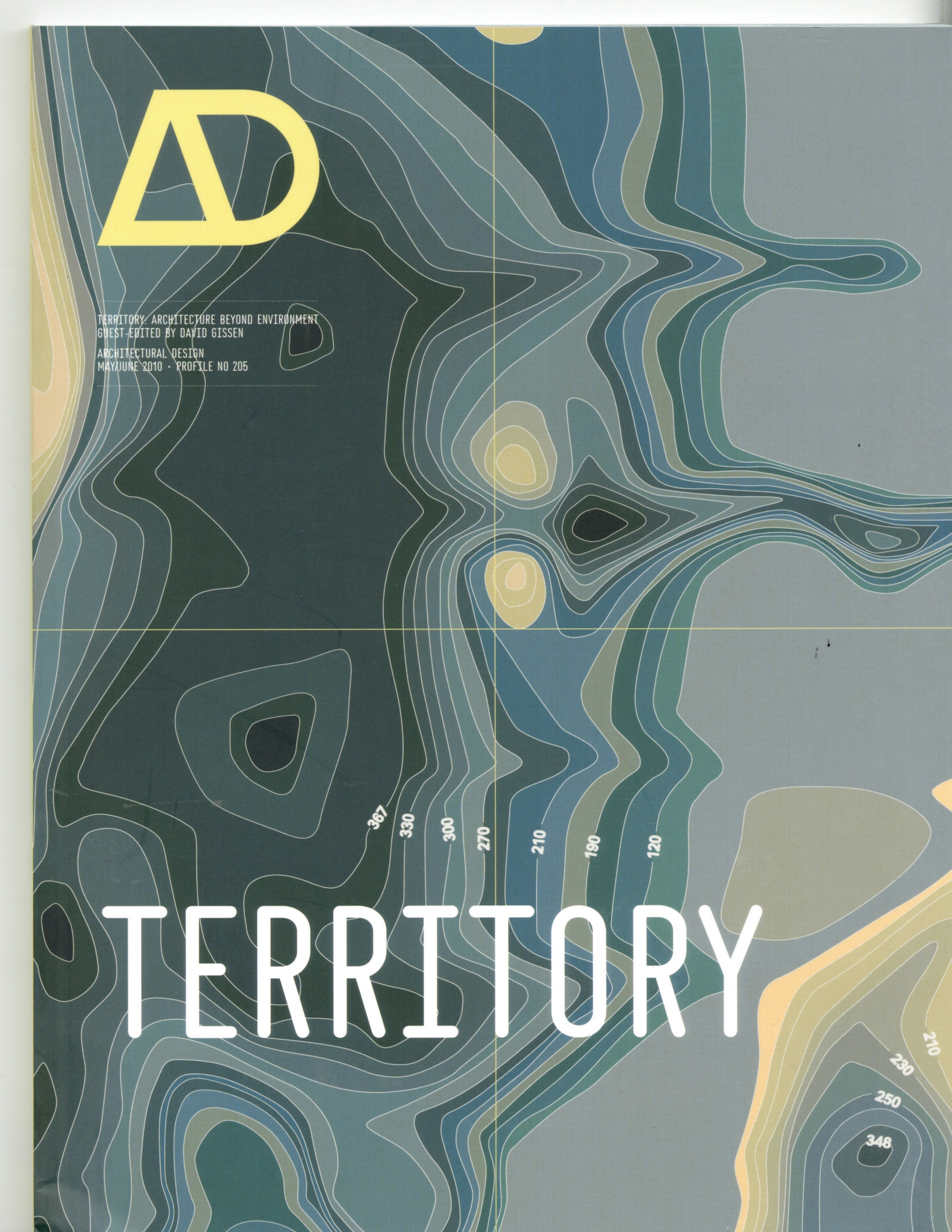
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TERRITORY: ARCHITECTURE BEYOND ENVIRONMENT
GUEST-EDITED BY DAVID GISSEN
ARCHITECTURAL DESIGN
MAY/JUNE 2010 • PROFILE NO 205
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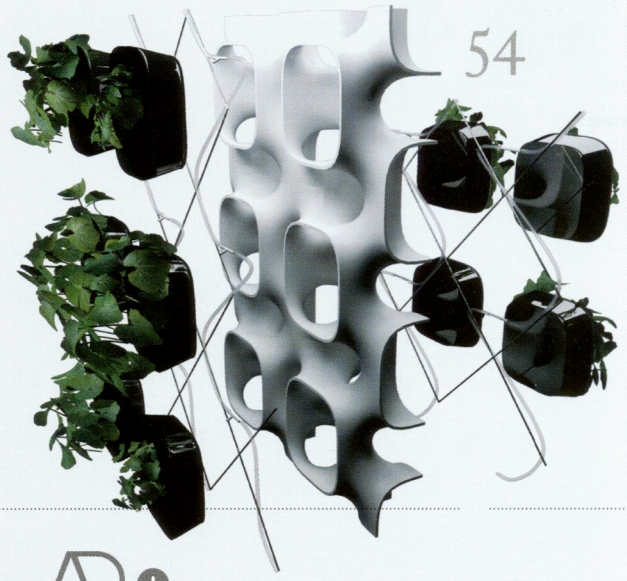


