

Practice  
**Circumstances, Expectations and Trust: An Interview with Peter Bohlin and Ray Calabro, Bohlin Cywinski Jackson**  
 BUILD llc

End Note  
**Buckminster Fuller (Not Al Gore) Invented the Internet**  
 Charles F. Bloszies

# Consistent, supportive hubs for creativity are essential. The Rainier Oven Building's 20-year history shows us why.

work, 70  
 space, 50  
 architecture, 48  
 community, 36  
 Rainier Oven Building, 36  
 design, 32  
 art, 31  
 studio, 26  
 Chicago, 23  
 architects, 22  
 practice, 21  
 time, 21  
 owned, 20  
 building, 20  
 materials, 19  
 way, 18  
 place, 17  
 artist, 17  
 clients, 17  
 artifacts, 16  
 column, 16  
 year, 16  
 built, 15  
 things, 15  
 use, 15  
 best, 14  
 process, 14  
 containers, 13  
 wall, 13  
 area, 12  
 build, 12  
 game, 12  
 make, 12  
 world, 12  
 beautiful, 11  
 cultural, 11  
 environment, 11  
 inspired, 11  
 photo, 11  
 animal, 11  
 all, 10  
 creative, 10  
 great, 10  
 museum, 10  
 people, 10  
 salvage, 10  
 windows, 10  
 create, 10  
 center, 9  
 current, 9  
 important, 9  
 issue, 9  
 office, 9  
 wildlife, 9  
 character, 8  
 experience, 8  
 end, 8  
 furniture, 8  
 many, 8  
 old, 8  
 past, 8  
 designers, 7  
 district, 7  
 facade, 7  
 firm, 7  
 good, 7  
 hall, 7  
 historic, 7  
 left, 7  
 neighbors, 7  
 problem, 7  
 objects, 7  
 players, 7  
 sculpture, 7  
 small, 7  
 view, 7  
 benefit, 6  
 church, 6  
 collect, 6  
 decision, 6  
 first, 6  
 future, 6  
 history, 6  
 house, 6  
 interior, 6  
 look, 6  
 love, 6  
 more, 6  
 neighborhood, 6  
 night, 6  
 opportunity, 6  
 other, 6  
 present, 6  
 reuse, 6  
 rural, 6  
 said, 6  
 shop, 6  
 sign, 6  
 volume, 6  
 win, 6  
 experience, 6  
 serve, 6  
 always, 5  
 approach, 5  
 commission, 5  
 components, 5  
 consultants, 5  
 curators, 5  
 ensemble, 5  
 home, 5  
 human, 5  
 idea, 5  
 installation, 5  
 jumping, 5  
 known, 5  
 level, 5  
 life, 5  
 lion heads, 5  
 local, 5  
 long, 5  
 MCA, 5  
 model, 5  
 move, 5  
 nature, 5  
 Philadelphia, 5  
 pieces, 5  
 potential, 5  
 press, 5  
 provides, 5  
 questions, 5  
 removal, 5  
 right, 5  
 see, 5  
 site, 5  
 social, 5  
 story, 5  
 visual, 5  
 word, 5  
 addition, 4  
 already, 4  
 assets, 4  
 bank, 4  
 become, 4  
 Boilermakers, 4  
 book, 4  
 collaboration, 4  
 conservation, 4  
 contemporary, 4  
 details, 4  
 developed, 4  
 design, 4  
 discussion, 4  
 each, 4  
 editor, 4  
 expectations, 4  
 feel, 4  
 high, 4  
 image, 4  
 kinds, 4  
 large, 4  
 library, 4  
 metal, 4  
 mind, 4  
 needed, 4  
 neon, 4  
 owner, 4  
 Pennsylvania, 4  
 physical, 4  
 piece, 4  
 play, 4  
 political, 4  
 principal, 4  
 reclaim, 4  
 residence, 4  
 residents, 4  
 resources, 4  
 room, 4  
 steel, 4  
 summer, 4  
 Tehran, 4  
 value, 4  
 vulnerable, 4  
 writer, 4  
 abandoned, 3  
 address, 3  
 ancient, 3  
 annexes, 3  
 Ballard, 3  
 better, 3  
 bright, 3  
 builder, 3  
 case, 3  
 century, 3  
 circumstances, 3  
 completed, 3  
 connection, 3  
 costs, 3  
 couple, 3  
 craftspeople, 3  
 degree, 3  
 demolition, 3  
 demonstrated, 3  
 described, 3  
 detail, 3  
 diocese, 3  
 director, 3  
 discovered, 3  
 diverse, 3  
 doors, 3  
 early, 3  
 engage, 3  
 evoking, 3  
 example, 3  
 fabric, 3  
 factory, 3  
 famous, 3  
 figures, 3  
 final, 3  
 fine, 3  
 focused, 3  
 folks, 3  
 given, 3  
 held, 3  
 held, 3  
 humanity, 3  
 impact, 3  
 industrial, 3  
 influence, 3  
 inside, 3  
 instrument, 3  
 interests, 3  
 involved, 3  
 Iran, 3  
 know, 3  
 landscape, 3  
 little, 3  
 loft, 3  
 loss, 3  
 lost, 3  
 loud, 3  
 luxury, 3  
 maintain, 3  
 medium, 3  
 memory, 3  
 mix, 3  
 modest, 3  
 money, 3  
 national, 3  
 natural, 3  
 often, 3  
 one, 3  
 original, 3  
 Pacific, 3  
 play, 3  
 political, 3  
 private, 3  
 professional, 3  
 protected, 3  
 provide, 3  
 public, 3  
 recital, 3  
 research, 3  
 result, 3  
 saving, 3  
 scale, 3  
 school, 3  
 science, 3  
 seen, 3  
 selected, 3  
 series, 3  
 server, 3  
 showing, 3  
 sits, 3  
 sold, 3  
 sonic, 3  
 south, 3  
 state, 3  
 structural, 3  
 sustainability, 3  
 text messages, 3  
 thinking, 3  
 told, 3  
 tradition, 3  
 true, 3  
 vision, 3  
 willing, 3  
 wooden, 3  
 absence, 2  
 absent, 2  
 access, 2  
 accommodate, 2  
 away, 2  
 base, 2  
 block, 2  
 choices, 2

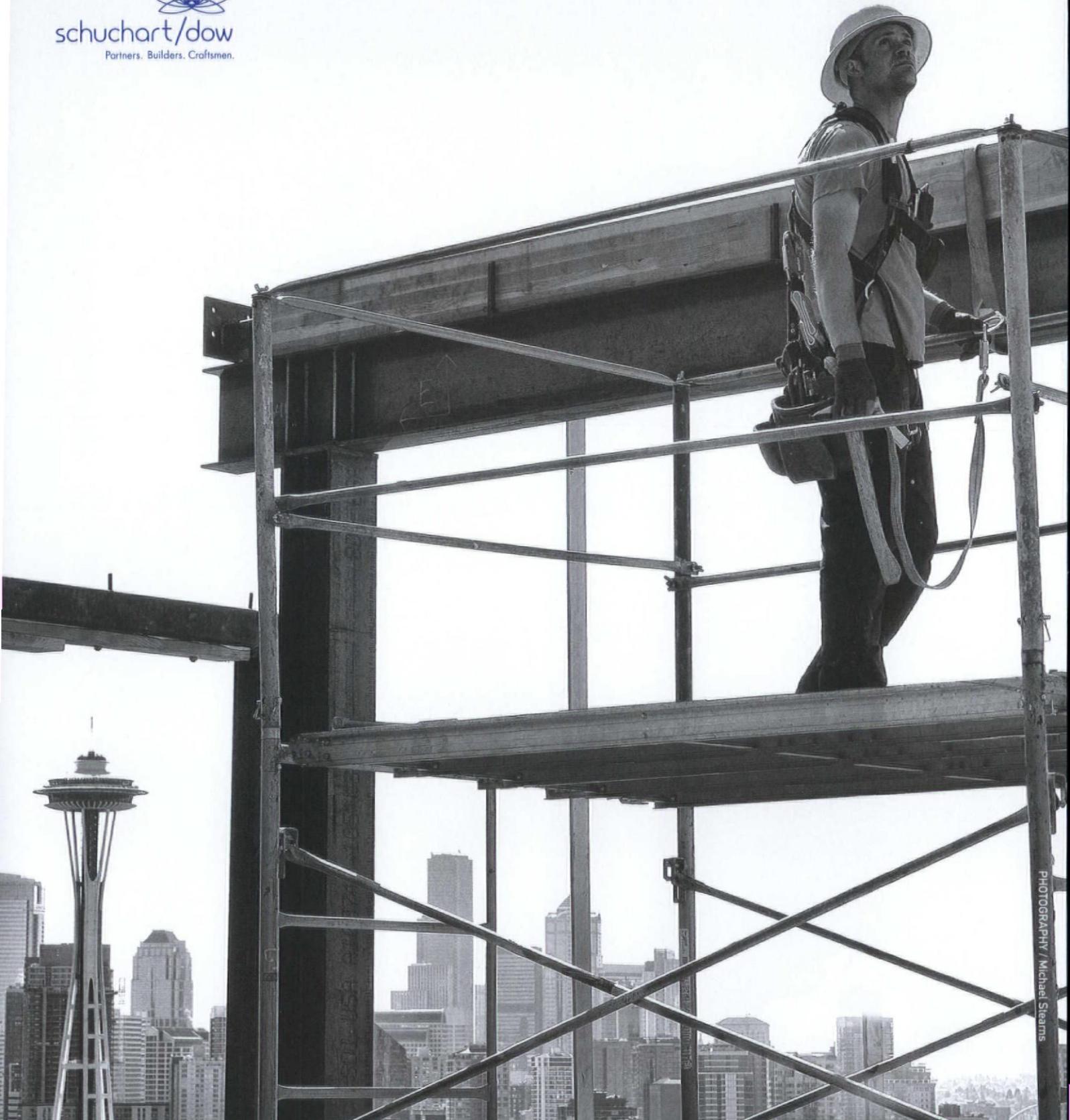
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# The Creative Space-Time Continuum: Histories and Futures Inside the Rainier Oven Building

Essay by Erin Langner, Photography by Peter de Lory



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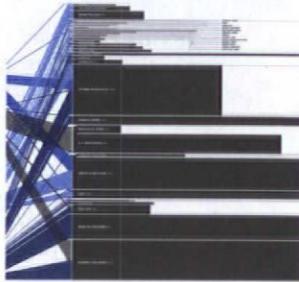
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## ARCADE Winter 2015 Contents

- 8 Info Feed  
**The Biggest Guns**  
Tyler Monteferrante  
& Karen Cheng
- 12 Art Matters  
**Sonic Still Life:  
Architectural Space  
as Music**  
Mark Johnson
- 16 Art Matters  
**Columns and Cynics:  
Ania Jaworska at the  
MCA Chicago**  
Elissa Favero
- 20 Practice  
**Circumstances,  
Expectations and Trust:  
An Interview with Peter  
Bohlin and Ray Calabro,  
Bohlin Cywinski Jackson  
BUILD IIc**
- 25 Feature  
**The Créative Space-Time  
Continuum: Histories and  
Futures Inside the Rainier  
Oven Building**  
Essay by Erin Langner  
Photography by Peter de Lory
- 52 Preservation Perspective  
**Beyond Sustainability:  
Exploring the Ethics of  
Architectural Salvage**  
Amy Hetletvedt
- 56 Interaction Design Observer  
**I Wish for an Animal:  
A Game to Make Urbanites  
Aware of Their Impact  
on Wildlife**  
Shaghayegh Ghassemian
- 60 End Note  
**Buckminster Fuller (Not Al  
Gore) Invented the Internet**  
Charles F. Blossies



8



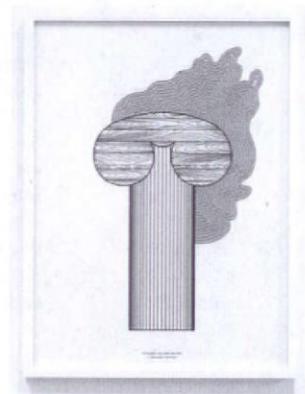
20



52



12



16



25



56

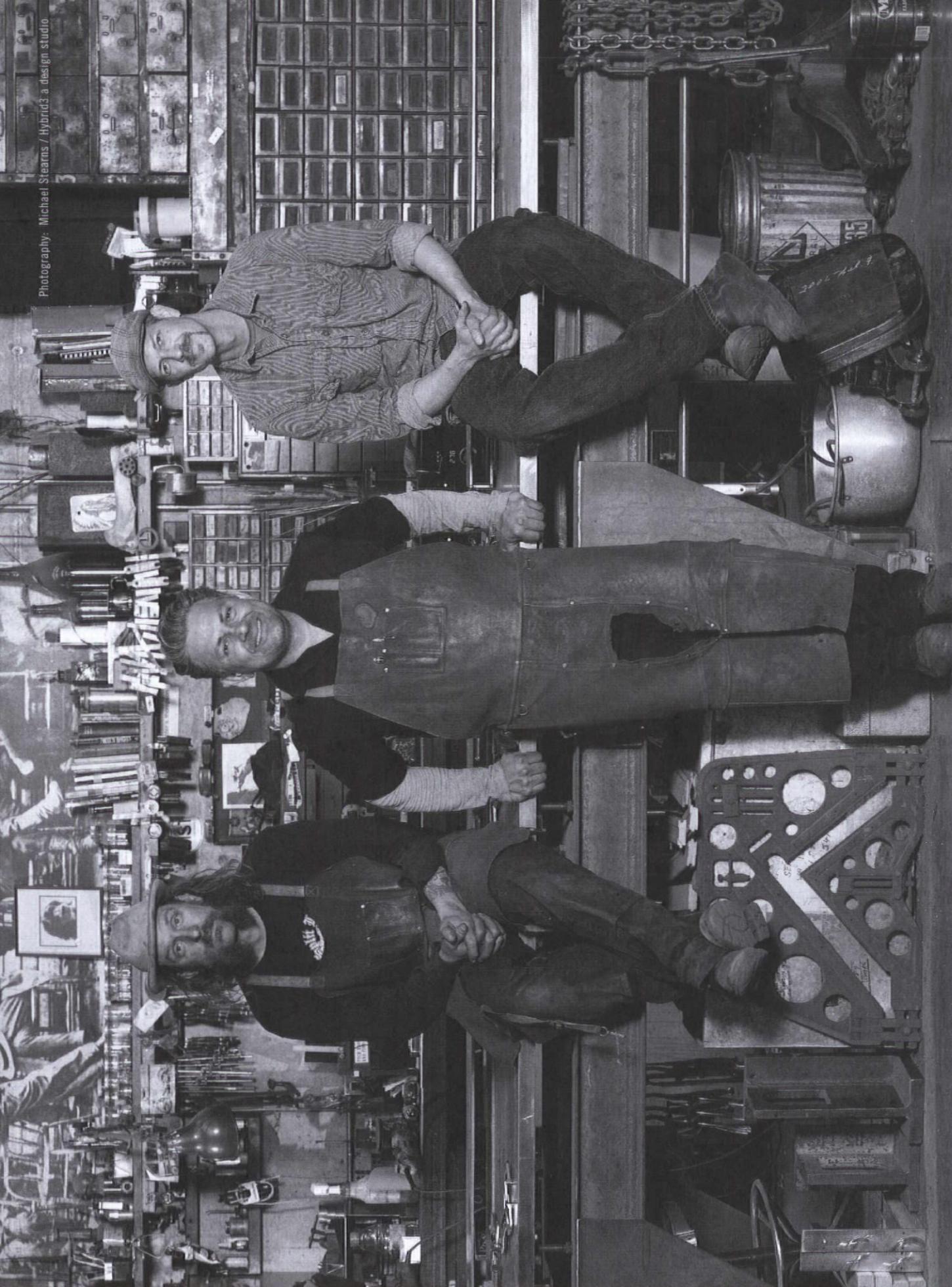


60

Created by Schema, the designers of this issue, this list depicts 391 frequently used terms in this edition of ARCADE. Ranked in order of frequency, the number of times each word occurs is shown below. In addition, lists throughout the issue show 10 of the most used terms on each page. The lists were created using Processing, an open source programming language ([processing.org](http://processing.org)).

