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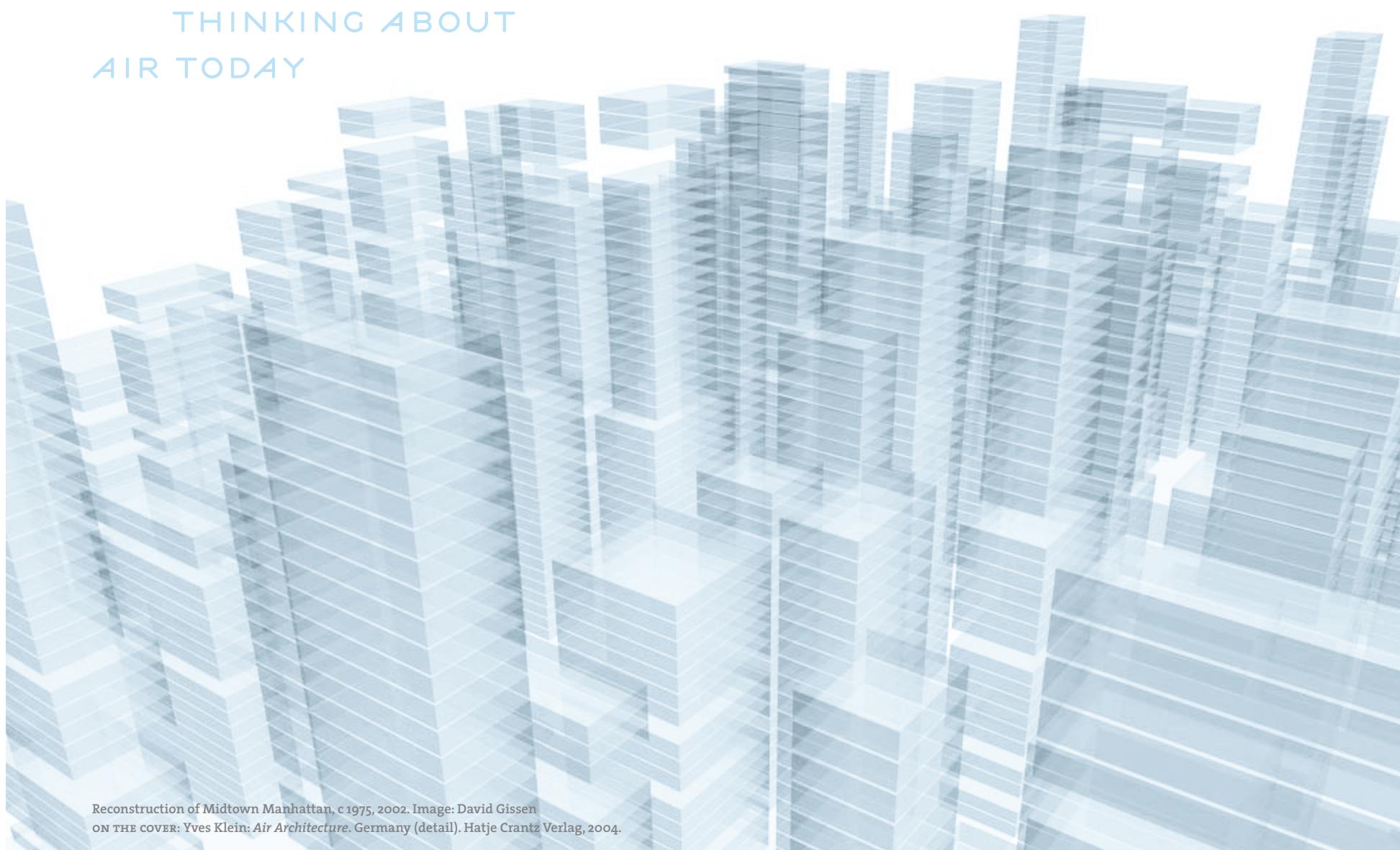
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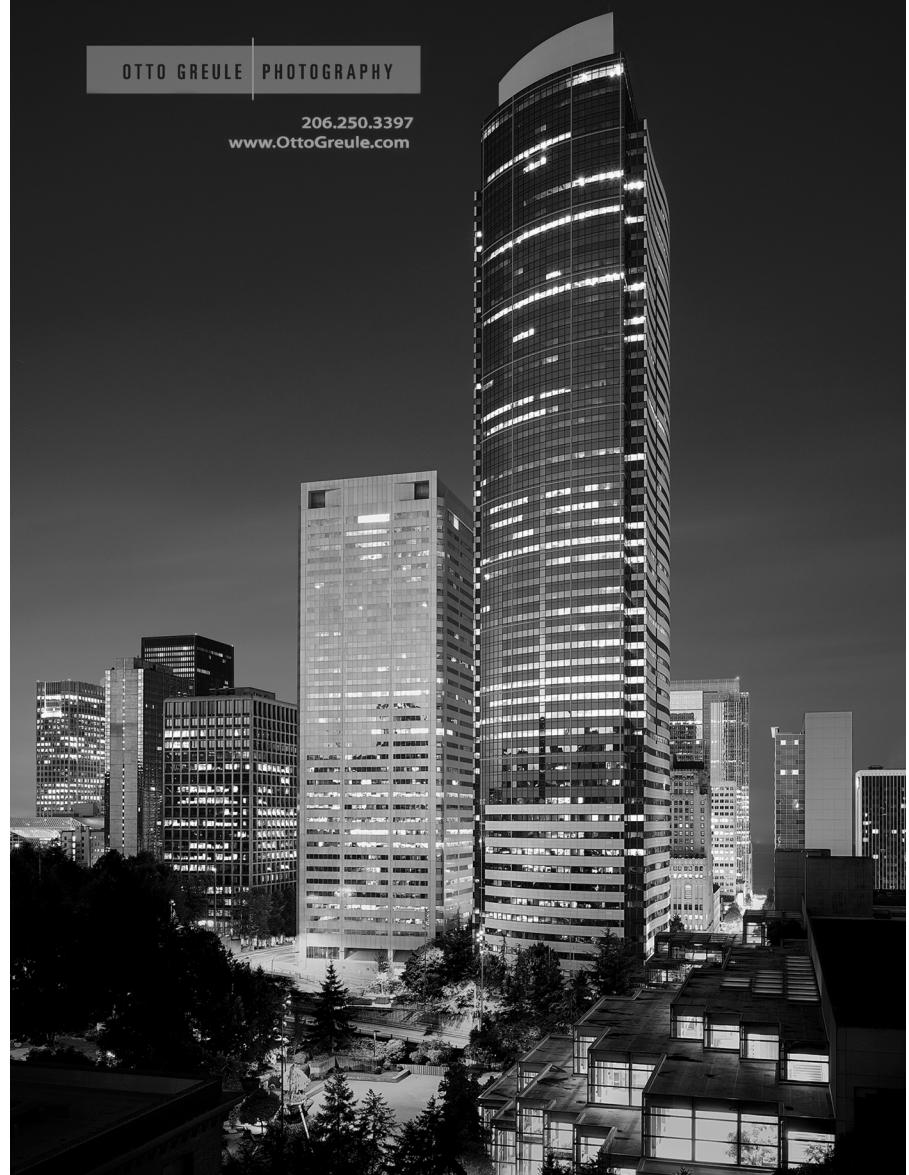


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Short Takes

Short Takes by Erin Kendig

A Form of Breathing: Alexander Calder at SAM

To look at Alexander Calder's mobiles and stabiles—in particular, his smaller pieces—is to remember what it is to feel delight. You stand in the quiet, still austerity of the museum and stare, inquisitively, at what you assume is (of course) a static sculpture formed of delicate wire and organic shaped disks of red, blue, yellow, white. They balance precariously, almost magically, rich with modernist beauty, art historical import and technical skill. And as you continue to stare, carefully pondering the deeper implications of this important work, something unsettling and wonderful happens: you realize it is *alive*. Yes, the sculpture in front of you is bowing, turning, dipping ever so slightly—a slow chameleon animated by the invisible currents of air that gently caress it. It is moving with nothing less than the subtlety of breathing.

Through April 11, 2010, the Seattle Art Museum will be showcasing a large survey of Calder's signature mobiles, stabiles, works on paper and jewelry in the exhibition *Alexander Calder: A Balancing Act*. The exhibition, drawn primarily from the Seattle area collection of Jon and Mary Shirley, traces the master American sculptor's work from the late 1920s to the 1970s in a showing that is not to be missed.

For more information, visit www.seattleartmuseum.org.



THIS PAGE: "Untitled," ca. 1948, Sheet metal, wire, wood, string, and paint. Collection of Jon and Mary Shirley. © 2009 Calder Foundation, New York / Artists Rights Society (ARS), New York. Photo: Justin Gollmer OPPOSITE PAGE, FROM LEFT: Leonardo da Vinci, Anatomical Manuscript A, folio 4v. The muscles of the shoulder, c.1510. Pen and ink with wash, over traces of black chalk. In the Well of the Great Wave off Kanagawa (Kanagawa-oki nami-ura) Series: Fugaku sanjūrokkei (Thirty-six Views of Mt. Fuji), 1830-33. Polychrome woodblock print on paper. Katsushika Hokusai. Japanese, 1760 – 1849. 10 3/16 x 14 15/16in. (25.9 x 37.9cm). Promised gift of Mary and Allan Kollar, in honor of the 75th Anniversary of the Seattle Art Museum.

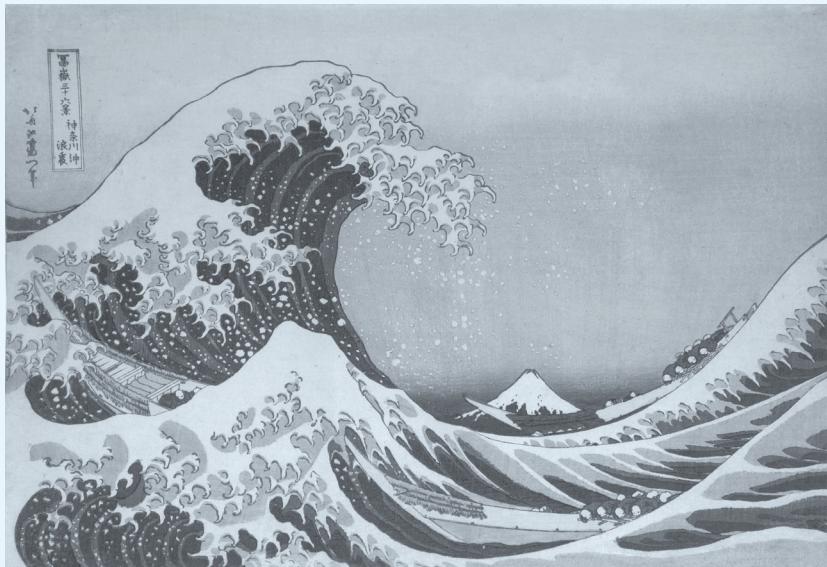
A Master Visits the Northwest: Leonardo da Vinci at the Vancouver Art Gallery

For Leonardo da Vinci, drawing was an act of discovery and investigation, a genuine search for truth through intense observation and graphic depiction. This veracious mind embraced all facets of the natural world, absorbing and filtering them through his amazing aptitude for draftsmanship. "Nothing can be loved or hated unless it is first known," wrote the ingenious painter, inventor, designer and engineer.

In the end, among other scientific and artistic feats, a graphic manifestation of the human body emerged from this Renaissance man's hand that would deeply influence the future of scientific illustration, and thus, the progression of modern science itself. As art historian Erwin Panofsky wrote in *The Renaissance*, "Anatomy as a science (and this applies to all other observational or descriptive disciplines) was simply not possible without a method of preserving observations in graphic records, complete and accurate in three dimensions."

For the first time in history, Leonardo da Vinci's most skilled and definitive group of anatomical drawings, *Anatomical Manuscript A*, will be on view in its entirety—and, as luck may have it, in the Northwest. The collection will be shown in the exhibition *Leonardo da Vinci: The Mechanics of Man* at the Vancouver Art Gallery from February 6 to May 2, 2010. On loan from the Royal Collection by her Majesty Queen Elizabeth II for presentation during the Vancouver 2010 Olympic and Paralympic Winter Games, this exhibition will include more than 240 individual drawings. Extraordinarily detailed, the drawings will be displayed in double-sided frames, allowing for an intimate study of the meticulous renderings. And as Martin Clayton of the Royal Collection and the show's curator writes in the exhibition catalogue, "It is futile to try to enumerate all of the firsts embodied in these drawings [as] virtually every one is the finest depiction of a particular structure to that date and, in some cases, for several centuries to come."

For more information, visit <http://www.vanartgallery.bc.ca>.



Living in the Moment: Japanese Woodblock Prints at the Seattle Asian Art Museum

Ukiyo-e prints were, in some respects, the rock-posters of old Japan. Produced for the masses and available at modest prices, *ukiyo-e* or "pictures of the floating world" celebrated the transient joys and dramas of urban life in flourishing Edo (modern-day Tokyo). Images of sensational actors, seductive courtesans, magnificent clothing and a dynamic and dramatic natural world are found in these prints, often used as playbills for shows or advertisements. Elegant, bold and abstract, utilizing line and form to highly evocative ends, when *ukiyo-e* reached Europe in the 19th century, it took the art establishment by storm, deeply influencing the direction of Western modern art and graphic interpretation.

From April 1—July 4, the Seattle Asian Art Museum will be showing an exceptional collection of *ukiyo-e* prints, including pieces by many of the movement's heavy hitters—Utamaro, Hokusai and Hiroshige. With over 60 prints on view, this showing will include two of Japan's most celebrated artworks — Hokusai's iconic *The Great Wave* and *Red Fuji* — as well as several works from Hiroshige's major series of landscapes.

And even if after viewing the show you decide *ukiyo-e* isn't your "thing," it's hard not to appreciate the irony: for a movement founded on the ephemeral — in format, material and content — *ukiyo-e* has proven to have amazing staying power.

For more information, visit www.seattleartmuseum.org.

Corrections to ARCADE 28.2, Water 2.0, Aquatic Dysfunctions

"Net Zero Impervious Design: A Radical Concept" by Mark Buehrer

The Clearwater Commons project site design discussed in this article was a collaboration between Banyon Tree Design Studio, 2020 Engineering and the client, Clearwater Commons, LLC. The site plan drawing and house elevations published in ARCADE (20-21) were produced by Banyon Tree Design Studio. You can read more about the project at www.clearwatercommons.com.

"Stop Wasteful Spending" by Eden Brukman

The Maximum Performance (MaP) testing protocol discussed in this article was attributed to the California Urban Water Conservation Council (CUWCC). In fact, MaP was created by John Koeller, principal of Koeller and Company and a technical advisor to the CUWCC, and Bill Gauley, Principal of Veritec Consulting, Inc. in Canada. The CUWCC hosts the MaP reports on their website: www.cuwcc.org/MaPTesting.aspx.

"Out of the Box and onto the Ground" by Clair Enlow

The photograph of atelierjones' prototype for a biodiesel fueling station was taken by Lara Swimmer: <http://swimmerphoto.com>.

Industrial Design Observer

Dominic Muren

The Ultraportables

Re-working the Workplace

Were you to wander into any prehistoric human encampment — say, 10,000 years ago — you would have found, along with a cooking hearth and some sort of shelter, a space of ground littered with thousands of flakes of stone. Stone tools were the instruments of civilization in those days, and the process of chipping them into shape left this visual signature. This space for making and using tools — the earliest of workshops — became a recurring theme as humans graduated from stone to metal to microchips. Whatever the era, whatever the work, humans have designated different spaces for different types of work. Now, 10,000 years later, the workshop is losing ground to the coffee shop thanks to a new generation of tasks to be done and tools with which to complete them.

It might seem late to call the past year the turning point in this loss of location for working—after all, laptops have been around since the early 80s. However, just as the concept of the portable phone had to wait for large-scale adoption, low-cost plans and new social conventions to blossom into the always-on culture of the early 2000s, the invention of the laptop was not enough to invalidate the workplace on its own.

This revolution also needed connectivity—a computer isn't much if you have to take it back to the office to send data, communications or save files. Wifi networks have become ever more available and computer users have taken advantage of them, motivated by the 3rd place appeal of the coffee shops offering the connections. Additionally, the growth of cellular modem usage or smartphones with data plans has even freed the on-the-move worker from needing a coffee shop at all. As more devices like the Kindle or HP Mini 1151NR are equipped with cellular modems or other technologies which allow for constant connectivity, the spaces available for work will continue to open up.

Another crucial force for change was the growth of the computing cloud. Once a theoretical holy grail of computer scientists non-local data storage (and even processing) is becoming much more available and powerful. The rise of web-based storage services like Box.net, Flickr, Vimeo and Gmail has allowed users, or groups of users, to have access to the same data even when not on the same LAN. As new, web-based tools like Picnik, Google Docs and Basecamp take over more of the data-processing load, mobile computers may need less onboard processing power, making for longer battery life and even greater portability.

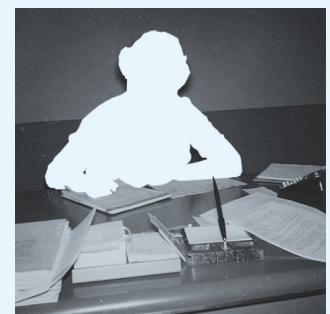
Of course, the importance of well-designed devices should not be downplayed. New developments in construction (the MacBook Unibody design), battery life and form factor make the latest generation of netbooks and micro-laptops more portable than ever. And, with Apple's recent launch of the iPad tablet, the competition is bound to stay lively, producing more shiny, aluminum reasons to leave your cubicle, desk or office behind.

All these innovations allow work to be done in more places, but what about the quality of that work or the lives of the workers? What else is being lost as we take the place out of the workplace? One early casualty has been the automatic networking afforded by proximity in office environments. As the watercooler is replaced by a website, the real time expenses of staying connected increase. A recent survey by Nucleus Research found that 77 percent of office workers used Facebook accounts — 66 percent during work hours — causing potentially millions of hours of lost work. Other effects of the decentralization of work are harder to predict. Positive changes like reduction of commute times and energy consumed in driving are probable. Just as likely are degenerations of the social life that comes with working on the same problems, in the same place, with the same people. The prehistoric change from stone to metal tools must have seemed like an insignificant choice at the time, just as modern workers think nothing of telecommuting from a coffee shop. But our modern society is no less malleable, or susceptible to influence from changes, especially in areas so fundamental as how and where we use our tools.