R&Sie(n), Curtain Wall System, B_mu Tower, Bangkok, 2005
Interior view of the tower and its polluted skin.

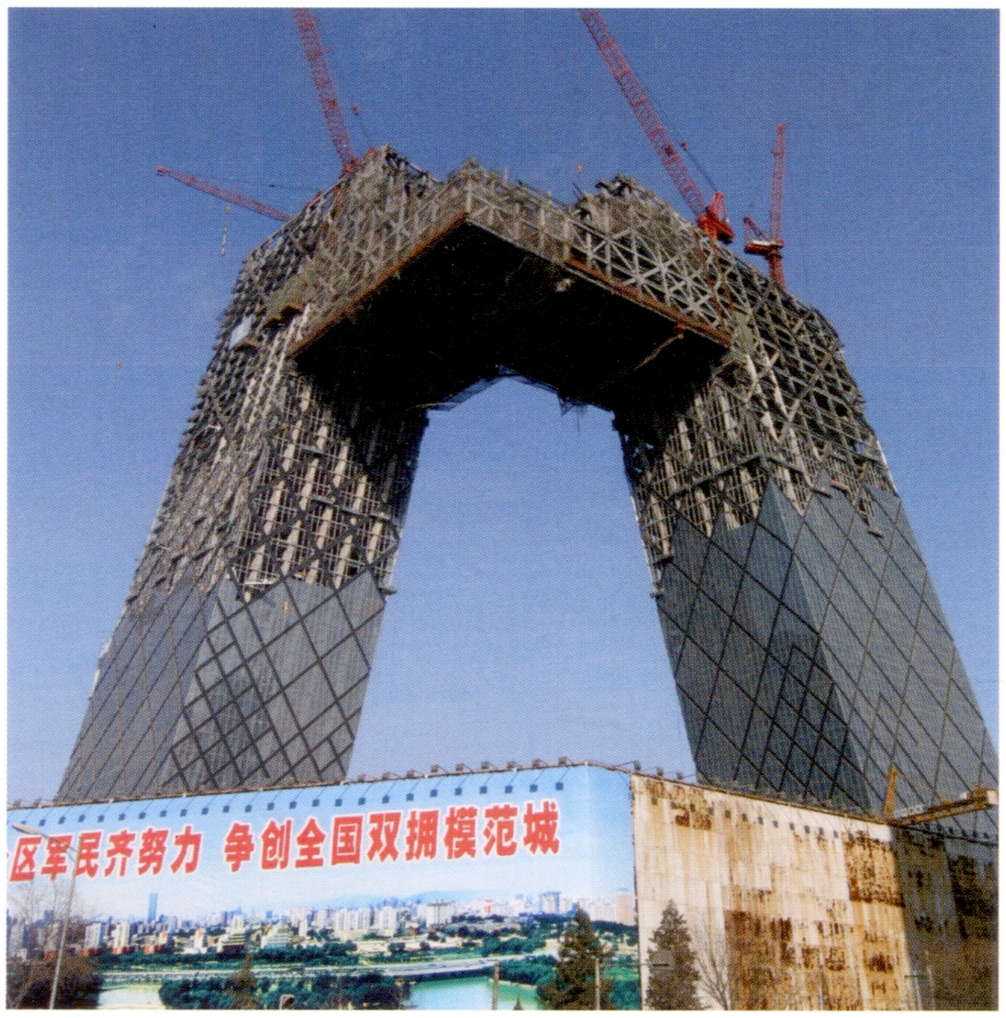
As half of the world's population has become urbanised, toxic or at least previously built-up land has become more like the norm. Guest-editor **David Gissen** considers the reality for architecture of toxic territories, in which the relationship of architecture with pollution needs to shift from one in which architecture is wholly regarded as a means of separation from a noxious external environment to one of interaction.