work, 70	current, 9	rural, 6	already, 4	abandoned, 3	impact, 3	scale, 3
space, 50	important, 9	said, 6	assets, 4	address, 3	industrial, 3	school, 3
architecture, 48	issue, 9	shop, 6	bank, 4	ancient, 3	influence, 3	science, 3
community, 36	office, 9	sign, 6	become, 4	annexes, 3	inside, 3	seen, 3
Rainier Oven	point, 9	spoke, 6	believe, 4	article, 3	insight, 3	selected, 3
Building, 34	set, 9	tenants, 6	biennial, 4	award, 3	instance, 3	series, 3
design, 32	wildlife, 9	volume, 6	Boilerworks, 4	Ballard, 3	instrument, 3	server, 3
art, 31	character, 8	win, 6	book, 4	better, 3	interests, 3	showing, 3
project, 29	day, 8	wood, 6	budget, 4	boxes, 3	intersection, 3	sits, 3
building, 28	different, 8	experience, 6	came, 4	brick, 5	into, 3	sold, 3
studio, 28	end, 8	serve, 6	collaboration, 4	bright, 3	involved, 3	sonic, 3
Chicago, 23	furniture, 8	always, 5	conservation, 4	builder, 3	Iran, 3	south, 3
architects, 22	many, 8	approach, 5	contemporary, 4	burden, 3	jewelry, 3	sphere, 3
city, 21	music, 8	blog, 5	creating, 4	businesses, 3	jobs, 3	standing, 3
practice, 21	old, 8	care, 5	culture, 4	Capitol Hill, 3	jump, 3	starting, 3
time, 21	past, 8	commission, 5	details, 4	case, 3	know, 3	state, 3
designed, 20	same, 8	components, 5	developed, 4	century, 3	landscape, 3	structural, 3
sound, 20	turn, 8	consider, 5	development, 4	certain, 3	last, 3	suggests, 3
Seattle, 19	urban, 8	context, 5	discussion, 4	China, 3	like, 3	sustainability, 3
materials, 19	want, 8	curators, 5	each, 4	circumstances, 3	little, 3	text messages, 3
way, 18	complex, 7	ensemble, 5	editor, 4	completed, 3	loft, 3	thinking, 3
Detroit, 17	corner, 7	environmental, 5	embedded, 4	connection, 3	loss, 3	told, 3
new, 17	craft, 7	gallery, 5	ethical, 4	costs, 3	lost, 3	tradition, 3
place, 17	designers, 7	home, 5	expectations, 4	couple, 3	loud, 3	true, 3
artist, 17	district, 7	human, 5	feel, 4	craftspeople, 3	luxury, 3	vision, 3
clients, 17	facade, 7	idea, 5	high, 4	degree, 3	maintain, 3	willing, 3
artifacts, 16	firm, 7	installation, 5	image, 4	demolition, 3	medium, 3	wooden, 3
column, 16	good, 7	jumping, 5	kinds, 4	demonstrated, 3	memory, 3	absence, 2
year, 16	hall, 7	known, 5	large, 4	described, 3	mix, 3	absent, 2
built, 15	historic, 7	level, 5	library, 4	detail, 3	modest, 3	access, 2
things, 15	left, 7	life, 5	metal, 4	diocese, 3	money, 3	accommodate, 2
use, 15	neighbors, 7	lion heads, 5	mind, 4	director, 3	national, 3	acoustic, 2
best, 14	problem, 7	local, 5	needed, 4	discovered, 3	natural, 3	actively, 2
process, 14	objects, 7	long, 5	neon, 4	diverse, 3	often, 3	after, 2
containers, 13	players, 7	MCA, 5	owner, 4	doors, 3	one, 3	allows, 2
wall, 13	sculpture, 7	model, 5	Pennsylvania, 4	early, 3	origin, 3	American, 2
area, 12	small, 7	move, 5	physical, 4	engage, 3	Pacific Northwest, 3	annual, 2
build, 12	view, 7	nature, 5	piece, 4	evoking, 3	plaza, 3	appeared, 2
game, 12	benefit, 6	Philadelphia, 5	play, 4	example, 3	police, 3	appreciated, 2
make, 12	church, 6	pieces, 5	political, 4	fabric, 3	principles, 3	arranged, 2
world, 12	collect, 6	potential, 5	principal, 4	factory, 3	print, 3	arrived, 2
beautiful, 11	decision, 6	press, 5	reclaim, 4	famous, 3	products, 3	artistic, 2
cultural, 11	first, 6	provides, 5	residence, 4	figures, 3	profession, 3	attention, 2
environment, 11	future, 6	questions, 5	residents, 4	final, 3	professional, 3	audience, 2
inspired, 11	history, 6	removal, 5	resources, 4	fine, 3	protected, 3	auspices, 2
photo, 11	house, 6	right, 5	room, 4	focused, 3	provide, 3	avenue, 2
animal, 11	interior, 6	see, 5	steel, 4	folks, 3	public, 3	away, 2
all, 10	look, 6	site, 5	store, 4	gain, 3	published, 3	Bainbridge Island, 2
creative, 10	love, 6	social, 5	strong, 4	geodesic, 3	recent, 3	balance, 2
great, 10	more, 6	story, 5	summer, 4	given, 3	recital, 3	bass, 2
museum, 10	neighborhood, 6	team, 5	Tehran, 4	hang, 3	references, 3	beyond, 2
people, 10	night, 6	think, 5	urbanites, 4	happens, 3	remain, 3	big, 2
salvage, 10	opportunity, 6	visual, 5	value, 4	held, 3	research, 3	block, 2
windows, 10	other, 6	word, 5	vulnerable, 4	help, 3	result, 3	body, 2
create, 10	present, 6	able, 4	wish, 4	here, 3	returning, 3	bring, 2
center, 9	reuse, 6	addition, 4	writer, 4	humanity, 3	saving, 3	choices, 2

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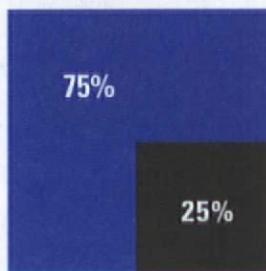
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# THE BIGGEST GUNS

## WHO CONTROLS THE US FIREARMS INDUSTRY?



From 1986 to 2010,\* three-quarters of all US firearms were produced by 37 companies.

The remaining 25% were made by 2,250 companies.

Over 98 million firearms were made in the US over these 25 years.

### THE TOP 37 PRODUCERS 1986–2010

In the US, only 37 companies (~2% of the industry) produced 75% of all domestically made firearms. These companies (shown at right) also exported guns to other countries worldwide. The gun industry had an economic impact of \$32 billion, a major portion of which was controlled by these 37 manufacturers.

Infographic research and design by Tyler Monteferrante (BDes in Visual Communication Design, University of Washington, sinclairm.com) with Karen Cheng (Prof., Visual Communication Design, University of Washington).

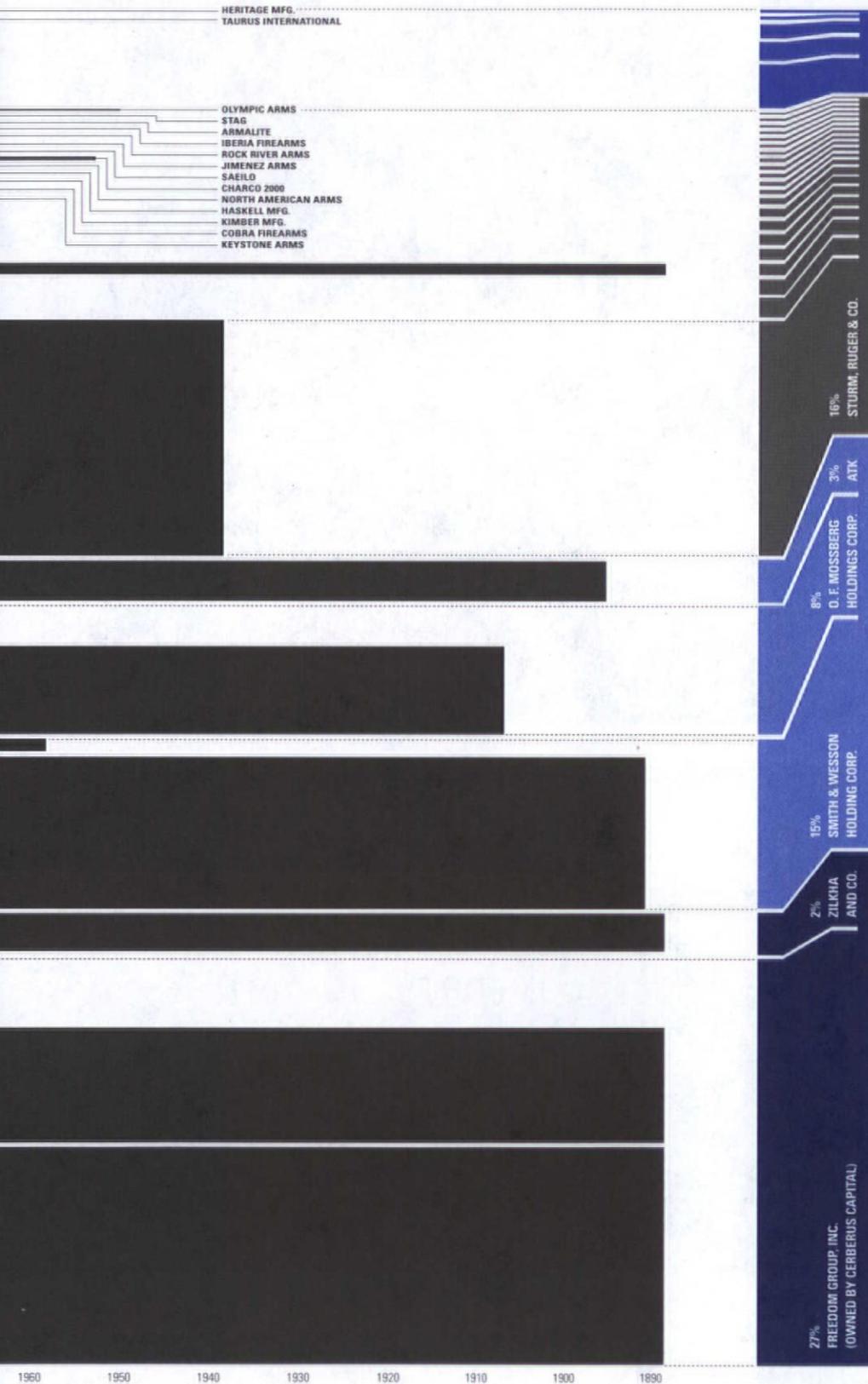
\*Data on the US firearms industry is difficult to obtain. Used here is the latest and most reliable source, the 2013 SAS (Small Arms Survey) report, *The US Firearms Industry: Production and Supply* by Jurgen Brauer, which covers 1986-2010. SAS combines data from online ATF (Alcohol, Tobacco, Firearms and Explosives) reports from 1998-2010 with data from 1986-1998 obtained via Freedom of Information Act requests to the ATF.

Due to the US Trade Secrets Act, manufacturers delay reporting data to the ATF by one to two years. Figures exclude what is produced for the military, but include guns manufactured for US law enforcement, US civilians and international export. SAS verifies data from manufacturers and estimates underreporting at ~1%. SAS obtains additional data from the FBI, customs and other sources. Data in the 2013 SAS report begins in 1986, after the passage of the federal Firearm Owners Protection Act. This act limited the power of the ATF to inspect firearms dealers and prohibited the creation of a national firearm registry; it also banned the sale of machine guns to civilians.



### FOUR TYPES OF FIREARMS

From 1986 to 2010, the top 37 manufacturers produced four types of firearms: rifles, pistols, shotguns and revolvers.



**FOREIGN COMPANIES (9%)**

Foreign manufacturers have taken advantage of lax gun laws by establishing their firms in the United States.

**DOMESTIC INDIVIDUAL COMPANIES (23%)**

The majority of US gun manufacturers from 1986 to 2010 were small-scale individual companies. In the top 37, Sturm, Ruger & Company is the only US individual company that produces all four types of firearms: rifles, shotguns, pistols and revolvers. Therefore, they have not had to acquire other firms in order to expand into production of additional gun types.

**DOMESTIC CONGLOMERATES (29%)**

A conglomerate is a combination of two or more corporations engaged in entirely different businesses that fall under one corporate group. Smith & Wesson was the largest conglomerate amongst the top 37 producers in the US from 1986 to 2010. In addition to firearms, the company also makes ammunition, knives, handcuffs, apparel, watches, firearms accessories, safes and many other products.

**DOMESTIC PRIVATE CAPITAL FIRMS (39%)**

Private capital firms (also known as private equity firms) are management firms that make investments in the private equity of operating companies. The Freedom Group, formed in 2007, was the largest private capital firm/gun manufacturer in the US from 1986 to 2010. The Freedom Group purchased and merged several of the largest national rifle makers.

**TYPES OF COMPANIES PRODUCING FIREARMS**

Conglomerates and capital firms dominated the firearms industry; they accounted for 68% of all guns made by US producers from 1986 to 2010.

**A TIMELINE OF DOMESTIC GUN PRODUCTION**

The top 37 companies shown here were established in the US between 1890 and 2010. Bar width indicates the percentage made by each firm out of the group's total production from 1986 to 2010.



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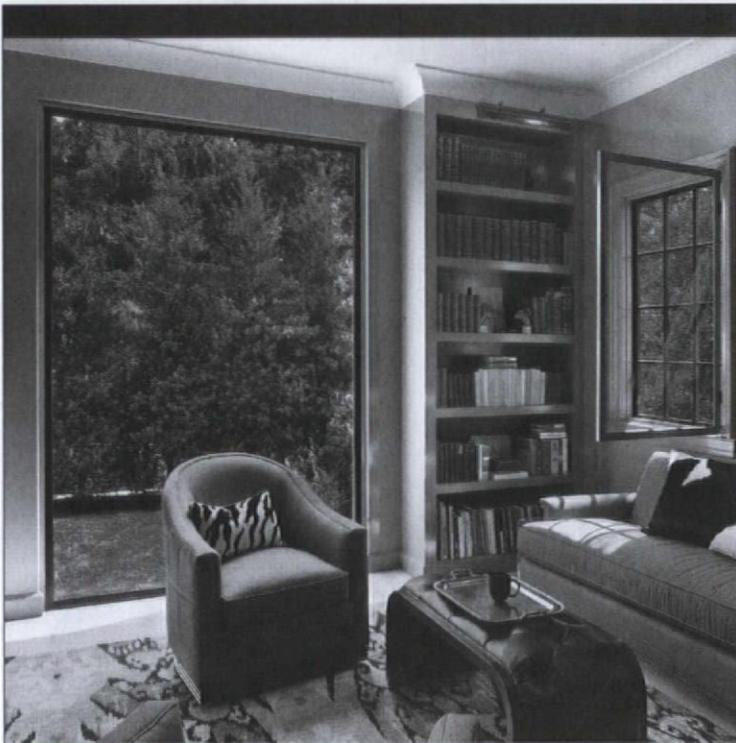
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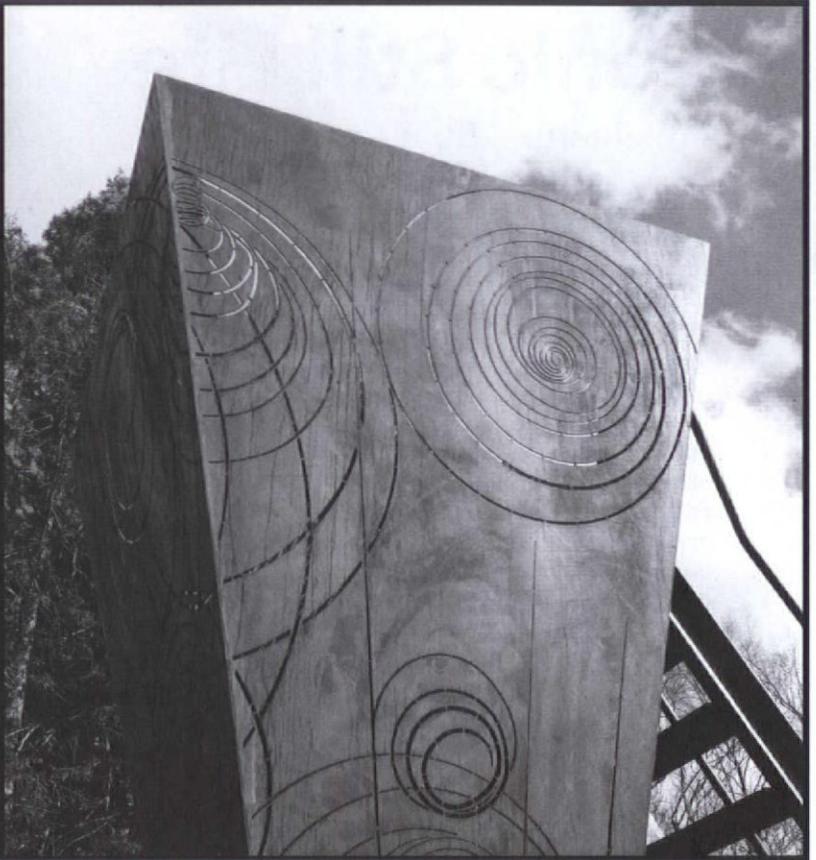
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## GREAT THINGS HAPPEN AT THE CONFLUENCE OF ART + TECHNOLOGY

Every project has a past, a present and future – the best collaborations realize all three. “Toporithm,” a joint piece by GLY’s Adam Cisler, and Graphite’s Kim Krech, is the latest public artwork commissioned by Vulcan in South Lake Union. On display in Amazon’s Apollo building, it conceptualizes the ghost topography of the Denny Regrade. [www.gly.com](http://www.gly.com)



PHOTOGRAPHY | JANINE PIETZ, GLY MARKETING

# Sonic Still Life

Architectural Space as Music

Mark Johnson

The visual character of sound has inspired my architectural practice since design school. As an architect, I craft visual music in my studio by day, composing, constructing and diagramming buildings and landscapes on whiteboards and trace paper to locate the big design moves. By night, as an artist/musician, I build loud, thunderous constructions with fellow architects inspired by sound; we detail the shifts between dissonance and resolution with loud guitars, bass, drums and open space. Goethe, and before him Schelling, called architecture “frozen music.” If that is the case, then is music liquid architecture?

