

# Antenna™ Workspaces

## Idea & Concept

Compiled and edited by Knoll, Inc.

*Based on interviews with Antenna Design principals Masamichi Udagawa and Sigi Moeslinger;  
Douglas Reuter, Knoll Senior Marketing Director; Tracy Wymer, Knoll Director of Research, Strategy and Media  
and Benjamin Pardo, Knoll Director of Design*

**Knoll**



How open is today's open office? That is the fundamental question that Antenna Workspaces by Masamichi Udagawa and Sigi Moeslinger raises—and answers—with their eponymous office system. For their first foray into the furniture industry, the principals of Antenna Design have created a deceptively simple collection of desks, tables, storage units and screens that can be combined and recombined in a seemingly infinite number of ways. At first glance, the collection's straightforward, no-nonsense detailing gives an overall simplistic air, but, on closer inspection, it becomes evident that, just as its name implies, Antenna Workspaces embodies an implicit and knowing critique of its many precedents, instinctively detecting, interpreting and even forecasting subtle signs in today's changing office landscape.

## History of the open office

The histories of the open office and the furniture systems that populate it are intertwined and go as far back as the dawn of the 20th century when a young Frank Lloyd Wright, strongly influenced by the writings of Ralph Waldo Emerson, among other transcendentalists, began expressing his theories of the individual and the collective in three-dimensional form. In the late 1890s, his vision of an egalitarian and communal work environment flourished—literally—in the drafting room in his own Oak Park, Illinois studio, where he elevated work—beginning, of course, with his own work—to a sacrament.

Elevating the quotidian tasks of an architectural practice into ceremonial acts confirmed his idealized view of work and, in Wright's case, gave visible sign to an invisible power—his creativity. As historian Robert McCarter noted, Wright confirmed this view of a vocation as both a moral obligation and the public expression of one's identity in a small inscription mounted in his Taliesin studio: "What a man does—that he has." Believing that space could shape character, Wright maintained that the 20th century office building should be as inspiring as a cathedral. This ongoing preoccupation with elevating white-collar work is evident in his buildings as early as the Larkin Company Administration Building in Buffalo, New York of 1903 and reached its apotheosis in his design of the SC Johnson Wax Administration Building in Racine, Wisconsin in 1936. The centerpiece of the Johnson Wax building was what Wright called the "great workroom," an enormous expanse of open space with individual desks arranged along the implied perimeter lines of the structural bays, an organizational structure that was to permeate the American office in for the rest of the 20th century.

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The furniture that would be appropriate for such grand communal workspaces was another issue. At that time, the contract furniture industry was in its infancy—Hans Knoll founded his company in 1938, two years after the completion of the Johnson Wax building. In keeping with his vigilance over every aspect of a project, Wright devised his own furniture for Johnson Wax, including three-legged chairs which, due to difficulties in balancing, did not meet the same widespread acceptance as pieces by other internationally acclaimed architects such as Mies van der Rohe and Marcel Breuer—chairs and tables that were to become cornerstones of Knoll's growing collection.

As Knoll defined its business, attention to corporate interiors, particularly in the post-World War II era, increased. In 1943 Florence Knoll established the Knoll Planning Unit, which went on to create some of the most distinguished executive suites of the time. Notable projects included spaces for CBS management in the company's new Eero Saarinen-designed Manhattan headquarters, which featured a combination of

tautly linear Florence Knoll-designed tables, credenzas, and couches along with more sculptural pieces by Saarinen, Mies, and Breuer.

## Where we work

By the 1960s, the white-collar workplace had been codified almost to the point of calcification: corridors of private offices along a building's perimeter and open and typically dense secretarial pools in the center. Robert Propst, president of Herman Miller Research Corporation, surveyed the all-too-familiar scene and concluded, "Today's office is a wasteland. It saps vitality, blocks talent, frustrates accomplishment. It is the daily scene of unfulfilled intentions and failed effort." His response, designed with Jack Kelley, was unveiled in 1968: Action Office, the first open-plan office furniture system made up of components that could be combined and recombined into a variety of work areas, not only for support staff but also for managers. Like Wright before him, Propst sought to foster a collaborative culture by removing barriers among colleagues, allowing each to have a broader view of their own particular role within a company. As its name implied, Action Office was a direct attempt to counteract what Propst viewed as the complacency of the typical corporate office. His system required people to move around—some pieces were even designed for people to work standing up—in order to generally invigorate themselves and their approach to their work.