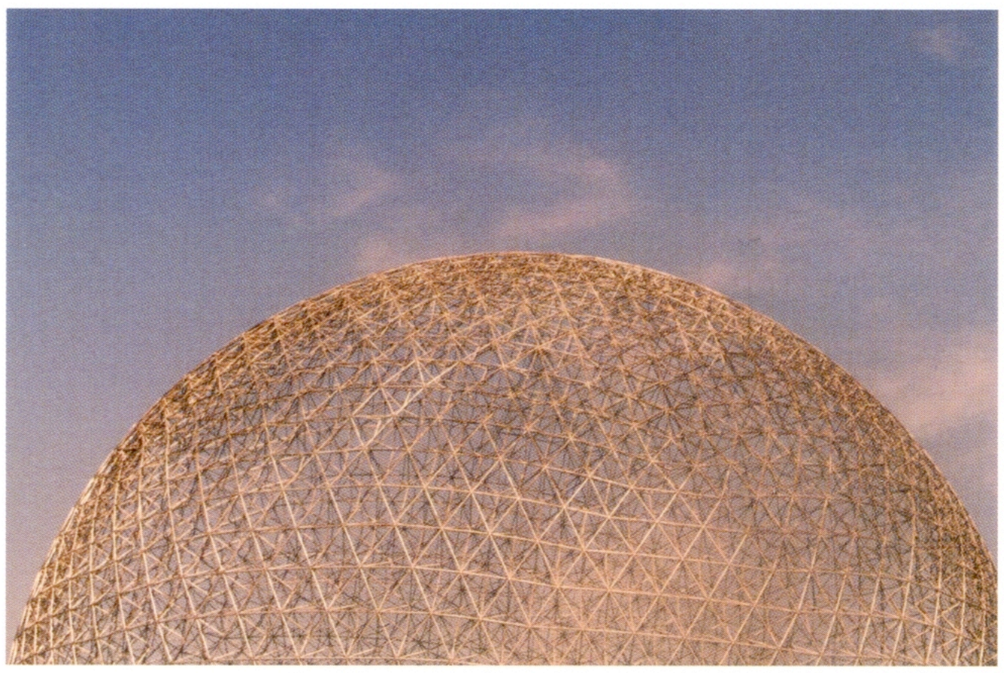
TOXIC TERRITORIES

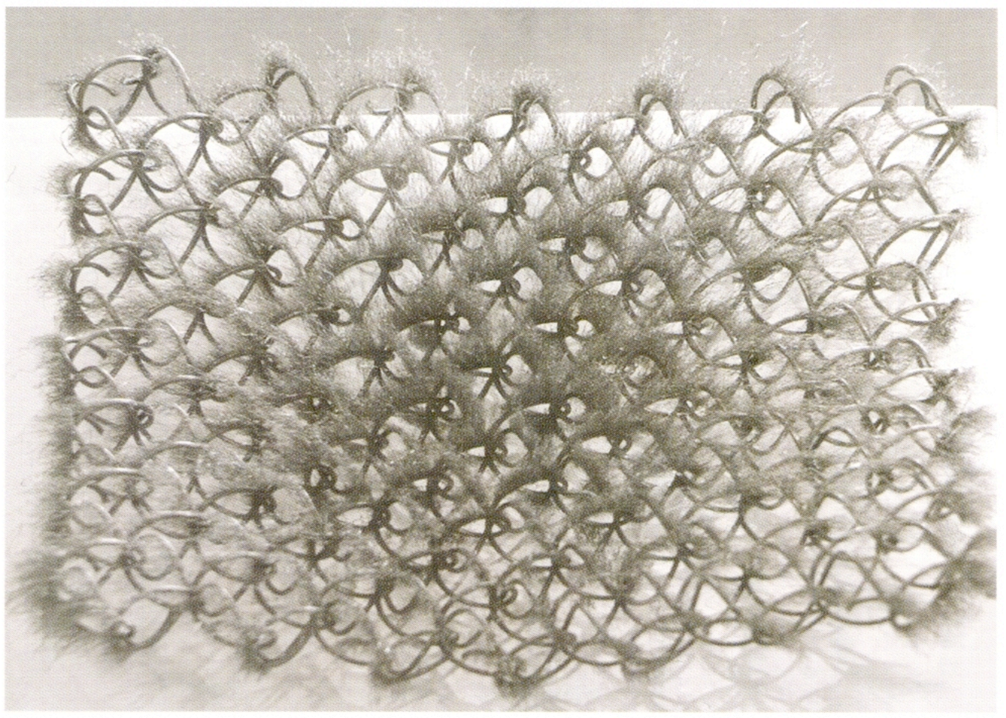
OMA, CCTV Tower, Beijing, 2008
top: Numerous photographs show the CCTV Tower within a polluted atmosphere. As startling as the pollution is, the contrast with the tower's 'late-Modernity' is dramatic and disturbing.

Buckminster Fuller, US Pavilion, Montreal, 1967
centre: Building skins always represented the urban conditions of their time. The dome invokes a city of environmental risks.

R&Sie(n), Curtain Wall System, B_mu Tower, Bangkok, 2005
bottom: The curtain wall of the B_mu Tower draws pollution towards it.







It is difficult to imagine the toxic matter coursing through cities as a type of site within which an architectural aesthetics might emerge; and to even make such a claim requires a significant qualification relative to the aims of such a project. But, sadly, this is a de facto condition, before it is even a considered one. The dense, smoky atmospheres of cities appear as the troubling anti-environment within which many contemporary buildings materialise. What are these endless photographs of post-industrial surfaces standing within industrial atmospheres but acknowledgements of the industrialisation that always plagued those urbanites living outside 'postindustrialisation?

These images, from around the world, reveal the contradictions of post-Second World War Western cities, as much as the pollution elsewhere. But now that the late-Modern forms and the high-Modern environment appear together, they suggest that the city's architecture (not to mention its life, management, etc) no longer aggregates links between technical forms of expression and technological regimes. The Modern machine-era of coal and steam and the late-Modern's dustless, digitalised realm now appear together. The architectural techniques of the latter now find themselves in the environmental realm of the former. What could possibly illustrate this more than a glassy, computer-modelled reflective surface open to an urban atmosphere consisting of coal smoke and ash? This historical disconnection should be the cause of a new sense of unease, but it may also hold the future of a new consideration of architectural interactions with pollution; a resurrection of a modern project but in a completely altered form.

Architecture has been and remains a significant feature of our perception, interpretation and interaction with pollution. The technological components of architecture – from ventilation systems to curtain-wall systems – have historically protected the inhabitants of buildings (lucky enough to be within them) from troubling atmospheres. They have also opened that world to a type of reflection. This is not limited to those technical buildings such as hospitals and institutions, but extends into virtually every feature of Modern architecture.

