

NELSON



EAMES



GIRARD



PROPST



THE DESIGN PROCESS AT HERMAN MILLER



DESIGN QUARTERLY 98/99

Published by:
Walker Art Center
Vineland Place
Minneapolis, Minnesota

Editor: Mildred S. Friedman
Graphic Design:
James E. Johnson
Circulation: Linda Krenzin
Graphic Design Assistance:
Wayne Henrikson

Design Quarterly is listed in
Art Index.

Change of Address: To insure
receiving all copies, give old
address as well as the new one
and allow five weeks for
change to become effective.

Subscription rates:
4 issues \$6, 8 issues \$11,
12 issues \$15

Single issues: \$1.60
Double issues: \$3.00
(Double issue constitutes
two issues)

Foreign postage: \$1.25 for
four issues

The exhibition and this issue
of Design Quarterly are
supported in part by a grant
from the National Endowment
for the Arts, a Federal agency.

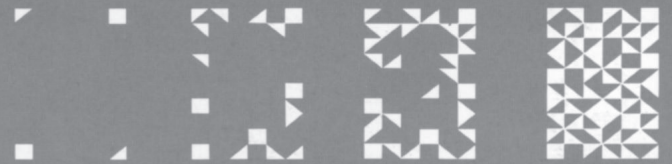
NELSON



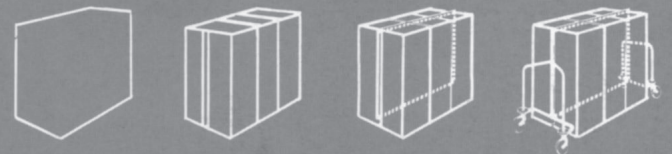
EAMES



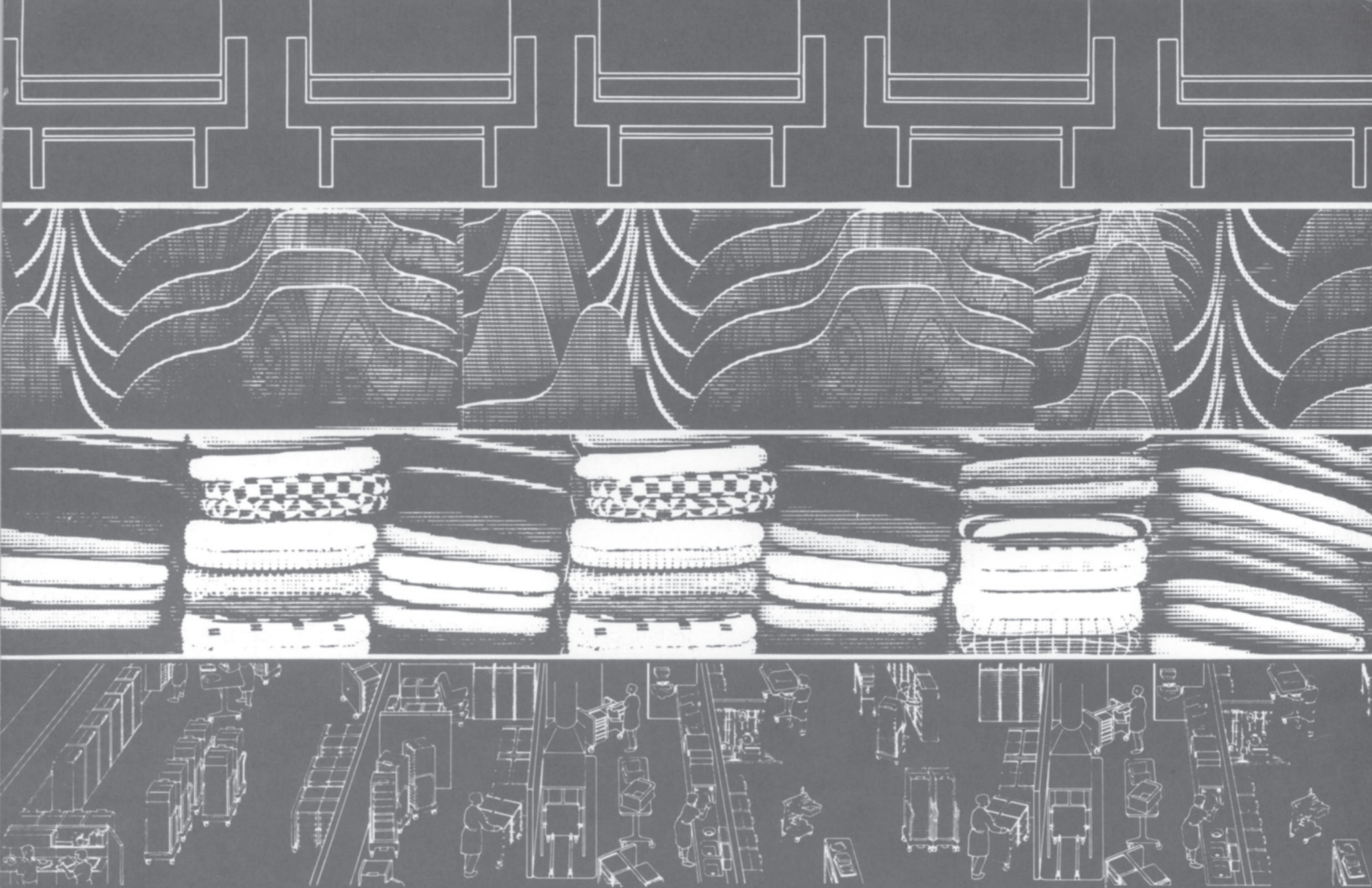
GIRARD



PROPST



THE DESIGN PROCESS AT HERMAN MILLER



LENDERS TO THE
EXHIBITION

Cooper-Hewitt Museum of
Decorative Arts and Design
The Girard Foundation
Herman Miller Inc.
Herman Miller Research
Corporation
University Gallery, University
of Minnesota

Arlene Benton
Robert Blaich
Hy Bomberg
D. J. De Pree
Hugh De Pree
Charles and Ray Eames
James Eppinger, Sr.
Jeffrey Martin
Pep Nagelkirk
Bert Raterink

Timing has a lot to do with the way things happen.