Open-plan office systems were an almost instant success, but not necessarily for the reasons Propst envisioned. These systems were particularly embraced by certain business savvy companies that came to understand the implications of recent changes in the tax code, which specified that furniture and

equipment depreciated more quickly than the building improvements associated with fixed offices. By the mid 1970s, systems, including Knoll's pioneering Stephens product line, accounted for a significant percentage of new office furniture sales.



Stephens Office System

But as economics increasingly became the driving force in shaping the office landscape, so did the pressure to fit more and more people into any given area without much thought to the specific needs of different types of work. The space in and around each individual Action Office workstation—space that was in fact essential to its design—was increasingly compressed and, for the sake of expediency, the wide variety of possible arrangements was abandoned in favor of one singular, easily repeatable cell—so much so that the very system designed to break down

barriers among colleagues, was being reduced to maze of three-sided boxes, like a white-collar bull pen. The privacy screens that were to be used judiciously to delineate discreet spaces had become barricades between people. Action Office, which was designed to energize the workplace, had, unintentionally, spawned the cubicle. Ironically, Propst was eventually credited with inventing something he vehemently denounced, calling the cubicle's vast proliferation across corporate America "a monolithic insanity."

## How we work

While the grandeur of the enormous workroom at center of the Johnson Wax Administration building is mostly lost on the many imitators of its structural-bay organization, it is perhaps the habits apparent in Wright's own

drafting room over 100 years ago that remain and can now be understood as a paradigm not for where we work, but how we work today. In fact, then and now, the everyday rhythms of an architect—who requires periods of intensely focused individual study as well as easy access to colleagues for consultation and, also, a more casual environment to display and discuss ideas in a group—could be seen as the model for the work flow at many of today’s most progressive companies—whatever their business may be.

Knoll devotes considerable time and resources to studying changes in the workplace, maintaining close ties with architects and designers in order to learn about the challenges that are not being met by existing products. This ongoing investigation makes Knoll “keenly aware of diverse work styles,” explains Tracy

Wymer, the company’s Senior Director of Research, Strategy and Media.

According to Wymer, this research made it clear that over the last decade the American workplace has been experiencing yet another significant shift in its ongoing evolution away from the private office.

Having previously completed such diverse projects as a computer terminal for Bloomberg LP, a subway car for New York City’s Metropolitan Transit Authority, and the interactive public art installation called “Power Flower,” collection of projects that they happily concede “defies categorization,” working on office furniture was, say Udagawa and Moeslinger, a welcome entry into an entirely new industry. Initially surprised when Benjamin Pardo, Knoll’s Director of Design, contacted them in early 2006, they nonetheless responded enthusiastically to the project brief.

Years before, Udagawa had come from Japan to study at Cranbrook, Florence Knoll’s alma mater, which provided not only a symbolic link to one of the company’s founders, but also a kinship of philosophy—one that views furniture as utilitarian objects and also objects imbued with meaning. Moeslinger studied in Austria and Switzerland and at Art Center College of Design in Pasadena, California. Udagawa worked at Apple and Moeslinger worked at IDEO before forming their own practice; both had experience with user-centered consumer products. What made them most attractive to Knoll, explains Pardo, is Antenna Design’s view of design as a tool of social interaction, a way of bridging people and technology. In the preface to a book published on their work, Udagawa and Moeslinger describe their

own approach by noting, “Human behavior is complex and often seems irrational, yet it can be predicted if we define and closely investigate the situation.”



Antenna’s designs. Top:  
Bloomberg terminal  
Bottom: New York City  
subway car

## Newcomers to the furniture industry

Being new to the furniture industry actually served Udagawa and Moeslinger well. By their own admission, they weren’t initially able to distinguish among the many competing office furniture systems and so they undertook a close analysis of what made each existing system unique. In addition to examining the competition, the designers looked closely at Knoll’s product line, including long-time standard-bearer, Morrison, which was introduced in 1986. Its 64-inch-high panel version gives the impression of seclusion and incorporates all power, data and communication lines, allowing Morrison to provide virtually all of



Currents

the amenities of the private office while still being, by virtue of its kit-of-parts assembly and possible disassembly, mobile.

