Rather than designing with a particular hierarchy of spaces and narratives of spatial movement in mind, he generally works towards a spatial structure that allows a multiplicity of choices for pedestrian flow and encounter. Koolhaas wants to “liquefy rigid programming into non-specific flows and events . . . to weave together exterior, interior, vestigial and primary spaces into a frank differential matrix that rids the building of the hackneyed bourgeois niceties of cosmetic hierarchies.”

Koolhaas often designs interiors as if they were exteriors, importing lessons from exterior urban
space into interior space. These interiors are often designed as fields of play or artificial landscapes that dissolve boundaries between inside and outside, between architecture and metropolis. Such spaces are often functionally open and visually transparent to maximize social encounter. Jameson situates Koolhaas’s work in the context of the prevailing social dialectics of publicity/privacy and freedom/control in what he terms the post-civil society. He suggests that Koolhaas’s work enables patterns of free play within a rigid spatial order.

The originality of Koolhaas is that his work does not simply glorify differentiation in the conventional pluralist ideological way: rather he insists on the relationship between this randomness and freedom and the presence of some rigid, inhuman, non-differentiated form that enables the differentiation of what goes on around it.7

There is an interesting connection here with what Allen suggests is a shift in architectural thinking from a focus on the architectural object to a focus on field relations, paralleling the development of field theory in mathematics.8 A field consists of contingent relations, forces, trajectories, and patterns of movement such as those that govern a flock of birds. Allen describes field conditions as “any formal or spatial matrix capable of unifying diverse elements while respecting the identity of each. . . . Field conditions are bottom-up phenomena: defined not by overarching geometrical schema but by intricate local connections.”9 The field is a material condition rather than a discursive practice. Allen draws analogies between field theory and architectural attempts to encourage a spontaneity of action. He suggests that systems with “permeable boundaries, flexible internal relationships, multiple pathways and fluid hierarchies” are capable of responding to emerging complexities of new urban contexts.10 A major innovation in Koolhaas’s work lies in the extent to which he has utilized such strategies in the interiors of buildings where they contribute towards the emergence of new kinds of social space. The promise here is that the field-like nature of Koolhaas’s work opens up the work to multiplicities of experience and action. This idea of the building as a “field” rather than an architectural object entails a shift in critique from form to spatial analysis. To what extent do these designs restructure social space or reproduce familiar spatial structures?

**Spatial Syntax**

Methods of spatial syntax analysis, first developed by Hillier and Hanson, represent an attempt to reveal a deep social structuring of architectural space.11 From this view, buildings operate to constitute social organizations as spatial dispositions; architecture mediates social reproduction through spatial “genotypes.” These are not formal types or archetypes but clusters of spatial segments structured in certain formations with syntactic rules of sequence and adjacency. Genotypes are seen as institutionally and epistemologically embedded. The forms of schools, offices and houses are reproduced from a limited number of spatial genotypes. Each of these is linked to specific social institutions (school, corporation, family) embodying forms of knowledge, production, and reproduction. The work of Hillier and Hanson is widely perceived within the field of architecture as positivist and reductionist. Although we share some of these concerns, Koolhaas’s programmatic innovations demand analysis and critique in terms of the link between spatial structure and institutional authority. Syntactic analysis is the most sophisticated available.

Not enough space is available here for more than a cursory account of spatial syntax, and there are a range of analysis techniques. Our analysis is a loose adaptation of syntactic analysis that translates the building plan into a diagram of how life and social encounter is framed within it.12 Figure 1 shows how similar plans with different access points yield quite different syntactic structures and illustrates three primary cluster relations: the string (or enfilade) with no choice of pathway, the fan (or branching) structure with access controlled from a single segment, and the ringy network or permeable structure with multiple choices of pathway. Architecture inevitably involves combinations of these three. The linear syntax is an enfilade of spaces with controlled movement, which is common in traditional centers of power (such as Versailles) and in some retail buildings (with an entry at one end and an exit at the other).13 The network syntax is defined by a choice of pathways and is often called permeability. The fan is characteristic of bureaucratic organizations with large numbers of cells controlled by a hallway. When a linear syntax is combined with a fan, the result is a tree, a linear series of fans. A key dimension of syntactic analysis is the degree of network connectivity or “ringiness” versus a tree-like hierarchy of spatial control. The network structure is defined by its multiple and lateral connections, many possible pathways.
through it, and dispersed control. Tree-like structures control circulation and social interaction in certain key access spaces. Thus, a hallway or foyer that is the only access to a cluster of rooms has a high level of control over the flow of everyday life. The permeable network or ringy structure offers many possible pathways and diverse encounters; the flow of life through space is only loosely controlled.