At the end of the war, Herman Miller was a tiny company with a modest factory in Zeeland, Michigan and a chronic cash problem. This company had decided some years earlier to confine its production to modern designs, an admirable but premature decision.

I came on the scene through a series of accidents which began with a commitment to do a book on modern houses, with Henry Wright, which led to creation of the Storage-wall—a “fattened,” hollow interior wall capable of storing large quantities of accumulated possessions on flexible shelving. Publication of the concept in *Life* magazine set up a series of shock waves in the case goods industry, which found the idea subversive, since the Storage-wall was conceived as a built-in part of a dwelling, whereas case goods manufacturers liked to sell storage as furniture. (Architects had, of course, built storage into walls for decades.) Their noisy anguish over the possible loss of those annual Cadillac convertibles reached Herman Miller, a furniture company I had never heard of, and in 1945 I found myself with my first client.

By normal standards, in a society fervently dedicated to the numbers on the bottom line, Herman Miller was peculiar, not so much because it was small, but because it was dedicated to manufacturing modern furniture for *moral* reasons. Gilbert Rohde, a pioneer industrial designer, had convinced D. J. De Pree, head of Herman Miller, that it was dishonest to manufacture period reproductions. De Pree, a deeply religious man committed to carrying his beliefs into everything he did, accepted Rohde’s arguments and in the mid-30s switched production to pieces representing what he and Rohde considered “honest” design. The decision, as I said earlier, was close to disastrous, but it made possible all the very good things that happened later.

At some point in my first year or two with Herman Miller, I ran into Charles Eames, who had samples of his first molded plywood furniture and was in search of a manufacturer. I persuaded D. J. and some of his staff to come to an exhibit of them, and subsequently we invited Eames to work with us. Somewhat later we were joined by Alexander Girard, whose fabric concepts opened up whole new areas for designers and architects, thus extending the Miller axis from Zeeland, Michigan to New York to Venice, California with a stop in Santa Fe, New Mexico.

The thing that impresses me in recalling these early events was that not only was the timing right, but so was everything else. I was involved in design that would keep the factory going, Eames had opened a door to new technologies, Girard to new color and pattern, and over it all was the benign, trusting, cheerful presence of D. J. De Pree. Apparently four very dissimilar people together, with shared convictions as their common bond, can work with total freedom and still have everything come out in one piece.

It is not a bad lesson for right now, when mushrooming bureaucracies are obsoleting free creative relationships, since all that seems to come out of the substitution is a great deal of paper, boring work and escalating costs. I find it hard to believe that my office produced some 70-odd new designs and finished factory prototypes for a Herman Miller opening in 1946, for very low cost and within a work period of only 18 months.

The real assets of Herman Miller at that time were items one never finds on balance sheets: faith, a cheerful indifference to what the rest of the industry might be up to, lots of nerve and a mysterious kind of interaction that had everyone functioning at top capacity while always having a very good time. Finally, Herman Miller allowed designers to help shape its policies and direct its energies in a manner virtually unique in American industrial design.

Business is complicated, and we may be sure that this ultra-simplified view of things is far from the whole story. The point is that *this was the real strength of the company; it was the real basis for its phenomenal development; it was the explanation for a prestige completely out of proportion to sales and profits.* And it worked.

Herman Miller’s current administration, led by D. J.’s sons, Max and Hugh De Pree, has carried on the tradition of allowing designers all the metaphoric space and real time required to solve problems. The Herman Miller Research Corporation is headed by Robert Propst. Located in Ann Arbor, Michigan, the research group has a broad range of interests and projects that result in actual Herman Miller products only after years of study.

So what we see in this exhibition is the result of a very odd mix of faith, design and technology, an evolution covering roughly three decades, within a setting of massive social transformations.

Modern furniture, of course, goes back more than three decades. Passing over the question of whether Art Nouveau was "modern" or not, and putting aside the interesting work of English, Dutch and Austrian designers before the 20s, we have only to recall the brilliant work of architects-turned-designers in the 1925-35 decade. The pieces by Aalto, Mies, Breuer and Le Corbusier were prophetic and inspired. We must also keep in mind that they were not designed for a "market" but to play a role within specific buildings. This probably does more to explain the continuing freshness of their designs than any other factor.

Oddly enough, the thrust of these accomplishments had no visible effect in the U.S., where 30s furniture was generally brutal, poorly detailed and devoted to finishes like pickled pine.

The end of the war brought with it a set of attitudes that might be described as "moralistic." There was a general feeling that the past had to be swept away and the world changed, somehow, into a better place. There was no need to go looking for reasons: the slaughter of some 20 million people plus the horrors of the Nazi camps were enough. With these feelings came a rather naive belief that ethical behavior (usually understood as doing something for "the people") and good design were the same. There was no basis whatever, historically or philosophically, for such a notion, but it did generate a lot of energy.

Along with the postwar yearnings for a new innocence and simplicity, often reflected in furniture that reached for a primitive quality

but achieved, as often as not, a fair degree of sophistication, there was also a strong undercurrent of excitement about new technology. When the Italians finally surfaced at the Milan Triennale of 1951 after several decades of invisibility, the promise of new technology was expressed in almost operatic style. This was the first major international "design explosion" since the earlier work at Miller and Knoll came into view, and it marked the emergence of a real competitor for first place in the global design sweepstakes.

During the early postwar years in America, it was generally taken for granted that the proper place for modern furniture was in the home. There were two things wrong with this assumption: good design combined with good quality cost more than the large public could afford; furthermore, this large public never showed much affection for modern at any price. While it might be expected that a visually unsophisticated population would not comprehend modern furniture, the emulative character of middle class behavior worked towards rejection simply because the furniture wasn't fancy enough and did not weigh enough.

These factors were not operative in the commercial market where a more favorable climate nudged the producers of good modern in the direction of contract business, and it was here that they found not only a market that could afford their wares, but their new spiritual home as well.