For more information:

<http://nucleusresearch.com/research/notes-and-reports/facebook-measuring-the-cost-to-business-of-social-networking/>

Dominic Muren teaches Industrial Design and Design Studies at the University of Washington. His research focus is on novel methods of manufacturing using flexible machinery and local materials to make modular, hackable products for more rich, resilient economies. He is editor of Humblefactory.com, a blog exploring the development of this new mode of manufacturing.



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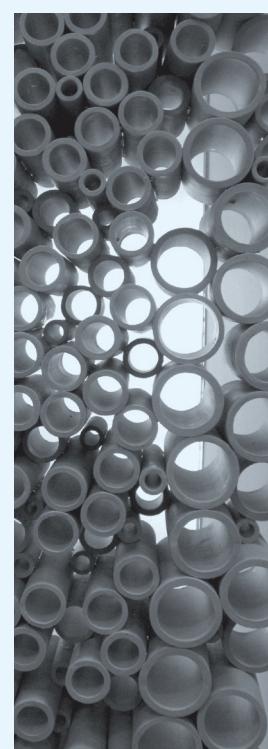
Fifty-nine feet above sea level, the city of Eindhoven is south of Amsterdam, across the Meuse and Rhine River deltas. There is an interesting story here. Home to Philips since 1891, the company town has experienced outsourcing at a phenomenal level. The booster taxi cab drivers tell a story of Philips employment dropping from 250,000 to 9,000 from 2000-2010! What is a community to do? How do you reuse offices, laboratories and light bulb factories? How do you remain a center of innovation and a national economic force?

Part of the answer is PSV Eindhoven, one of three big Dutch football clubs, and Dutch Design Week (DDW), an annual fall extravaganza of 265 events, 1,500 designers and 65 locations that draws over 120,000 visitors a year. The first (the football clubs) is noted tongue-in-cheek, but the latter is serious. Coupled with Philips Design, the Design Academy Eindhoven, the University of Technology (VanBerlo) and the Van Abbe Museum (connected to Amsterdam's remarkable Stedelijk Museum), Dutch Design Week fills this city of 209,000 with all types of designers finding their way from event to event, eating, talking, drawing and looking. For attendees' use, the almost-free DDW taxis and bicycles connect the events. Everything is game. Exhibits range in topic from electric automobile prototypes, food design, textile design, architecture, urban design, landscape architecture and furniture design to explorations in repurposing materials, innovative bricks and building cladding to health care. Students present sophisticated exhibits of work, including station-platforms embedded with train information at your feet, beautiful rainwater collection cisterns and flower bombs—balls of seeds and soil. Old power plants like the Klokgebouw are turned into exhibit spaces for glasswork, bicycles and food resulting in an experience out of *Blade Runner*. The WitteDame (White Lady), the 1920 former light bulb factory

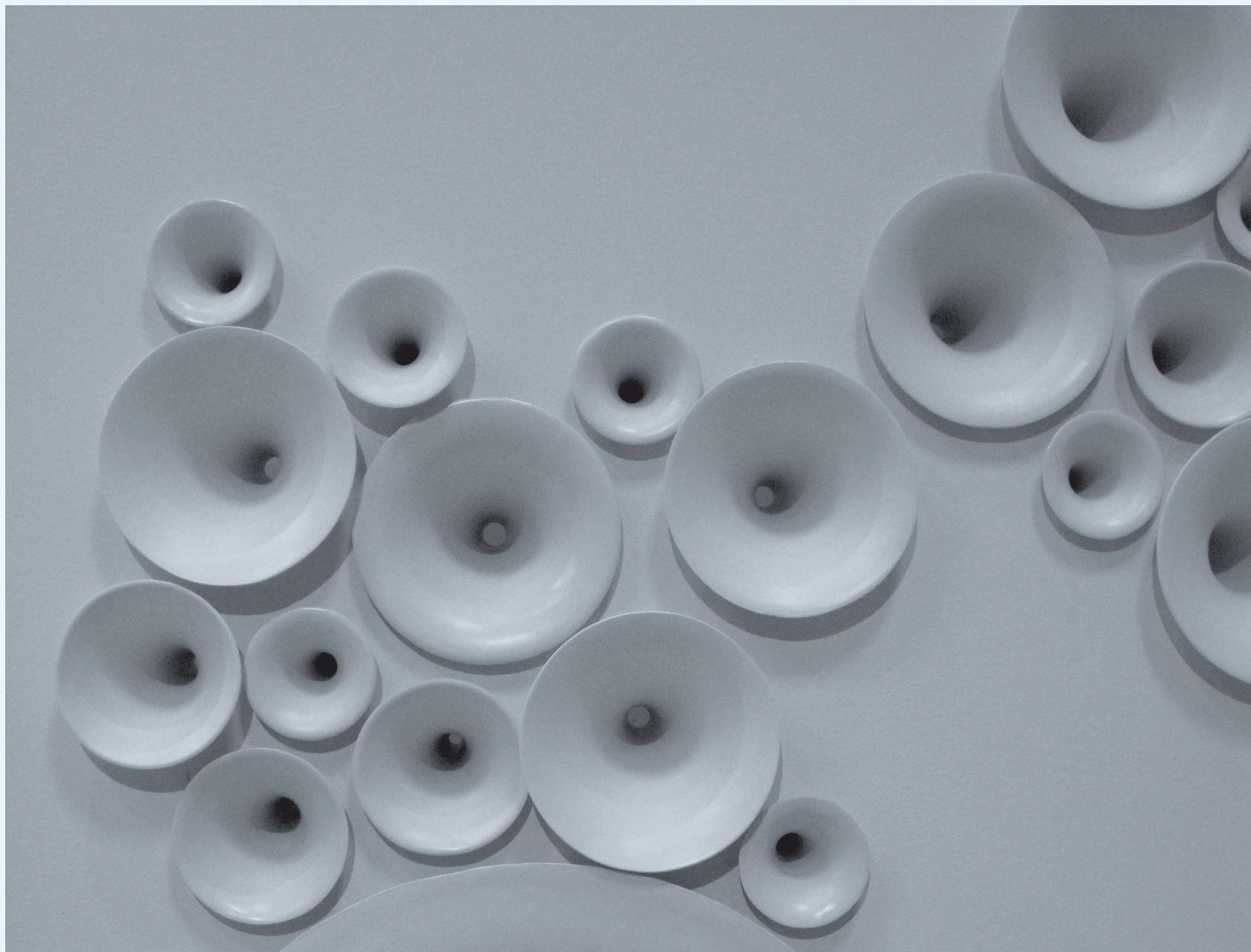
in the heart of the city, now houses arts and design institutes, galleries and a couple of great restaurants. The Van Abbe Museum has a dark collection of Kandinskys, Picassos and Lissitzkys, along with special exhibits involving audience interaction in *Take Me On (Take On Me)—An alternative production factory*. Lectures populate the week with discussions ranging from lighting, the role of design, the relationship to the manufactured object, copyright, design thinking and business development. National design awards are presented, parties occur and food abounds.

Beyond the take-aways of an over-stimulated design-minded brain, a sketchbook full of notes, sore feet, cards and drawings, visitors are presented with the notion of design and design innovation as an integrated economic engine. Han Robertus, the new director of DDW, sees design as an exceptional export "product" with DDW providing a direct connection between audience, designers and companies. The International Council of Societies of Industrial Design has instituted the program of the *World Design Capital*, a biannual designation of cities with exceptional accomplishments in promoting innovative design. The two finalists for the *World Design Capital 2012* are Eindhoven and Helsinki. With a combination of highly regarded design academies, creative industrial design companies (including Philips and new start-ups), reuse of vacant buildings and factories coupled with an extravaganza such as DDW, Eindhoven is particularly interesting. This city's reinvention merits watching as the speed of innovation and change increases and integrated design thinking becomes an important resource.

Barbara Swift, founding member of Swift Company LLC, exhibited in the European Ceramic Work Centre installation of Ceramics and Architecture with Claudia Fitch and John Fleming.



THIS PAGE FROM LEFT: *Brick Project*, Rem Posthuma. Design graffiti, artist unknown. *Untitled*, Akiko Yanagimoto + Moriko Kira. OPPOSITE PAGE: *Whispering Wall*, Pierluigi Pompei + Kess Spanjers. Photos by Barbara Swift.



A conversation with Hans Robertus, Director, Dutch Design Week

With the shift of Philips employment, what role does DDW have in the effort to revitalize the economic situation of Eindhoven?

Eindhoven has both a strong research/technology community and a strong creative/design community. The DDW started as a platform for the creative industry with a focus on young talent but is now setting its direction towards becoming a meeting place for all kinds of parties related to product and service development (entrepreneurs, financial institutes, legal experts, etc.). As shown during the Week, this is to encourage an exploration of ways to realize ideas and dreams. We strongly believe in the importance of assembling the right people from the right disciplines to fully explore the potential of this region's unique industries—design and technology.

Is it part of a larger plan, and if so, can you explain the character of the plan?

You might indeed say that it's part of a larger plan and overall strategy. Without being too specific, we're optimizing the coordination between a number of design- and innovation-related initiatives. We're convinced that we're in a good starting position for this because of our so called Triple Helix model. This model stands for a close and, therefore, unique cooperation between knowledge institutes, the industry and the government.

How did the idea for DDW originate?

As stated above, it started 89 years ago with a small group of very enthusiastic designers with a drive to

show their work. The fact that it started this way and that we carefully secured the underlying ideas and principles makes the Week what it is. It's not organized from above and not taken over by governmental and/or strongly commercial-oriented organizations.

Is there government funding for DDW?

Yes, on different levels. This is quite essential and without this support it would have been difficult to set up such an event. Funding, by the way, is not only given in the form of cash, but also in the form of expertise, facilitation, networking, etc.

How is this part of the cultural heritage of Eindhoven and the Netherlands?

If the word "this" in your question stands for the quality of Dutch Design, then I would say it all fits the Dutch mentality and culture. We have quite a "no nonsense" approach. We want to work within the bandwidth, but we like to explore the boundaries. We are used to finding a consensus. The amount of hierarchy in our society has diminished dramatically over the past decades. Changes in the way we treat one another have changed the design process. The differences between men and women, for instance, have become smaller. And our mentality makes our end products well thought through. I think this is what enables us to set ourselves apart from the rest of the world.

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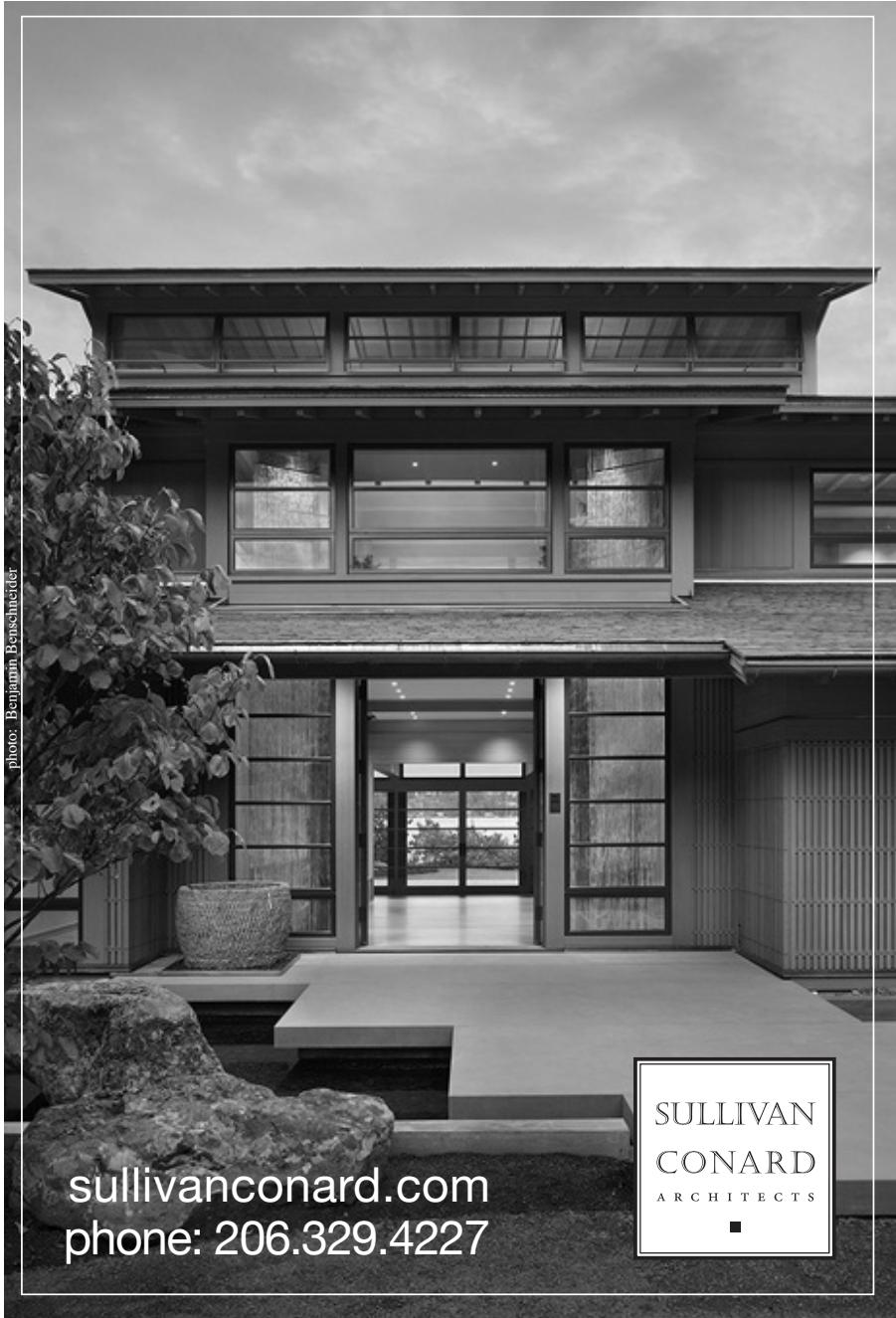


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Art Matters

Abigail Guay

The Impossible Impossibility

On *Sherlock Holmes* and Alchemy

In Guy Ritchie's recent release, *Sherlock Holmes* (2009), the menacing leader of The Temple of the Four Orders, a secret society of influential Victorians, executes a series of alchemically-themed murders employing earth (a live burial), water (a poisoned bath), fire (a flammable substance triggered by a gun shot) and air (a botched plot to release a cyanide cloud into Parliamentary chambers). In appearance, the murders are magical acts and the menacing leader a sorcerer. But the detective Holmes proves otherwise: The complex and incredible killings are elaborate, ingenious, wicked tricks. Just tricks.

As Holmes outlines each act, he addresses the chemicals used, including a cyanide "antidote" designed to protect from the noxious cloud those members of The Temple of the Four Orders serving in the House of Lords. Holmes does not describe the composition of the antidote nor how it behaves in the body—it simply is what it is, however ineffable. The detective, through observation and sound logic, solves the case; but in the end, by necessity, some magic remains.

Alchemy was constructed piecemeal from over two centuries of experimental work, including the proto-scientific practices of the ancient Egyptians, Greeks and Indians. Vantage points vary, but in the broadest terms, most ancient or pre-modern practices that blend mineral or herbal chemistry with a spiritual or supernatural element were/are fair game for co-option. Additionally, alchemists ascribe to a Humoral Theory, the notion that the four humors (blood, phlegm, and black and yellow bile) are linked to tangibles and intangibles such as seasons, physical states, human temperaments, and yes, elements. We owe Aristotle the ubiquity of this four-part system, which defines matter as shifting, as volatile and interactive. His theories laid the groundwork for pre-Newtonian physical science.

In the universe of Ritchie's movie, the cyanide antidote is the Philosopher's Stone, the intangible but necessary component of the story. In alchemy, the Stone is the legendary substance believed to turn base metals to gold (transmutation), to impart everlasting life, or to otherwise make whole what is incomplete in man and nature. (The alchemist aspires, it would seem, through wealth and immortality, to embody the life and times of literature's manor house monster, the wealthy, undead recluse who eats and/or romances mortals.) The composition of the Stone is aether, a fifth element that exists at the intersection of substance and essence. This crossroads was of serious interest to Aristotle who, via Thomas Aquinas and other proponents throughout time, provided tools for understanding concepts ranging from Medieval Catholic transubstantiation to contemporary theories of space-time.



Robert Downey Jr. as Sherlock Holmes in Warner Bros. Pictures' and Village Roadshow Pictures' action-adventure mystery *Sherlock Holmes*, distributed by Warner Bros. Pictures. Photo courtesy of Warner Bros. Pictures

During the Medieval and Renaissance periods anything associated with Catholicism had a good chance of sanction, documentation and survival. Magic endorsed by authority, however, is not magic, but fact. Authority takes the form of religious or civic leaders and it manifests as the author's voice in a creative work, the hermetically sealed universe of an alternate reality. Because a cyanide antidote is possible within the framework of *Sherlock Holmes* — a framework of cults, potions and Holmes himself, an impossibly fast and strong middle-aged man — moviegoers suspend disbelief.

As the practical sciences developed and alchemy became chemistry, physics and Jungian psychology (as well as a minor component of many things, per its religious and social aspects), practitioners no longer needed to confer symbolic or spiritual qualities on the materials and practices of their crafts; the purely functional purposes were powerful enough. All of the symbolism and lore drained and strained from alchemy did not go away, however. These remain popular tools for setting a mystical tone or for plugging holes in an incomplete, but compelling, narrative.

In many contemporary societies, individuals are inclined to identify in a given context the one thing that is the missing element (aether) or perfect solution (riches, eternal life)—never mind the apparent impossibility of this one thing's existence. However, innovation is eliminating more and more of what we once considered impossible impossibility. Magical Realism — the artistic genre that places magical elements in mundane situations (see *Sherlock Holmes*, Gabriel Garcia Marquez, television advertising) — presents a stage or a world from which anything unsatisfying or deadly is removed or easily, artfully, ecstatically corralled. Disbelief is suspended, the experience of the whole satisfying. Scientific practices act on these same desires, but in stages and with concentrated effort and plenty of real gold.