Another key characteristic is the depth or shallowness of any segment from the nearest external entry points and the overall depth of the structure. A deep structure requires the traversing of many segments with many boundaries and points of control. The diagrammatic method shows the spatial segments of the building layered into levels of depth so that the level of a space indicates the shortest route from the exterior. Depth is an important mediator of social relations both between inhabitants (kinship relations or organizational hierarchies) and between inhabitants and visitors. Domestic space is often structured along age (adult/child) and gender divisions in its deeper segments, while mediating contact between insiders and visitors in shallower space. The syntax of disciplinary institutions (prison, hospital, asylum, school, and factory) locates subjects under surveillance deep within the structure.14

Many contemporary buildings, those of Koolhaas among them, are designed with owing and fragmented spaces, pursuing deliberate ambiguities of enclosure, visibility, and permeability. What happens to spatial genotypes when they are subjected to such tactics, and does syntactic analysis make sense when space is not clearly segmented? It is our view that the analysis is worth the effort so long as it is coupled with a serious warning about the status of the diagrams. The diagrams are not plans; they are designed to reveal the modes of access and control through the spatial structure. The diagrams have a mimetic relationship to the plan but are not mechanically derived from it. Boxes on the diagrams include both separate rooms and semi-separated spatial fields. They are necessarily interpretive, but they have an empirical basis in the flows of movement through the buildings. For our purposes here, the diagrams should not be read mechanically but as fields of sociospatial encounter.

The spatial structure is a “structuring structure” of what Bourdieu terms the habitus, the embodied divisions and hierarchies between things, persons, and practices that construct the social world.15 Our “positions” within buildings lend us our “dispositions” in social life; the spatial “division” of our world becomes a “vision” of our world. The buildings we inhabit, our habitat, our spatial habits, all reproduce our social world. Syntactic analysis opens up many questions. What kinds of agency are enabled and constrained by the particular building genotype within which it is structured and whose interests are served? How is everyday life bracketed and punctuated into sociospatially framed situations and locales? How does architecture frame the social gaze through structured realms of visibility? What regimes of normalization are enforced and in whose interest?

Hillier distinguishes between “long” and “short” (or deep and shallow) models of interior space: the long model conserves and reproduces status and hierarchy, whereas the short model generates new possibilities for social relations:

A ritual is a long model social event, since all that happens is governed by rules, and a ritual typically generates a precise system of spatial relationships and movements through time. . . . A party is a short model event, since its object is to generate new relationships by shuffling them in space, and this means that rules must be minimized by using a spatial “short model.” . . . In a short model situation, space evolves to structure, and often to maximise, encounter density.16

A permeable network of spaces and the open plan have long been linked to practices of social freedom, yet any conflation of physical enclosure with social constraint, or of open space with liberty, is a dangerous one. Buildings are increasingly called upon to produce an illusion of freedom coupled with the reality of control and surveillance. Transparency may be used to couple a proliferating gaze with diminishing access.17 And freedom of association within a particular social group can build the social capital of that group vis-à-vis other groups. This is what Hillier and Hanson term the correspondence model of urban space in which spatial zones “correspond” to social groupings. High correspondence is when all those who share a spatial zone also share a social label.18 A high level of correspondence is relatively deterministic of patterns of social encounter: space operates to exclude random encounter and to keep “difference” at a distance. A non-correspondence system will mix people of different social identity; it is a spatial model that breeds encounter with difference. There is a social logic to the boundary between exterior and interior space in that interior space is more strongly structured and segmented: the correspondence model prevails with a primary function in the reproduction of social relations. This is countered by the non-correspondence model more common in exterior space. Each of these is in contradiction: random encounter would undermine the social reproductive function of interior space, and the determinism of interior structures would kill urban diversity. This is precisely what happens in urban space when tree-like genotypes (such as the housing enclave) invade public space. Koolhaas is attempting the opposite, playing with this tension between inside and outside, using the encounter structures of urban space to effect innovations in interior space.