We have to remember that the rise of the great corporations was enormously



accelerated during the 50s and 60s, and there was presently a worldwide rash of "image" buildings, mostly extruded towers of 40 to 100 stories, sheathed in stainless, aluminum, glass or precast sections, conspicuous monuments to the power and the enterprise of business. The inevitable tendency of an overripe technological society to glorify itself through conspicuous spending was not basically new: Versailles and Vatican City tell similar stories in different languages. Furthermore, just as in these illustrious earlier examples, the interiors presently followed the lead set by the buildings themselves. For this purpose, costly, elegant and beautifully made furniture was needed, and presently the need was felt in general work areas as well.

In the work spaces, a significant change had been initiated by the "office landscape" concept developed by the Quickborner Team in Germany. In essence, this was an attack on the old arrangement of closed offices lined up on endless corridors, and the story was that work places arranged in loose clusters on an open floor improved communications and expedited paper flow. Whether the argument was valid or not, there was no question whatever about the magic of the word "flexibility," an image so powerful that even for the bottom-line worshippers, questions of cost took second place. Propst's Action Office was the first in U.S. industry to provide a system specifically designed for big open spaces and it has been widely used and imitated.

Like everything technology is responsible for these days, new problems seem to spring up on the heels of new solutions. In the case of office systems much of the depersonalization, anonymity and alienation we have come to associate with big enterprises are so pervasive that the designer's work cannot remain unaffected. But in the 70s, things are changing again. We are all caught in a web of multiple crises, former sacred cows like science and technology are no longer perceived as infallible, and all big institutions, whether public or private, are being viewed with feelings ranging from uneasiness to outright hostility.

Trying to view the scene overall, we get a mass of signals indicating that a metamorphosis of extraordinary dimensions is going on, and that all social structures are being affected. In simple terms, there is a shift from an essentially materialistic value system to one in which other, more human values predominate. There is any amount of documentation to support the view that millions of people today, here and in the other industrial countries, find their work

meaningless and degrading. Rebellion takes many forms: independence versus dependence; a search for meaning at the individual level; a resurgence of bicycling, hiking, gardening, home canning; a new interest in oriental philosophies. Smallness, the manageable, human-scale enterprise, suddenly become attractive again and books like Schumacher's *Small is Beautiful* or Pirsig's *Zen and the Art of Motorcycle Maintenance* find broad readership.

Design could hardly remain unaffected by such developments, especially since most designers are sympathetic, and frequently involved in humanistic causes. The manifestations of a changing outlook are as I have said, spotty. The growing number of publications of the "underground interior" is significant in relation to furniture design. The statement broadcast from these raffish pads seems to be that furniture has little or nothing to do with quality of life as it is currently perceived: as long as you can sit on it, sleep on it and eat at it, who cares what it is or how it looks? We are not looking at a mass movement here, but it could be a "cloud no larger than a man's hand." In such domiciles the high fidelity rigs, cameras, book and record collections and sports equipment can cost, in the aggregate, considerably more than a very respectable assortment of household furniture.

A reasonable conjecture as to what is going on is that there is an emerging distinction in the consumer's mind between *possessions* and *tools*. The difference is that a possession tends to enhance status, while a tool enhances existence. A tool promotes skills and personal growth. A possession just sits there to be admired. In this sense, a camera, amplifier, tape deck, bicycle, mountain tent, tennis racket are tools. The value and benefits are built into the use, not the ownership.

And what does this have to do with furniture design? I think it may possibly have to do with the distinction just made. Corporate furniture will probably not change very much; certainly any perceived threat to the corporation or its structure will merely rigidize and intensify existing attitudes. To the extent corporate leaders perceive and accept a new social role, one would guess that interiors and furniture would reflect the humanizing influence in that role. As far as domestic furniture goes, the idea that it may be seen as a kind of tool for the real enhancement of living is anything but distasteful. In such an event one might imagine that the least of its qualities would include, to use the ancient phrase, "commodity, fitness and delight."

A room by George Nelson for Alexander Girard's 1949 exhibition, *For Modern Living*, at The Detroit Institute of Arts, has only three pieces of movable furniture. Storage and built-in seating were Nelson-designed components made by Herman Miller.



George Nelson played a decisive role in the development of the Herman Miller company. The Herman Miller company played a decisive role in the development of furniture as a pervasive artifact of the modern lifestyle, and as an instrument integral to the modern working environment. This exhibition is predicated on the second premise. This article aims to prove the first, while briefly outlining Nelson's career.

Certain facts are clear: Nelson was, chronologically speaking, the first of the group (Nelson, Eames, Girard, Propst) to work with the company. And it was he who brought in the second, Eames—friend, crony and kindred soul who shared many of his attitudes and beliefs about design. Nelson was also the strategist who molded the Herman Miller image, conceiving and designing advertising, graphics, catalogues—including the famous Herman Miller "M," first made as a plywood cutout. During the early years he designed many of the Herman Miller showrooms. As a mentor he gave the De Prees some very valuable advice: "If you can't afford advertising, you should produce a few products that will get into all the magazines because they're odd or crazy." He invested the advertising budget—when at last there was one—into striking full-page advertisements even if this meant fewer insertions. It was also Nelson who verbalized De Pree's credo of integrity—Calvinist uprightness translated into company policy—carrying the word to the press as a writer, editor and charismatic interviewee.

It is ironic that as an image-maker, Nelson established the Herman Miller identity much more firmly than his own. His contributions to the modern movement were original breakthroughs of much deeper import than his public relations activities for Herman Miller.

Nelson belongs to the "lost generation" of architects who emerged from academia at a rather inauspicious time—when building was frozen, first by the Great Depression and, several years later, by World War II. He went to Yale and, for postgraduate training, to Catholic University, winning a *Prix de Rome* along with his diploma. The year was 1932 and the prize staked him to two years of travel and study in Europe. What he discovered there, in addition to the treasures of the past, was the modern movement in architecture. He capped his observations by interviewing as many of the pioneers of that movement as he could, with Le Corbusier at the head of the list.

Back in the States he found a publisher for the interviews, the magazine *Pencil Points* (now *Progressive Architecture*), and was offered a position on *Architectural Forum* by Howard Myers, one of the first American editors to appreciate and report the architectural revolution as it was taking place.