Alchemy ties the whole lot together: the magic, the science and the desire to improve one's lot in life. Like the detective Holmes, we're starting from there.

Abigail Guay is Program Manager at Grantmakers in the Arts, Seattle.



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THE NEW MILIEU

THINKING ABOUT AIR TODAY

KIEL MOE

It is the first and last of the elements we encounter.
It is almost nothing, yet no living thing would be without it.

During the 20th century, air became increasingly mechanized, instrumentalized and quantified. It was humidified, cooled, cleansed, measured and polluted. For the first time, it carried men and women across continents and oceans, it carried nuclear fallout and it carried radio signals and radar pulses. It now harbors the tons of carbon that have been continuously pumped into it throughout this century that have begun to drive systemic ecological changes. In this period, air became an entirely new milieu. It is far from nothing, for it touches all aspects of life.

In the 20th century, air was conditioned: conditioned by the dreams of a mechanized century, by the entrepreneurial ambitions of the inventors of "Man-Made Weather" machines and rhetoric, by marketing agents, by theories of dilution and purity, by sick building syndrome, etc. In turn, air conditioned our expectations for comfort, the dimensions of building floor plates and related lighting systems, and conditioned air ultimately played a large part in the hubristic energy practices of the 20th century; for instance, by engendering large metropolitan cities where none belong.

Given our current contexts of climate changes, polluted interior and exterior atmospheres, the Risk Society and shifting economic and ecological conditions, it is time for architects to consider again the role of air in built environments. Today, air is a fundamental material in architecture. Its properties and behaviors determine

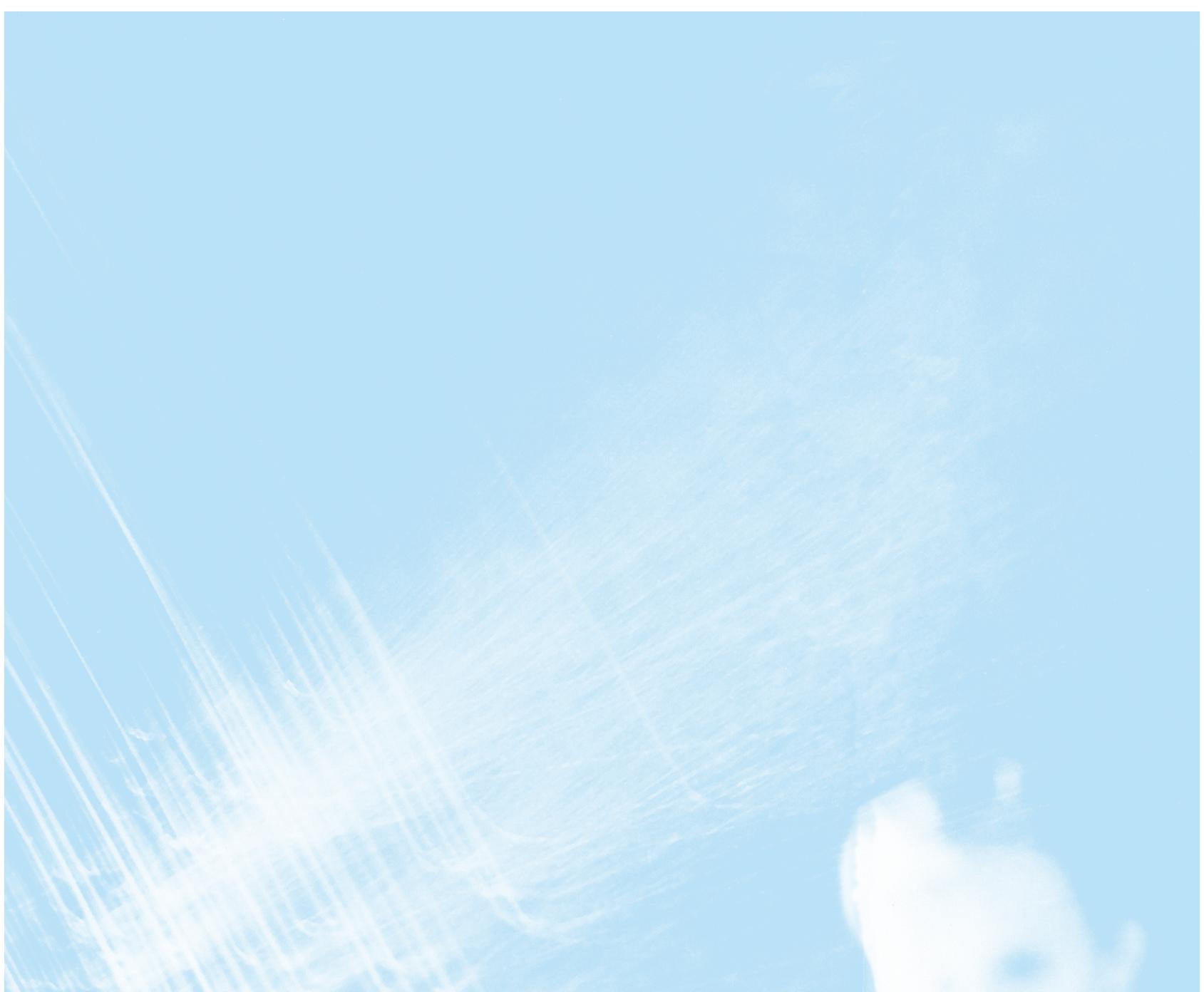
multiple aspects of a building's performance in a city and climate. Today, air can shape buildings in new ways. Increasingly, this "almost nothing" has begun to shape almost everything in architecture: its systems, compositions and techniques. To this end, the following authors were asked to reconsider the role of air in contemporary built environments by responding to the following questions: How is air different in design today? From the molecular to the territorial to the global, what capabilities and culpabilities are inherent in air as a designed material, an ephemeral boundary, a flow of energy and a fabricated environment? How should designers think, and think differently, about air in the 21st century?

The aim of this group of architects, researchers and theorists is to make us think, and think differently, about air in the twenty-first century. The authors provide a range of voices and trajectories of thought about air in built environments. I am grateful for their reflective contributions to this topic and hope that they collectively help you shape new thoughts about this most fundamental aspect of our milieu.

Kiel Moe is a registered architect and an assistant professor of design and building technologies. He is a Fellow of the American Academy in Rome. His book, *Thermally Active Surfaces in Architecture*, will be published by Princeton Architectural Press in March 2010. His first book, *Integrated Design in Contemporary Architecture*, was published by Princeton Architectural Press in 2008.

ON
SEEING
AIR

JENNIFER YOOS



Sigfried Giedion codified the modernist idea of space as the inverse of form—an abstract matrix of nothingness that enables the viewer to have a direct relationship with an architectural object. Despite new scientific understandings of fluidity and the dynamic fields of energy and matter that compose physical space, Gideon's ideas of architectural space, direct descendants of the perspectival space of the Renaissance, still dominate. While architecture has the potential to actively participate in the fields of energy and matter that surround it, it is undermined by this traditional focus on composing space and form. Though contemporary architects are embracing new technologies to transform building performance, they are still working within this basic framework, representing their new understandings of these phenomena through metaphoric forms and ignoring the ability of form to shape environmental performance. It is this long-held art-historical concept of "forms in space" that has become an impediment to our seeing "air" as an integral material of design. Should an architecture defined by space now be superseded by an architecture defined by "air?"

While architecture has been preoccupied with discovering new forms, many notable artists have been exploring the behavior of air as part of what we call the temporal field. Hiroshi Sugimoto's photography makes air palpable, if not literally visible, in its relationship to other fluid phenomena like seawater, vapor or even electricity. In his photographic series, *Seascapes*, Sugimoto registers on film the subtle atmospheric effects of air pressure, stratification and air turbulence on otherwise still surfaces of water. Video artist Bill Viola recorded the optical phenomenon known as a mirage by photographing air and the visual refractions of human activity and landforms caused by temperature gradients and air in extreme heat. In site-specific installations, sculptor Olafur



If we learn to see air as the essential medium of architectural space, we will also begin to see it as a fundamental material shaping habitation and form.

Eliasson projects enlarged images of dynamic fields of gas and liquids interacting with human activity in real-time. In one installation, "Your Windless Arrangement," Eliasson used the low-pressure vacuum created by a wall of 16 stacked circular fans to accelerate viewers from one room to another. Yves Klein's personal obsession with what he called "the architecture of air" may be the most relevant example. Klein conducted numerous laboratory experiments with various gases, water and combustion, resulting in urban-scaled artistic proposals that manipulate form to manage and compose the atmosphere of cities.

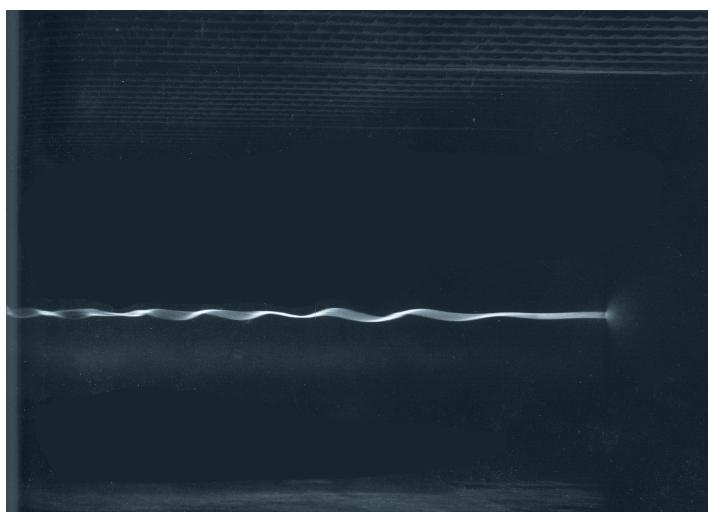
The growing crisis of pollution and global climate change has made the chemistry of the earth's atmosphere the most pressing problem of the 21st Century. It has also made the performative aspects of architecture much more a part of architectural discourse. If we learn to see air as the essential medium of architectural space, we will also begin to see it as a fundamental material shaping habitation and form. If we avoid building metaphors of fluidity in favor of acting directly upon the temporal field, we may gain a new understanding more appropriate to contemporary conditions of architecture as a mediator of the environment. Architects could even move beyond ceding the design of air movement to mechanical engineers and HVAC systems and engage it as an essential issue in defining the shape of buildings.

Once air is fully considered, the most critical concern for architecture is what do you do with it? How should it move? Will it be fluid or partitioned, settling or rising? How is convection or pressure or turbulence manipulated? Does it cool or heat or carry moisture? Is it compressed or dissipated—how does it act on other matter? And how does all of this support the activities and life of architectural spaces?

We need to recognize the aesthetic and experiential value in designing space as a variety of microclimates. If we reconsider space relative to air, we can visualize built form and space as containing a moving mass of material, stratifying, directing or channeling it, creating stack effect or convection loops or providing spatial couplings of the movement of people and air. If we reconsider surface relative to air, we see the potential for texture and geometry to direct flows, form eddies or create turbulence, the forms we make acting in unison with the surfaces we articulate at both the micro and macro level.

Space, rediscovered as air, is the medium of architecture, and it is critical to the progress of architecture in this age of rapid climate change. Expanding our architectural interests to the performative aspects of air, with its interactions with temperature, moisture, energy and activity, not only makes our buildings more responsive to climate but also provides a variety of new aesthetic and experiential alternatives to uniformly conditioned space. Architects need to broaden their scope of considerations and see air, and the other phenomena of the temporal field, as part of their medium. Space is not simply a by-product of architectural form but a field of energy and material effects that can be designed.

Jennifer Yoos is a partner in the firm of VJAA. Their work integrates design practice with research and explores the interconnections of social, cultural and environmental issues with the built environment. She is Professor-in-Practice at the University of Minnesota School of Architecture.



OPPOSITE PAGE: Yves Klein: *Air Architecture*. Germany: Hatje Cantz Verlag, 2004.

THIS PAGE FROM TOP: Brougher, Kerry and David Elliot Ed. Hiroshi Sugimoto. Germany: Hatje Cantz Verlag, 2004.

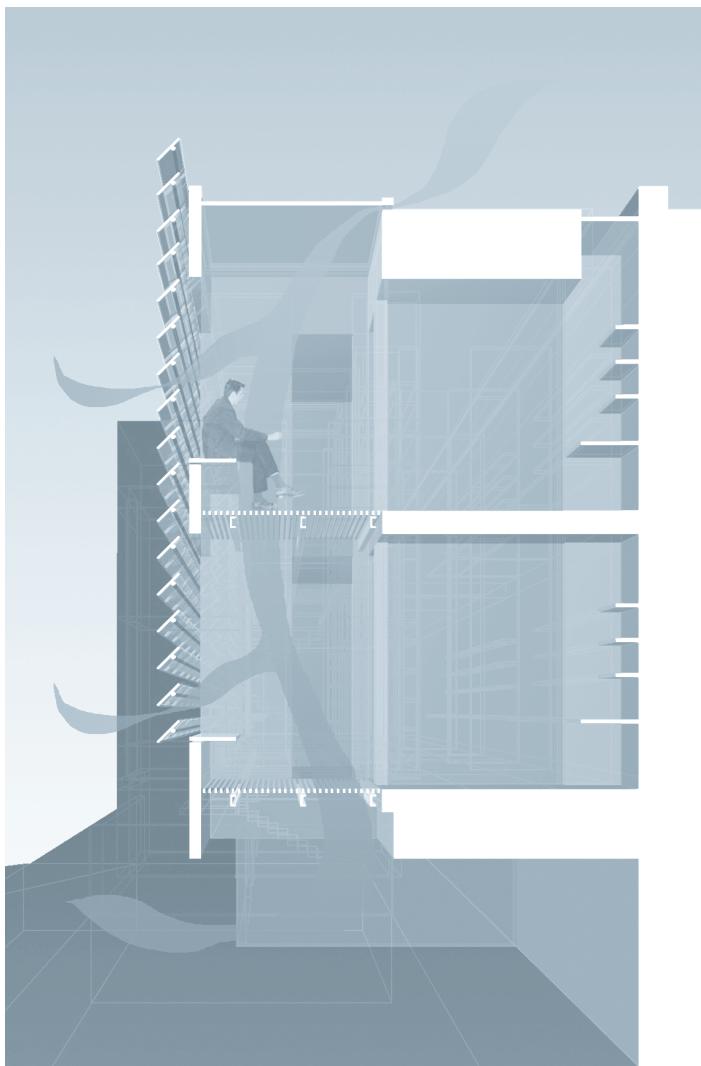
Olafur Eliasson in Parkett. Zurich, Switzerland: Parkett-Verlag. No. 64, 2002.

Ross, David A. Bill Viola. New York: Whitney Museum of American Art, 1998

AIR PARCELS

WILLIAM SHERMAN

An architecture of elastic boundaries: William Sherman's south addition to Campbell Hall at the University of Virginia (with SMBW Architects).



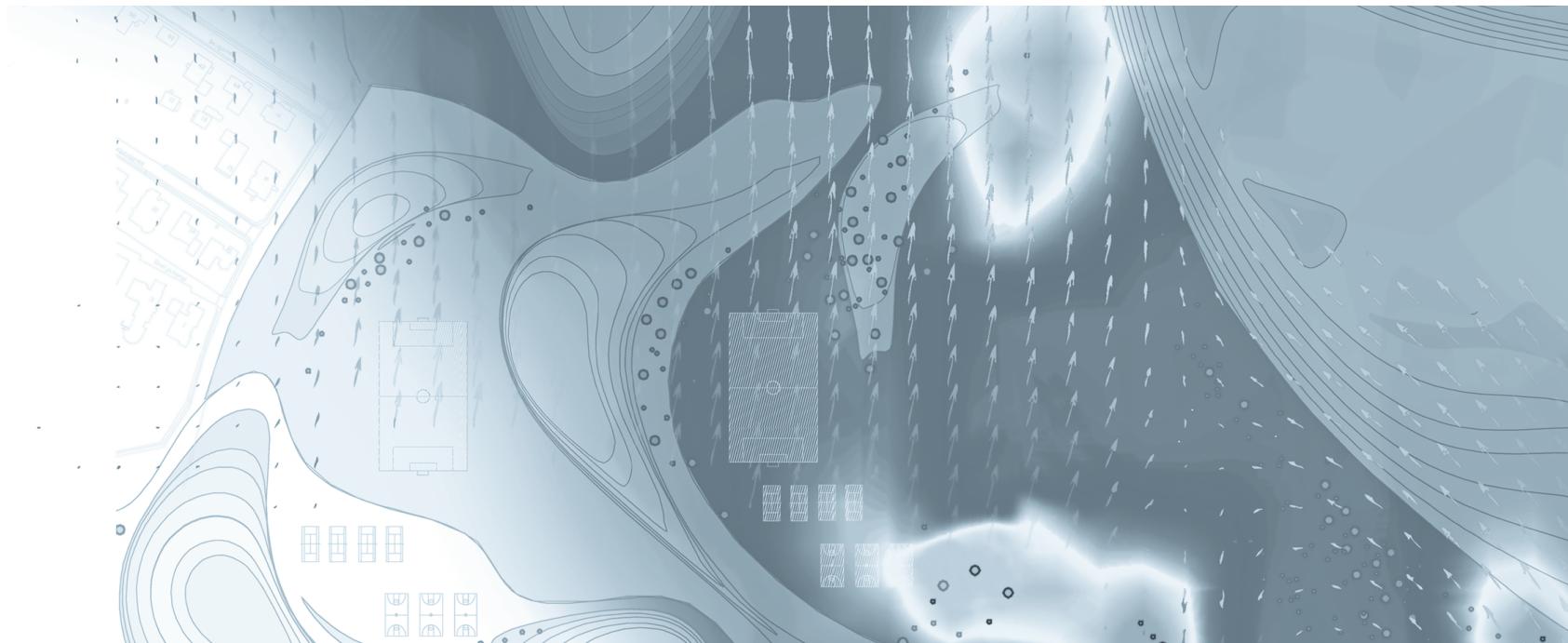
Architecture is the construction of difference, creating spatial distinction out of continuity.