In the same way that spaces shape our experiences, sound can be influenced by physical volume. Space is often the invisible instrument in an ensemble. A case in point: during rehearsals following the opening of the then newly built Icicle Creek Music Center in Leavenworth, Washington, pianist Oksana Ezhokina was working through an exercise with a string ensemble. At one point she stopped the rehearsal, unable to properly hear herself. The space’s design team was in the room, and to their ears, the performance sounded acceptable; however, the artist was dissatisfied with the sound levels between her instrument and

music, space, sound, design, visual, inspired, ensemble, point, architecture, loud



Photo: Christian French

the ensemble. Oksana had worked with a team—myself and Johnpaul Jones of Jones and Jones Architects and Landscape Architects and Michael Yantis of Sparling—to create a recital hall that, through its materials, textures and spatial character, would reinforce the chamber ensemble. In this instance, the addition of a temporary riser elevating her black Steinway Model B to the audience level was counter to the piano's integral nature within the performance. She described that the sound was divorced from the recital hall. The music director suggested that the piano would not have enough volume in the mix if it were on the floor, to which Oksana replied, "I'll play louder." The recital hall was an instrument in the ensemble, reinforcing the merger between sonics and space.

Not only does space make sound, but sound also makes space. In 2006, sculptor Christian French installed a piece titled *Boilerworks* in Seattle that would become the test bed for my collaboration with him between sculpture and sound. Christian's medium is shipping containers; his work expands on the modularity and utility of the 8' x 8' x 40' volume, celebrating the transient, impermanent nature of the boxes, the stories of human connection across vast distances that they embody, and humanity's reliance on the sea inherent in them. For our collaboration, he explored different ways to stack the containers, while I experimented with the reverberant nature of the volumes. I focused on how the container's interior space could influence or react to sound inputs of varying pitches and sources.

The instrumental diagram of the container is a reverberant block, with solid wood decks, steel frames and corrugated metal walls and roofs that serve as reverb chambers capable of substantial entropy. Citing composer Carl Orff's approach to music making, we developed simple methods to generate acoustic tones in the containers. In each box, we triggered a long decay of complementary notes that mixed within the volume, and we explored instrumentation precedents drawing on the intrinsic sound-character of different materials. Hans Reichel's daxophone, Ellen Fullman's long strings, and harmonic principles of the xylophone served as starting points for our sound generators. Hardwood slats of varying lengths

## The containers' fleeting sounds gestured to a volume beyond their walls, evoking a human connection to the space of the city.

that were clamped to the container frames and activated with bass bows produced the loudest, most consistent acoustic tones, while bailing wire strung along the lengths of the containers produced harp-like notes. The result was a dense, multiphonic layering of sound. Hauntingly beautiful, with low-frequency drones overlaying each other, the sound of the containers merged with the ambient train and transport noises of the Riverside neighborhood in an industrial chorus.

This sound and sculpture collaboration was a physical interpretation of the latent opportunity within a utilitarian space—it was a sonic still life of humble vessels that exist in constant motion, connecting humanity and products across the globe. The ephemeral world the sounds created implied a greater space than the interior of the containers, one that reached beyond the walls of the Riverside Boiler Works building in which the boxes sat. The containers' fleeting sounds gestured to a volume beyond their walls, evoking a human connection to the space of the city.

The sonic possibility of the containers represents the guts, lifeblood and loud quietness that can be discovered at and beyond our city's intersections and edges, becoming present among the noise of today. At once frozen music and industrial jumble, the containers and their resonant potential illustrate how space can become the amplifier of a place's soul. ■

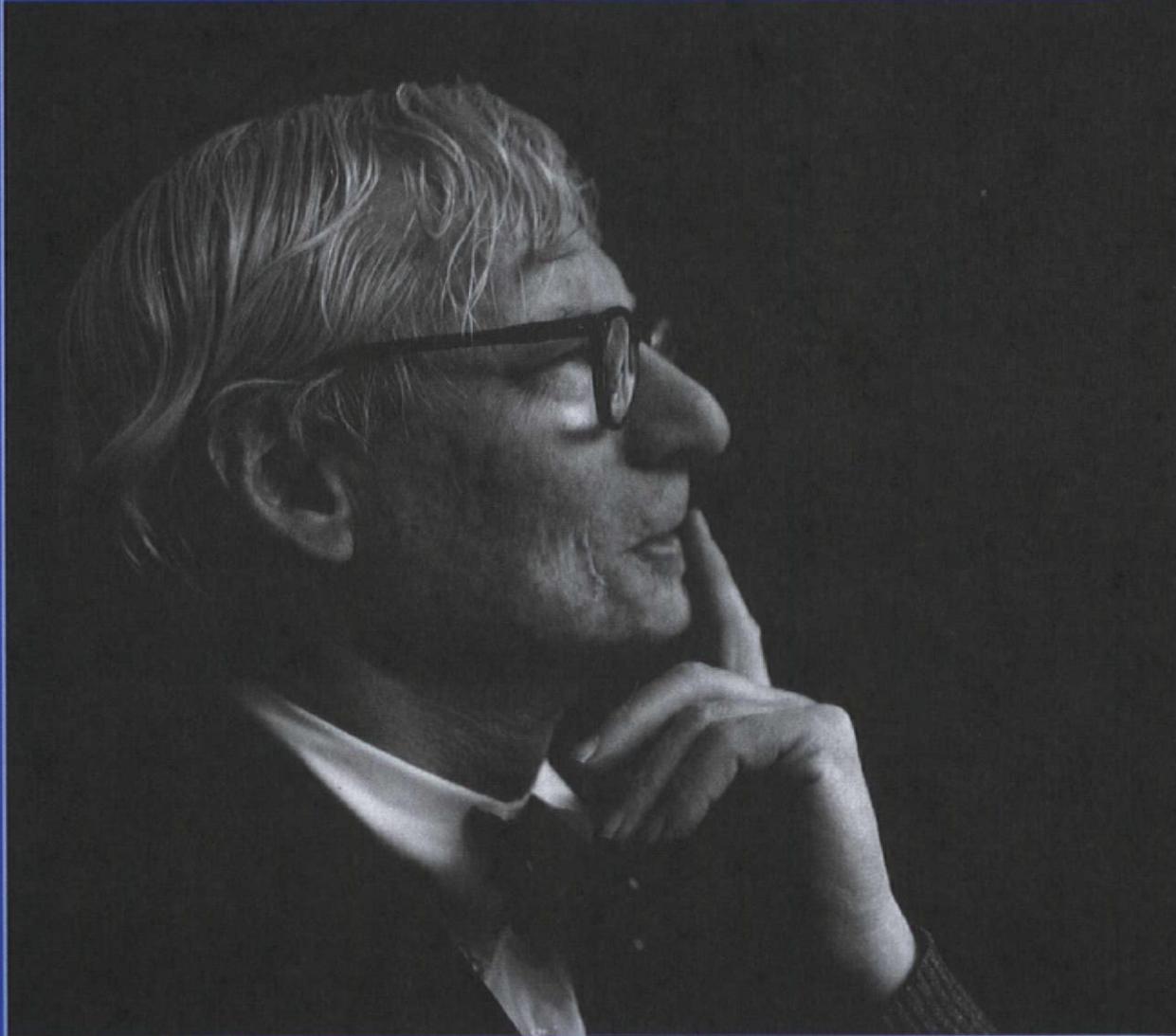
Mark Johnson founded Signal Architecture + Research in 2014 as a practice where buildings, landscapes and people are interconnected, reflective of their context, culture and goals. Since graduation from Savannah College of Art and Design in 1995, his double life as an architect and musician has inspired a design approach based on collaboration, enthusiasm, intuition and respecting the right thing in the right place. [signalarch.com](http://signalarch.com)

Christian French's *Boilerworks* can be found at [christianfrench.com/archives/513](http://christianfrench.com/archives/513).

Listen to the recording from *Boilerworks* at [soundcloud.com/townforest/sets/big-metal-boxes](https://soundcloud.com/townforest/sets/big-metal-boxes).

# LOUIS KAHN

## THE POWER OF ARCHITECTURE



JANUARY 29 – MAY 1, 2016

Portrait of Louis Kahn, 1972. Photo: © Robert C. Lautman Photography Collection, National Building Museum

*Louis Kahn: The Power of Architecture* is an exhibition of the Vitra Design Museum, Weil am Rhein, in collaboration with the Architectural Archives of The University of Pennsylvania and The New Institute, Rotterdam. The local presentation of this exhibition is curated by Stefano Catalani.

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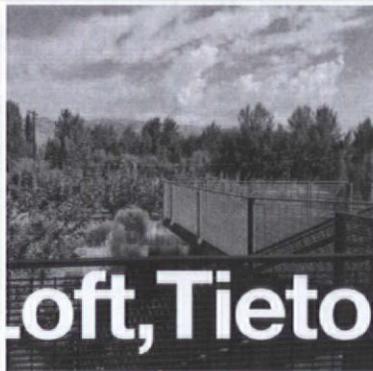
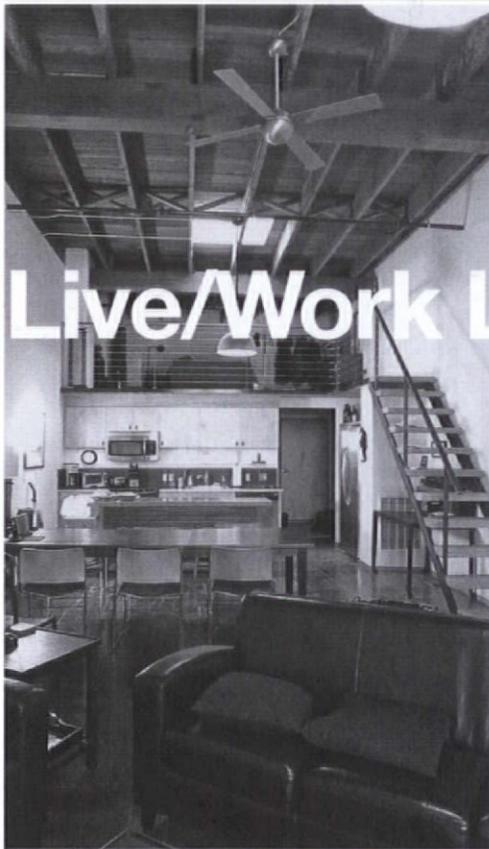
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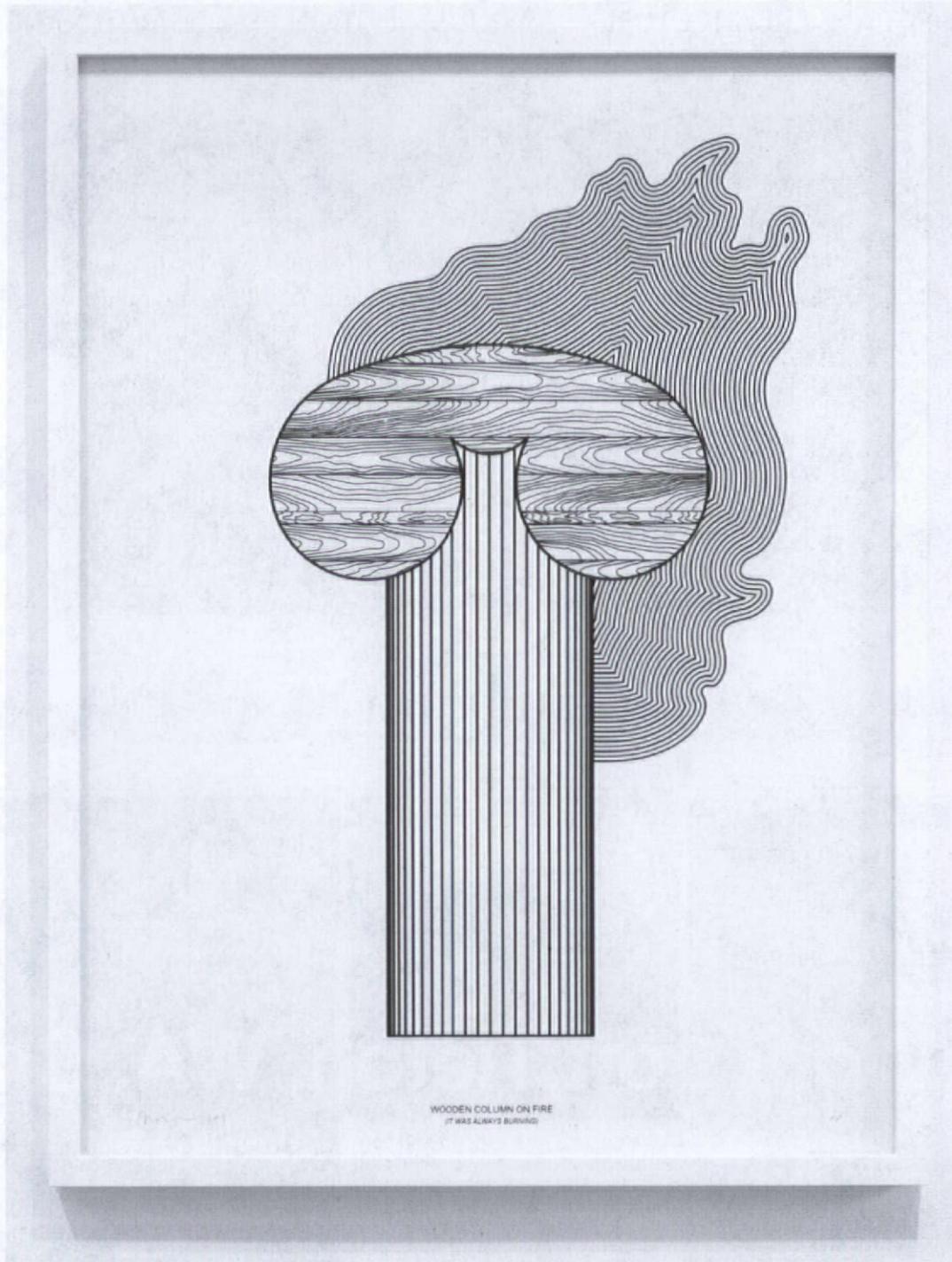
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*Wooden Column on Fire (It Was Always Burning)*, Ania Jaworska. Installation view, *BMO Harris Bank Chicago Works: Ania Jaworska*, MCA Chicago. 25 August 2015–31 January 2016. Photo: Nathan Keay, © MCA Chicago.

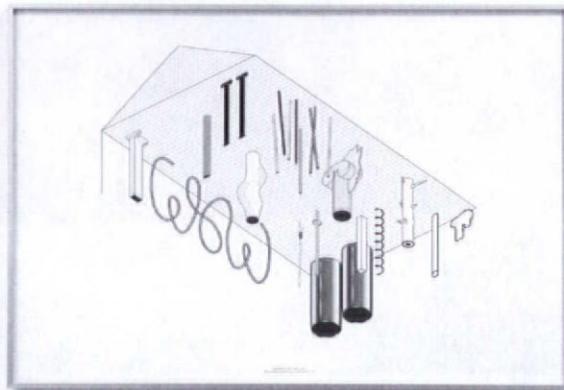
# Columns and Cynics

Ania Jaworska at the MCA Chicago

Elissa Favero

Drawing liberally from the history of architecture in her current show and contribution to the inaugural Chicago Architecture Biennial, architect and artist Ania Jaworska has a laugh, even when things turn dark.