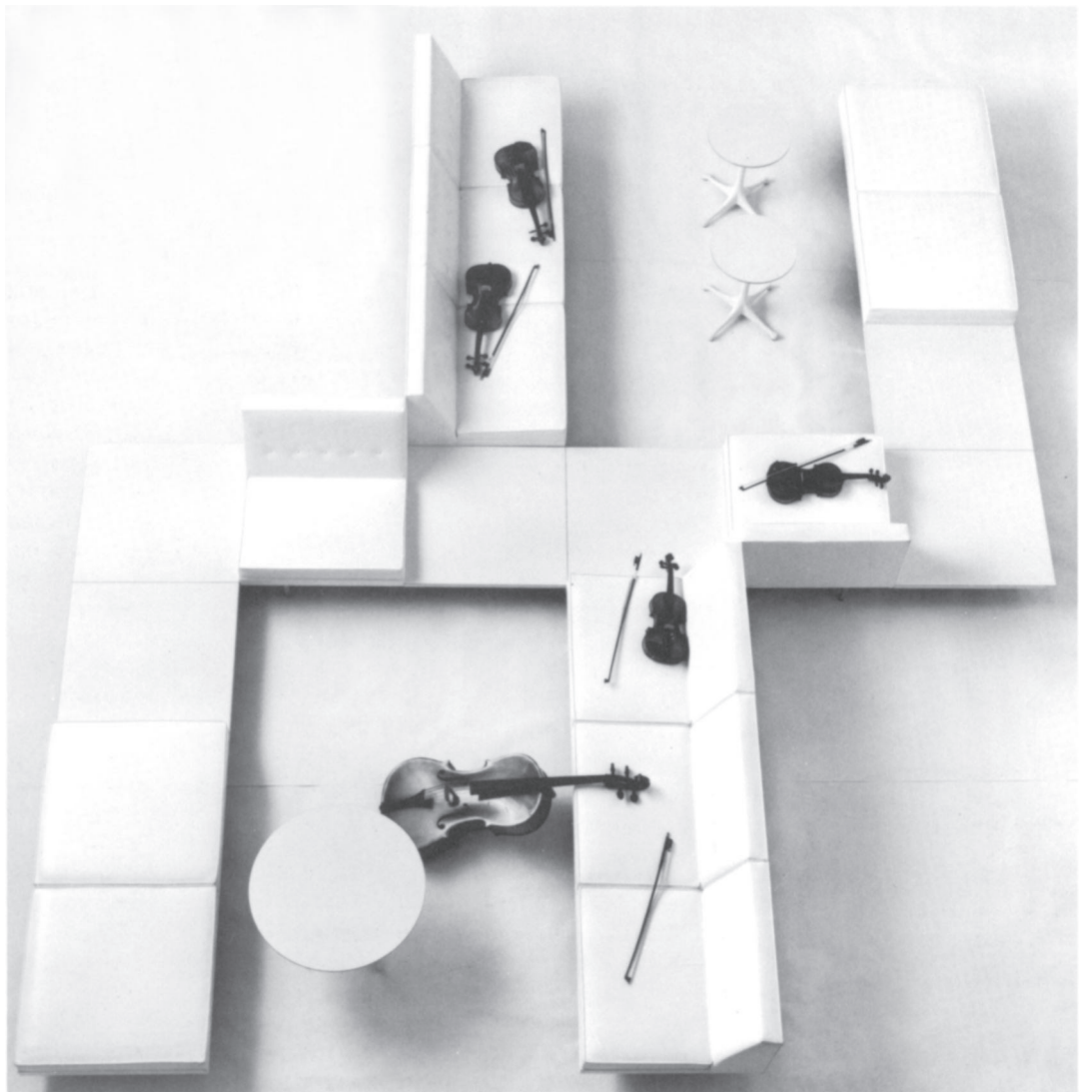
Nelson eventually rose to the position of *Forum* co-managing editor with Henry Wright. In addition to writing for the *Forum*, he also wrote and conducted special research projects for two other Time, Inc. magazines, *Fortune* and *Life*. And in 1936, encouraged by signs that building was starting up again, he opened an architectural office in association with William Hamby, "moonlighting" all the while.

Their most memorable building was a townhouse for William Fairchild. It consisted of two separate units joined by a spectacular ramp over an interior garden.

When World War II clamped down on building, Nelson compensated by writing more. In the mid-40s he turned out two books, *The Industrial Architecture of Albert Kahn*, and, with Henry Wright, *Tomorrow's House*. If he couldn't design houses that would get built, at least he could explore ideas of how people might live in houses.

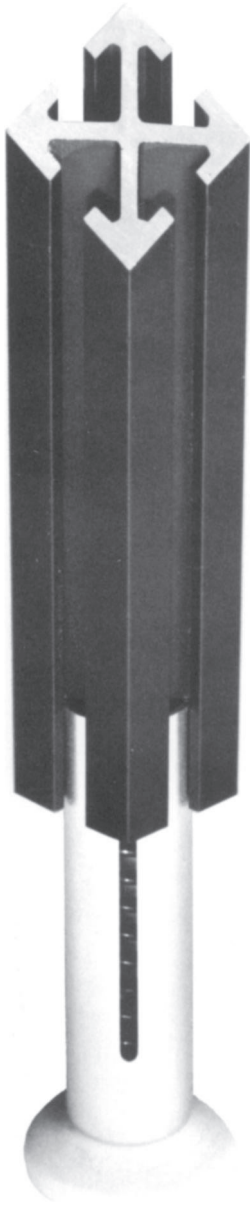
One of those ideas was stimulating enough to be translated into a tangible prototype, the Stogewall, which *Life* published in 1945 in conjunction with an exhibition at Macy's New York department store. It was an answer to a growing problem: as the proliferation of gadgets and belongings in an increasingly affluent society was saddling people with more and more things to store, building costs were resulting in smaller rooms and reduced space for storage furniture. It occurred to Nelson that since most walls were about six inches thick, and most household objects could be stored in depths of ten inches or less, an immense amount of orderly storage could be accommodated by replacing fixed solid walls with partitions consisting of connected storage components including shelves, cabinets and drawers. He also reasoned that if the components were modular, they could be combined in accordance with whatever the user wanted to store, and placed anywhere that the user wanted a wall. And that both the components and the position could be changed as needs changed.