The language of Modern architecture was a conceptual and technological marvel, but it was also an environmental marvel, conceptualised as a counter-environment to the disgust produced by a 19th- and early 20th-century industrial city. Reyner Banham, the great theorist of architectural environment, proclaimed that we must consider the 'atmosphere' within which modern building technology developed; and he meant this literally.[1] Office and apartment towers were conceptualised as places offering something else (light, air, greenery) to the vile soup of industrial cities. The spheres and bubbles of postwar architecture explored how surface and structural ideas conjoined

to offer an environment unlike the one that gave birth to its very materiality. These latter structures often invoked an apocalyptical dimension in their safety from the violence of a postwar atmosphere. Lurking in the surfaces of the geodesic dome or the inflatable was an invocation of the type of visual interpretation of the atmosphere of its particular time.

The architectural technological reflection on atmosphere is revived in recent work, but due to the atmospheric disconnections described above (the clashing of industrial environments and postindustrial forms), it appears in a suddenly radicalised form. We see this more radical technological direction in a new type of consideration of building skins that search for new relations with environmental pollution. One approach, represented by R&Sie(n)'s B-mu Tower in Bangkok (2005), effectively inverts architecture's given role in polluted environments. The building literally pulls the ferrous-laden dust particles of the city's atmosphere towards it. In this project the building skin is reconceptualised to breed the dust of its surroundings. The project represents to its potential inhabitants the absurd position of the architect in this context – asked to produce enclave-like interiors within abject environmental pollution.

More generous are those contemporary 'green' architectural efforts that also invert modern relationships between technology and the urban environment. Several new environmentalist buildings and technologies not only protect inhabitants; they promise to scrub both the interior and surrounding atmosphere of its harmful contents. For example, in a recent proposal for the Bank of America building by Cook + Fox Architects (New York, 2007) or the work of Anna Dyson and Skidmore Owings and Merrill's Center for Architecture Science and Ecology (CASE) also in New York (2008), we see a type of skin that cleans air (with plants, chemicals or more normative filters). Such systems not only clean polluted air for the inhabitants of a building, they also expel air from the building that is cleaner than the air that entered it. Here architecture terraforms the interior and exterior spaces of the metropolis into something more atmospherically akin to a postindustrial city. With these projects Modern architecture is not only a refuge; it rebuilds the city's environment in its own image, an image of health, but also one of contemporary architectural renderings, replete with a fixed and smokeless sky.

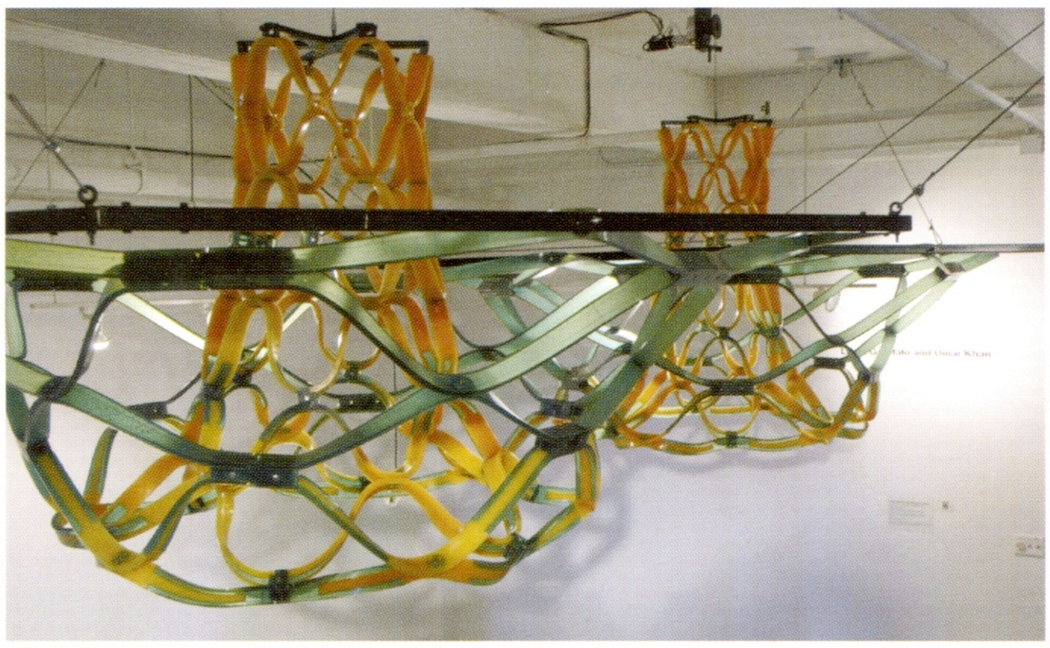
These technical developments are intriguing, but also reveal how the entire discussion of pollution and its relationship to architecture requires much more thought. We should reflect more carefully on how the realisation of buildings impacts our understanding of what pollution is and its larger sphere of operation, and vice versa. Before images of these new smog-ridden, developing cities appeared, most Westerners considered 'sick building syndrome' to be the most significant atmospheric danger befalling late-Modern architecture.