Climbing into the taxi at the Houston airport, I was asked if I wanted air. Being a pleasant spring day, I answered yes, only to see the windows go up and the air conditioner kick on with a blast of stale mold spores. In a city whose existence depends on the massive flow of energy required to cool, filter and dehumidify millions of discrete parcels of air, conditioning is no longer a necessary modifier.

What is a building but a box of air, straining to contain an infinitely infiltrating gas in a state sufficient for a narrow definition of inhabitation? The harder the boundaries, the more difficult the challenge, like the contested borders of countries demarcated by straight lines where wars keep erupting as pre-existing orders ignore the artifice. In buildings, the boundaries approach the clarity of a straight-line border as energy is displaced through space and time across continents and millennia to achieve the abstract modern ideal of transparency. What separates the interior air from its counterpart across a glazed membrane? Not the glass, but a network of energy flows from deep within the earth, leveling mountains, draining ancient deposits at untold human cost, transforming the air itself in a latent cataclysm measured in the infinitesimal proportion of parts per million.

Architecture is the construction of difference, creating spatial distinction out of continuity. The energy infrastructure of modernity has liberated the visual dimension of this distinction from the visceral, allowing the production of a pure space without the constraining geometries of environmental processes. The parcel of air in which we choose to dwell achieves this autonomy through the hum of air handlers, no longer dependent on the angle of the sun, the thermal properties of materials and the evapotranspiration of water cycles. But air is only one flow that has been diced, objectified and commodified; water, energy and the land itself are measured in artificially constrained units to make possible the concept of ownership. In the attempt to possess a fragment of the indivisible, the modern project constructs its demise. How thick is a piece of real estate? Who owns the unconstrainable flows? The abstraction of constructed boundaries upon which modern society rests is threatened at its core by an inherent, dynamic reality. With a whole new meaning at this end of the arc of modernity, all that is solid melts into air.

William Sherman is an Associate Professor of Architecture and a practicing architect. For many years his research, practice and design studios have been focused on the interaction between architecture, the city and ecological systems. His work explores the cultural, political and environmental responsibility of architecture as the construction of a binding, sustaining and transformational infrastructure.



MATERIAL ENERGIES

SEAN LALLY

As our profession increases its control and ability to operate upon our material world, advancements in adjacent disciplines of biology and the sciences are elevating the human senses to new levels. That which may be dismissed as simply "air" today, due to the limits of our human sensory systems to perceive otherwise, may tomorrow be articulated by heightened human senses able to perceive increasingly minute variations in our environments. Expanded spectrums of visible light, subtle shifts in olfactory conditions and the innumerable atmospheric functions that continually exist around us may one day be within the reach of our everyday perception. Juan Enriquez, founding director of the Life Sciences Project at Harvard Business School, reminds us that just 10 years ago, individuals with hearing difficulties wore devices on the outside of their ears, while today the deaf receive cochlear implants that often permit them to hear for the first time. As this trajectory of artificial sensory advancement continues, treatments will be available that grant us a sensory sensitivity on par with insects; eye implants will elevate our visible spectrum to include ultraviolet or infrared "light." We will create for ourselves an ability to sense and comprehend previously unperceived materials and systems of organization.

In the future, these two seemingly distinct areas of research (the increased sensitivity of our senses and the architect's control over the material world) will eventually converge. After all, if the way we perceive our environment is changing, shouldn't the constructs and territories we make as designers evolve as well?

Central to this evolution in our built environments will be the role of building boundaries. Boundaries will no longer be perceived as static lines or surfaces but fluctuating intensities read best as gradients. It is important that as we pursue new opportunities associated with climatic materials — traditionally relegated to conditioning interior spaces or believed to be beyond our control on a building's exterior — that we not default to preconceived notions of their roles, possible responsibilities and limitations. Today, with our ability to quantify and implement these material energies, we have an opportunity to build new environments, climates and contexts saturated with potential for social interaction, activities and spatial organization. We have a greater ability to represent and control such materials, and we are poised to re-inform architecture's definition of what constitutes the boundaries we use for defining spatial organization. Unfortunately, up to this point we have primarily reverted to two mutually exclusive mantras when dealing with such materials: efficiency, which has kept us locked in discussions of individual interior comfort levels, or mood or effect, an expression of intentions regarding

That which may be dismissed as simply "air" today, due to the limits of our human sensory systems to perceive otherwise, may tomorrow be articulated by heightened human senses able to perceive increasingly minute variations in our environments.

these same material energies through metaphors and poetics. Instead, we should be seeking the creation of contexts and sites previously unseen and untested, for these materialities, which are more closely associated with energy waves, particles and radiation than bricks, steel and concrete, are no longer out of our range of implementation and should themselves absorb the responsibilities associated with architecture. This will result in the design of new micro-climatic conditions that take on spatial responsibilities, allowing activities and programs that were thought to require building interiority. To move past the limitations of their conventional roles, these conditions should be investigations that acknowledge the demands of built architecture in order to construct speculative new environments yet to exist.

If these material energies are moved to the foreground, garnished with the materials that construct physical boundaries and inform various new spatial typologies, what might the spatial and social implications to our built surroundings be? The intention is to foreshadow and draw out the spatial and organizational scenarios that stem from these endeavors; but it is equally important to remember that even as the toolsets at our disposal seem to grow faster, stronger and more efficient every year, we need to remain mindful that our reliance on such software and computational devices to deliver scenarios of tomorrow are often an excuse for a weak imagination. Our imaginations must lead, and technology will follow.

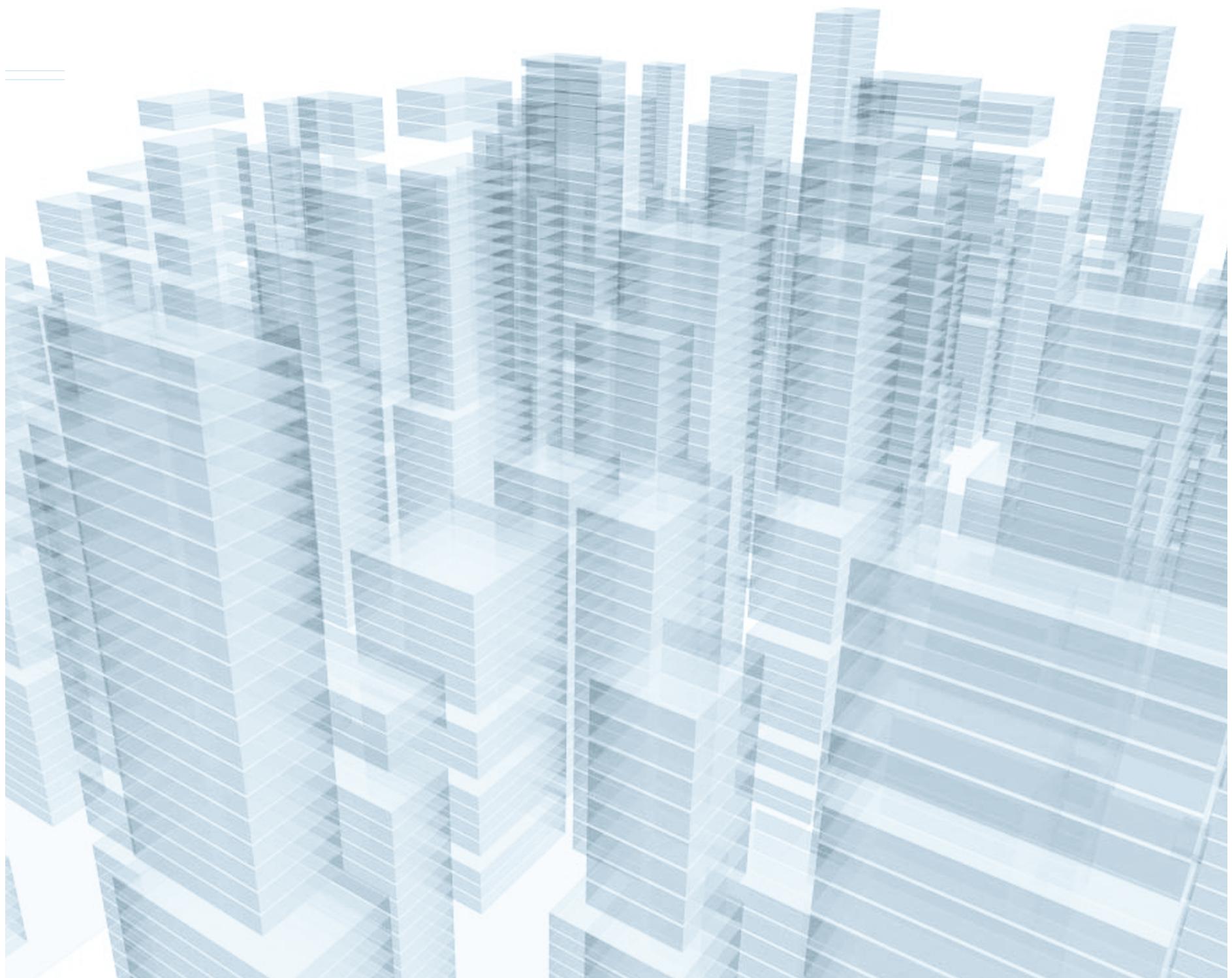
Sean Lally founded the office WEATHERS to embrace the potential overlap between the disciplines of architecture, landscape architecture and urban design. Sean is an Assistant Professor at the School of Architecture at The University of Illinois Chicago. He is most recently guest editor and contributor for the *AD* magazine issue "ENERGIES – New Material Energies." His current book, *The Air on Other Planets – A Brief History of Things to Come*, is forthcoming.

Vatnsmyri Urban Planning Competition, WEATHERS, Reykjavik, Iceland, 2007.

Like the existing thermal pools on the site that mix ocean water with water from geothermal resources to create a unique condition for swimming all year round, each of the programmed landforms proposed around this site is tied to the others by a climatic "wash" that permits an extended period of usable time outdoors during the course of the year, producing artificial microclimates.

BEYOND THE VECTOR

DAVID GISSEN



It is absurd to reduce air to motion, force, temperature, affect or sensation.

Reconstruction of
Midtown Manhattan,
c. 1975, 2002.
Image: David Gissen

This perspective shows
the air-conditioned
volumes of space that
rose in 1970s Midtown
Manhattan. The
intention is not to
represent the services
themselves or the
techniques of air
circulation, but rather,
to portray what this
environment was as
an urban totality.

It's virtually impossible to visualize air in architecture without resorting to images of air quivering with a type of dynamic motion. Such images, which permeate virtually all discussions of the architectural environment, are part of a larger system of representation known as vectors or vectored spaces. Vectored space is a representational system in which little arrows illustrate the movement of air, but it's also a belief system advancing architecture as a dynamic site for natural exchange. It not only appears in passive air-conditioning schemes, "green" and "natural" architecture but also in more avant-garde contemporary projects that manipulate the architectural environment. While vectored space has enabled architects to better articulate a dynamic, ecological approach, it's time that we move past this vectored image. We must move past this endless discussion of air under movement, especially if we are going to arrive at a robust theory and concept of architecture and its environmental condition.

The actual vectors — the tiny arrows that are used to illustrate the movement of air in space — are nothing novel; they were introduced in architecture in the 18th century (first appeared in 17th century diagrams and maps where the movement of water is illustrated). Within architecture proper, they appeared most conspicuously during the Reformist era of the late 19th century. In this context, vectors illustrated air movement and a new hygienic concept of the architectural interior-exterior relationship. Curiously, vectors were a dormant aspect of architectural representations of air within modernism, where they primarily appeared within engineering diagrams. But, as is evident, they surged back in recent architectural drawings, where they illustrate both a new focus on energy conservation and a neo-vitalist conception of spatial flow (for instance, through the writing of Sanford Kwinter or Manuel deLanda). Vectors make space appear as a dynamic entity; they enable us to understand the energy flows and exchanges of nature that permeate space.

While vectors compellingly demonstrate the motions of air, how many illustrations of air circulation can architects make before realizing the lack of deeper content contained within these drawings? In most vectored drawings, the air outside and within buildings appears simply as exchange. Vectors, by their very involvement in the representation of becoming, of dynamism, of what will be, obscure other key aspects of air in space—namely, the struggles and human labors that move through it.

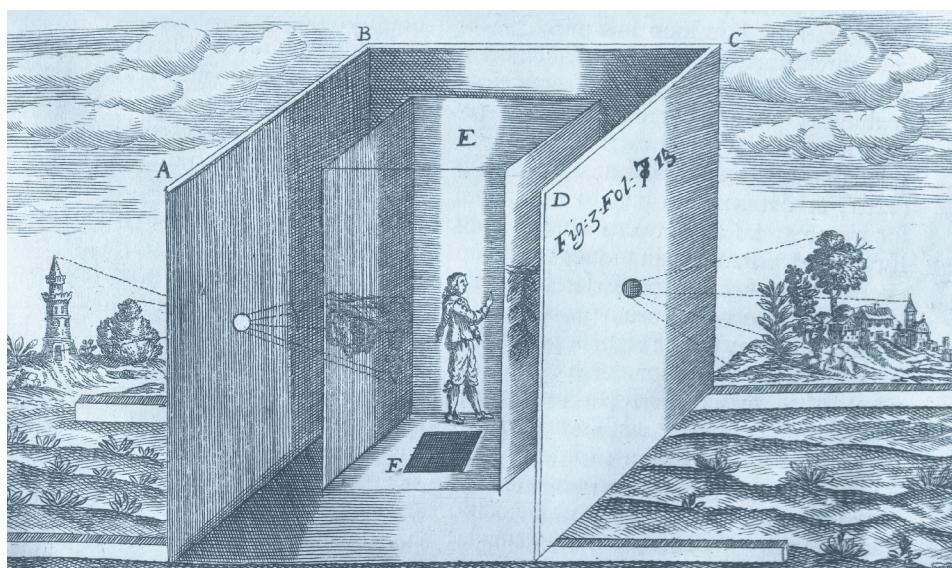
To arrive at a non-vectored conception of architectural air requires more than a new graphic form of representation; it requires a wholly new agenda involving what architects might wish to say about air and its relationship to architectural space. Rather than conceptualizing air as a simple physical process, we might begin to understand it as having a history just like the cities within which architects work. We certainly interpret the built environment with more than physics or sensations. Like the reductive aspects of 1950s ecologies of urban spaces, it's absurd to reduce air to motion, force, temperature, affect or sensation. Like cities, air is not only an aspect of history, it more specifically is an aspect of social history. Every breath of air, every wisp of smoke, every cloud contains the tragedies and successes of the socially transformed and produced nature that exists wherever human experience appears. Chernobyl, climate change, the aromas of the city are all key designs we have imparted into air. Once we realize this, air will no longer appear as an arrow, it will appear as something much more powerful within our representations of buildings and cities.

David Gissen is a historian, theorist and designer whose research operates at the intersection of architectural and geographical theory. Recent work specifically focuses on developing a novel concept of nature in architectural thought—considering what nature might become in architecture or what architecture might be "after nature." David is the author of the book *Subnature: Architecture's Other Environments*; editor of the forthcoming issue of *AD* magazine, "Territory," and editor of the book *Big and Green*. He is an assistant professor of architecture at the California College of the Arts.

PICTURING AIR

STEVEN A. MOORE

Historians have long observed that the modern discipline of architecture derives from the development of linear perspective in the Quattrocento. The appropriation of this technology by Italian masons helped to materialize the dramatic cultural and economic changes that were at that time already underway in Europe. With this in mind, the representational tools we are inventing today are no less significant in the transformation of contemporary building culture—the set of tacit rules, values and norms that regulate architectural production.¹ As many readers know, the technology of linear perspective was not *invented* by Brunelleschi. Rather, it was appropriated as a useful tool by Brunelleschi and others when capitalism emerged from feudalism and it became economically possible for powerful aristocrats, merchants and the Church to conceive of projects on a scale and schedule never before possible.



The Enlightenment Observer. From Athanasius Kircher, *Ars Magna Lucis et Umbrae* (1671). Courtesy of the Harry Ransom Research Center, the University of Texas at Austin.

It was in this context that an Arabian parlor game became useful, not only to proto-architects, but to the aristocracy they served. Technologies show up, or become formalized, only when societies envision a need for them. Societies and technologies co-evolve.

It should come as no surprise to us, then, that the technology of linear perspective visualizes space but not air. In a perspectival drawing — be it made with a ruling pen or a computer — air is only the stuff between static objects. Put in more contemporary language, air has not been a variable under consideration in the production of the future. The visualization of air quality and air movement has only become of interest to us as environmental and social conditions have taken contemporary form. That we now have computational fluid dynamics (CFD), building information modeling (BIM) and a host of other digital tools to help us represent the non-visual characteristics of our design proposals reflects both what we have done to the air in the past and how we want it to be in the future.

Representational technologies like CFD and BIM are not inevitable, but the reverse: Societies tend to get the technologies they deserve—our technologies will not show us what we don't want to see. Just as linear perspective both reflected and directed the development of the European Enlightenment, CFD and BIM both reflect and direct current emergent conditions. Just as the stonemasons of the Quattrocento found in linear perspective the capacity to rearrange power relationships in the building culture of their time, contemporary programmers are rearranging power relationships in our own. Architecture has, as the philosophers say, "taken an empirical turn." Already gone is the time when designers can justify their projects on the basis of tasteful form, proportion and meaning. At issue is how contemporary architects, engineers, technocrats and contractors will, in Brunelleschi's shadow, compete to create tools of quantification that are capable of representing and producing a future world that is not only beautiful, but one also filled with breathable air void of greenhouse gases.

Steven Moore is Bartlett Cocke Regents Professor of Architecture and Planning at the University of Texas at Austin. He is Director of the Graduate Program in Sustainable Design and Co-founder of the University of Texas Center for Sustainable Development. Moore is a Fellow of the National Endowment for the Arts, a Loeb Fellow of the Harvard Graduate School of Design, the recipient of an Individual Scholar Award from the National Science Foundation and the author of many works on the topic of sustainable architecture and urbanism. His most recent book, *Pragmatic Sustainability: Theoretical and Practical Tools*, was released in January.