The Stogewall assumed the functions of movable furniture ranging from armoires and breakfronts to the smallest bookstand, and many of the functions of fixed architectural



The original slat bench (1945) was built for an office whose occupant wanted something that would prevent visitors from overstaying their welcome. It didn't work. Shown here with an added raised back, the bench, storage cases and an early wood arm chair are all part of a unit proposed for hotel use (above).

Modular Seating (1955) was an early move toward a soft seating "system" for institutional and commercial rather than residential use (below).



Designed in 1956, Nelson's Omni System (detail of pole, above) has an extruded aluminum cross section which accepts connectors on four sides, and was the first such compression structure (poles are held by pressure between floor and ceiling) to permit plugging-in of shelves, lights and storage cabinets. Omni was followed by the Comprehensive Storage System shown overleaf.

features such as walls, closets and partitions.

It is impossible to overestimate the importance of the ideas germinated by the Storgewall. It showed the possibilities inherent in interchanging furniture and architectural elements. It suggested the possibilities of flexibility, i.e. continuous changeability. It suggested that neither furniture nor architectural elements need be bought whole, and that they themselves can be stocked compactly—often flat—and sold as components. All open plan systems are derived from the possibilities generated by Nelson in that 1945 *Life* spread.

It also brought Nelson to the attention of the Herman Miller company (as he tells us in his introduction to this catalogue) whose president, D. J. De Pree, was searching for a design director to replace his first modern designer, Gilbert Rohde, who died in 1944.

Nelson describes his first contact with D. J. De Pree: "I felt obliged to tell him that I really didn't know much about furniture. He listened very solemnly and when I told him to go look for a designer who had been in a furniture factory, he said OK, and he went. I forgot all about him. He was gone four to six months and suddenly came back. I said, 'What are you back for—it's very nice to see you and all, but what is this?'"

"D. J. said, 'Well, we did see a lot of designers who know a lot about furniture. You have no idea how many telegrams we got before poor old Gilbert Rohde was cold in his grave, from people who were going to lead us into the promised land. We went and visited every one of them, talked to them, and looked at their stuff. They were all just terrible. All their furniture was awful.'"

Continues Nelson: "This was a very honest man. He had a nose for fakery. He understood dishonesty. It wasn't so much aesthetics, but if a thing struck him as not an honest statement of whatever it was supposed to be, all the bells started ringing and the red lights went on. This is what protected him." Nelson accepted De Pree's second offer, beginning work on his first Herman Miller collection even before opening his own office for the practice of architecture and design, in 1947.

Let's look for the common denominator in Nelson's designs. Take his sturdily appealing and obviously useful wood platform bench; and his L-shaped desk with surfaces on two sides of the user, at two different heights; his "home" desk with the suspended file

basket of perforated metal; his straight-lined case pieces on steel legs, in which the steel frames not only look crisp but supply necessary rigidity to wood panels of less than standard thickness and strength; his straight-line case pieces suitable for home or office which are so simple to make but gain luxury or character in accordance with the choice of wood veneers or lacquer surfaces; his "coconut chair," a comfortable visual pun; his ineffably graceful and elegant reclining chaise; his small, round, four-toed pedestal table with sculptural metal base and laminated top; his Comprehensive Storage System; his Executive Office Group; his daybed on steel hairpin legs; his posh, impressive, sinewy Sling Sofa with its steel outline around leather. Not to mention the clocks Nelson designed for Howard Miller, a firm with a familial link to Herman Miller. Instead of the conventional flat clock face under glass, Nelson saw the hands and face as circular exercises in geometric sculpture to perch exposed on the wall—witty faces to punctuate the wall graphically and tell us the time in no uncertain terms.

This is the shotgun barrage. Conversation pieces, systems, ways of making simple technology produce elegant products, a number of technological developments that are *not* simple, two very important exercises in interchangeability and demountability; one of them introducing, for the first time ever, the notion that the desk can provide storage *above* the desk surface.

The common denominators are unpretentiousness, economy, ingenuity and wit—uncopyrightable!

Nelson's Comprehensive Storage System (1959), where the support is provided by interlocking extruded aluminum poles, was preceded by Omniwall, produced by another manufacturer. Omniwall's extrusion operated on four sides, while CSS was designed to accept storage elements on only two sides. Nelson had long before suggested the myriad possibilities of demountable pole and panel systems in an article, "Ten Tinker Toys," published by *Interiors* in 1947. Nelson's work for Herman Miller is only one facet in his prolific career as writer, teacher, interior designer and maker of exhibitions and films, with a little architecture thrown in (a Herman Miller factory in 1962, a number of vacation houses).

His books include *Chairs, Display* and *Problems of Design*. Among his more significant articles: "After the Modern House" (July 1952 *Interiors*) suggested using anonymous factory-shell or space-frame buildings converted to special purposes with