*BMO Harris Bank Chicago Works: Ania Jaworska* at the Museum of Contemporary Art Chicago comprises two distinct sections. In the first part of the exhibition, *A Subjective Catalog of Columns*, Jaworska's prints present a parade of architectural styles, with references ranging from the ancient to the contemporary. In the wall label accompanying #1, her first print, the artist speculates, "Two sticks tied together; the original column?" From there, she moves to *Boring Office*, a plain gray cylinder, and then to *The Future*, where the column's cylindrical body is reduced to a stark, single line. Along the way, a curvaceous red shape suggests the silhouette of a female body in *It's Not Easy*, recalling, at once, ancient fertility figures like the Venus of Willendorf, the tradition of caryatids (imprisoned female figures who stand in for columns in some ancient Greek buildings), and women architects who bear the burden of the profession's structural sexism. The spiral column from *The Future Is Informed by the Past* refers to twining Solomonic columns from Byzantium, but its reflective coil also evokes optical fiber cables and the architecture of contemporary telecommunication. A haloed cruciform column, *Saint*, made with tongue gently in cheek, suggests architect Mies van der Rohe and his celebrated architecture of steel and glass that continued to exert strong influence in Chicago even after his death in 1969. Elsewhere are references to a Chicago address (2247 N Lakewood Ave, Chicago, IL 60618) and another Chicago architect, Stanley Tigerman (*Where Is That Knife?*). The fluted shaft and faux bois



*Column Pavilion*, Ania Jaworska. Installation view, *BMO Harris Bank Chicago Works: Ania Jaworska*, MCA Chicago. 25 August 2015–31 January 2016. Photo: Nathan Keay, © MCA Chicago.

capital ablaze in *Wooden Column on Fire (It Was Always Burning)* bring to mind artist Ed Ruscha's 1965–68 painting *The Los Angeles County Museum on Fire*. Jaworska may not have started the fire, but her print adds fuel to the iconoclastic flame. Nothing is too sacrosanct to burn, especially for the purpose of a mild roast.

*Column Pavilion*, Jaworska's final print in the series, compiles the many columns from this personal catalogue under a single roof. But even before this last piece, the individual prints, identically sized, framed and spaced along two perpendicular walls, read just like a row of columns wrapping around a corner in a neat colonnade.

The five sculptures in the show's second part, *Cynic Architectures*, installed in a room with slate walls and gray carpet, mine darker histories and



*Sign of Their Place*, Ania Jaworska. Installation view, BMO Harris Bank Chicago Works: Ania Jaworska, MCA Chicago. 25 August 2015–31 January 2016. Photo: Nathan Keay, © MCA Chicago.

Chicago, architecture, art, installation, museum, center, place, view, Seattle, biennial

connect more explicitly to other exhibitions in the Chicago Architecture Biennial, which this year celebrates “The State of the Art of Architecture.” In Jaworska’s *Untitled (Empty Gesture)*, velvet rope hangs between steel stanchions arranged in a tight circle. They cordon off a small area, but there is nothing inside their center to enclose; they limit access only to empty space. The piece both brings to mind and contrasts French artist Didier Faustino’s *BUILTHEFIGHT* at the Chicago Cultural Center, where similarly arranged modular architecture explicitly proposes to provide shelter for political protesters. Near *Untitled (Empty Gesture)* stands Jaworska’s *VIP Lounge*. With tall, flat columns held upright by sandbags behind, the piece makes structural support into post-modern scenery, evoking Barbara Kasten’s stage sets showing in the Graham Foundation’s survey of the American photographer, printmaker and installation artist’s work, also on view as part of the biennial. And in Jaworska’s *Sign of Their Place*, letters spelling out the word “HERE” rotate atop a steel column. Like SuttonBeresCuller’s installation *You Always Leave Me Wanting More*, currently in *Genius / 21 Century / Seattle* at Seattle’s Frye Art Museum through 10 January, *Sign of Their Place* seems at first to point, like good advertising, to something else. But ultimately, both pieces are signs for only themselves and the charged sites around them.

With smart playfulness, Ania Jaworska uses image and installation to remix architectural heritage and reflect on architecture’s fraught role as a tool of communication in a world of historic preservation and relentless development, of access and exclusivity, of luxury and kitsch. ▣

BMO Harris Bank Chicago Works: Ania Jaworska is on view at the Museum of Contemporary Art Chicago through 31 January 2016. [mchicago.org](http://mchicago.org)

The inaugural Chicago Architecture Biennial, The State of the Art of Architecture, continues at the Chicago Cultural Center through 3 January 2016. [chicagoarchitecturebiennial.org](http://chicagoarchitecturebiennial.org)

Writer and editor Elissa Favero has worked in education and public programs at the National Museum of Women in the Arts and at the Seattle Art Museum. She currently teaches critical and contextual studies at Cornish College of the Arts. You can read her essays about art, architecture and landscape on her blog, *Yellow Umbrella*. [elissafavero.com](http://elissafavero.com)

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# Circumstances, Expectations and Trust

An Interview with Peter Bohlin and Ray Calabro, Bohlin Cywinski Jackson  
*BUILD IIc*

*Last summer, BUILD sat down with Peter Bohlin and Ray Calabro of Bohlin Cywinski Jackson at their Seattle office to discuss their process of designing everything from art galleries to books as well as the importance of understanding clients.*

**BUILD: How did Bohlin Cywinski Jackson get its start in the Pacific Northwest?**

PETER BOHLIN: Early projects like Forest House and the first house I designed for my parents were published in the *New York Times*. The Forest House was a cultural icon for architects and still is. I think it's why we were selected to compete (were put

on the short list) to design Bill Gates's residence, which was a joint venture with Cutler Anderson Architects on Bainbridge Island. When he was at the University of Pennsylvania, Jim Cutler worked in our office, and he and I became friends. If we were going to design the Gates residence, I felt we needed to be here in the Pacific Northwest. During the competition, the BCJ design team lived on a boat in Eagle Harbor on Bainbridge Island, and we shared an office space with Jim. We ended up winning the project, and as the Gates residence was nearing completion, we began to win additional work in the area and saw the benefit of having an office in downtown Seattle.

**BCJ has worked with Steve Jobs on many of the well-known Apple Stores around the world as well as on the Pixar headquarters in California. How did you find a working balance with Jobs, who was known for bringing a strong, often tenacious vision to the table regarding how things should look and function?**

RAY CALABRO: Steve appreciated our work and appreciated Peter because he worked hard to understand the nature of each client and their circumstances. Understanding Steve's desire for symmetry, for instance, was really crucial to him. Other architects might not have been as perceptive or willing to listen, or more interested in imposing their own wills.

**What do you look for in clients in order to begin a project with them?**

PB: When we work with institutions, it's important that we identify people who believe in us and want to interact throughout the design process. That interplay allows us to end up at a better place than if we simply designed a project on our own.

RC: Some of our more appreciative clients are those who've been most enthusiastic about the process. It becomes more than doing a house, but



Forest House, West Cornwall, CT. Photo: M. Thomas Architectural Photography



Pixar Animation Studios, Emeryville, CA. Photo: Sharon Risedorph

also about how it will make them feel, how the project will change their patterns, and what they see. Perceptiveness is a quality we like in clients.

In Hawaii, we designed a gallery space, the Waipolu Gallery and Studio, for a very private client. He's a collector of midcentury modern art, and the gallery was just for him. The genius of the space is that it captures the view of the Diamond Head crater and the sea at the same time in one structure. The client said it exceeded his expectations. He was very engaged but not dictatorial about the process. We gain the client's trust in most cases, and once that happens, they're willing to take leaps with us.

And then there are times when a client is set on working with us. Currently, we're working with a developer on the Eastside who selected us for a large-scale project. Though we turned it down a couple of times, he demonstrated a really great interest in design and was persistent about us producing something together.

PB: The ones you turn down a couple of times often turn into better clients.

**You work with many clients that may very well expect perfection. How do you properly set expectations?**

RC: Some of that expectation setting happens when we take them to see other buildings we've done, and it can be a revelation for them. On one of these visits, a particular client expressed their appreciation of how beautiful materials related to each other and were detailed to a level of precision. They recognized that it was the result of both a good architect and a good builder, and it changed the way they were thinking about the project we were starting together. Seeing past work of ours demonstrated the level of detail we achieve with projects.

PB: I would say "care" rather than "detail." There isn't always money to create lavish details. And sometimes you don't want to. Sometimes details can get in the way of the dream.

RC: Setting expectations around the issue of care can transpire by taking clients to our past projects and also by visiting projects that they like that were

designed by someone else. Other times we have clients that come in having seen a certain project and say, "We want to go well beyond that." And you have to live up to it. In these situations, Peter reminds us that you can't drop the ball, you have to own up to the opportunity you've been given.

PB: We're always doing modest things, too, like working with the Girl Scouts, which involves a different level of expectation. We did one building a year for them, and they funded it with cookie money. We're always working on a range of projects, and it's good because it stretches us; we don't get into one habit of thinking. It's a little challenging because sometimes we get into a certain pattern of designing and try to apply that approach elsewhere, and it doesn't work very well.

**Living up to those expectations through drawings is one thing, but how do you control the execution of the design in its built form?**

PB: Sometimes you can't. That's when you have to decide what's important and what's not.

RC: We try to have good document sets to work from. And then it's important to have a strong relationship with the builder. You also have to want to be on site and to be part of the conversations there often. A lot of it is demonstrating that you care about the final outcome.

PB: It's always about deciding. Things aren't equally important nor equally achievable, whether it's the ability of a builder, the size of the budget, the caliber of people involved or the scale of the endeavor.

**One of the challenges with high-end luxury homes is that the owners can enjoy the process of design to the extent that they don't necessarily want it to end. How does your firm maintain discipline and resolution regarding a project's timeline?**

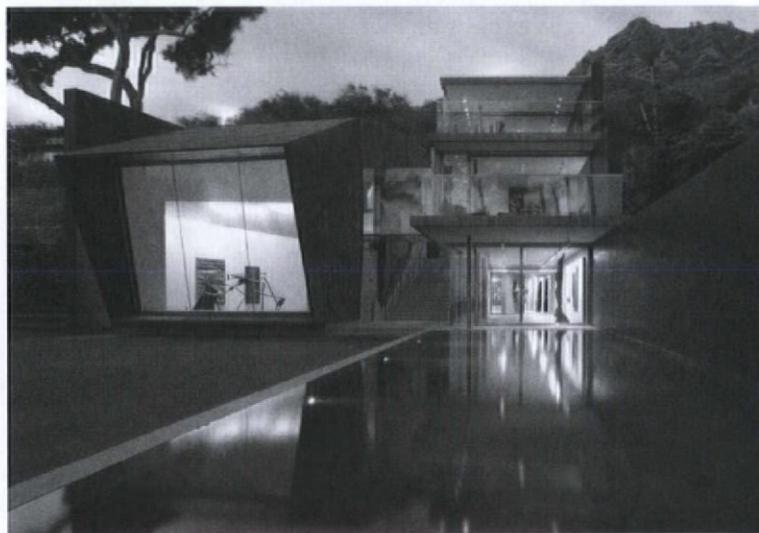
RC: I'm reminded of a past project, the Gosline Residence on Capitol Hill. Our clients were a couple that really enjoyed the process. It wasn't that they didn't want it to end, but after the project was completed, the owner would invite the entire office (which at the time was much smaller) over to the house about once a year. The process had a life beyond the built project, and he wanted us to participate in the dialogue. He loved that the house could accommodate and take on different uses that he could never have imagined.

**What inspired the decision to design everything down to the furniture for the Ballard Library and Neighborhood Service Center project in Seattle?**

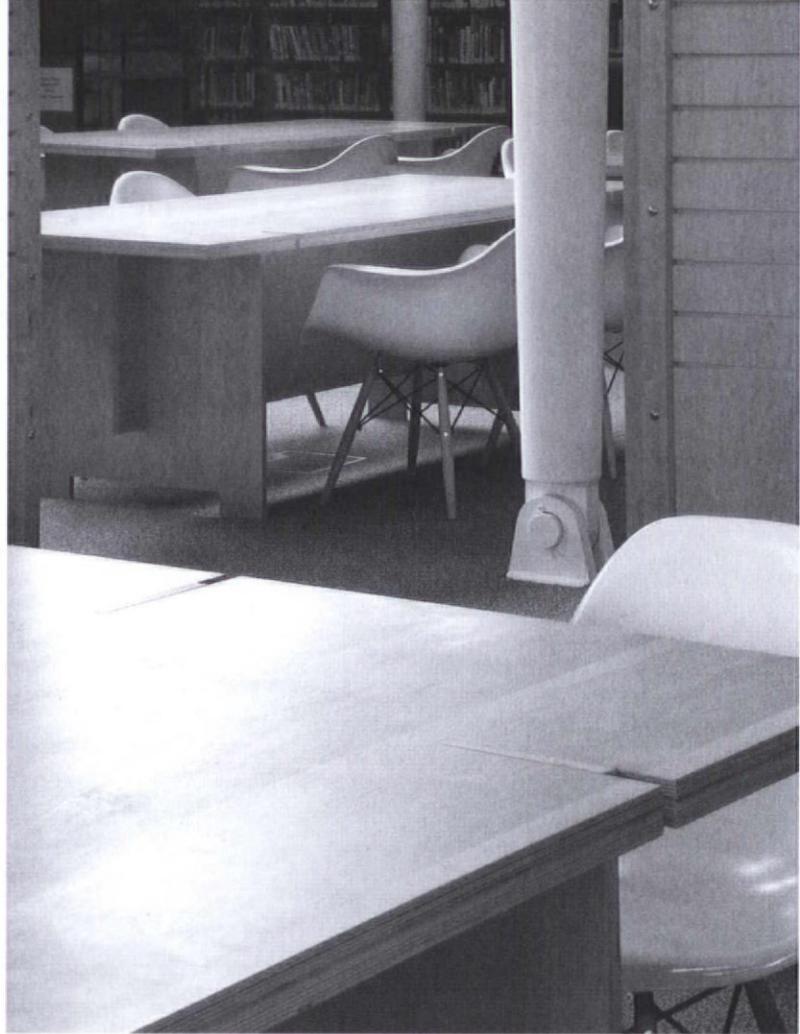
RC: We had a very modest budget on that project. It was initially designed with a furniture package that consisted of mass-market pieces, but that ended up being more costly than the available budget. It was the insight of Robert Miller, the principal in charge of the Ballard Library project, that led us to design and build the furniture ourselves for less money than it would take to buy it commercially, particularly in regard to the tables. We used Eames fiberglass shell chairs, but the lounge furniture, tables and children's furniture were all custom designed. Robert had an interest in notch-and-tab furniture. The theory was that if we could build everything based on a 4' x 8' sheet of plywood, there would be little waste, and the furniture could be shipped flat from the manufacturer. One night in the library, folks from the branch and our office assembled the pieces with rubber mallets. We didn't use any adhesive or mechanical connections. It was a way of leveraging a modest budget.

**You've also designed some very beautiful books. How does the process of designing a book differ from the process of architecture?**

RC: Peter and I are very involved in making the books. We believe in presenting our work in a way that speaks to the spirit of the building. The combination of images, drawings and sketches provide insight into the way we work. There's a new book



Waipolu Gallery and Studio, Oahu, HI. Photo: Nic Lehoux



Ballard Library and  
Neighborhood Service  
Center, Seattle, WA.  
Photo: Nic Lehoux

coming out in October titled *Listening*, which covers 12 houses from the last six years of our practice. Within it is an essay called "Stitching a House" by Alexandra Lang, whom we met when she first wrote about us a few years ago.

Peter has always been interested in getting great photography of our projects, even in the early days of the practice. Back then we worked with Joe Molitor and some of the other talented

architectural photographers of that time. There's tremendous value in images of your work since there are so many ways of reaching people beyond just printed photos now. They play into social media and websites, and that's a great thing. We have a history of having beautiful images of our projects and showing that work to others in a strong way. ☒

Peter Bohlin, FAIA, is a founding principal of Bohlin Cywinski Jackson and one of America's leading architects in practice today. Founded in 1965 in Wilkes-Barre, Pennsylvania, with Richard Powell, the firm has expanded to five offices in Pittsburgh, Philadelphia, Seattle and San Francisco. In 1994, the firm received the AIA Architecture Firm Award. In 2010, the AIA awarded Peter their Gold Medal, the highest honor they bestow upon an individual in the profession. [bcj.com](http://bcj.com)

Ray Calabro, FAIA, holds a Bachelor of Architecture degree from Virginia Tech and is a principal at Bohlin Cywinski Jackson. A member of the firm since 1995, Ray's experience includes visitor centers, corporate headquarters, academic buildings for science and research, and private residences across the western United States and Canada. His leadership and vision are most clearly demonstrated by the award-winning Grand Teton Discovery and Visitor Center in Jackson, Wyoming. He leads Bohlin Cywinski Jackson's publication efforts and serves as president of the Board of Trustees of ARCADE.

BUILD llc is an industrious design-build firm in Seattle run by Kevin Eckert and Andrew van Leeuwen. The firm's work focuses on permanence, sustainability and efficiency. BUILD llc maintains an architectural office and is most known for their cultural leadership on their *BUILDblog* ([blog.buildllc.com](http://blog.buildllc.com)). BUILD team member Sandy Ha contributes to the ARCADE interview series.