AIRING ARCHITECTURE

ANNE SCHOPF

Air seems to be nothing. We can't see it. It is only when air moves that we can feel it. In motion, it assumes power and dynamic presence, collecting and carrying with it tiny hitchhikers: water, pollen, spores, salts, sand, dirt, odors, acids and pollutants of all manner. These microscopic interlopers are our collaborators. They make their mark on buildings — eroding, polishing and planting — giving our structures the mark of time, creating surfaces that are rich with patina. It is a dynamic interaction of our buildings with the "elements."

Accepting this is messy business. Weathering is highly unpredictable and, in a culture of scientific evidence-based design, we shy away from what cannot be controlled, monitored and measured. Embracing decay and erosion, staining and weathering is like introducing another designer into the team, an unpredictable partner that controls the final detail. All buildings undergo physical changes over time. When we

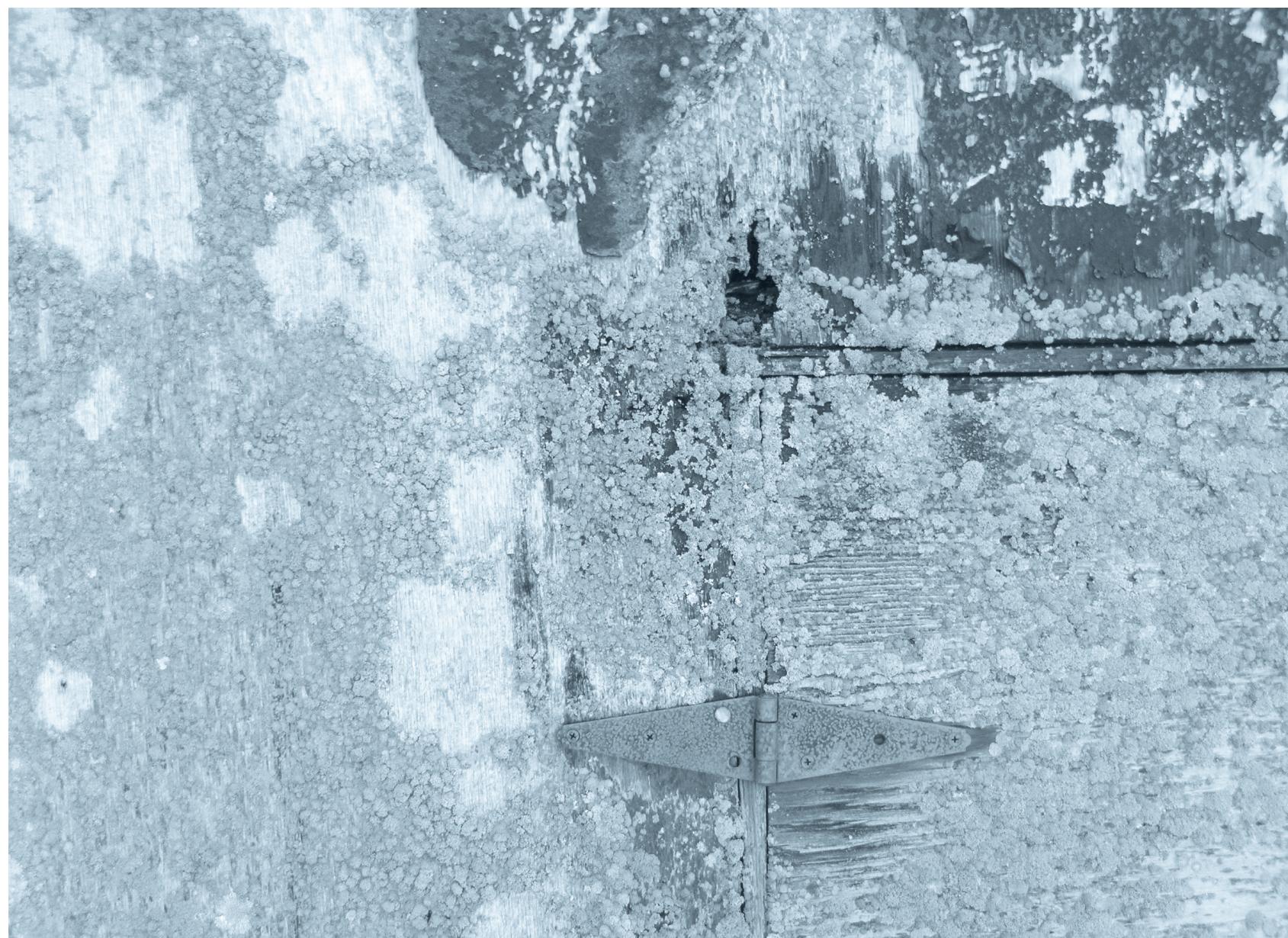
conceptualize buildings in their pristine form — in materials that don't want to be dirty — we enslave our clients to a Sisyphean effort to maintain an ideal image. Perhaps the ideal image is unsustainable, much like perennial youth, and requires rethinking to acknowledge our collaborative relationship with nature.

Stains and detritus left behind by passing air on the building skin communicate the tangible and long-term dialogue that our buildings engage in with the ecosystem. It is a subtle reminder that we are not masters of the earth but rather part of a glorious web over which we hold a limited amount of control.

Air — seemingly nothing and often taken for granted — has strength and power greater than ours. To ignore it seems like careless hubris. By embracing nature's hand in design, our work is strengthened.

"Finishing ends construction, weathering constructs finishes."

Moshen Mostafavi and David Leatherbarrow, *On Weathering*



Shed, Gambell, Alaska. Photo by Anne Schopf

Anne Schopf, FAIA is Partner and Director of Design at Mahlum in Seattle, Washington. She is the current president of AIA Seattle and is an Advisory Group member for the AIA National Committee on Design (COD). Characterized by an elemental sense of materiality, her work has been nationally recognized with AIA COTE Top Ten Green Project Awards and numerous AIA and IIDA design awards at the local, regional and national level.

FINGERPRINTING AIR

HILARY SAMPLE

**Urban Health
Infrastructures**

FROM TOP: Thermal
scanners at Beijing
Airport.

Sidewalk Series,
Antenna Design.

Let's face it—crises in architecture are not theoretical propositions, they are real events. Scientists, medical practitioners and public health authorities deal with crises on a daily basis, and their acts and decisions change the shape of the built environment. Policy is not an abstract goal remote from architecture. It is impossible to gauge the future of our built environment without discussing issues of urban health, and specifically the politics of urban air. The effects of urban health crises shape the practice of architecture and forms of urbanism. The forms of modern cities emerged as a consequence of epidemics, pollution and warfare, and the effects of urban health crises shape the practice of architecture and forms of urbanism. All cities recalibrate themselves against vulnerabilities, and one such method is through the monitoring and control of the health of their citizens and air quality. Today's cities are focusing on new forms of architecture's constructability to resist effects of atmospheric pollution, biochemical attacks and rising epidemics. These emerging paradigms situate the problems of disease as fundamental design decisions that engage technology as a solution.

Already in the 21st century, the spread of urban diseases from the SARS to the H1N1 viruses has made air the greatest source of focused study and treatment for disease control. At the Beijing International Airport, the content of micro-organisms and viruses in the air is now measured by thermal scanners organized and built into the airport entrance sequence. These devices are accepted as part of an infrastructure for health monitoring. In the early 1990s, new strategies to ensure supplies of healthy air manifested as radical new forms in hospitals. As a result of possible bio-chemical attacks, Tel Aviv's General Hospital had the capability to be shrink-wrapped as a new defensive measure—the building was physically wrapped through an automatic mechanism shutting off windows and other openings to keep contaminated outside air from entering. Reflecting Mayor Bloomberg's ambition for New York City to have the cleanest air in the US, Antenna Design pokes fun at America's obsession with achieving a smoke-free environment through a series of design projects—for example, an elevated tree house allowing smokers to congregate above street traffic, keeping the crowded sidewalks smoke free. In general, air is understood as the agent for creating more healthful environments. The subject might initially seem to lend itself more to the scientist than the designer, but the measure and means of examining the air has an impact on urban spaces and architecture; regulations such as banning indoor smoking are focused around the subject of not only air composition and its transportability, but on the architectural spaces, materials and systems which enclose it.

Fingerprinting air is a recent practice applied at both large urban and personal scales. Air has long been the medium of transporting germs, including tuberculosis, Legionnaire's and new viruses. We constantly and involuntarily intake a vast range of microbes—from bacteria to fungi—spawning conditions ranging from allergies to more harmful diseases such as influenza. The United States-based J. Craig Venter Institute, a nonprofit organization, launched the Air Genome Project in March 2005. This analytical program investigates the air in Midtown Manhattan with the intent of characterizing the genomic spectrum of the microorganisms which reside within it. According to the Venter Institute, this complements the Department of Homeland Security's Biowatch Program, a system created in 2002 and operating in 30 US cities that continuously monitors the air for lethal pathogens.

As new technologies emerge and become more personalized, an alternative approach to monitoring for disease and toxins is shrinking to the scale of the individual. The Mayo Clinic's emergency simulation center is composed of a warehouse-type space lined with computerized dummies to simulate any type of disaster in which the dummies exhibit spontaneous life-threatening illness caused by events such as a bio-chemical attack. Researchers at the University of Toronto are employing biosensors that hybridize a DNA detection system with fiber optics as a personal monitoring device to enable instantaneous testing for organic molecules. This reinterprets the ambition of the Air Genome Project as a more transportable and interactive system in the form of disposable diagnostic devices that would screen for drinking water and food safety, streptococcal infections, hepatitis or HIV with the same ease as current home pregnancy tests. "The idea here is to have something like a thermometer, but instead of temperature, you are monitoring for DNA fragments indicative of problems that can cause disease and infections." As society has embraced more personalized devices, from mobile phones to iPods, the prospect of transporting an individual environmental monitoring device would give a new perspective to personalized healthcare, instituting a real-time measuring of our bodies and physical space reflecting the public's desire to occupy urban environments.

Hilary Sample is a designer, writer and teacher. Her professional practice engages interdisciplinary research concerning design, environment and technology and includes projects in the North America, Europe and Asia. She is currently completing the book *Sick City: A Global Investigation into Urbanism, Infrastructure and Disease*, and *Maintenance Architecture* forthcoming from MIT Press. She is a principal of MOS and an Assistant Professor at the Yale University School of Architecture.

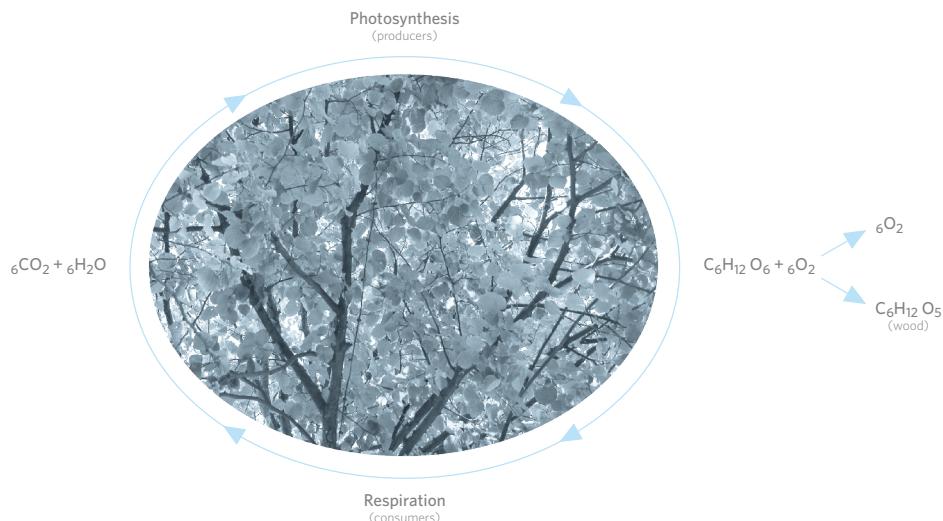


"The air has minimally been explored."

Eddy Rubin, Director of the Joint Genome Institute
talking about the Biowatch Program

"PlaNYC 2030 calls for the cleanest air
of any big city in America."

Mayor Bloomberg



RECYCLING INFRASTRUCTURE

WILLIAM BRAHAM

FROM TOP:
Photosynthesis
Cell phone tower

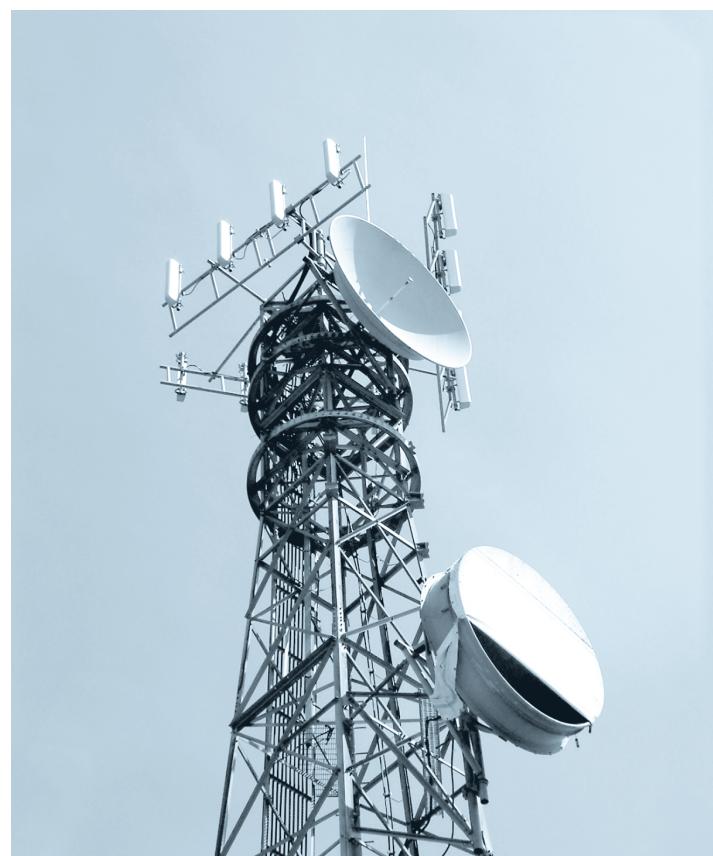
How long can you hold your breath? Most of us can only go a minute or two; otherwise we take air entirely for granted. It is the background of our existence, and we only notice it when it is scarce or polluted (or really windy).

It is the fluid ubiquity of air that makes it so useful and our own vigorous mobility possible. Air is a kind of organic infrastructure produced by plant life seemingly for our convenience. Plants are very like the invisible and massive infrastructures required for our mobile phone system—the electric power grids, cellular transmission towers and the whole armature of locating and routing computers that makes possible our experience of mobile, lightweight communication. We can only make calls where we have a strong enough signal, just as we can only travel freely where there is oxygen-laden air.

Plants need air as well. While we can roam about to find food, air serves as a home-delivery system for the carbon, via carbon dioxide, that plants need to convert sunlight in organic molecules. The release of that carbon happens everywhere in all the reverse processes of respiration, consumption and decay, and plants rely on air to bring that carbon to them. Mammals, and especially humans, were only a small part of this global process until we began releasing the carbon stored in fossil fuels; however, the real issue here is the unlikely and unstable nature of air, which is maintained only by the unintentionally collaborative activities of nearly every living entity on the planet.

In effect, we trade carbon back-and-forth with green plants to facilitate the flow of converted solar energy through the biosphere, and air is the vehicle for exchanging that power. If some species of plant made an evolutionary breakthrough, dramatically increasing the efficiency of its photosynthesis, it would become richer and more competitive (and more worth eating), but it would also reduce the "waste" oxygen that it releases. Once that breakthrough spread and the oxygen level of the atmosphere shifted, mammals would have to adapt or disappear.

The death of 146 British prisoners due to suffocation in the "Black Hole of Calcutta" may be the most famous tale about a lack of air, and whether it was true or not, it became part of the litany of evidence for the importance of fresh air in buildings. From the "light and air" mandate of the tenement reform movement to the resistance to air conditioning in public schools, it is a short step from the Clean Air Act to sick building syndrome. But inadequate building ventilation and urban smog are the result of human activity, and both are amenable to design and reform. What if the nature of fresh air itself changed?



We see ourselves as kings, sitting at the top of the energy transformation chain, but really, plants would manage fine without us. Like bridges, the electric grid, or the internet, infrastructures are something you can only ignore up to a point. Air is the just-in-time oxygen delivery system of our mobility, which green plants toss off as a waste product. We are bound to them through air in a cooperative, self-serving agreement for survival. Call it a community of necessity.

Dr. William W. Braham, FAIA is an Associate Professor of Architecture at the University of Pennsylvania, where he's taught since 1988 and is currently Interim Chair of the Department of Architecture and Director of the Master of Environmental Building Design. At Penn he teaches graduate courses on ecology, technology and design. In 2006 he published *Rethinking Technology: A Reader in Architectural Theory*, and in 2002 *Modern Color/Modern Architecture: Amédée Ozenfant and the Genealogy of Color in Modern Architecture*. He is working on another book project, *Ecology, Technology, and Design* and blogs at williambraham.net.

NATURAL VENTILATION SUCKS

GEOFF McDONELL

OK, OK, a juvenile attempt to grab your attention with a sarcastic comment. However, as a building systems engineer, I am seeing many more well-meaning folks latch onto this benign, green, sustainable term called "natural ventilation" as a key design element of their new building designs, regardless of the building location, climate zone and occupancy. While naturally ventilated buildings can and do work very well in many climate types and zones, it's certainly not something I'd propose as a "primary" building-cooling and ventilation system in the Pacific Northwest. We live in a heating-dominated climate up here—this means we need more heating year round than we do cooling (check the degree days and see for yourself). In addition, the coastal climate zones from California to Alaska can see long periods of steady rain and cool, moist outdoor conditions. Now, let's remind ourselves how natural ventilation works: Air is pretty stupid—it will only follow the path of least resistance, going where it's easiest to flow. It must also obey the laws of physics: There needs to be a motive force (air pressure differential) to make air want to move.

So how does one induce air from outside a building to go into and through a building? Well, the building interior needs to have a negative air pressure relative to the outdoor air to "suck" that air in, and in order for that air to leave, there has to be a corresponding place around the building where the outside air pressure is lower than that within the structure.