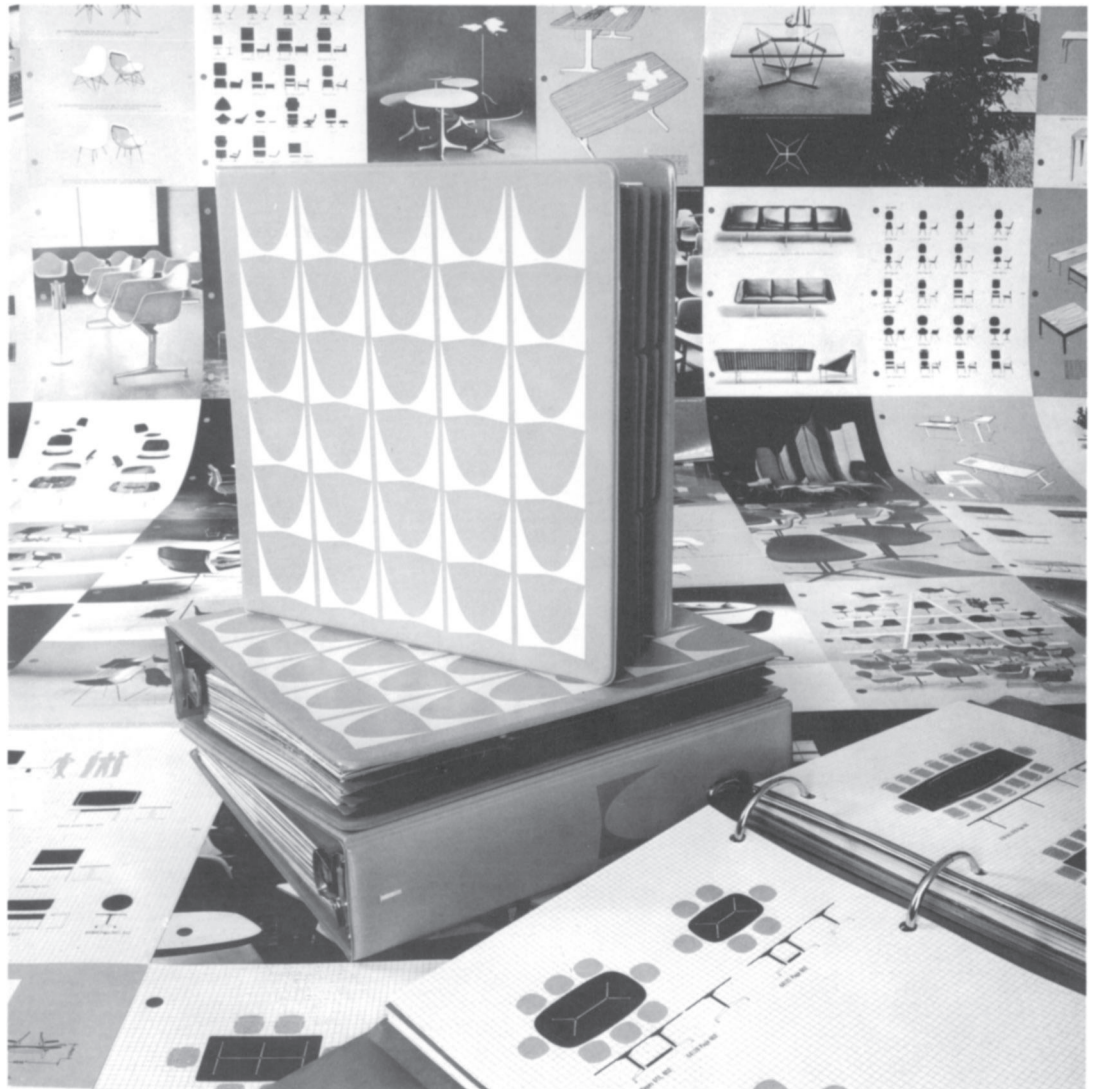


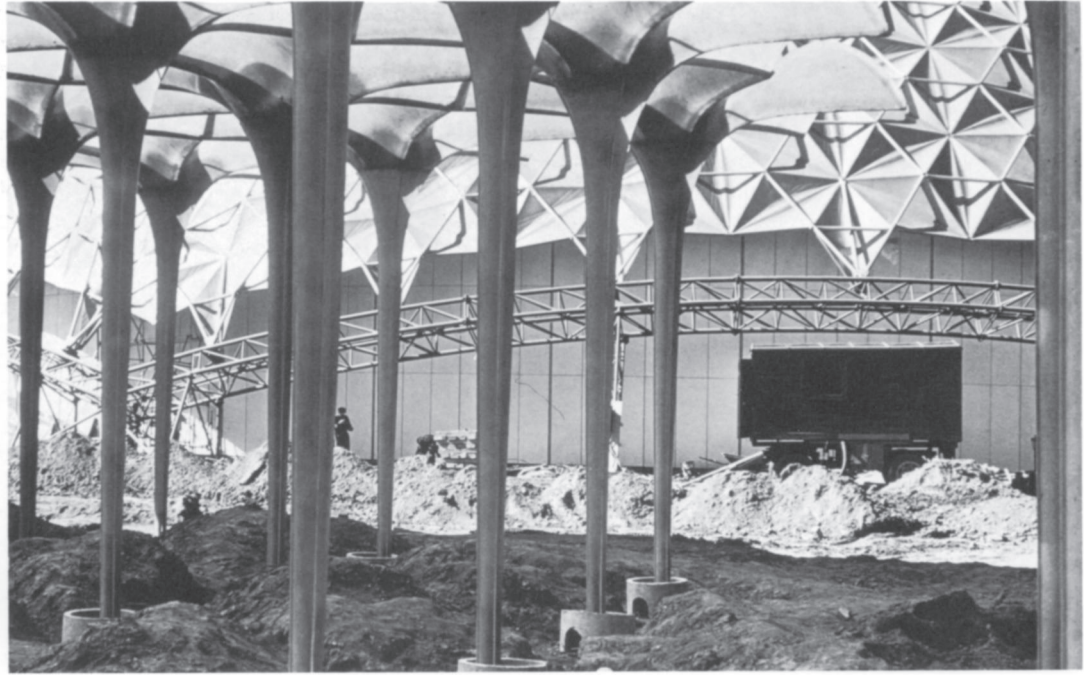


Comprehensive Storage System (CSS) was a 1959 version of the earlier Omni system. CSS accepted connectors on two sides and worked either with floor to ceiling pressure support or as a wall-hung system. This photograph includes lighting units designed for the system and a number of its innumerable storage elements (opposite).

Nelson's 1952 Bubble Lamps (top) consist of wire frames of various sizes and shapes, covered with a self-webbing plastic spray. These glowing forms produced a soft general light, primarily for residential application.

A photomontage of a few of the many graphics for Herman Miller designed by the Nelson office in the 50s and 60s (below). Nelson's first catalogue for Herman Miller was, like many Nelson products, the first of a kind. Furniture dimensions were given and it was sold like a book on design (which it was). Subsequently, this catalogue became a reference work on interior design for architects and students.





A major innovation of the American National Exhibition in Moscow, 1959, was the structure of its three pavilions. Made of translucent fiberglass, molded "umbrellas" formed the roof, shown above.