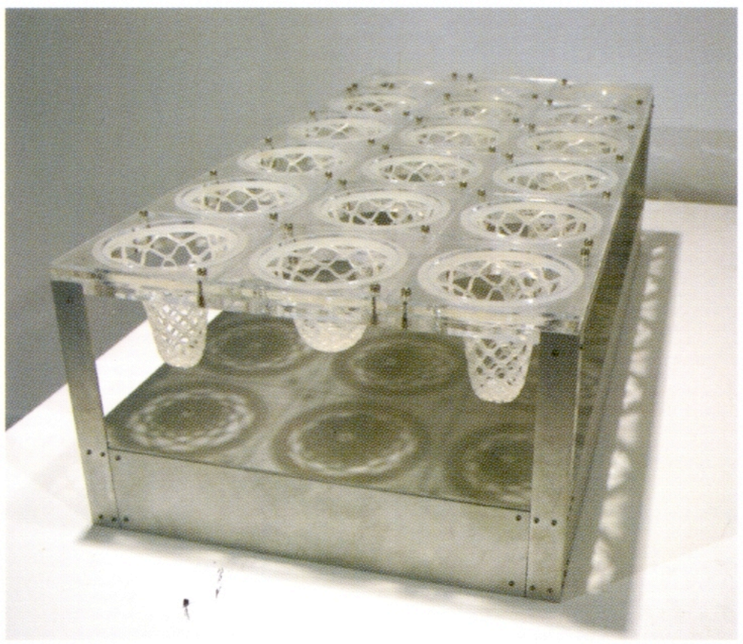
Within this context, the skin of large-scale building entered a new type of de-operationalised relationship with its surroundings as the environmental dramas were played out inside. Within this 'envelope', mechanical engineers have sought (and still seek) ways to mitigate the problems of a completely technified interior, while office workers sought futile solace in air purifiers or potted palms. As Reinhold Martin (another significant conceptualist of environment) suggests, every building contains an image of the city within it;[2] and just as the Fullerite sphere invoked a city full of atmospheric risks, the Postmodern tower effectively represented a city without external atmospheric dangers. Nothing could be further form this than the images of these new dust-breeding or terraforming building skins.

Although some buildings begin to engage with pollution in startling new ways, we still visualise the thing itself – atmospheric pollution – in much the same ways we have before. This is curious considering that we now understand pollution to be much more than its particulate counts. It is more than hydrocarbons or CO_2. Today, pollution appears more geographically and historically mediated by a society, its products (namely architecture) and its subjects. The cleansing of certain precincts marks victories for health and urban institutions, but also for those who wish to transform the dynamics of urban zones. When we enter a smokeless area of a contemporary city (for example, a gallery that was once a turbine hall), we understand that certain class formations and institutions have disappeared with the pollution. We might consider this connection between detoxification, social transformation and urban change to be completely played out; a relic either of a massive postindustrialisation or an even earlier Victorian urban transformation. But these desires to link urban change to changes in the air continue.