Where wind blows across a building, this can happen quite easily, as long as the path the air takes through the building is relatively clear and easy. When the wind doesn't blow, well, how's that going to work? Stack effect: allowing warm, buoyant air generated inside the building to leave through its top will cause a negative pressure inside the structure and draw in fresh air. Now, let's ask the building envelope guys how they feel about maintaining a negative air pressure inside a building in a rainy, wet climate. Anyone been following the leaky condo disasters in Vancouver, BC lately?

Once that fresh air is inside the building, how does the natural ventilation system designer know where that air will go? The folks near the perimeter with opening windows will certainly get some fresh air, but how do the folks in the interior and around the corridors fare? Remember that air only follows the path of least resistance; unless there is a way to make an easy air-path past, in or through the cluster of open office cubbies with six-foot high cubby walls, fresh air will waft by around the ceiling, but not much, if any, natural ventilation will reach those folks sitting down in their cubicles with phones glued to their ears.

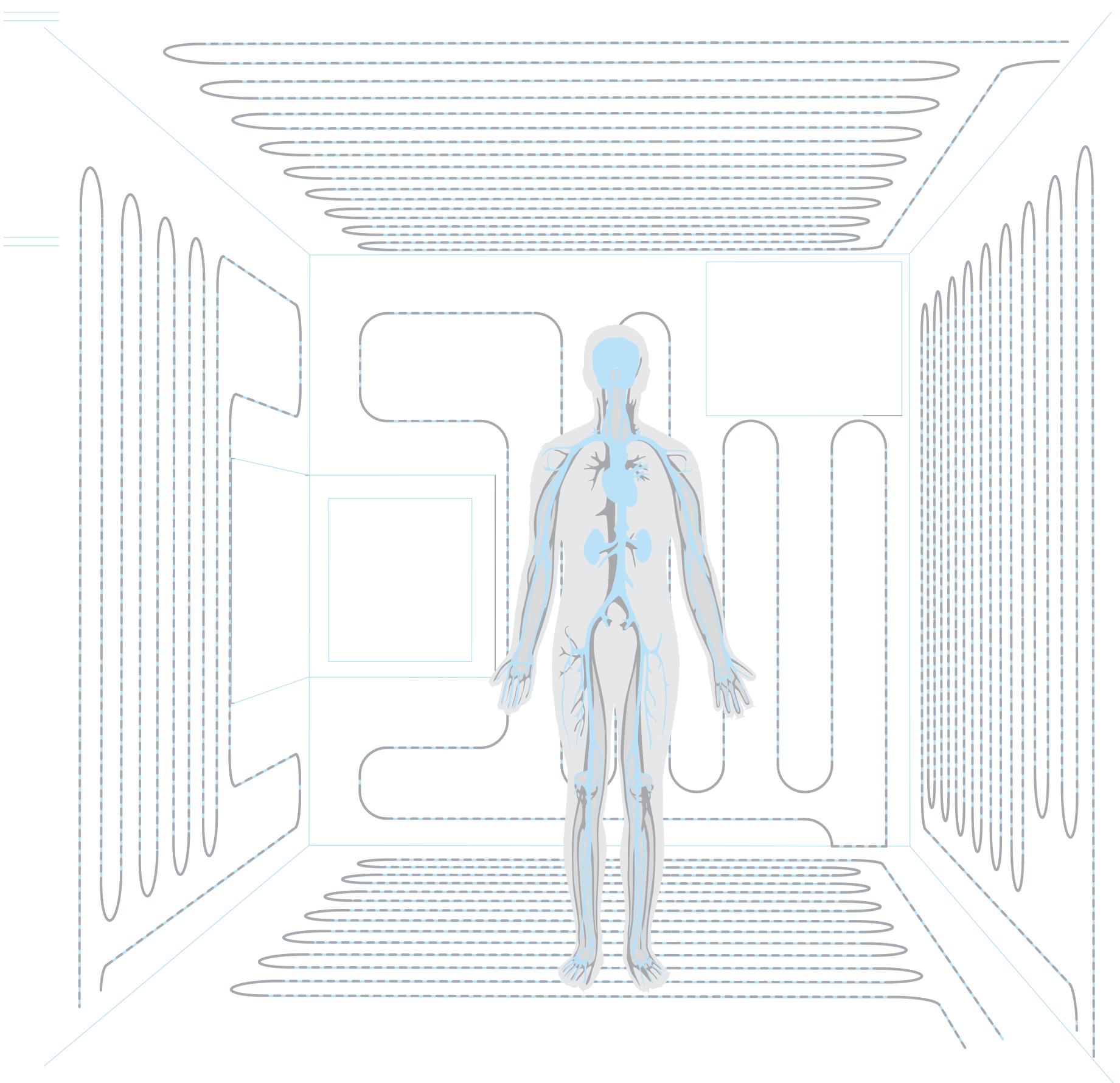
So how do we achieve some effective use of natural ventilation while insuring that the building occupants are provided with good indoor air quality?

One: Use a dedicated outdoor air system (DOAS) for the primary ventilation air supply system. This is a powered delivery of tempered/conditioned fresh air that is balanced and controlled so that air is delivered to all spaces in a measured manner.

Two: Provide the opening windows for the perimeter folks as a supplementary means of ventilation, and use indoor CO₂ sensors to monitor the indoor air quality to control variable speed fan drives on the DOAS system to provide "enough" tempered, controlled fresh air to maintain healthy conditions inside the general building areas, taking advantage of the energy savings that the supplementary natural ventilation is providing.

The DOAS system at least allows the building designer to maintain local and average internal to external building air pressures at a level that doesn't cause moisture infiltration through the building envelope. One can go further by using localized "air valves" (two-position open/closed duct dampers) in the fresh air distribution ductwork to provide locally controlled "demand ventilation" so that one can provide powered fresh air only where it's needed, based on the local CO₂ sensors' demand and room occupancy.

Geoff McDonnell, LEED™ AP is a senior mechanical engineer responsible for developing institutional and sustainable projects, including complete mechanical design project management, design execution through to construction services and site inspections. Geoff specializes in very low-energy, semi-passive building systems including radiant cooling, displacement ventilation and high performance building envelope design. Geoff is also the author of a number of papers and articles covering radiant cooling systems, in-slab radiant systems, displacement ventilation systems and other sustainable building approaches.



THERMALLY ACTIVE SURFACES

KIEL MOE

The human body is a thermally active surface.

Water is 832 times more dense than air. You can capture and channel substantially more energy in a volume of liquid than you can in an equal volume of air. This is why your body primarily heats and cools itself with blood; it exchanges most of its heat energy with your milieu through your skin's hydronic, thermally active surfaces. Imagine the size of your arteries and veins, lungs, heart and your caloric intake if you were heated and cooled with air. You would be about 800 times the size you are; this would be as absurd as it would be inefficient. With that said, it is hard to imagine why we heat and cool buildings this way.

Increasingly in the 21st century, the thermal conditioning of a building will be decoupled from its ventilation load, just as your body separates these functions. Buildings will finally occupy the same thermodynamic space as your physiology's thermodynamic behavior. While this has enormous consequences for energy consumption in buildings, it is equally about new forms of human comfort largely unknown to us in the thermodynamic and physiological ghettos of 20th century architecture.

This seemingly innocuous switch from air to water will trigger a cascading set of effects for the economic, ecological and formal life of architecture. While contemporary heating and cooling systems may absorb a third or even half of a building's budget, thermally active architectural surfaces of this hydronic technique inherently redirect budget, material, labor, design time, coordination and maintenance away from conventional, air-based heating and cooling systems and towards the fabric of the building itself, imbuing it with a more active role. Thermally active surfaces shift more budget to the building envelope and exposed structural systems, two key systems of expression in contemporary architecture. By obviating the need for drop ceilings and increasingly complex, multi-layered wall assemblies, thermally active surfaces collapse the physical and organizational layers of contemporary construction systems into one more robust and integrated layer of architecture. This engenders a new strategy for creating, within the same budget, very durable buildings otherwise not possible through typical building systems—and durability is a central issue in the ecological, cultural and social sustainability of North American cities. Further, buildings and design production are too complex today. By collapsing the physical and

organizational layers of contemporary construction systems, thermally active surfaces make building design and practice more sane through fewer but more highly-integrated and higher-performing systems. Finally, thermally active surfaces are low-tech but high-performance. This means that they can be applied in both the developed and developing world, an important ethical principle often neglected in building systems research and development. In short, this century our thermal conditioning systems will increasingly shift from convective transfer through air to radiant transfer via hydraulically activated surfaces and structures in architecture. The cascading set of effects associated with this change stands to strategically advance fundamental aspects of our discipline.

Kiel Moe is a registered architect and an Assistant Professor of Design and Building Technologies. He is a Fellow of the American Academy in Rome. His book, *Thermally Active Surfaces in Architecture*, will be published by Princeton Architectural Press in March 2010. His first book, *Integrated Design in Contemporary Architecture*, was published by Princeton Architectural Press in 2008.

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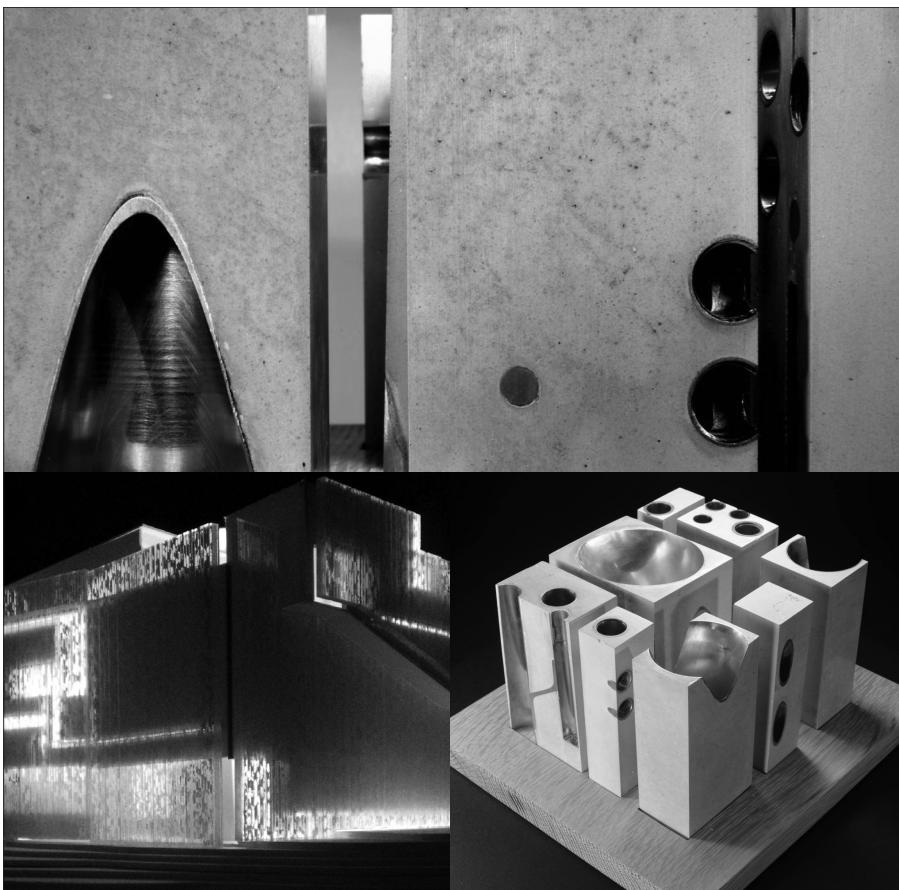
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top and right Allied Works Architecture, The National Music Centre of Canada
bottom left Nicholas Belkowski, dvf: Shadow Illumination, 2008. 23 x 13 x 9 inches.

SUPERM ODEL

A two-part exhibition presenting models of recent projects from Portland-based Allied Works Architecture along with the winning results of a juried student competition from degree granting architecture programs in the Western US and Canada. Juried by: Ken Oshima (University of Washington), Annie Han and Daniel Mihalyo (Lead Pencil Studio), and SIMPARCH.

Each SUPERMODEL reoccurrence will have a new regional focus intended to highlight the work of one prominent architectural practice exhibited alongside the academic achievement of students from the same region.

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Info Feed

AMERICAN & HOMELESS

Homelessness in America has long been an almost impenetrable issue. The homeless population conventionally varies according to ups and downs in the job market and the availability of affordable housing, but the current recession has cast a wider net that rivals 1930's Great Depression figures. Social service agencies are dealing with fiscal tightening while foreclosures and layoffs are creating thousands of newly homeless. This upward trend is resulting in unsanctioned tent cities popping up in many corners of the country, including Nickelsville in Seattle. How will local governments and the greater public respond to this pressing concern?

Various factors contribute to homelessness – each person has a different story to tell. However, there are some general, common causes of homelessness in the US – some due to federal laws and the economy and others due to personal choices.

UNABLE TO PAY RENT

Federal support for low-income housing has fallen 49% from 1980 to 2003.

MENTAL ILLNESS

16% of the homeless population suffers from some form of mental illness.

HEALTH CARE COSTS

One third of the 36 million Americans living in poverty have no health insurance of any kind.

ADDICTION DISORDERS

73% of homeless people with substance abuse disorders do not receive proper treatment.

DOMESTIC VIOLENCE

Half of all women and children experiencing homelessness are fleeing domestic violence.

RECOGNIZING THE FOREMOST FACTORS

CRIMINALIZING HOMELESSNESS

Legal measures taken by local governments in the following cities stand out as some of the worst examples of inhumane treatment of the homeless and poor.

Policies and actions criminalizing homeless camping

The detainment and incarceration of the homeless

Unsound/excessive local government spending

Policies and actions limiting food/meals to the homeless

Unfair, organized sweeps of the homeless population

Policies affecting access to public transportation

ATLANTA, GA

In 2007, despite police being unable to describe the areas included, Atlanta outlaws panhandling within the "tourist triangle." The ordinance also prohibits panhandling anywhere within 15 feet of an ATM, bus stop, taxi stand, pay phone, public toilet or train station.

BERKELEY, CA

In 2007, the Berkeley City Council enacts the Public Commons Initiative. Critics say the law, which authorizes penalties for minor public offenses including "having a shopping cart," is unfairly aimed at the homeless.

DALLAS, TX

From 2003 to 2005, over 500 individuals are jailed as a result of tough anti-panhandling ordinances/laws.

FLAGSTAFF, AZ

City officials are pushing to extend a city ordinance to prohibit camping or sleeping in a car within the Flagstaff city limits. The proposed penalty is a fine of up to \$2,500 and six months of jail time.

GAINESVILLE, FL

In 2007, as part of the city's 10-year plan to end homelessness, the City Commission approves a plan to spend \$75,000 constructing a fence to keep homeless off the public property used for a tent city.

HONOLULU, HI

In 2008, the city spends \$11,000 on an initiative to replace benches at bus stops with round concrete stools. Critics say the new initiative is part of a series of city policies designed to push the homeless out of sight.

LAWRENCE, KS

In 2005, the city approves three "civility" ordinances. In opposition, Councilman Hightberger says the ordinances simply address "things that people didn't want to look at," rather than genuine public safety concerns.

LITTLE ROCK, AR

In 2005, a free public event is held at Riverfront Park with various businesses giving away free samples. Despite vendors encouraging homeless at the event to take free samples, police instruct them to immediately leave or be subject to arrest for loitering.

LOS ANGELES, CA

A 2007 study shows \$6 million a year is spent to crack down on crime in the Skid Row area at a time when the city budgets only \$5.7 million for homeless services.

ORLANDO, FL

In 2006, the Orlando City Council passes a law that prohibits groups from sharing food with 25 or more people in public parks.

ST LOUIS, MO

In 2005, 25 homeless persons are abused, harassed and illegally detained in order to clear the streets before Fourth of July festivities. Despite \$80,000 in damages being awarded to the group of 25, the City of St. Louis admits no wrong-doing of any kind.

SAN FRANCISCO, CA

After responding to complaints of loitering, SFPD in coordination with the bus companies offer one-way bus tickets to the homeless to "reunite them with loved ones for the holidays." Critics claim it gives police an opportunity to harass the homeless into leaving town.

BENJAMIN K. SHOWN is a Seattle-based designer pursuing a MFA in Visual Communication Design at UW and freelancing after dark. His current thesis work involves the effectiveness of maps to create positive change for social good causes.

RESPOND: Visit www.benjamink.com/nickelsville to see the graphics in full and share your opinion about the Nickelsville homeless issue in Seattle. Thank you.

● Timeline and map pieced together from nickelsvilleseattle.org and various articles from *The Seattle Times*, *Seattle Post-Intelligencer*, *The Daily UW*, West Seattle Blog, *Seattle Weekly* and *The Stranger*.

* Democracy Now "A 21st Century Hooverville": http://www.democracynow.org/2009/3/30/nickelsville_seattle_newest_tent_city

▼ National Coalition for the Homeless Factsheets: <http://www.nationalhomeless.org/factsheets>

+ "Homes Not Handcuffs 2009," a report on the criminalization of homelessness in US cities by The National Law Center on Homelessness & Poverty (NLCHP) and the National Coalition for the Homeless (NCH): <http://www.nlchp.org/news.cfm?id=108>

NICKELSVILLE SEATTLE



Nickelsville named in dishonor of Mayor Greg Nickels' harsh homeless encampment policies.



150 pink dome tents donated for use and to attract attention to the issue of homelessness in Seattle.

CITY OF SEATTLE VACANT LOT
5 DAYS: 9/22 TO 9/26
1
2
WASHINGTON D.O.T. VACANT LOT
4 DAYS: 9/27 TO 9/30
3
DAYBREAK STAR INDIAN CENTER
9 DAYS: 10/1 TO 10/9

UNIVERSITY CHRISTIAN CHURCH
56 DAYS: 10/10 TO 12/4
4

UNIVERSITY CONGREGATIONAL CHURCH
90 DAYS: 12/5 TO 3/4
5

BRYN MAWR UNITED METHODIST CHURCH
93 DAYS: 3/5 TO 6/5
6

WASHINGTON D.O.T. VACANT LOT
48 DAYS: 6/6 TO 7/23
7

PORT OF SEATTLE TERMINAL 107
68 DAYS: 7/24 TO 9/30
8

ST. ANDREW'S EPISCOPAL CHURCH
6 DAYS: 10/1 TO 10/6
9

KEYSTONE CONGREGATIONAL CHURCH
28 DAYS: 10/7 TO 11/4
10

NEW HOPE MISSIONARY BAPTIST CHURCH
11/5 TO PRESENT
11

SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

9/22/2008

Nickelsville is created by Seattle community members, including Veterans for Peace Chapter 92, a 501(c)3 non-profit. Their first encampment in Southwest Seattle is promptly given a 72-hour eviction notice from the Mayor Greg Nickels' office.