For their next generation of office systems, Knoll had two objectives, according to Douglas Reuter, Senior Marketing Director. The first was to make the innovations of Morrison available to a wider audience through a more affordable product. The result was Dividends, which relies principally on 50 and 57-inch-high panel heights to allow sight lines while standing, and is roughly 30% less expensive than Morrison. (Over time, the system has spawned enhancements that are known today as Dividends Horizon.) The second objective was to, in effect, extract power and data lines from inside of the panels to house them in a more flexible, freestanding service

wall, permitting a much wider variety of workstation configurations. Fulfilling this objective resulted in the 1998 release of Currents, with its 48-inch-high spine.

## The changing workplace

Among those surveying the spectrum of open plan office furniture systems some 10 years later, Udagawa and Moeslinger couldn't help but notice that over the years the walls were coming down. An increased reliance on team work and the need for visual access between desks and among teams of colleagues had led, over the years, to a gradual decrease in the typical heights of system panels. This downward

trend was further accelerated by the fact that lower panels permit direct sight lines from desks to day light, making it possible to earn increasingly coveted Leadership in Energy and Environmental Design (LEED®) points for a project. Additionally, due to the explosion of wireless technology, panels were no longer as necessary as conduits for data. Increased reliance on wireless technology has also transformed notions of privacy; it is now the norm to conduct private conversations and even business meetings while walking down the street or sitting in coffee shops. This gradual acceptance that privacy can be found not in your own personal cubicle, but in public spaces, with ambient noise serving as the "screen," was just one more of the many factors in the increasing

obsolescence of high panels.

The need to shift seamlessly from one task and one type of work to another—from focused endeavors to both shared and team work—had over the past decade become the drumbeat of certain high-tech and creative companies as they reorganized themselves into a more team-oriented office lay out. What these early adaptors and other change-focused organizations share is the belief that cross-disciplinary interaction is the key to innovation. "Historically we've developed products that serve the need of the individual," observes Wymer. In a reversal, Udagawa and Moeslinger started with the group and worked their way back to the individual. "Today the individual is the group," says Wymer.

## The evolution of Antenna Workspaces

Udagawa and Moeslinger's project for Knoll consisted of two main phases. Phase one began in 2006 with an intentionally broad scope of work that included every aspect of an office furniture system—from work areas to lounge seating and accessories—and a second phase started in 2008, which eliminated almost everything

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other than the workstation itself. The intense focus of the second phase actually helped resolve Antenna Design on the core of their concept—the desk, which they came to see as the essential element of the office.

While recent research shows that desks are unoccupied nearly half of the time during the workday, it doesn't necessarily follow that assigned desks are no longer needed, explain the designers. In fact, almost 20 years ago that flawed assumption prompted advertising impresario Jay Chiat to conduct a bold experiment in his own Chiat/Day office: employees no longer had their own desks and instead were assigned lockers where they stored their personal belongings each day before checking out laptops to

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work in whatever open spot they could find. Unfortunately, some found the freedom of movement too disorienting and preferred to work at home, a detriment to any enterprise where fostering collaboration is key aspect of success.

In assessing Chiat's bold, if ultimately unsuccessful plan, and other similar schemes, Udagawa points out that "there's a danger in considering the workplace as transient as it loosens one's connection to the job." Udagawa and Moeslinger maintain that a dedicated workspace is still necessary even though the typical size of an individual's space is shrinking while the size and quantity of group spaces are growing. And this is not only aimed at accommodating younger employees. According to Wymer,

there's increasing recognition that money spent on office design is an investment in a company's two largest expenses—employee productivity and retention—and that this investment pays off across a spectrum of generations.