La Potagerie (1972) is a Fifth Avenue, Nelson-designed cafeteria that looks like an elegant restaurant (right, below).



special-purpose fittings—a precursor of the open plan concept which uses huge unpartitioned floors; “Grass on Main Street,” (1942) was an early version of the ubiquitous pedestrian mall idea—Nelson was blowing the whistle on the automobile before anybody else; “The Hidden City” (January/February 1975 *Architecture Plus*) suggests the earth berm as a device to unclutter the urban landscape.

Among the interiors turned out by the Nelson office: innumerable showrooms, especially for Herman Miller; Loeb Student Center at New York University; New York Times Subscription Office; Information Center at Colonial Williamsburg; New York Merchandise Mart Restaurant; La Potagerie Restaurant; The Children’s Place Shop; Rosenthal Haus on Fifth Avenue. Most of them are in some way innovative, a Nelson characteristic. The Children’s Place is a three-dimensional divertissement for children (much copied, of course). Rosenthal Haus, a magnificent showcase that turns into a snail labyrinth leading into a subterranean display place, is too special and elaborate to copy.

But it is as a designer of exhibitions and films that Nelson is most dazzling. And perhaps there is a lesson in this. Films and exhibitions are evanescent, though films can of course be replayed. And yet the ideas expressed in both films and exhibitions become part of the public domain, become part of the mental furniture of the viewer. It is interesting that all three of the original Herman Miller group—Nelson, Eames and Girard—share this experience with exhibition design, and that both Nelson and Eames have done lots of memorable films. It is revealing that in this work they retain their individual characteristics: Nelson conceives original ideas but often (not always) executes them in haste and sometimes (not always) presents them before the audience is ready. Eames produces films and exhibitions that are formidably researched, ingenious as mathematical puzzles, and intricate as jewels (the IBM exhibition, *Computer Perspective* and the Franklin-Jefferson Exhibition). Girard’s exhibitions have been voluptuously beautiful, particularly his *Textiles and Ornamental Arts of India* for The Museum of Modern Art. All three men display abundant resourcefulness, humor and intelligence.

Nelson’s exhibitions have ranged from low budget quickies to magnificently funded productions to be measured only in acres. Of the latter, perhaps the most memorable—for its effectiveness as soft-sell propaganda, as well as for its richness and

the multiplicity of media and devices it used—was the American National Exhibition in Moscow (1959). Here again Nelson played his role of conceptual catalyst. He invited Eames to make a film, suggested the multi-screen format, and proposed an ending (people all over the U.S. kissing each other goodnight) which totally disarmed the Russian audiences.

A few Nelson productions which looked like flops at the first showings have exerted more lasting influence than his successes, however. His “Requiem,” filmed in an auto junk yard was greeted with catcalls and sullen silence by its first audiences, but its images have become thematic to sociologists and filmmakers (sociologists are showing a tendency to become filmmakers these days). Most daring was “A Sample Lesson” (1952) prepared with Eames and Girard (see Foreword).

At the start of his association with Herman Miller, Nelson was unpretentiously performing a yeoman service for a small manufacturer. That this manufacturer could later support ambitious research and development programs is in part due to Nelson’s dedication and energy, as well as to his enormously innovative concepts. The designers whom he pulled into the Herman Miller orbit—from then on to cross fertilize and stimulate each other’s work—were to enjoy the luxury of working slowly and refining their ideas, simply because Nelson hustled and bustled in every possible direction at the beginning, meeting the deadlines of the market with the simple facilities available at the time. He put the show on the road.

Nelson is protean, but no more restless than Eames, Girard, and Propst. None of *them* is one-dimensional, but it is easier to size them up at a glance, stylistically speaking.

Eames’s furniture is a variation on the theme of seating in lyrical compound curves fabricated by means of formidable technology. The fabrics of Girard are an amalgam of solidly constructed textures and witty, personal graphic patterns in color combinations echoing Girard’s lifelong love affair with folk art. Propst’s AO and Co/Struc are *tours de force* of highly tooled components intricately interlocked with functions derived from human engineering.

Highly personal styles are difficult to copy well. Highly engineered tooling requires too much time and money to make copying worthwhile. But *concepts* are impossible to protect. They are immediately appropriated by everyone. This has happened to Nelson time and again.

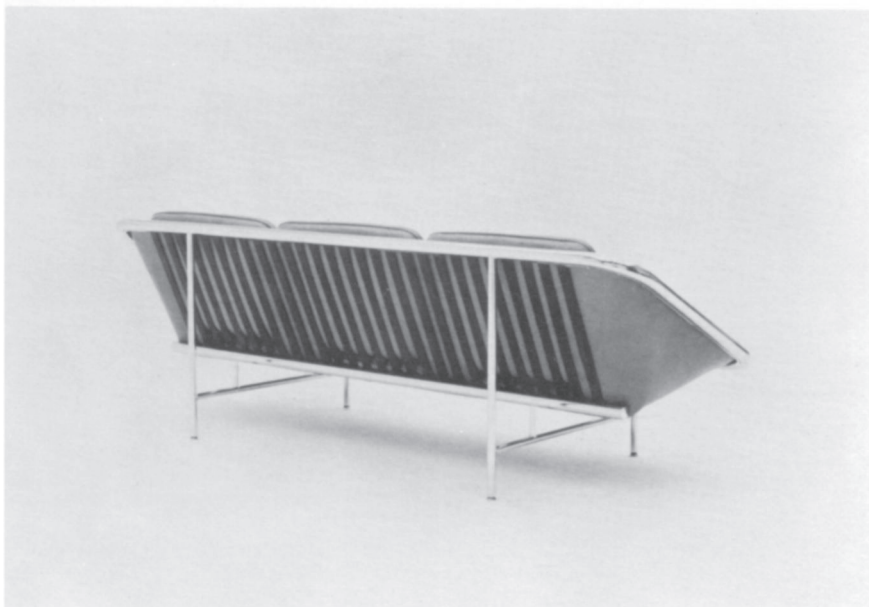


Nelson's office produced designs for the first expression of Robert Propst's open (or landscape) office planning in 1963 (above, right). This award-winning version of "Action Office" was beautifully detailed and very expensive. It was replaced by a more affordable system in 1968.