This attempt at a forced fit between spatial fields and spatial syntax is surely a contentious issue and one which we cannot deal with at any length here. The concept of space is very slippery and changes meaning between disciplines and between different ideologies within architectural theory. In general terms, Hillier’s definition is more empirical
and materialist, whereas Koolhaas appears to adopt a Deleuzian epistemology incorporating ideals of “smooth space.” Yet the work of both rests upon shared claims about the importance of social encounter and shared concerns for architecture as “machine.” We now move to a spatial analysis of two of Koolhaas’s recently completed projects.

**Factory of Learning: The Educatorium at Utrecht**

The Educatorium for the University of Utrecht was completed in 1997; it houses a cafeteria, two large lecture theaters, and a cluster of examination rooms. (See Figure 2.) According to the project architect’s statement, it was conceived as the hub of a campus servicing fourteen faculties and research facilities, a “rendezvous and exchange point, creating a new center of gravity,” which is to “embody the university ‘experience’: the social encounters of the cafeteria space, the learning and exchange in the auditoria/classrooms, and the individual rites of passage played out in the examination halls.” There was a deliberate attempt to generate diverse forms of social encounter in the building: “seeking potential overlap between the programs and encouraging exchange between the users of its diverse functions, whilst allowing a pragmatic and nearly autonomous use of individual spaces.”

This architect’s statement introduces a series of key phrases and metaphors that have become the primary frameworks of critique in other journals. The characteristic blurring of inside and outside in OMA projects is described through the metaphor of the “synthetic landscape.” The entry to the building is described as a tilted ground plane and urban plaza that then continues as an interior sloping “field” upon which the two auditoria are placed like figures in a landscape. This rising floorplate, which folds upwards and back to become the
wall and then roof of the building, is described by Koolhaas as a “social magic carpet,” an urban landscape of play and social encounter imported into the architecture. (See Figure 3.) The floor that folds into a wall has become the iconic image of the building: one of the photographs provided for publication shows a skateboarder “surfing” the curved surface of the interior landscape. One of the auditoria has an entire wall open to the view and is described as an amphitheater set in the landscape.

Examination rooms are also described as interior landscapes that are able to be flexibly subdivided for different functions. A permeable spatial structure is deliberately designed “to act as a network in which students and users are free to discover their own alternative shortcuts and to ‘drift’ through (the) building. Rather than attempting to dictate any particular pattern of use, the design of the educatorium seeks to create a synthetic landscape open to individual choice.”

Circulation areas are designed as a series of “pause spaces” for impromptu hanging out between exams or lectures. The spatial analysis diagram (Figure 4) shows a building that is accessible, shallow, and highly permeable. The building is accessed publicly through eleven entry points from the exterior and other buildings. For a building of this size and complexity, this is a very shallow structure indeed: all major spaces are accessible within six levels of depth. With the exception of service spaces (which have been omitted for clarity), there are no dead-ends whatsoever. The building has three major functional “attractors”: the auditoria, examination rooms, and the cafeteria — each of which is coupled with a major social circulation space. These three zones are organized vertically with the cafeteria on the ground floor, auditoria above, and the exam rooms occupying the upper levels. The major circulation spaces and routes between them are unenclosed. (Spaces enclosed by doors are marked by dark frames on the diagram.) Four major foyers or “pause spaces” form a series from the ramped plaza on the exterior to the main foyer, which leads upwards to the folded foyer and then back to a balcony foyer outside the examination rooms.

Although the plan has a high level of permeability with a multiplicity of pathways, the main foyer also operates as a control space through which all of the open circulation systems within the building pass. (See Figure 4.)