9/26/2008

25 Nickelodeons and supporters are arrested and briefly jailed for trespassing during a police sweep. They become known as the "Nickelsville 25."

10/19/2009

Seattle's Department of Planning and Development threatens University District churches with a \$500-a-day fine for land-use violation. However, no fines are issued.

5/29/2009

2nd degree criminal trespass charges against the "Nickelsville 25" are formally dismissed by Seattle City Attorney Tom Carr.

9/22/2009

Nickelsville marks a one-year anniversary of its inception by having an on-site open house and fundraiser.

9/30/2009

12 Nickelodeons and supporters are arrested for refusing to leave the tent city, including 82-year-old homeless advocate and activist Dorli Rainey.

12/21/2009

Nickelsville organizers hold a press conference to release a Homeless Manifesto – a Declaration of a State of Emergency – detailing urgent state and city policy concerns and needs.

In September 2008, homeless individuals and advocates set up camp on city land in Southwest Seattle near the Duwamish River. They were quickly evicted and have since been shuffling to different sites. Their goal throughout has remained the same – a permanent location for the self-operating camp. Nickelsville provides a basic level of shelter, safety and sanitation when the government steadfastly refuses to do so.

● RELIGIOUS PROPERTY

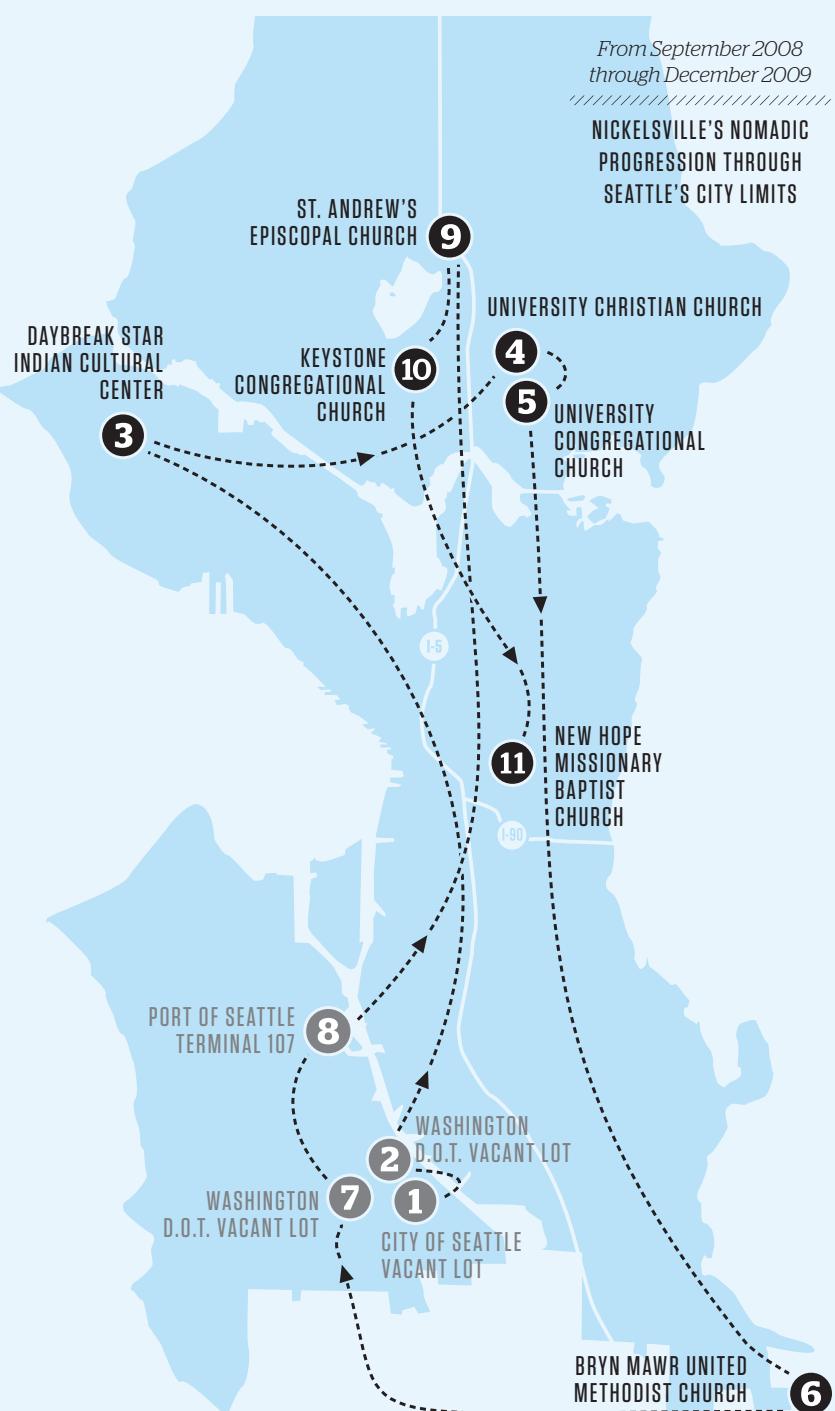
60 or 90 day permits are available for hosting camps on church property.

● STATE/CITY PROPERTY

Homeless encampments are illegal and considered trespassing.

From September 2008 through December 2009

NICKELSVILLE'S NOMADIC PROGRESSION THROUGH SEATTLE'S CITY LIMITS



TENT CITIES • VERSUS • SHELTERS

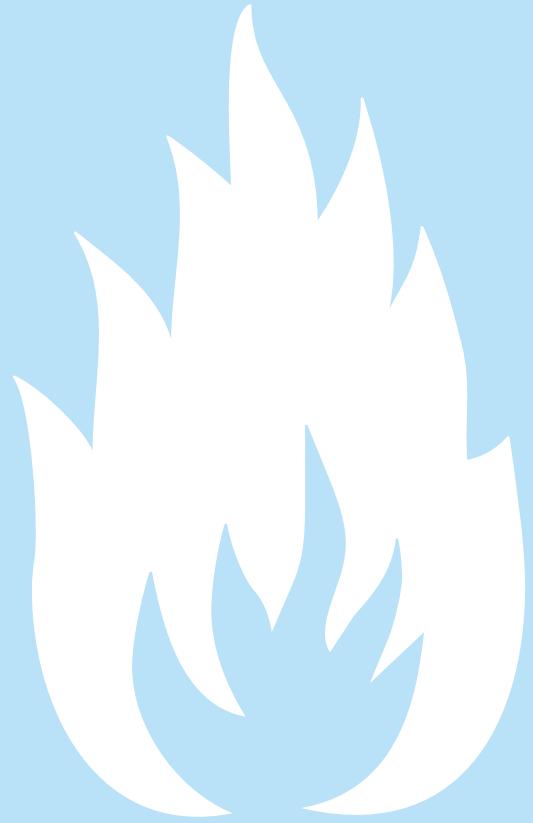
\$3	Cost per day to accommodate a homeless individual	\$18
24-HOUR	Facility access and entry/exit times	6-9PM & 6-8AM
YES	Accommodating to homeless families	INTERMITTENT
YES	Ability to work swing shifts or graveyard shifts	NO
YES	Storage access for possessions	NO

"Over the years I've seen a much higher rate of people getting back on their feet from tent cities than out of the shelters."

ANITRA FREEMAN, NICKELSVILLE ADVOCATE AND FORMERLY HOMELESS *

McGINNVILLE?

January 4, 2010 marked the first day on the job for new Seattle Mayor Mike McGinn, who has only offered vague plans to address the homelessness issue and organizations such as Nickelsville.



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City Building Vancouver

Trevor Boddy

Vancouver's Unreal Estate

On 2010 Architecture: Why the Canada Line's Architecture Is So Bad

EDITOR'S NOTE: This is the first of several articles in which our Vancouver correspondent looks at buildings and urban infrastructure built for the Winter Olympic Games.

Serving as yet more proof that the two cities are non-identical twins, during the past 12 months, both Seattle and Vancouver opened public transit rail lines to their airports. And while it might surprise Americans, who think everything Canadian is sturdy and dull, the route alignments and construction timing of mass transit lines in Metro Vancouver are even more politicized than in the Puget Sound area.

Some background is needed to understand Vancouver's newest rail line, the Canada Line (so-called because the federal government of Canada gave most of the money needed to build it). The first phase of the SkyTrain system was sponsored by the right wing Social Credit government in the early 1980s and built for the 1986 EXPO on an alignment that went to districts that had voted for the party, and no further. Not to be outdone, the subsequent Millennium Line was sponsored by the left wing New Democratic Party and was built along a strange circular alignment that restricts service to zones that had voted for their party, and no other.

As desirable as an airport service is to the business class and conventioneers in this resort-like city, Vancouver's real transportation priorities lay elsewhere—along the city's natural east-west spine of Broadway, from UBC in the west to Simon Fraser University in the East, the heaviest travelled corridor in the city. Our current right wing government — who confusingly call themselves the Liberals — ignored this to propose a line south from downtown along Cambie Street to the highly Asian suburb of Richmond (which votes for their party) and the airport, in large part because the transit line was thought crucial to winning the rights to the 2010 Winter Olympics.

The winning bid — by the huge Quebec construction company SNC/Lavalin — ironically rejected the Quebec-developed SkyTrain technology by Bombardier in favor of German Siemens cars, which are wider, taller and blessed with picture windows at the front and the back. The front seats of the Canada Line cars have already become the most popular thrill-ride of Vancouver stoners, those German cars going up and down and around into an ever-winding vanishing point. (The word on Vancouver's streets is that you score dope on the crime-riddled Expo Line, then enjoy the high on the cleaner and safer Canada Line.)

While the Canada Line's cars have made me a happy passenger, the rest of it has made me an unhappy architecture critic and urbanist. As mentioned, this is not the route priority I would have picked, but it is the direct airport-access route that the provincial cabinet thought essential to bolstering the chances for its Winter Games bid proposal. For another, I am furious at Vancouver's city planners and three previous city councils (Coalition of Progressive Elector, Non-Partisan Association and the Vision parties—shame on them all) for lacking the political will to propose, nay, insist on increased housing and workplace density around stations, and I am one local resident who wants more density.

Astonishingly, 24 years after the opening of the Broadway-Commercial hub of the SkyTrain system, there is still no major redevelopment there, and City of Vancouver planners have barely touched their notepads concerning the redevelopment of King Edward and Langara Stations on the Canada Line, which opened last August. Meanwhile, Richmond's civic minders quickly worked out deals with adjacent landowners (such as Aberdeen Mall), leading to built links and increased building density in evidence even before the line started running. A silver medal goes to

the City of Richmond for its 2010 land-use planning, and a scrub-out, did-not-finish to the City of Vancouver's council and planning department.

Let's bring this all home. I live on the east side of Cambie Street, just south of 27th Avenue. The decision to switch to cut-and-cover construction rather than the previously announced bored tunnel for what became known as the Canada Line had a real effect on me and my family: a 100-foot deep hole for two years at the edge of our front lawn, endless construction noise, scrambled traffic, not to mention huge and non-compensated losses by merchants down the street.

Despite this, there may be no more enthusiastic riders of the Canada Line than my family and I. But as the hoarding came off the station at King Edward and Cambie Streets two blocks from my house, my architectural fears turned to horror. A bunker! A cheap and nasty leftover from the Maginot Line, built with the blandest and cheapest of materials—plain glass walls and unadorned concrete. Electrical switching stations are designed with more grace and urbanity than this grey hut. Never did I think I would find myself longing for the sheer minimalist, good design of the utilitarian, ceramic tile-work used in the Toronto, Boston or New York Subway systems.

Could there be blander wall tiles than the cream ones chosen for King Edward? Could the station have been made smaller, cruder, dumber? My architectural training tells me that the King Edward station will eventually be surrounded on two sides by a new building, but it is, and will remain, inside and out, an architectural disgrace. The epitome of the Canada Line's cheapness is the virtual non-provision of seating on the platforms. Standing, always standing there, one can imagine the contractual language for the Private Public Partnership proposal calling for "seating" to be provided. And didn't these devilishly sharp-penciled "value engineers," employed to structure and frame proposals then build the RAV/Canada Line, figure out that two metal chairs meet the minimum contractual definition of "seating." Often these pairs or sometimes trios of hard metal chairs are separated, like a squabbling family. This means no eavesdropping on nattering side-by-side seniors—one of my secret delights while taking Métro in Paris and the Tube in London.

How could so perfunctory and idiotic a public construction as the King Edward Canada Line station have come to be? One cannot put the entire burden of blame on the skill level of the RAV/Canada Line team of executives. For one, senior staffer Jane Bird was in a prior incarnation the needed good client for the exceptionally fine stations built along the Millennium Line—notably Peter Busby/Architect and Fast + Epp/Structural Engineers' Brentwood Station, celebrated in design circles around the world and happily included in my current exhibition on our best design (*Vancouverism: Architecture Builds the City*). For this bland-to-banal design, I do blame the architect—Norman Hotson of the once-grand firm Hotson and Bakker, a practice which started out by designing Granville Island but recently merged into a Calgary corporate design concern. But my criticism of the architect is tempered by knowing that the real villain is BC's provincial cabinet and the Private Public Partnership design-build system they insisted on as the means of delivering the Canada Line.

Moderately useful in delivering such relatively simple products as sewer systems or bridges, the weakness of a PPP setup is evident whenever it tries to deliver architecture. This is because the width of bridges, capacities of sewage plants or frequency of transit cars can all be readily quantified and compiled into the elaborate documents that set out the deliverables in PPP bids. But provincial



Canada Line. Photo by Andy Grellmann.

While the Canada Line's cars have made me a happy passenger, the rest of it has made me an unhappy architecture critic and urbanist.

bid-writers are at a loss when setting out contractual terms for any construction that services human behaviors more complex than getting cars over rivers or disposing of crap. PPPs in the design-build mode fail utterly when the issues are cultural, social or aesthetic.

It's all in the language of the proposal call; "minimum satisficing" is the strategy needed to win these contracts, as well as finding ways to cheapen things even further when construction actually starts. The design of the cars was a given from SNC/Lavalin's supplier Siemens, so things got squeezed where they could be: In the modality of construction (that hugely disruptive cut-and-cover chosen over the promised bored tunnel, which was slightly more expensive) and in the quality and character of architecture and other high-contact touches, from the signage system, the seating, the needed financial relief to construction-blighted merchants and so on. The cruel irony lurking in this whole turn to PPPs is that the difference between interest rates available to even huge corporations like SNC/Lavalin, and those available to governments, would almost have paid for glorious architecture and a

bored tunnel. In other words, we got disruptive construction and appalling architecture solely to satisfy BC's provincial cabinet's ideological need to promote PPPs.

The architecture of the King Edward Canada Line station reminds me, tellingly, of the bare concrete-and-glass condo towers that have become Vancouver's architectural icons, buildings which developers and their designers continue to pass off to us coastal rubes as the epitome of luxury. The station is a bunker indeed, an outpost for the visually dead ethos-cum-ideology that is reshaping our province. The core belief for Vancouver's real-estate industry is to build it cheap and bland then over-praise the heck out of it through marketing.

This is the very formula perfected by the Vancouverite-of-the-decade-just-closed, the conscience of his generation, the real mayor of Vancouver: condo super-marketeer and art collector Bob Rennie. Rennie once told me that if you include real-estate agents' commissions, Vancouverites devote, on average, 18 percent of their new housing dollars to marketing costs, while all design (architecture, engineering, landscape design) merits barely six percent. "Financed" by lousy architecture, we pay more for housing marketing costs than any other contemporary society: unreal estate. With the Canada Line, Vancouverites were taken for a ride.

Trevor Boddy is co-organizer of the "TownShift: Suburb Into City" design competition, with finalists on show through March 28 at Surrey Central City. Details at TownShift.ca. The exhibition *Vancouverism: Architecture Builds the City* is in the atrium of the massive new Woodward's redevelopment, free and open daily through March 27. Visit www.vancouverism.ca for more information.

This article was adapted from a longer cover story in *Vancouver Review Magazine*.

HEADLINES

CALL FOR ENTRIES

VISUALIZE

REALIZE

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MARCH 15 - APRIL 21: Call for Entries

APRIL 23, 5 - 8 PM: Reception, UW Gould Court

APRIL 23 - MAY 7: Exhibit

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VISUALIZE: Submit commissioned ideas and/or projects not yet built.

VISUALIZE & REALIZE (new anniversary category): Submit *previous HEADLINES* entries along with a new board illustrating the metamorphosis of those ideas in its realization.

CALL FOR ENTRIES

This non-juried exhibit is open to all Washington practitioners. The **HEADLINES** exhibit will travel throughout Cascadia. \$75 per entry. Detailed entry information will be available at **HEADLINES** online starting March 15: www.depts.washington.edu/archdept/activities_headlines.html

Email questions to: archpac@u.washington.edu

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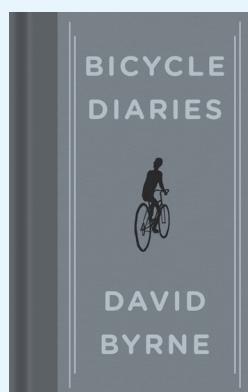
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Book Review

Brian Boram

A Talking Head Rolls

**Bicycle Diaries****David Byrne****Viking, 320 pages****\$25.95**

When you're David Byrne, you spend time traveling the world, hanging out in galleries, playing music with your friends and pondering the rhythms of the city from the seat of your

bicycle. What I imagine while reading Byrne's *Bicycle Diaries* is a future where anything is possible.