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# THE CREATIVE SPACE—



# TIME CONTINUUM

**Histories and Futures Inside the  
Rainier Oven Building**

Essay by Erin Langner

Photography by Peter de Lory

The first time you walk into the Rainier Oven Building you might mistake it for a typical set of work spaces. The two-level building that sits at the intersection of Jackson, 14th Avenue South, Rainier and Boren in Seattle's Central Area initially appears a maze of hallways, lined with rows of windowless doors. When closed, these doors are deceiving; their uniformity relays the false notion that each space behind them is the same. But were you to walk up and down the two floors, opening each door, vastly different sets of insides would be revealed. One space houses architectural models and a charming antique bureau. The next has shelves lined with plants and a collection of jeweler's tools. In one room towards the back, jump ropes hang from above, and hand weights are stacked and sorted by size. Continue outside, and you'd find that the studios spill over into two nearby annexes. There, modern bookshelves fill a former auto-upholstery building and kinetic sculptures drift through the air beside a collection of neon signs.

When ARCADE Executive Director and Editor Kelly Rodriguez visited the Rainier Oven Building this past summer, she was not deceived; she knew there was something distinctive about this place. ARCADE's editorial year—focused on space, place and culture—was already in the back of her mind when she arrived for the complex's annual summer party, so perhaps that guided her insight. Or, maybe it was the new moon that rose that night amidst a summer storm. Either way, it was there, framed by the clouds and the season's end, that she found herself surrounded by a true nexus of space, place and culture, whose story she invited Peter de Lory to tell in pictures, and me in words, for the publication's final issue of 2015.

When I parked in front of the Rainier Oven Building's stout brick facade to meet owner Carol Bennett, I had never been inside. But I realized I had noticed this place many times before because its facade appeared simultaneously old and new. The words "Rainier Oven Corp." were painted across one side, faded and weathered, while the rest of the wall looked pristine and graffiti-less, as if someone had been guiding it into old age.

As I stood with Bennett in the lobby, she spoke of the 23 studios she manages across the Rainier Oven Building and two adjacent spaces on the same corner. Herself an artist and designer, Bennett's own search for a working space brought her to the defunct oven factory built in the 1920s. At this unlikely Seattle intersection, away from other creative hubs like Pioneer Square and Capitol Hill, she found affordability—a

rare attribute during the 1990s when, similar to the present moment, demand enabled properties to be sold on the spot, without inspections. She also saw character embedded in the oven factory’s bricks that was absent from the new construction she witnessed going up around town.

Woodworker Tom Whitaker happened to be searching for a new studio when the complex opened in 1996. He recalled, “The first time Carol told me I had to see this building, I came by, and the windows probably had never been washed. It was dirty in here, and I thought, *This is worse than what I’ve got now.*” But as Carol reworked the building into a more open studio plan and power washed away the grime, Whitaker saw the potential she had detected and eventually moved into the space. Over the following 19 years he built new walls and massive shelving units, steadily nudging his studio into its current iteration—an airy, light-filled room, pungent with the scent of freshly sawed wood.

After filling the Rainier Oven Building with tenants, Bennett expanded the studios to the two annexes on the same corner, where Jeffry Mitchell was molding an army of small, brown figures in his space the day I visited. Preparing trays of these cartoonish men for the kiln as we spoke, he told me of his experiences working in a variety of studios throughout his career, landing at the Rainier Oven Complex temporarily in 2006 and then returning permanently in 2012. Mitchell recounted, “I was [in another studio] for a year, waiting for the landlord to connect my kiln. He never did. Artists are used to experiences like that. No one expects more, but Carol has a whole different philosophy.” Bennett also suggested he enlist Best Practice Architecture’s owner and founder, Ian Butcher (another Rainier Oven tenant), to design the wooden loft that presides over his space. I was tempted to joke that Tom Whitaker must have built it, but as Mitchell continued his story, that turned out to be the truth.



**AT THE CORNER OF A CULTURAL INTERSECTION** — Wedged into the southeast corner of South Jackson Street and Rainier Avenue South, the Rainier Oven Building sits at the boundary between the Central District and the International District. This simplified map presents a selection of the businesses and organizations surrounding the Rainier Oven Complex, which reveals a lively mix of neighbors, a characteristic that is echoed within the studios themselves.

Rainier Oven Building, studio, space, new, washed, told, kiln, experiences, complex, built

"I would rather be here with all of our neighbors than have a fancier office elsewhere, without them," Kailin Gregga of Best Practice Architecture explained as I spoke with Ian Butcher and her in their clean, white studio back inside the Rainier Oven Building, where they have worked since 2013. Having recently encountered Likelihood, a men's footwear store on Capitol Hill that Best Practice designed, I had witnessed the fruits of this approach in the flesh. Many of the striking store's details were born from collaborations with fellow tenants—for instance, its honey-comb-like lighting fixtures crafted by Troy Pillow and scrawling neon fabricated by Noble Neon. The happy hours and abundance of professional connections Best Practice spoke of having with their neighbors made it sound like these studios had been tailor-made for their work.

Lia Hall and Cedar Mannan of Noble Neon moved into a former metal shop in one of the annexes less than one year ago. As one of Best Practice's collaborators on the Likelihood store, they had already experienced the synergy among those working in the complex. Another benefit they mentioned was the freedom to transform their space to fit their needs. Hall described how they had worked over the past year to convert their studio from its past life as a metal shop into a subdivided space, adding couches and other elements of comfort: "Before, this was never a space where you would want to hang out and spend time ... but I think we see a lot of potential in spaces." As she spoke, her words began to sound like Tom Whitaker's decision to move into the building so many years ago—and like Carol Bennett's own thoughts about creating the first set of studios from the old oven factory.

After I left the building and passed by the aging Rainier Oven sign once more, Lia Hall's description of Bennett came back to



Rainier Oven Building owner, Carol Bennett (left), with tenant Lesley Petty.

me: "We say she's not a collector of art but a collector of artists." During a time when creative communities are often in constant states of relocation, the existence of consistent, supportive places for such practices feels like a luxury. But the importance of these elements to the Rainier Oven Building's success cannot be overstated. Twenty years of history and relationships have enabled the studios to expand around the people who work within them as the tenants' own careers do the same. The Rainier Oven Building is a testament to the idea that time's discrete but pivotal role in creative practices should be considered when we look for ways to build and maintain hubs of space, place and culture—that planning for and protecting the longevity of creative spaces is important. As Carol Bennett described her decision to leave the Rainier Oven Building's sign as is, "I don't need a new sign. I like that transition of time." ☒

Erin Langner is an arts education professional and writer based in Seattle. She is the Writers in the Schools program associate and blog editor at Seattle Arts & Lectures. She has held previous positions at the Seattle Art Museum and Henry Art Gallery. Her writing has appeared in *ARTnews*, the *Stranger*, and the *New American Paintings* blog, where she is the Seattle contributor. She is currently at work on her first collection of essays.

Photographer Peter de Lory works on projects addressing metaphors embedded in the West and in the Pacific Northwest landscape. He has created public works for Sound Transit and the City of Seattle, and his pieces are held by multiple other national and regional agencies and institutions. He lives and works in Seattle.



**GREEN DOLPHIN  
ENTERPRISES LLC**

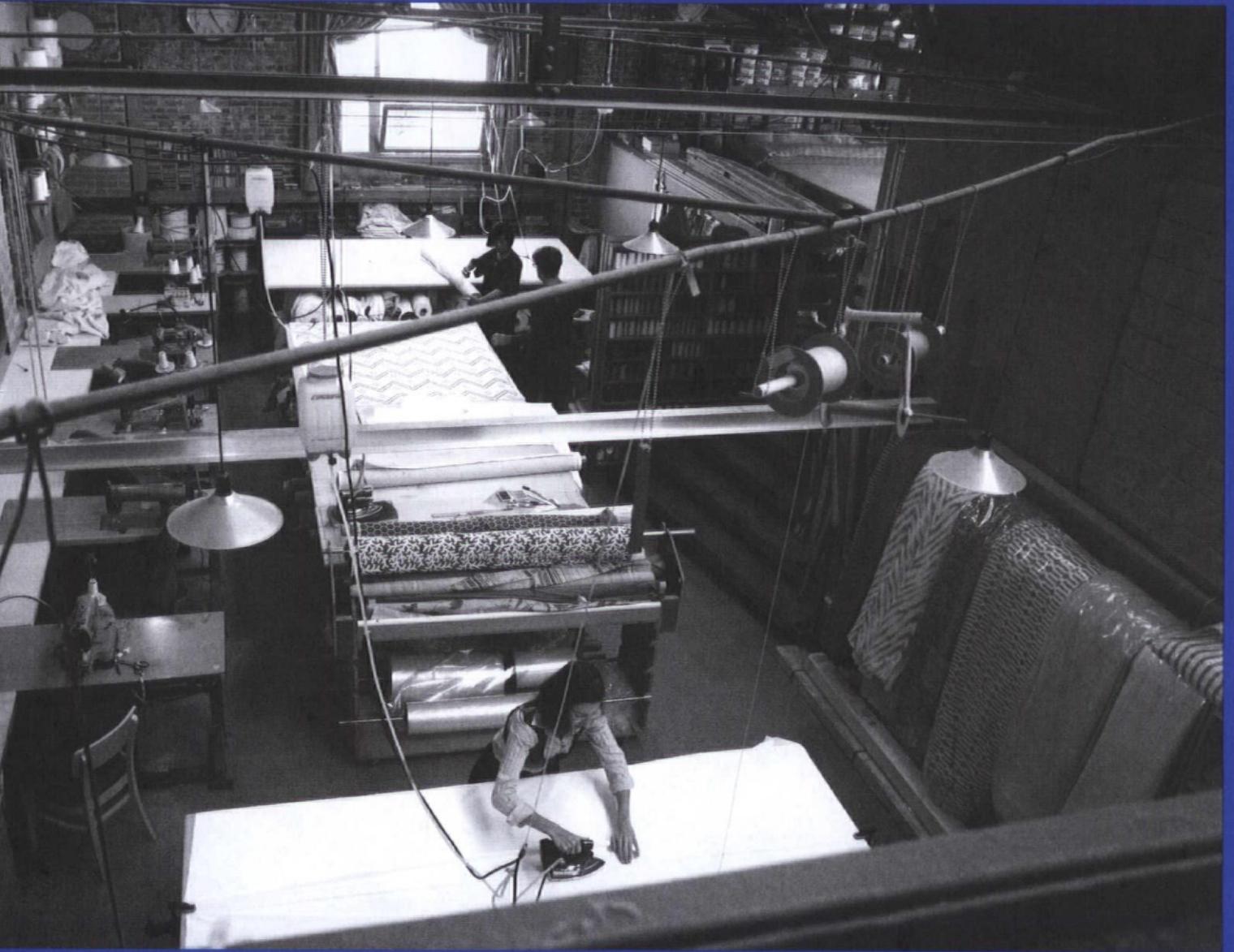


Rainier Oven is everything my previous work spaces weren't: a community of people, a well-maintained facility, hands-on management. I have been able to do my best work here.

—Thomas Whitaker



**LESLEY PETTY  
INTERIORS WORKROOM**



I have always said that if a client comes to see us here at the shop in the Rainier Oven Building, they will return again and again. Who wouldn't want to come here? Beautiful art, a myriad of creative people and a fabulous space all in one package!

—Lesley Petty

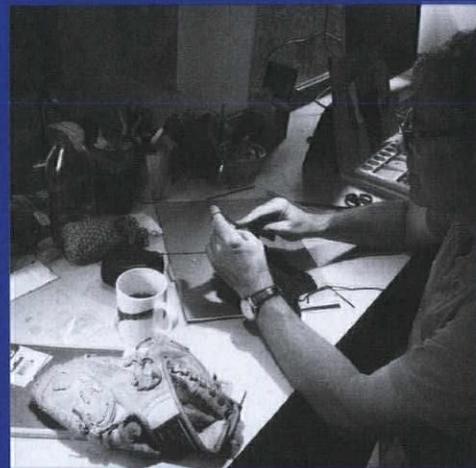


**JOSEF VASCOVITZ,  
ARTIST**



With high ceilings and a specially designed loft area, my studio is large enough to facilitate my diverse art practice, from painting to sculpture to working with found objects. I use the loft area to crochet small sculptures; right now I'm working on recreating toys from my childhood memories. The main area is set up for large-scale paintings, which often take several months. The great thing about a large studio is that because you can store so much, when you have an idea you can mine the things around you.

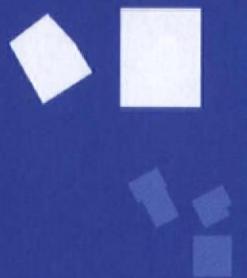
—Josef Vascoviz



**JEFFRY MITCHELL,  
ARTIST**

I love my studio and love working here with all the other creatives, who are great folk. Carol has a beautiful vision and creates really wonderful, smart, quality spaces.

—Jeffry Mitchell



**JENNIE GRUSS**  
**INTERIOR DESIGN**

The spaces that we design are inspired by much more than just beautiful things. Our work is inspired by our clients, our environment and our community. This idea extends organically to where we work—a diverse community of creatives who share resources, projects and drinks. I think of the ROB [Rainier Oven Building] as a one-stop shop for the best designer resources in the city, with great interior design, architecture, industrial design, visual art, a wood shop and a pillow/window treatment workroom all under one, or a few, roof(s).

—Jennie Gruss



**BEST PRACTICE  
ARCHITECTURE**



The work of Best Practice is most successful when we are able to pursue a conceptual approach to a given project's "problem," and we also love to be inspired by our peers and neighbors. This is why we are thrilled to be working in the Rainier Oven Building. As a group of social designers, we often spend time chatting with our neighbors, which then leads to collaboration. Because of this, we have the opportunity to exchange ideas with artists, designers and craftspeople who can inspire us to go in directions we never would consider on our own, and they often help us solve tough design problems.

—Ian Butcher



**ELIZABETH SANDVIG-SPAFFORD,  
ARTIST**

The Rainier Building is my second home. I have had a studio there for 16 years, and I find Carol's care with developing studio space is good for the production of art, as well as providing delight through her selection of art on the walls. I am always happy to go there.

—Elizabeth Sandvig-Spafford





## LILYEMME JEWELRY

LilyEmme Jewelry has an elegant and minimalist aesthetic, and the Rainier Oven Building provides us with a space that matches. This beautiful old building; our bright, lofty and colorful space; and the friendly, small community of diverse tenants makes working here enjoyable, and coming to the jewelry studio is something we look forward to every day.