The Educatorium is repeatedly described in the literature as a “factory of learning,” a phrase that resonates with Koolhaas’s aesthetic, his machine metaphors, and the role of the university as a knowledge factory. While knowledge is produced in the research centers and staff offices deeper in the university (in the spokes of the “hub”), fragments of this knowledge are revealed in the spectacle of the lecture theaters, discussed in the foyers and cafeteria spaces, and then examined in the enclosed rooms above. Markus has shown how the spatial structure of the lecture theater surrounded by a field of highly permeable social space dates from the enlightenment; here knowledge is brought into the light from a deeper source and discussed in social space. Knowledge is legitimated in part by locating its sources in deep spatial programs. The communication from lecturer to student is reversed in the examination rooms, in which students perform for lecturers and knowledge is tested under ritual conditions of surveillance. This is what Hillier describes as the long model of spatial planning derived from the reversed spatial syntax of disciplinary institutions of the enlightenment that place subjects under surveillance deep within the spatial structure. In the sense that this building is seen as the “hub” of the university, one would expect to find staff offices and laboratories (the production of knowledge) on the branches of the tree-like structure. The spaces where student performance is legitimated are found deep within the hub. Here, the Educatorium becomes partially reversed, inducting its subjects into regimes of normalization and surveillance in relatively deep space. The examination zone is five to six levels deep within the building; it does not receive the level of architectural attention of the shallow zones and does not figure in the published photographs in magazines. Here the field of play stops and work begins. Although all examination rooms have multiple points of entry, they are each end points to spatial movement. The shortest routes of access and egress
to these levels are not through the open foyers but via the enclosed stair and the elevator. (See Figure 4.)

One can read the Educatorium as a radically innovative building at its shallow levels with a conservative depth. The socialization of students, contact between students and staff, and the delivery and sharing of ideas all take place in the relatively shallow network of social spaces. Yet the grading of student performance, the legitimation of institutional knowledge, remains deeply embedded in the spatial structure. The two key metaphors of “synthetic landscape” and “factory of learning” reflect the ways that the field relations of the landscape have been imported into the factory to urbanize the building. Yet the synthetic landscape of the folded floor/wall/roof does not encompass the examination rooms wherein the building more closely resembles the instrumentalism of the factory. Graaffland has suggested that Koolhaas’s work is a somewhat Faustian practice that embodies a dialectic between the freedoms he seeks and the tree-like institutional structures in which such practices are embedded. This entails a certain acceptance of prevailing social and economic forces, the rejection of an architecture that simply resists authority in favor of a realpolitik wherein the desire for the new is harnessed to make what one can in a difficult world. The circulation system in this building is in many ways a masterful piece of design, but it achieves this by integrating such programmatic innovation with entrenched spatial genotypes. Its freedoms of movement and encounter urbanize its interior, but only to the point that it does not threaten the knowledge/power regime that produces the building in the first place.

Machine as Heart: The House at Floirac

The house at Floirac was completed in 1998 on a hilltop site outside Bordeaux in northern France and has been widely published since then. The client is a family whose father was recently confined to a wheelchair as the result of an accident, and the house was largely designed around his needs. Koolhaas suggests that it is not a house for an “invalid” but an architecture that denies “invalidity.” The family’s previous house in the medieval section of Bordeaux was described by Koolhaas as a “prison” and the father himself describes the new house as his “liberation.”

The house is organized with a total of four vertical-movement systems connecting three formally distinct floors: a highly transparent living floor sandwiched between the heavy mass of lower (kitchen/entry) and upper (sleeping) floors. (See Figure 5.) The base level is an entry courtyard with car access, framed by the house on one side with guest and servant quarters on the other. At this level, the house is excavated from the hillside and likened (by Koolhaas) to a “sequence of caves” or “cellar” housing the entry, kitchen, wine cellar, and television room. The middle level is a fully transparent, glass-enclosed slice of living/dining and gallery/study areas structured into one large field of visual and functional encounter. (See Figure 6.) A motorized glass wall slides away to erase the boundary with the outdoor terrace, landscape, and commanding views across Bordeaux. Just as the interior is opened to the landscape, so the exterior is to be furnished with artworks using a special tracking system in the ceiling. The bourgeois drawing room (once the “withdrawing” room) slides out from the house. The bedroom accommodation on the top level is enclosed in a horizontal slab, pierced with porthole-sized windows, and designed to appear as if suspended above the transparent living zone, like a sandwich about to collapse on its contents.

The four vertical-movement systems are three stairways and an open elevator. The elevator provides the wheelchair access: a platform of 3 by 3.5 meters that rises and descends on a hydraulic column to align with each of the three floors. The platform has no walls or balustrades, and it becomes a part of each room it aligns with. As Koolhaas puts it: “The movement of the elevator changed, each time, the architecture of the house. A machine was its heart.” At the ground floor, the platform becomes an alcove off the entrance/kitchen and provides the access to a wine cellar. At the middle floor, it becomes an unenclosed part
5. House at Floirac, Bordeaux plans.
6. House at Floirac, middle floor (Photo by Christian Richters).
of the living/dining areas with views out to the landscape and terrace. At the top floor, it becomes an alcove off the father’s bedroom. At each level, the platform slides across bookshelves that line one side.