Whether different generations of workers have different styles of working or different needs in the workplace are topics of considerable debate in the furniture industry, according to Wymer, who has studied work patterns of both Baby Boomers, born after World War II, and recent graduates, what's called Generation Y. Though much discussion focuses on the differences in work styles of these two groups, Knoll and Antenna Design decided to focus on the commonalities. According to Knoll's research, the 70 million Generation Y-ers expect to change jobs every three to five years while 77 million Baby Boomers became eligible for retirement in 2008 and so both groups require flexibility in the office environment. Baby Boomers eligible for retirement may want to continue working at a reduced level, while Y-ers also appreciate the ability to pursue their many outside activities. And, maintains Wymer, since Baby Boomer parents are in more regular contact with their Generation Y children than they were with their own parents when they were kids "there is a continuous feedback loop." In other words, the groups aren't as diametrically opposed as some might assume.

In striving to find the right form of expression for a desk system that could provide a multitude of options with a minimum of different parts, Udagawa and Moeslinger found themselves returning again and again to study their own dining room table, which, not surprisingly, turned out to be designed by Florence Knoll. What they admire most about it is its frank expression of function and refreshing lack of pretense as well as its ease among other more obviously sculptural pieces. It's this special effect—to both stand out and fit in—that they seek in their own work.

What the dining table and the Antenna Workspaces collection have in common, says Moeslinger, is that each seems to announce itself without apology or fuss. In fact, this "here I am" aesthetic as Moeslinger characterizes it, pervades the Antenna Workspaces collection both in its overall appeal and its signature element: elegant 1-inch square tube steel legs, which support roughly 1-inch-thick, slabs of wood, laminate or glass. Together these seemingly delicate legs and cantilevered surfaces create a quintessentially Modernist composition of floating planes and crisp detailing.



Antenna Workspaces big table

While the idea of an easily recombina- ble system made from a minimum number of parts seems almost obvious it is far from effortless to achieve. It actually took months of prototypes and refinements to obtain not only the desired precision and adaptability of each the parts, but also to do so at a reasonable costs while maintaining Knoll’s commitment to eliminate the use of environmentally-damaging PVCs. Key to the structural strength of Antenna workspaces is the diamond-shape steel rail that runs between each pair of legs and is attached to the top by a cast-aluminum cradle. This rail can connect one worksurface to another in a variety of configurations— ranging from the more standard desk with a return to “benching,” the long expanses that are reminiscent of the communal worktables at libraries. It also allows the legs to be positioned virtually anywhere perpendicular to the length of the table.

Udagawa recalls, “The structure was inspired by an elevated highway: the horizontal rail runs above the upside-down U-shaped vertical structure of the legs. The horizontal rail can extend independently of the legs. Similarly, the legs can get wider to support different desk depths, independent from the rail. The V-shaped cradle is the most efficient way to connect the rail and legs. In addition, the rail is a square tube that is rotated 45 degrees to give it a diamond shape, providing the most efficient connection not only to the legs, but also to other rails that run perpendicularly to support other things, such as storage, and making it easier to grab from the bottom and sides.”

“A small number of components but a large number of planning alternatives,” pronounces Pardo. Like Currents before it, Antenna Workspaces can be used with a low fence containing power and data that can be positioned to support worksurfaces as well as shelves, cabinets and other accessories. These days, systems require less space to conceal

and distribute cable but users need many more places to plug in—something these fences provide.

Overall, the neutral grace of Antenna Workspaces allows it to adopt a different personality depending on what materials are selected and which colors are applied, allowing it to range from the more playful to the subdued. Udagawa and Moeslinger are keen to introduce a more natural and tactile palette of materials, like cane and textiles, than is typically associated with the workplace, claiming today’s youth doesn’t approve of artificial or disguised materials. “Products should be honest,” says Moeslinger. Privacy screens in more expressive curves and other shapes are included not as substitutes for walls but as a way of shielding computer terminals or defining different areas or groupings and providing additional texture.

“These days, everyone else is building products. We are building spaces.”

With the introduction of their furniture, Antenna Design has produced not just another addition to a long and distinguished product line, but also a new way of shaping space. In the tradition of Florence Knoll, Antenna Workspaces is both office furniture and a planning system, points out Pardo. “Knoll has a history in the orchestration of spaces, not just the sculptural object, says Pardo. “These days,” he continues, “everyone else is building products. We are building spaces.” In fact, Antenna Workspaces allows the open office to be just as open as it needs to be and in combinations seemingly as endless as the imagination.