Byrne first came to prominence as a founding member and principal songwriter of the band Talking Heads. Known for his nerdy appearance, quirky movements and large suits, Byrne pioneered a breed of music that was both cerebral and liberating. I always identified with Byrne's eccentric design sense and willingness to explore new modes of expression. Now Byrne's insightful and poetic verse makes a compelling case for less dependence on fossil fuels and the joys of riding a bike.

In New York in the early 80s, Byrne needed a convenient and easy way to get around, so he started riding an old three-speed bicycle leftover from his childhood in the Baltimore suburbs. The bike allowed him to "run errands in the daytime or efficiently hit a few clubs, art openings, or nightspots in the evening..." Similarly in the book, the bike appears to be a handy excuse for his other intriguing interests around the world. Scouting new sounds in Buenos Aires or performing in Turkey, the *Bicycle Diaries* are filled with keen cultural observations made while using all forms of transportation.

Whether biking the twisted streets of central London and Manila or the industrial back roads of several American cities, he explores with a sense of wonder and curiosity about things, people, buildings, music, art, history and the lack thereof. Byrne provides a refreshing counterpoint to the more arcane study of urban landscapes and writes with a sense of irony and inquiry.

In the early 70s, lured by San Francisco's hippie eco-techno worldview, he joined a friend to build a dome in Napa Valley. He ended up busking on the streets of Berkeley with a different friend. "I realized at that time I was more interested in irony than utopia." In many

ways, Byrne's story is less a treatise of idealistic transport than it is a diversionary meditation on his surroundings. He writes, "This point of view—faster than a walk, slower than a train, often slightly higher than a person — became my panoramic window on much of the world over the last thirty years — and it still is."

Handsomely bound in orange and red cloth, this handbook-sized tome is sprinkled with vivid and offbeat photos of landscapes and storefronts. In Berlin, while discovering the rebirth of arts and culture in the capital, he finds a system of connected bikeways that are a beautiful and safe way to traverse the city. While pedaling around the world, Byrne considers each city's unique sensibility: "What is it about certain cities and places that fosters specific attitudes?" Byrne wonders if buildings, streets and neighborhoods make us who we are. I paused on this page to reflect on my own community and what it says about me.

Ruminating upon years of car-friendly policy in cities such as Dallas, Phoenix and Atlanta, he laments the monotonous and exhausting ribbon of concrete highways that have killed neighborhoods, cut off waterways and defined the American metropolis for much of the past 70 years. Although it is a bleak picture, by contrast, his observations of Chicago, Portland, Seattle and Minneapolis consist of vibrant neighborhoods full of life and possibility. Channeling the late Jane Jacobs in *The Death and Life of Great American Cities*, Byrne invites the reader to envision neighborhoods with density and varied people and businesses. Maybe this populist view, from one of history's pop pioneers, might provide a tipping point for developers intent on bringing good design and vitality back into our many broken cities.

So what do you do if you are David Byrne? You meet with dignitaries such as visionary Danish urban planner Jan Gehl, or you plan a bicycle forum as a night of entertainment, or you make whimsical bike racks for the streets of New York City. Or you write a book that imagines a future we all create, straddling our bikes and making it up as we go along.



This is one of the nine bicycle racks installed in different parts of New York City by the Department of Transportation. This red, functional sculpture is located on the west side of Fifth Avenue, north of 57th street (in front of Bergdorf Goodman). The giant, red, high-heel sculpture named "The Ladies' Mile" and the other eight racks are temporary art installations intended to promote bicycling in the city. Photo by Michael Surtees.

"What is it about certain cities and places that fosters specific attitudes?"

— David Byrne

Brian Boram is principal and founder of RMB Vivid, a multi-disciplinary design studio in Seattle. RMB Vivid conceptualizes, manages and implements comprehensive identity design systems in the built environment. Brian is a visiting lecturer at the University of Washington and is an ARCADE board member. He enjoys riding his bike very much.



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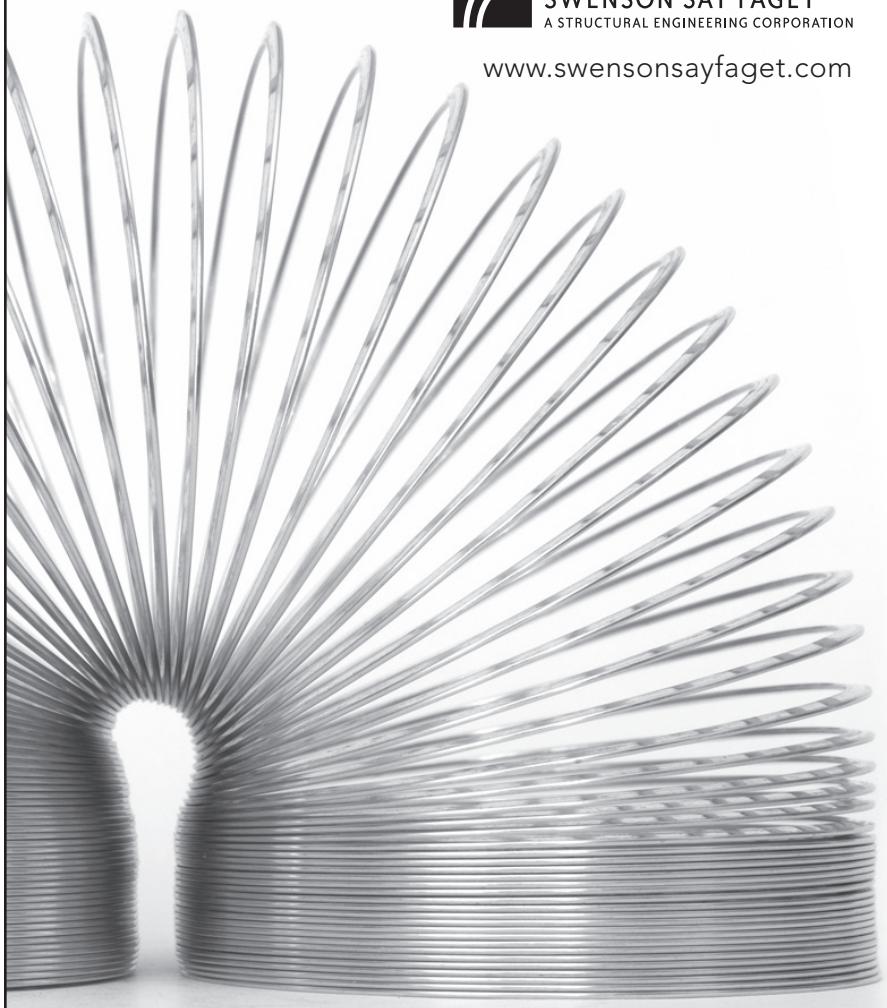
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Side Yard

Ron van der Veen

Using Big Architectural Words?

I am on my way to participate in graduate crits at the University of Washington's College of Built Environments. My morning has been spent on marketing proposals, budget-cutting meetings and management headaches—all the *artistic* stuff I learned about in school!

The students don't appreciate this, but I'm a tad bit terrified. I haven't acted like an architect in months. Hell, I even forgot to wear black today! Within the hour I will begin listening to several graduate students elucidate at length about designs into which they have poured all of their remarkable intellect for the last several months. They will be quite prepared with lofty concepts, compelling computer graphics, persuasive arguments and sometimes indecipherable designs. Then, after each roughly 20-minute presentation, the room will go silent and 50 to 60 students and educators will look me in the eye and dare me to say something weighty. I will twitch in my seat and buy time by asking a few questions of clarification. When I can no longer procrastinate, I will finally be compelled to say something...*INSIGHTFUL!*

This is criticism as performance art and I haven't rehearsed.

During my car ride to Gould Hall, I earnestly try to shift gears by going over my backlog of architectural terms: Juxtaposition is always a good one; sense of place is a classic; *parti* is good in a pinch; layering of conceptual configurations...While paying for campus parking, I feel a bit more at ease about my vocabulary, but can I put the words together into coherent ideas? Then again, coherence isn't always the goal of an intelligent sounding architect.

I grab my sketchbook (I brought the tattered one so it looks like I use it a lot) and head on in. I'm relieved to see the class is serving wine, even though it's just past noon. I greet the professor and students with an air of slight aloofness. I figure this will set the tone for my later postulations.

And now, after the first quite notable presentation, the moment of truth comes. By now I've managed to slip in two glasses of wine with no tangible lunch. The class goes silent and waits... "It seems your concept proposes a radical challenge to the notion of 'rational' Cartesian juxtapositions...of classical architecture finally exploded as an axonometric abstraction."^{*}

Wow, did I say that? The faces of the students suggest they are impressed! Let me try another one, "No, no, this scheme only serves to heighten the conceptual inversion by taking the south quadrant — which is formerly monolithic in scale — and transposes the volume into a sense of object-hood."^{**} Damn I'm good, or at least this third glass of wine is!

After the fourth student (and the *fifth* or *sixth* glass of wine) I really get going. "You seem to be using a strat-t-t-tegy of disjunc....disjunction and synthetic dis-s-sociation of disjunctive associations. I see a superimposition or juxta...juxtaposition of independently similar but unrelated elements."^{***} I have no idea what the hell I just said, but it's quite obvious to me that I haven't lost my magic touch. "Moving

toward interp-p-p-preitative infinity...refusing fixity is not insignificant to the dis-structuring of post humanist forms... Seismic plur...ality...didactic violation... confixt... confixt...urated animosity of exhumed meanings...conduct-t-t-toxicated hyperbole.... Oh what the hell, where's the vino???"

At the end of the crits, I begin strolling assertively out of the presentation studio, but I stop to find my black sports jacket. Oh, how silly of me. I didn't wear a black sports jacket! For some inane reason the professor insists that I not drive. As he calls for a cab I unexpectedly slither to the ground laughing. I am good, really good. Never wanting to lose an opportunity to teach, I grab the last wine bottle, take a huge swig and declare to the students how inefficient glasses are for transferring beverages into one's mouth.

I notice that I haven't been invited to the post-crit party. It can't be because of the wine and cake stains on my shirt and pants. The students must just feel a tad bit intimidated around me in a social setting. Never mind, if I leave now, I'll still have time to get back to the office and make a final decision about liability insurance. Anyone have a mint?

^{*}The author of this article was not able to actually construct a sentence this profound so plagiarized it from a book by Peter Eisemann.

^{**} The author ran out of Eisemann quotes and went to Bernard Tschumi.

^{***} These are terms invented by the author.

ARCADE

ANNUAL REVIEW 2009

2009 HIGHLIGHTS

Evolving from the WASTE volume to *alchemy* was a natural transition: The topic of waste was transformed into design inspired by the basic elements that make up our planet. Through the year, this flow of content continued to grow and inspire conversation about design and the built environment. To better serve our community, we created educational programs and events that used our magazine articles as a centerpiece for discussion.

EDITORIAL REVIEW

27.3 SPRING*The Politics of Waste*

Feature Editors: Patti Southard and King County GreenTools

This issue brought to light how in America the "personal is political" when it comes to waste: We allow ourselves to live with a flawed waste management system and are trained to purchase goods, throw them away, then purchase new again. This is especially true in the built environment, where construction debris takes up the bulk of our landfills. *The Politics of Waste* not only points out waste management flaws but discusses alternatives.

27.4 SUMMER*No Time To Waste*

Feature Editors: Jonathan Golob and Charles Mudebe

"Live more simply" is the first recommendation this issue makes for waste solutions. Water and air pollution, the decimation of our earth and the destructive tendencies we have toward our planet are discussed and challenged. *No Time To Waste* outlines a model for transforming our ethics by seeing the virtues in simplifying our lives, whether this mean changes in consuming, moving or building in a new simple fashion.

Throughout the four feature sections of Volume 27 (beginning in September 2008), ARCADE explored the many guises of waste: construction waste, packaging waste, lifestyle waste. We asked how the design and architecture industries could think differently about their products in an effort to put a stop to the staggering waste in our world. The transition to *Alchemy* gave us credence to examine our four basic elements. In 2009 started by discussing earth and water.

28.1 FALL*Grounded — Concerning the Earth*

Feature Editor: Barbara Swift

The issue was devoted to the efforts of people who are working with the earth and use their expertise to share its many wonders. As Barbara states in her intro, "A cup of soil contains more than a billion organisms—a critical part of the food web." From photo essays by Dorothea Lange to an article devoted to food to the discussion of living in a non-Cartesian world, *Grounded* reveals how the earth, i.e. dirt, is alive.

28.2 WINTER*Water 2.0: Aquatic Dysfunction*

Feature Editor: Jason McLennan

28.2 was a triumphant exposé on our psychopathic relationship with water. Water's content continually explored our relationship with this vital and diminishing resource. Discussions evolve around our abuse of water and areas where we can conserve, save and rescue it. As aptly stated by W.H. Auden, *First Things First*, 1957, "Thousands have lived without love, not one without water." We need to initiate change in the way we live with this resource.

SPECIAL RECOGNITION

Thank you to our ongoing grant-makers 4Culture, the Naramore Foundation, The Seattle Foundation, the Seattle Office of Arts and Cultural Affairs and the Washington State Arts Commission. We also give a special applause to the National Endowment for the Arts Recovery and Reinvestment Act (through 4Culture) for their one-time \$7,500 employment stimulus grant in which all the monies have gone toward underwriting editorial salaries.

RESOURCES

In tune with the economic climate, ARCADE had a tough 2009, ending the year \$7,604 over budget. To make up the loss, we borrowed \$4,500 from our reserve, leaving a total deficit of \$3,104. On a positive note, we still have another \$5,768 in reserve, zero debt, a new strategic plan designed to implement change, and a Board of Trustees and staff committed to revitalizing the organization's sustainability and success.

2009 was a paramount year in that we had to rethink our resources for contributed income. Therefore, we developed our first-ever fundraising event, the *Alchemy Party*, at Argent Fabrication on June 17. The mad-scientist themed event intrigued and delighted over 200 guests, grossing over \$11,000.

On the coattail of the fundraiser, with the help of RMB Vivid, Inc., we launched our first online giving campaign which brought in \$6,350.

In October, long-time ARCADE friend and supporter, Victoria Reed and her husband Gary opened up their newly built home for our fifth-annual Donor Party. Although not necessarily a fundraiser, over 150 people attended to celebrate ARCADE, the Reed's new Sullivan Conard Architects designed engawa house and see-first-hand how their contribution supports the design community.

December was another important month for fundraising. In 2008, we added a small silent "shop early for the holidays" auction to our launch. We continued the tradition in 2009 and can happily announce we grossed just shy of \$7,000.

We continue to reach out to the design community through phone appeals, mailings, email blasts and membership renewal requests. We also went "online" by including a web-based donor service to make giving easier. Flip to the front of ARCADE or check out our website to see a full list of donors who are leading the way in support of quality architecture and design.

Thanks to everyone who contributed in 2009!

OUTREACH AND DISTRIBUTION

In 2009, nearly 16,000 copies of ARCADE magazine were distributed. We are constantly communicating with our recipients to ensure our outreach is effective. ARCADE can be found in several professional firms, galleries, coffee houses and cafés; ARCADE members (those making a gift to our organization) receive our publication on a subscription basis. ARCADE is continually being welcomed by new members, donors and advertisers. Our publication can also be purchased at Bulldog News, Café Presse, Elliott Bay Book Company, First & Pike News, University Bookstore, J & S Broadway News, Rich's Cigar, Powell's Books, Newsbeat and Newsstand.

OPERATIONS

Other than the maintenance of day-to-day operations, the business team devotes time and resources to community building, outreach, educational programs and fundraising.

As always, we are grateful and thankful for our office space provided by Mithūn.

PLACES

Special thanks to our hosts of 2009's the quarterly publication launch parties:

March: Paladino & Co, Inc.

June: Henrybuilt

September: Caffé Vita's Green Bean Room

December: OddFellow's Building

BOARD OF TRUSTEES

Claudia Verna was our 2009 president, leading us in an eventful year of four great issues and a myriad of events. Under her guidance, we initiated new partnerships, programs and welcomed new board members Ian Butcher of Domestic Architecture and Rico Quirindongo of DKA Architects.

STAFF

ARCADE is a labor of love which is organized and facilitated by a staff of three. Their core ethic is to empower ARCADE volunteers to develop and execute an award-winning magazine and programs that promote design in all its manifestations.

GRAPHIC DESIGN

The look of the magazine changes with each volume thanks to the contributions of talented local graphic designers. In 2009, for the first time ARCADE, hired the same design team for two years running. Congratulations to Ed Andrews and Marcela Barrientos of Somelab for a second consecutive year of great design.

VOLUNTEER BASE

ARCADE increased its outreach efforts to a broad range of volunteers and looks forward to further developing volunteer opportunities in the coming year. These include feature editors, contributors, committee membership, event support, our Board of Trustees and much more.

PARTNERSHIPS

For the second year in a row, ARCADE partnered with Henrybuilt and the AIA Seattle to further our mission of providing independent dialogue about design and the built environment by offering educational presentations based and developed on themes initiated in our magazine, ARCADE. We also partnered with King County GreenTools on a private guided tour of the LEED Platinum Shoreline Transfer Station and with the Seattle Art Museum on a private, curator tour of the Calder exhibit for the ARCADE community. Lastly we applied and were accepted to partner with Springboard, capacity building program for small and mid-sized arts and cultural groups that is designed to help identify and address issues that are blocking organizations' ability to achieve sustainability and success.

With the programs instituted in 2009 we have set a sustainable path to our future. Thank you to everyone for your support and friendship.



Jane Tsong is one of the artists working on the Brightwater Treatment Plant in Woodinville, WA. The public artwork at Brightwater is designed to reveal the innovative scientific and ecological systems that are part of the facility and our region's wastewater management practices. Jane's integrated artwork touches the three primary emissions of the plant: air, water and bio-solids. These kinetic sculptures, mounted on four odor control stacks, celebrate the element of air, as a precious natural resource and a clean by-product of Brightwater.

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CULTURE

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Jane Tsong
Spinner Proposal

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A stylized illustration featuring large, blocky letters spelling out "BREATHE EASY". The letters are light blue and set against a background of white clouds on a light blue striped pattern. In the foreground, there are two simple line-drawn figures: a man on the left and a woman on the right. They appear to be breathing small, blue, spherical bubbles upwards. The overall style is graphic and modern.

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