The four vertical-movement systems generate a highly interconnected spatial structure for the lower floors. (See Figure 7.) However, they are also organized for specialized use: the mother’s stair to the east, the guest stair near the entry, and the children’s stair to the west. Koolhaas regards the elevator as the key liberating technology of our era, and here it is the elevator platform that renders the house accessible by wheelchair. However, unlike the urban elevator, which is shared by wheels and feet, here it is the domain of one person because use by others would leave the father stranded. This machine is the “heart” of the house, where it transforms the architecture and places the father in charge. The father controls the architecture, and the position of the elevator becomes a signifier of his presence and absence. When the father is out, on the ground floor, or in bed, then the main living space is left with a central void. This void has no handrails and at least one reviewer has suggested that the space produces a sense of genuine insecurity and risk. This void (reminiscent of Eisenman’s famous hole in the floor between the twin beds) can be read as a deconstructive challenge to the traditional idea of house and home as reinforcing ontological stability. Yet the void is created and erased in a gender-specific manner: the central living space of the house is secure only when the father is present.

The elevator is furnished in some photographs as a study with a desk and lamp. Because it is lined with bookshelves and controls all access to the wine cellar, it can be interpreted as a reconstruction of the male “den” brought into the light and mobilized, transposed from deep to shallow space with the walls removed. However, when the platform retreats to the top floor, it seals the gap to create a fully enclosed space, deep within the spatial structure. This adult bedroom zone is structured in a long loop with the two bedrooms at once separated and connected by a bathroom and a balcony. (See Figure 7.) The children’s bedrooms form a more traditional tree-like syntax on the same level but entirely severed from the adult zone and inaccessible to the father. Surveillance over children is the only function not afforded the father.

The house at Floirac is in many ways a reconstruction of the bourgeois house with its servant quarters and cellar dug into the hillside, surmounted by the piano nobilé with its commanding views, and the attic story with its tiny windows. The house can be construed as a play on the Bachelorian arche-type, itself firmly based in the French bourgeois house, with its cellar and garret framing the everyday life of the middle floor. However, it is a radically innovative and imaginative house, both formally and spatially. It combines a rethinking of the dialectics of inside/outside (as in Mies’ Farnsworth house) and vertical/horizontal (Corbusier’s Villa Savoye), but with greater programmatic dynamism and complexity (as in the Rietveld Schröder house). Although the structure of the house is highly ringy on the lower levels, it is also conceptually tree-like with the elevator as its stem. It embodies new forms of both liberation and social control, and gender divisions are enhanced rather than challenged. As Koolhaas puts it, “a machine is its heart,” and the machine is a patriarchal prosthesis. Although positions could be transposed (with a woman controlling the space), the structure of the house would remain hierarchical. Is this new spatial hierarchy an accidental byproduct of Koolhaas’s obsession with the elevator? Or is it a deliberate tactic of bringing authority into the light rather than resisting it, exposing the “nerve,” as Kipnis puts it. In either case, it seems a dangerous move.

Comment

Foucault

Liberty is a practice . . . [I]t can never be inherent in the structure of things to guarantee the exercise of freedom. The guarantee of freedom is freedom.

So what can be made of Koolhaas’s desire to unhinge architecture from its role in social reproduc-
Koolhaas’s work is brilliantly innovative, but it is not always what it seems. In her critique of the Floirac house, Colomina suggests that he operates in the mode of a magician, distracting the eye with one hand, concealing what he is up to with the other. Koolhaas’s formal inventiveness distracts critical attention from his programmatic surgery, which at times constructs illusions of “freedom” that can conceal what has not changed. Programmatic innovation can be reduced to significations of practice. Koolhaas has indeed allowed to himself as a magician producing “sublime moments of illusion,” and there is no suggestion here that the “magic” does not work in certain ways. What is missing, however, is an understanding of freedom as a form of practice: something people do rather than consume. Koolhaas does indeed challenge the primary genotypes of sociospatial reproduction, yet at the same time he generates illusions of an architecture that has been freed from spatial ideology. And these illusions can be a cover for new practices of power or of more of the same.