—Valerie Nethery



## COALITION ENDING GENDER-BASED VIOLENCE



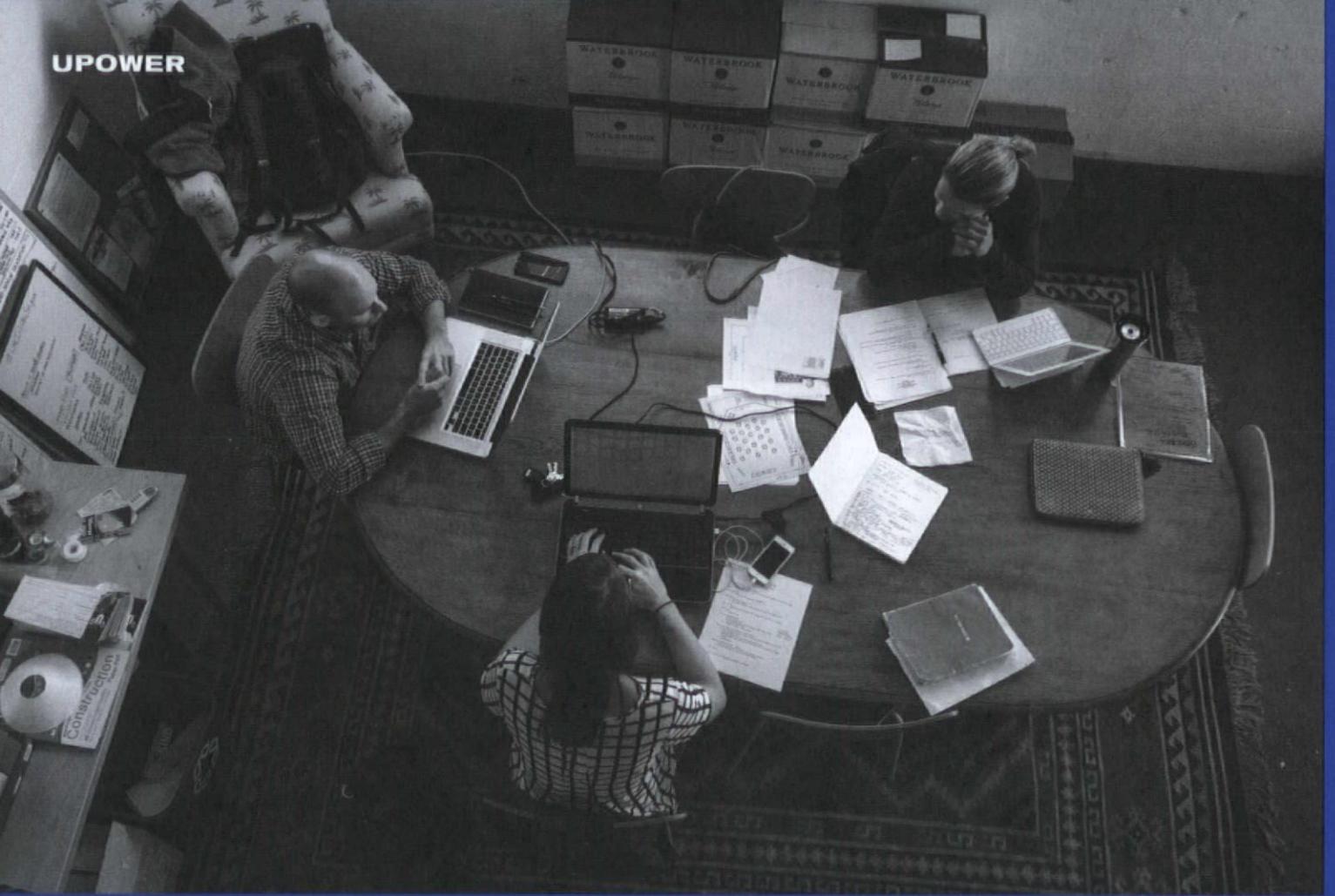
We are a small nonprofit working to end gender-based violence, so in many ways we seem like an anomaly in the mix of artsy Rainier Oven Building tenants. But we love working in this bright, attractive space and being a part of the warm, creative community that has grown organically in the building. Being able to see people create beautiful and/or functional art can be such a nice counterpoint to some of the

difficult issues we work with. And folks have been very willing to help us out when we've needed a shelf built, advice with space planning, art to hang on our walls, a hem sewn or a musical trio to play at a fundraising event! We hope that our building mates feel that we bring something to them as we all work towards a more just, safe, equitable and beautiful community!

—Merril Cousin

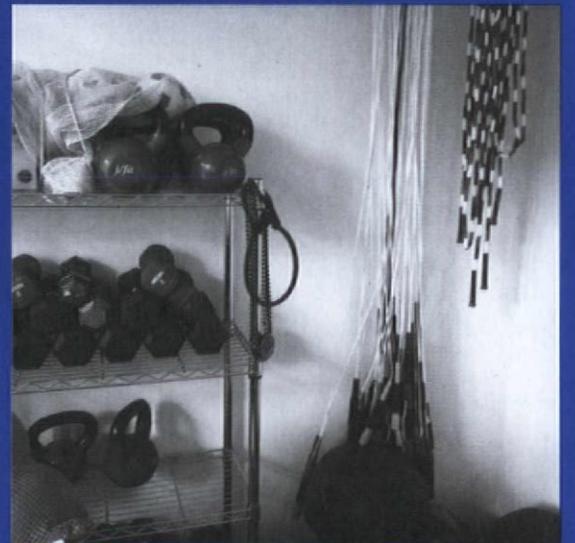


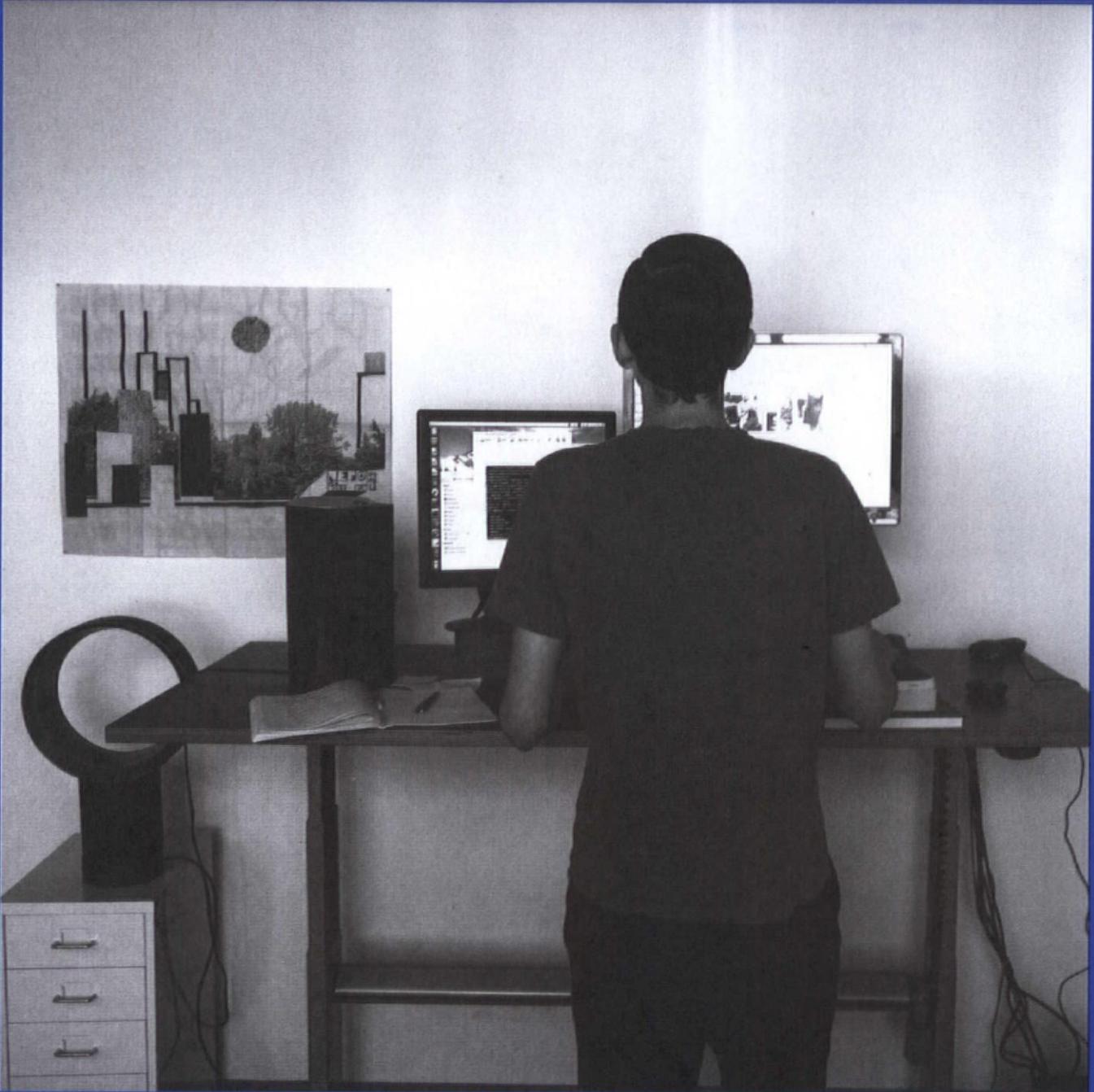
UPOWER



Upower is a nonprofit bringing fitness to under-resourced teens in King County. We have been in the Rainier Oven Building since March 2015 and feel like we have found our home. Our space has been perfect for growth, and we are confident it will be great for us as we continue to expand. We are inspired and motivated by the local artists and successful small businesses that surround us at Rainier Oven.

—Clare Spano





The Oven Building is embedded in a community of artists, craftsmen and entrepreneurs. You can do so many creative things in this space. For us, it was building a tech startup that focuses on a healthy work environment and developing a beautiful and useful product for the small businesses we care about.

—Felix Livni







## TROY PILLOW STUDIOS

Being part of the Rainier Oven community allows me to be surrounded by creative people and provides me with the unique opportunity to have an urban sculpture garden/studio to showcase my work. Not enough thanks can be given to Carol for her commitment to the arts in our community. She has not only developed a haven for artists to work in but has combined architecture, landscaping, gardening and art into the overall design, parlaying it into a rare use of urban space. I feel very lucky to have had my studio here for the last 12 years.

—Troy Pillow



## SHED

SHED was one of ROB's tenants when the building renovation was completed in 1998. Not only have we had our offices and workshops here, but we have also designed many things for the building—interiors, lifts, awnings, etc. Now we proudly occupy the former Surefit building on the corner of Jackson

and Rainier. We think that we have added a lot of character to the ROB design community, but it is also true that the ROB has shaped the character of our company as well—SHED would not be SHED if we had started somewhere else!

—Prentis Hale



## BREMELO PRESS



I always look forward to coming to work. I am inspired by my neighbors. This is an impressive bunch, and I am challenged to be the best at what I do because they are. Working within this community feels like a celebration of things that matter—creating and making with integrity and skill. They are a part of why I love doing what I do.

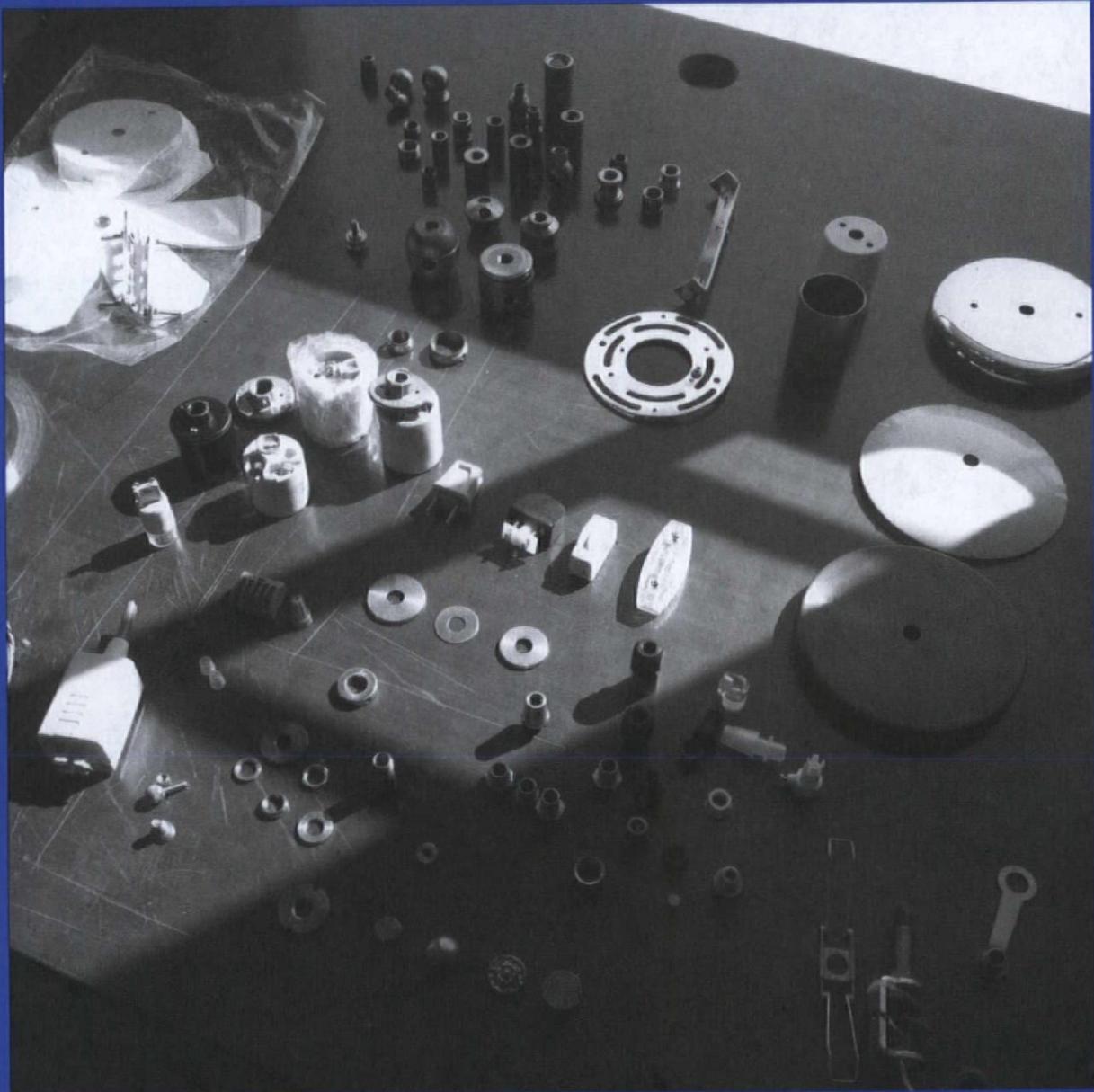
—Lynda Sherman



## FIXTURE

I'm fairly new to the building and am still getting to know my neighbors. I really enjoy the energy of the space and our corner in the neighborhood. It's a great place for me, and I really love being here and being a part of this great community.

—Josh Leggett





Noble Neon creates handmade neon light fixtures, signage and displays. We aspire to design new ways to feature the luminous neon tube. We are privileged to be a part of a creative and industrious community here at the Rainier Oven Complex. We've been operating at the Rainier Oven for a year and have already collaborated on projects with other makers and designers here. Carol has truly set the conditions for these kinds of synergies to happen—attracting folks who are dedicated to their craft in an impeccable way.

—Lia Hall & Cedar Mannan



**ATELIER VERT -  
GARDEN ARTISANS**

Space at the Rainier Annex offers a quiet respite to create beauty and build a business. The collective creative energy and experience is an unexpected bonus.

—Heather Lakhal





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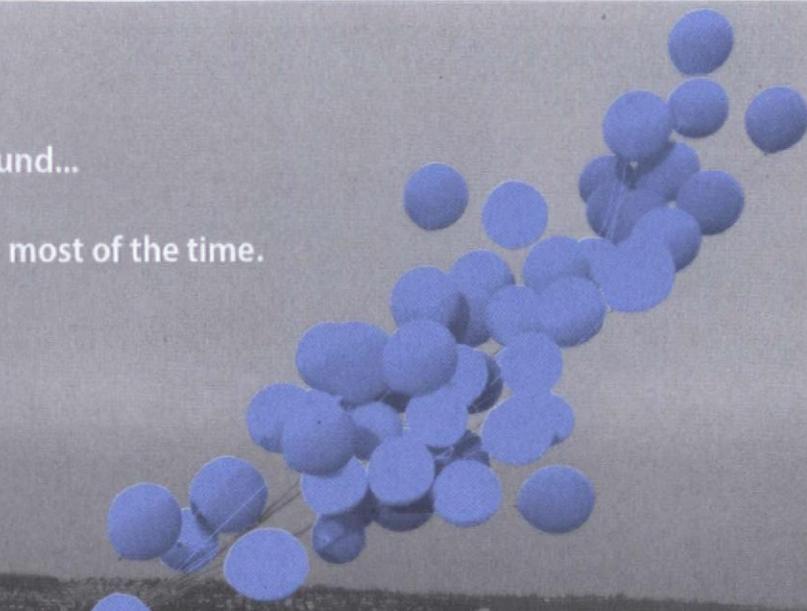
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# Beyond Sustainability

Exploring the Ethics of Architectural Salvage

Amy Hetletvedt

In the early 2000s, sometime in the night, or perhaps brazenly during the day, over 50 decorative terra-cotta lion heads were stolen from the abandoned high-rise called Lee Plaza in Detroit. Passing it, locals experienced that familiar blank sadness: something else was missing, and holes were left behind. And when six of the lions reappeared on the facade of a high-end condominium development in Chicago, dismay turned to outrage. As Dan Austin chronicles in *Lost Detroit*, 24 of the Lee Plaza lion heads were eventually recovered. Others remain missing, and those in Chicago still stare out of the facade of their new home.

While the art world has built up terminology and protocol around the removal, theft or selling of cultural objects, there has been less dialogue about architectural artifacts—old building components from windows to ornaments to wood—that are looted, lost or legally sold in communities suffering from civic breakdown and economic distress or experiencing significant population shifts. Like the lion heads from Detroit, these artifacts—tangible assets of vulnerable or transitioning communities—are often disassembled and exported by architectural salvage purveyors, both legal and illegal, or by curators of the built

environment: preservationists, architects, craftspeople, planners and those involved in municipal processes. A disproportionate focus on the environmental merits of architectural salvage has left a glaring absence of discussion on the numerous other ethical issues that emerge from the material reuse process.