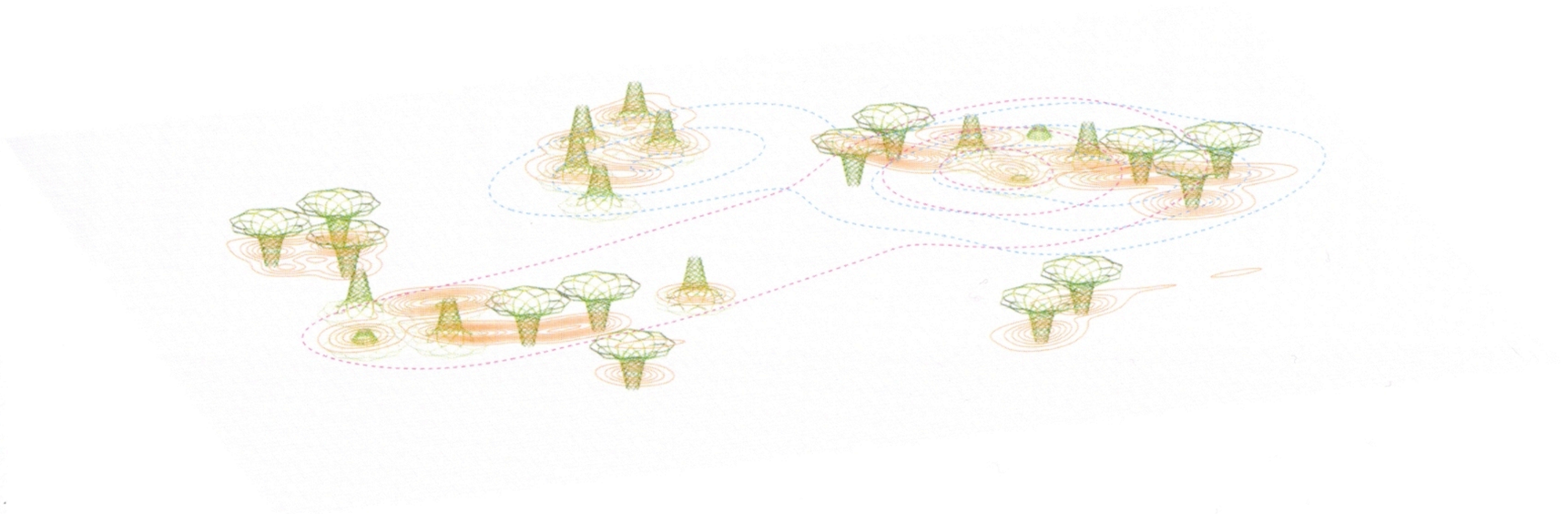
For example, in 2004, a study of air movement in Times Square (commissioned by the US Department of Homeland Security) was part of a larger effort to consider how building skins might be armoured from atmospheric, terrorist attacks, but also to further transform Times Square into a safe neighbourhood dotted with polite adornments. The remediation of the toxic territories of the city continues to be a significant aspect of contemporary urban discourse despite the historical pitfalls and the potential neutralisation of urban difference when such efforts are taken to extremes. There is a significant difference between a concerted effort to decommission a local polluter, to protect a populace by distributing environmental risk, and cleansing the surrounding biological environment as a matter of course.

Omar Khan, Open Columns, Buffalo, New York, 2007
right: The Open Columns were initially developed to remediate high levels of carbonised air. However, the project suggests new diagrammatic interactions between pollution and space.





CASE/Rensselaer, Active Modular Phytoremediation (AMP) System, 2008
above and right: In this project architects, scientists and botanists developed a building skin that scrubs the urban atmosphere of harmful pollutants.



left: The atmospheric map of the Open Columns demonstrates how harmful pollutants might be redistributed relative to aggregations of people in open space.