The story of St. Peter's Episcopal Church in the Germantown neighborhood of Philadelphia illustrates some of complexities of architectural salvage in the transitions between vacancy and occupancy. The imposing neo-Gothic structure designed by Furness and Hewitt was completed in 1883. By the turn of the 21st century, as Alan J. Heavens of the *Philadelphia Inquirer* describes, the congregation had dwindled while costs to maintain the building had risen, resulting in the church's closure. As reported in the local blog *PlanPhilly* (see Alan Jaffe's "Preservation Row: St. Peter's Windows Reflect Church/State Debate"), the diocese first sought permission from the local Historic District Commission to sell components of the National Register-listed church in 2009. Philadelphia's Historic District Commission approved the removal of four stained glass windows from the property, citing their "great artistic value and historic significance" and their insecurity in their current location. The windows, designed by Violet Oakley and Tiffany Studios, were sold to the Pennsylvania Academy of the Fine Arts, who agreed to hold them in perpetuity.

This outcome was a gain for the artifacts themselves, which are now safe from vandalism, theft and the effects of time and weather. The curators of the built environment (in this case, the owner

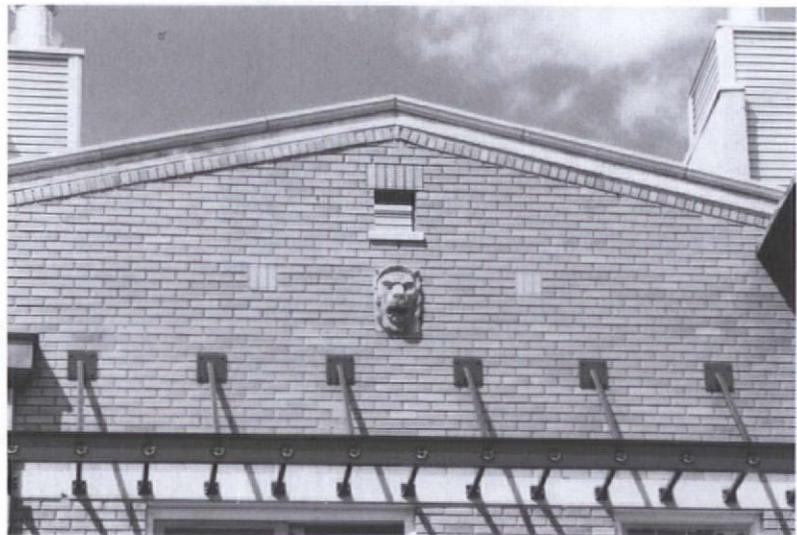
and the Historic District Commission) acted in the best interest of the artifacts by removing them from the context. Yet the transfer of the windows was a loss for the community, as it exported the character that contributed to the neighborhood's visual fabric. The commission may have had this in mind when it denied a subsequent petition by the diocese to remove additional windows from the building. As reported by *PlanPhilly*, the commission asserted that character-defining features should remain in situ despite the diocese's contention that the windows and their associated maintenance costs were an obstacle to potential buyers. Now, a decade after the church was closed, it is being rehabilitated for use as a Waldorf school. Its windows, both present and absent, mirror the complexities of balancing the interests of the artifacts, the interests of the owners and the interests of the community.

The flurry of demolition activity currently taking place in Detroit highlights some of the commingled values that accompany the exportation of a vulnerable community's architectural assets. Under city-sanctioned auspices, the Blight Removal Task Force is using various reclaim programs to salvage materials from structures targeted for demolition. In contrast to the outrage over the stolen lion heads, the press has been largely positive about this process. Lauded as a win-win that sustainably removes long-standing eyesores and provides local jobs, the materials from these structures are being catalogued, warehoused and resold.

Some of these salvaged building materials have remained in Detroit. In the *Detroit Free*

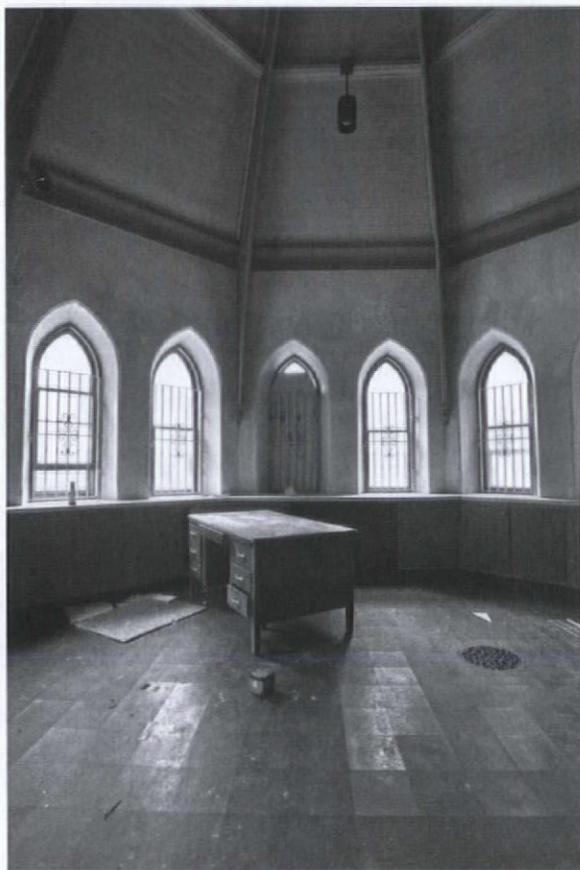
Opposite page: Lee Plaza interior mezzanine, showing the ocular windows alongside the gaping holes from which the lion heads were removed. Photo: © David Kohrman / [forgottendetroit.com](http://forgottendetroit.com)

Right: A lion head from Detroit reinstalled on a Chicago condominium project. Photo: © David Kohrman / [forgottendetroit.com](http://forgottendetroit.com)



**A disproportionate focus on the environmental merits of architectural salvage has left a glaring absence of discussion on the numerous other ethical issues that emerge from the material reuse process.**

Detroit, artifacts, new, city, communities, materials, use, Ningbo Museum, site, material



Interior of St. Peter's Episcopal Church, Philadelphia, PA. Photo: © Laura S. Kicey

Press article "Reclaim Detroit Finds City's Treasures in Abandoned Homes," L. L. Brasier describes how coffee shop proprietor James Cadariu was convinced to use locally salvaged materials for his rehabilitated storefront space when he discovered wood in a reclaim warehouse that came from a home on the same block where he played as a child. The retention of building artifacts in their original contexts is one of the powerful ways that artifacts can serve their communities by preserving cultural memory. When this happens, the story of the built past is woven into the community's future.

However, other materials from Detroit's demolished buildings are leaving the city. Some are being remade into products ranging from sunglasses to butcher blocks to ukuleles and guitars. "Detroit debris as a marketing tool is in vogue. Detroit is now a brand," said Craig Varterian, executive director of Reclaim Detroit, in a recent *Bloomberg News* article by Chris Christoff and Alexandra Mondalek, "Detroit Craftsmen Sift House Rubble in Quest for Treasured Wood." While many of the craftspeople who create these products live or work in Detroit and may benefit from this new business, the fetish for the artifacts of the city's urban decay is resulting in the permanent removal of many of Detroit's material assets from their long-standing context. It could be argued that salvage and reuse are a natural process of human and social evolution and that in this process some communities' resources are co-opted into other forms of buildings and objects. When communities are displaced or abandoned through urban migration or depopulation, artifacts remain and questions about their removal and use can be seen from multiple vantage points. In Detroit, new craft traditions are both transforming and exporting the materials left behind, benefiting the community but also permanently removing pieces of its history. It is both a gain and loss together.

Across the globe, a recent project in China provides a different example of architectural salvage that demonstrates how material reuse can interpret the narrative and preserve the craft tradition of a vulnerable community that preceded it. In the historic city of Ningbo, a new district called Yinzhou sits on the site of old agricultural villages that were razed for its development. In the *Architectural Review* article "Ningbo Museum by Pritzker Prize Winner Wang Shu," Till Wöhler reports that for the design of the new Ningbo Museum of History, which was built on the site, architect Wang Shu knew "he could not renew the site's rural vitality, since it had simply ceased to exist. All that remained of the villages were acres



Photo: Tile wall in Ningbo Museum by Siyuwj, building designed by Wang Shu, 2014. CC BY-SA 3.0 (creativecommons.org/licenses/by-sa/3.0) via Wikimedia Commons (commons.wikimedia.org/wiki/File:Tile\_wall\_in\_NBM\_%282%29.jpg)

of broken tiles and bricks.” Instead, he incorporated the remaining masonry materials into the facade. The use of reclaimed material made sustainability a visually prominent element of the building, but this choice also reintroduced a traditional building practice called *wapan*. *Wapan* is a masonry assembly technique that uses fragments of terra-cotta tile, stone and brick and was developed as a way to rebuild quickly after disasters such as typhoons. The looming brick-patterned facade makes a statement about demolition and urbanization with this allusion to disaster recovery and invests the building with the memory of what came before. It also actively carries the thread of a local craft tradition into the present day. When rooted in its place of origin, material reuse has the opportunity to provide cultural value beyond only ecological benefit.

The art world provides a corollary for this discussion about mobility and ownership. Art repatriation, a term for the practice of returning disputed artifacts to their lands of origin, has been a favored policy in recent years. This is evidenced by some Western museums returning artifacts acquired under dubious circumstances to their places of origin. However, dissenting voices are emerging that support the view that important antiquities are the common property of all humanity and that spreading them throughout the world distributes the risk of destruction. Which view best fits architectural salvage? One important

distinction between artistic objects and building components is that the former are inherently mobile, while architectural artifacts are designed to be one of a whole, rooted in place. It follows then that curators of the built environment must consider context in making ethical judgments about architectural salvage. They should not only consider what’s best for the objects or the environmental benefits of their reuse but how the artifacts can best serve their communities.

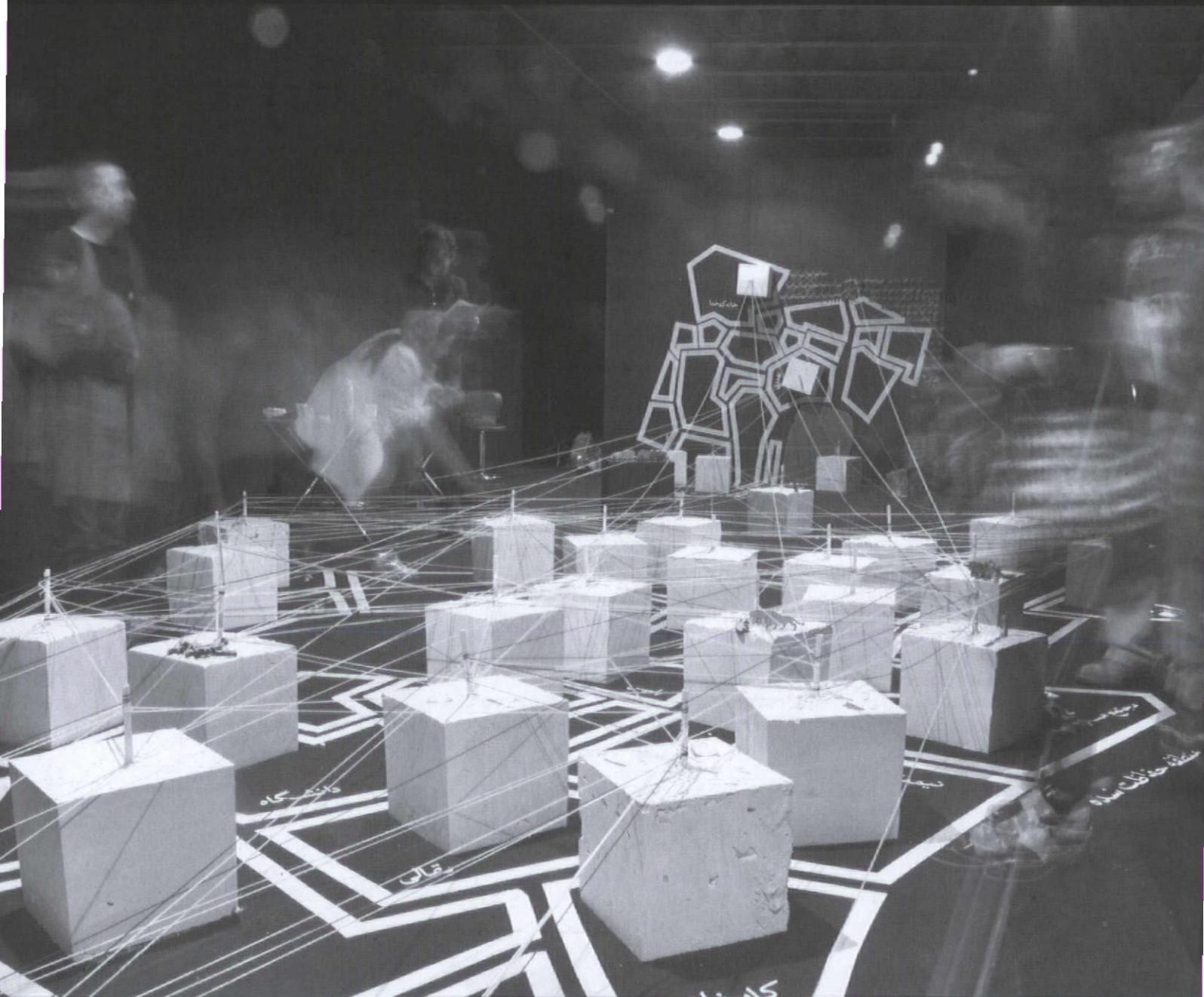
Even when dilapidated beyond reasonable repair or condemned to destruction, buildings’ artifacts contain both craft knowledge and cultural memory. Buildings are the fabric, the soul of a city. Old buildings and their components are also particularly important assets for vulnerable communities, which have historically been on the losing ends of resource grabs. Curators of the built environment must look beyond the environmental good of material reuse to consider a range of ethical questions about mobility, context and ownership. These questions can include the security of the artifacts, the burden of maintenance costs, the material and cultural value of the artifacts to the community, the benefit or loss to the community’s visual fabric and the craft traditions and opportunities that the objects present. Cultural resources can be used to benefit their contextual communities and participate in their futures when residents and curators of the built environment work together to evaluate these issues. ■

Amy Hettletvedt is a licensed architect, preservationist and writer. Among other professional and volunteer positions, Amy has served as a Historic District Commissioner for the City of Detroit and is currently an editor for the online platform *Architecture in Development* based in the Netherlands ([architectureindevelopment.org](http://architectureindevelopment.org)). Amy and her family reside in Togo, West Africa. She holds a Bachelor of Science in Architecture degree from the University of Michigan and a Master of Architecture degree from the University of Washington.

# I Wish for an Animal

A Game to Make Urbanites Aware of Their Impact on Wildlife  
*Shaghayegh Ghassemian*

Photography by Tarlan Ghassemian



**"I Wish for an Animal"** (in Farsi: Heivanam Arezoost | شسوزرا من اویح) is an award-winning multiplayer mixed-reality game about wildlife conservation that I developed for my MDes thesis at the University of Washington. I designed the game to promote wildlife conservation to residents of my home city of Tehran who don't yet consider this an important issue.

Tehran, like many other megacities, maintains a precarious relationship with the natural world. For many urban-dwellers, their daily exposure to nature is limited to their pets and apartment plants. They are removed from the realities of the natural world and also from rural communities, creating a belief that preserving the environment is a job for environmentalists rather than themselves.

Although rural communities are seen as a primary threat to wildlife populations through poaching and other traditional practices, because

of their recognition, relative wealth and political influence, Tehran urbanites have the potential to positively affect wildlife by actively engaging with the problem by supporting rural communities, changing their consumption habits, raising awareness and making the right political choices. However, a sentimental reaction to the problem, and especially toward poachers, has caused city residents to push for strange policy decisions (like a multiyear ban on legal hunting) based on emotional conclusions (such as hunting is evil under any circumstance). Though there are several reasons why wildlife suffers in Iran, the urban population's unfair blame is shifting the burden of wildlife extinction onto the rural community.

To help city dwellers examine their everyday impact on the environment, I created a three-day game that engaged them with the problem within their daily routines. "I Wish for an Animal"



Opposite and above: I implemented the game in April 2015 in Tehran, installing the physical components in the basement of a mall in the city's wealthiest neighborhood. The site was selected to attract the attention of wealthy urbanites, whose consumption choices tend to impose significant demands on rural villagers and wildlife. While text messages were sent and received, I transformed the model based on players' decisions: locations were destroyed, statuettes were moved and tracked by colorful yarn, animals were killed and nailed to the wall, and players died and went to the cemetery. There was only one main goal in the game: saving the animals. As the game proceeded, players understood that they needed to cooperate, compromise and sacrifice in order to succeed together. They either won as a team or all lost.