In response to all of these developments, we might initiate a contemporary project that offers a more incisive and self-reflective approach that embraces our understanding of pollution's true territorial dimension. Architects interested in more critical concepts of environment should not necessarily subscribe to the instrumentalisation of an individuated architecture acting as a counterpoint against the potential dangers of its surrounding environment. How architects engage with atmospheric toxicity might be cause for an intense and new form of reflection beyond the isolation of the modern subject. Claiming some space for architecture's autonomy from environmental clean-up efforts, yet acknowledging the obvious horrors and problems of a toxic atmosphere, architects might increasingly use architecture's technological capacities as a more explorative tool. Here the architect would explore our troubled atmospheric milieu while refusing to position buildings as part of larger unstated urban expulsions or the dystopian opposite. Rather, they might reveal the intimate relations between concepts of environment, pollution and population; or better yet, they may attempt to close the historical fissure of today by either laying bare its contradictions or rethinking the problem itself. Perhaps the surface is an exhausted medium when it comes to this architectural/atmospheric dialectic. We might begin a new architectural journey that visualises how atmospheric pollution haunts a digitally modelled city.

In understanding where we go from here, we should consider a project by the architect Omar Khan that illustrates the simultaneous charting and manipulation of atmospheric toxicities in a manner cognizant of contemporary techniques and historical failures. In his Open Columns (2007), Khan developed and built a matrix of rubber conical elements interspersed with sensors that both map and respond to atmospheric pollutants. The system produces both a cognitive image of architecture's territorial interaction with pollution – a type of cartographic aesthetic reality (à la Fredric Jameson) – while nonetheless interacting with pollution in a manner beneficial to a population. The columns respond to set levels of toxicity by dropping from the ceiling and dispersing both people and the contents of the atmosphere. When the atmosphere returns to a more usable state the columns rise. In the most recent iteration of the project, Khan rigged the columns to detect levels of carbon dioxide, primarily produced by our respiratory systems. The project not only operates outside the dialectics of inside and outside, but enables us to see how concepts of pollution and population appear simultaneously. In this project, everyone is de- and re-territorialised in the presence of environmental trauma; and these processes are laid bare.

As intriguing as this project is, we might also read Open Columns in less literal ways. Could it be a diagram of a new type of subject/environment interaction beyond the modern dynamics of interior and exterior environments, extreme and neutral environments? Could it be a representation of the aesthetic of digitally distributed risk – a counterpoint to the curtain wall? In this case, Open Columns illustrates how the urban atmosphere may be displaced and reworked into a new form, free from intimate entanglements with people yet wholly present. The difference here is that the harmful contents of the environment retain a relative position to those who navigate the spaces of the project. If anything, the project enables us to reflect on the relationships between social aggregation, pollution and architectural technology without the fantasy of a completely pollution-free architecture as some bubble against the city. It reworks what we understand a safe environment to be.

More remains to be done, but Khan's project offers some thoughts towards a more prolonged exploration of how architecture is implicated in our perceptions of pollution and toxicity. It offers a role for architecture, as much as planning, in the future debate on urban pollution. Nevertheless, it is not clear how critically architecture can engage with pollution, especially as polluted landscapes increasingly appear with emerging crises in impoverished sections of developing cities. The neo-Dickensian or (at best) Engelian reading of our contemporary world (evident in books such as Mike Davis' *Planet of Slums*),[3] may inhibit a more complex discussion of environment, health and architecture. Any possible architectural reflection on environmental destruction (as often happens after periods of war) will be displaced for a more purely scientific and hygienic operationalisation of architecture relative to the urban socio-natural environment. In an effort to make architecture ethically good, the field becomes an ever more technocratically utilitarian discipline and therefore a more easily manipulated tool of any and all formsof urban development. Explorations of the mediation of pollution (in all its meanings) may appear as luxuries versus a very real necessity. AD

Notes

1. Reyner Banham, *The Architecture of the Well-Tempered Environment*, University of California Press (Los Angeles, CA). 1969.
2. See Reinhold Martin and Kadambari Baxi, *Multi-National City*, Actar (Barcelona), 2007.
3. Mike Davis. *Planet of Slums*, Verso (London), 2007.