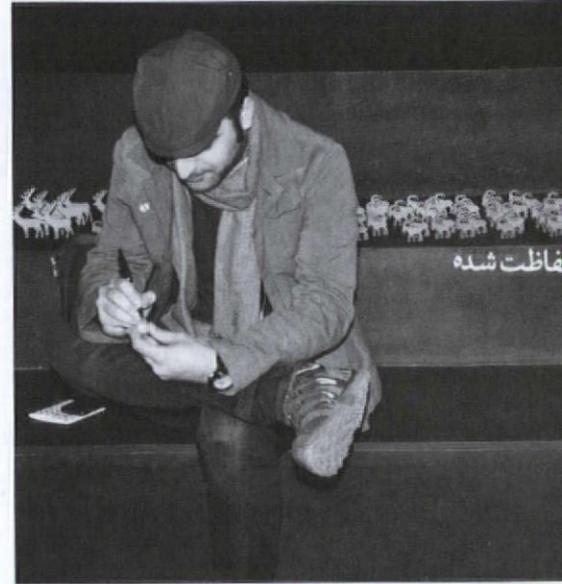
On the third day, the text message server went offline. We discovered that the Cyber Police (police departments in charge of cybercrimes) had stopped the server because of wording (“the police”) used in the messages. We convinced them that the texts were for a game and harmless, and the server was reconnected. However, the game’s momentum had already been disrupted. To engage the participants again, I asked everyone to come back to the center-point the next day and play physically around the model. This created an unexpected opportunity for me to engage directly with players.

consisted of a physical component, a model of a city, and a virtual component, text messaging. The game’s center-point, the model, told the story of a city, a village and a protected area where animals were dying out because of human negligence. Players arrived at the city (physically at the center-point and virtually through text messages) with the purpose of saving animals in the protected area. By succeeding or failing at various missions, participants affected the city, other players and the animals in the protected area.

Choosing a game as a medium to engage residents with this issue was inspired by the research of Stanley Asah, who suggests in his paper “Motivational Functionalism and Urban Conservation Stewardship: Implications for

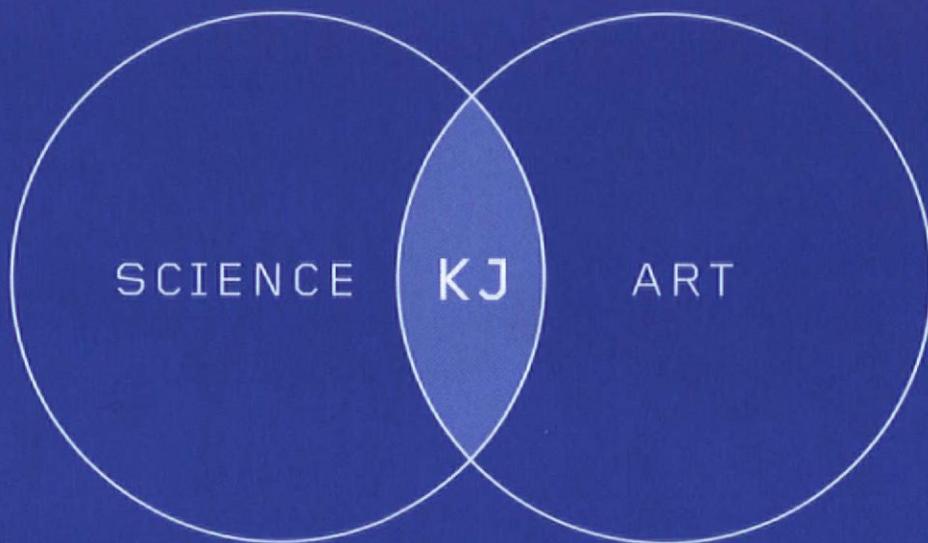
Volunteer Involvement,” that volunteers will commit more to conservation activities if they “meet their more pertinent personal and social goals of connecting with and giving back to their communities, socially interacting with other volunteers and defending and enhancing their egos.”

“I Wish for an Animal” created a temporary public sphere for urbanites to discuss the impact they have on the environment and other communities. This project was done with the help of a well-known NGO in Iran, Persian Wildlife Heritage Foundation (PWHF), and conservationist Amirhossein Khaleghi. You can watch a video of the event at [vimeo.com/129027928](https://vimeo.com/129027928). 



During the game, players raised a number of questions, including: “Why do we have to kill animals to save them or to run a city?” “Why do certain decisions result in saving or losing animals?” “How do we measure balance in the environment?” “What is an ecological footprint?” These questions served as starting points for a group discussion.

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# Buckminster Fuller (Not Al Gore) Invented the Internet

*Charles F. Bloszies*

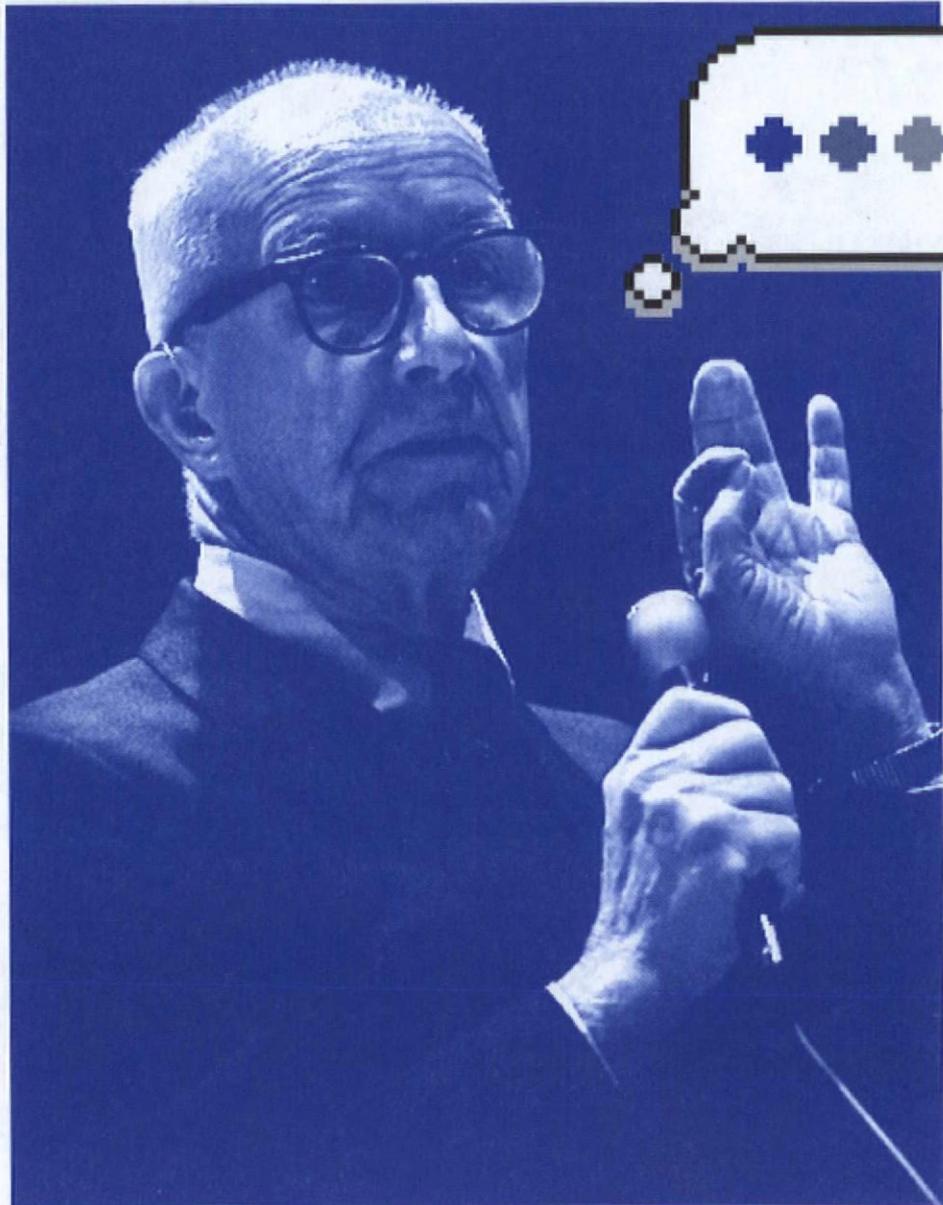


Photo: Buckminster Fuller, 1972–3 tour at UC Santa Barbara, by Dan Lindsay. CC BY-SA 3.0 ([creativecommons.org/licenses/by-sa/3.0/](https://creativecommons.org/licenses/by-sa/3.0/)) via Wikimedia Commons ([commons.wikimedia.org/wiki/File:BuckminsterFuller1.jpg](https://commons.wikimedia.org/wiki/File:BuckminsterFuller1.jpg))

He walked onto the stage and for an uncomfortably long time said nothing. Finally, he uttered something about how he wished those of us in the audience—a crowd of bright, young faces filled with hope and curiosity—could see through his eyes at this moment. Buckminster Fuller was all about the future. On 18 April 1968, at a plenary session of the 21st Annual Conference on World Affairs at the University of Colorado, he laid out the details of his freshly minted *Operating Manual for Spaceship Earth*, the topic of his keynote address.

Not yet as famous as he would become, Fuller was already known as a 20th-century Jules Verne, an eccentric engineer type with an unusually broad intellect. He seemed to think that conventional wisdom was puerile. His lecture that evening was a lengthy string of quasi-related notions about how the world worked, enlivened by all kinds of unusual references. For example, when we jump *up*, he said, we are not really jumping up. Since the earth is a sphere, we are actually jumping *out*. People jumping up in China are headed in the opposite direction from those of us jumping up here, so jumping out would be a more accurate description. He also seemed disturbed that architects didn't know how much their buildings weighed, as if this were some sort of architectural vital sign that needed to be monitored regularly. At the end of the talk, he knitted up everything he had said in a manner that left me pondering these odd ideas, wondering if they should be better embedded in the way I viewed the world.

Fuller put his principles into practice designing all kinds of clever things he believed were self-evident solutions to obvious problems. His Dymaxion car is but one example, a three-wheeled vehicle that could turn on a dime, aerodynamically sculpted so that with the addition of

**Fuller put his principles into practice designing all kinds of clever things he believed were self-evident solutions to obvious problems.**

wings it might be able to fly. It didn't quite catch on. Same with the geodesic dome. The idea here was to enclose a space under a surface of minimal area. He worked out a geometric network that resulted in a half-sphere using rods that were all the same length. Perhaps he should have gone on to design geodesic furniture, geodesic doors and so on, because the dome didn't quite accommodate the world of rectilinear shapes and only garnered interest from a few devoted followers. These designs were the product of sophisticated engineering to be sure, but science alone doesn't automatically yield the ideal solution—these objects all looked kind of funny.

A decade and a half later, in the late '70s, I heard a much more famous Fuller speak as professor emeritus at the University of Pennsylvania. His address was part of a lecture series under the auspices of the Graduate School of Fine Arts that featured famous architects on the theme of what inspired their work. The talk followed his usual meandering but attention-riveting pattern, and not once did he mention what inspired his designs. Instead, he spoke about the future, of course. He was excited by the possibility that electronic communication could lead to a true democracy; everyone's voice could be heard through this exploding medium of instantaneous information exchange. He was telling this crowd of architects that the future was all about something other than the static edifices they were creating. Maybe we didn't quite hear the message that night because we gave him a standing ovation despite his hint that our profession was about to become less relevant, or at least less interesting.

As it turns out, we still jump up, not out, and most buildings are just fine even though we don't know exactly how much they weigh. Most of Fuller's designs are now viewed as curiosities, but one idea he expressed that evening in Philadelphia really did catch on. That night, he invented the Internet. What he failed to predict, though, is that the designers of this virtual network now call themselves architects. ■

A version of this essay was originally published by [ArchNewsNow.com](http://ArchNewsNow.com) and [archengine.com](http://archengine.com).

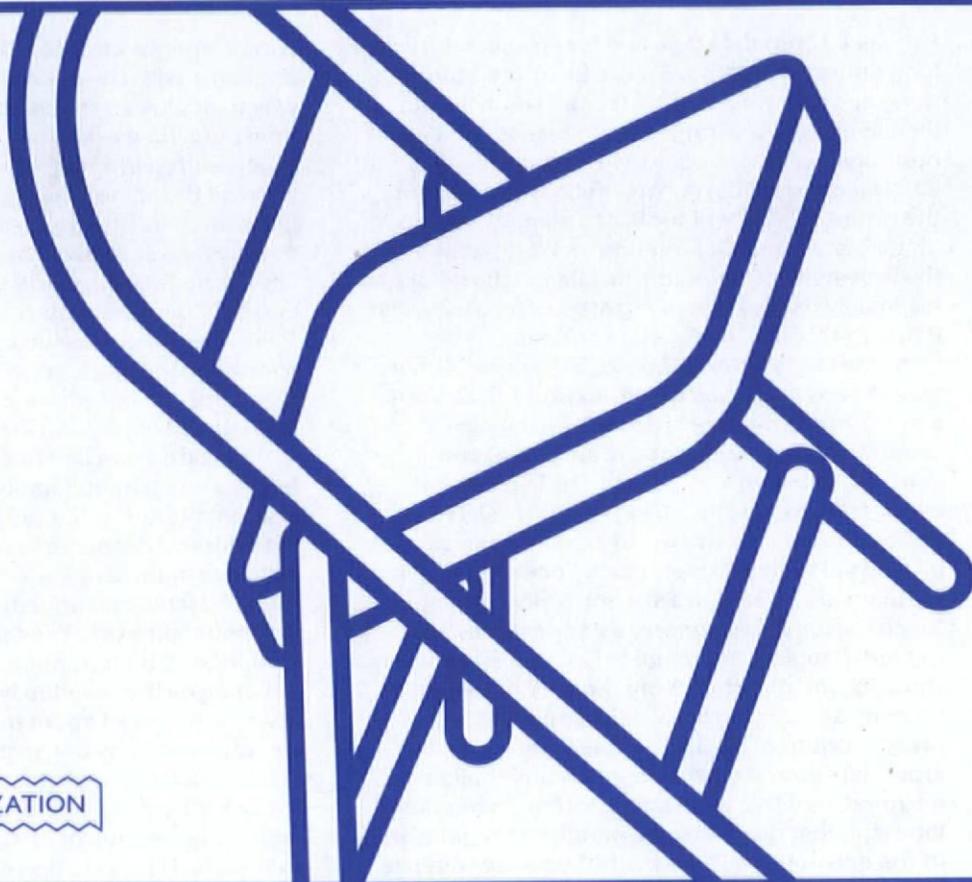
Charles F. Bloszies, FAIA, is an architect, structural engineer, writer and principal of a practice in San Francisco focused on complex urban infill projects. He is the author of *Old Buildings, New Designs—Architectural Transformations*, published in 2011 by Princeton Architectural Press and now in its third printing.

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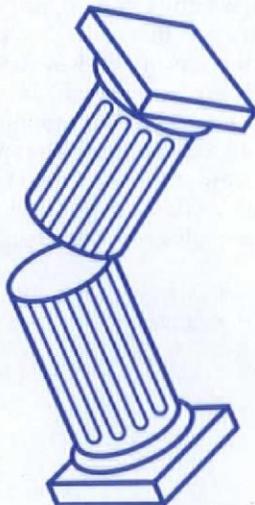
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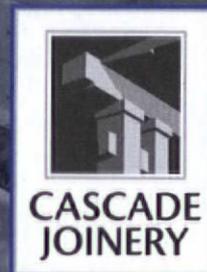
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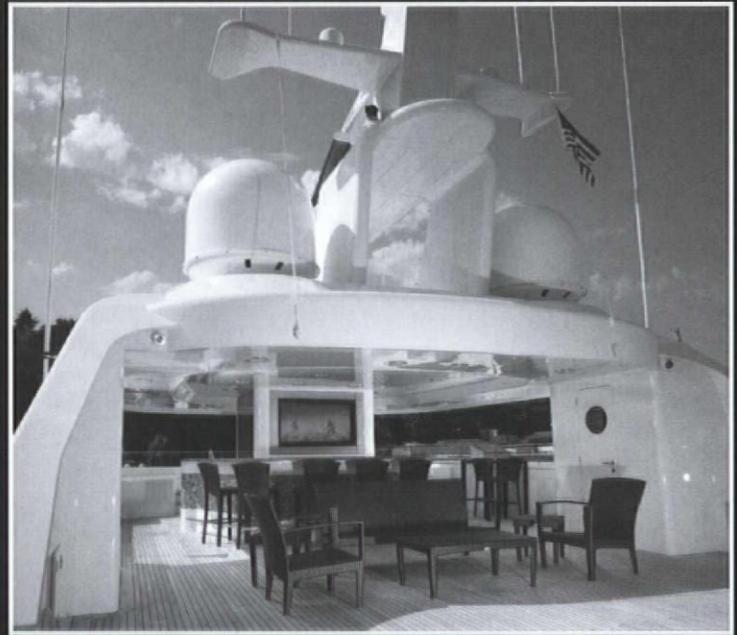
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