Nelson's *chaise longue* (1954) was made in small quantities for only a short time. It is shown (below, right) in one of the early Herman Miller ads designed under Nelson's supervision.

Chrome steel tubing chemically bonded with epoxy resins forms a frame for the 1964 Sling Sofa. Its leather seat cushions are supported by a molded neoprene (rubber) sheet stretched inside the frame. Back cushions are supported by neoprene straps (opposite).





Now within hailing distance of three score and ten, Nelson goes right on with his private entertainments, all of them a matter of keeping at least five balls in the air. Having reluctantly given up teaching at Harvard because he dislikes commuting, he is now trying on a course at Pratt in "Philosophy of Design" with some excited but puzzled students ("... nobody ever told them about thinking"), hoping that by the end of the semester he will have some idea of what a philosophy of design is. He was persuaded this year to go back to Harvard on a five-visit quickie ("Such a nice place," he sighs. "Too bad it isn't closer."). Two of the spinning balls are teaching.

His office is continuing work on an enormous corporate headquarters interior with twelve acres under one roof on two levels. ("The problem is how to keep it from looking like a parking lot.") One of his oldest concerns, how to use design as a humanizing element, is in full flight here.

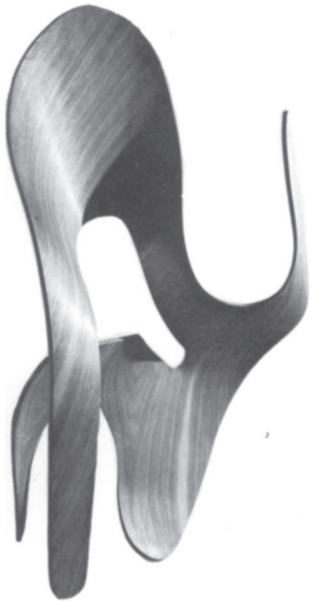
Nelson is finishing a book, *How to See*, an effort to give people spawned by technology-based education a tool for looking at the physical world. He is converting his successful slide show, "The Civilized City," into a film, so that the message can travel without him. His book *Problems of Design*, now a 20-year-old classic, is being reworked for a new edition ("Quite a lot has happened since it first appeared"). He is doing a catalogue for the opening exhibition of the Smithsonian Institution's Cooper-Hewitt Museum of Design (in New York), and is currently studying an idea for a series of seminars for corporate design staffs and management. He has just completed the theme article for the 35th Anniversary Issue (November 1975) of *Interiors* magazine.

His most recent project is an exhibition to go into Cass Gilbert's great old U.S. Customs House, a formidable *Beaux Arts* pile at the lower end of Broadway. The insides are encrusted with several dozen kinds of marble, solid bronze grilles, murals by Reginald Marsh, carved walnut paneling, and spiral staircases—the works, in other words. "Those interiors are so great," says Nelson, "that the only way to design the exhibition is to make it invisible. We haven't quite figured out how to do it yet, but we're working on it."

One loses count of the balls in the air after a while, but the juggler's obvious and constant concern is the relationship of design and the human condition, always on a steadily broadening scale.



CHARLES AND
RAY EAMES
Esther McCoy



A 1942 molded plywood sculpture by Ray Eames relates directly to the chair molding experiments carried on in the Eames's studio at that time.

From the beginning of the century, mass production was the golden fleece of design. As the century advanced, the body of literature and the body of faith increased, also the number of notable deaths. The world that could support the Model T killed off the Franklin. We deal here with Franklins.

Had Charles Eames been born half a generation earlier (into that of Alvar Aalto and Le Corbusier) or even a quarter of a generation (that of Marcel Breuer and Konrad Wachsmann) he would have encountered few men of conviction. For, as George Nelson wrote in the first Herman Miller catalogue, "A good thing about having convictions is that one tends to act on them."

In this light I understood the poignancy of Breuer's comment on Eames: "From the first, he has been in production without a single break." And Wachsmann's: "A fantastic opportunity." They were the ones who can (Emily Dickinson's expression) "Tell the definition . . . of victory."

Eames had another advantage. Architecture did not constantly summon him as it did others who designed furniture—Le Corbusier, Aalto, Breuer, and later Eero Saarinen; one was never in doubt as to their first allegiance. But then Eames was studying architecture during the Depression years when few were summoned. There was another factor. Designing of any sort for users who have not advanced to the point of receiving was an act of faith which was much more in harmony with the 30s than the 20s. The 30s was a cleansing decade; it reaffirmed discipline and imposed responsibility. In the writings of Eames the word discipline constantly reappears like a good gray thread.

The Museum of Modern Art's Organic Design show, where Eames first received recognition, was in the *Ich Dienst* spirit of the 30s; the purpose was not simply to single out the best entries for awards, but to find furniture which in addition could be machine produced at a reasonable cost. Moreover, when produced it was to be sold at selected shops or department stores across the country. The geographic spread was very important because basic to the idealism of the 30s was the tenet that benefits should be widely shared. The furniture, according to the Museum, should ". . . reflect today's social, economic, technological and aesthetic tendencies;" it was to ". . . provide adequately and handsomely for a typical American middle-income group family." The eye was on the sparrow.

Eames and Saarinen, then at Cranbrook Academy, entered pieces in all the categories. The most memorable entry was a molded plywood chair—the first version of the most famous chair of the century. Marcel Breuer, one of the jurors, recalled in 1973 that he was "very positive" about the choice of the Eames-Saarinen entries in two categories for top place. Looking back from a distance of 33 years, he summed up: "Plywood had been used before; I had used metal. There was nothing new in the lightness or the materials, but what was new was that he had pushed his design into industrial production."

The statement touches the quick but it leaps over the six years between the awards and the time in 1946 when Herman Miller took over the production of the Eames chair. That is to say, a move to California and a war occurred; there was the trial and error of building production tools for the molded plywood pieces, the endless handwork in preparation for mass production. Then Herman Miller carried the operation out of experimental mass production into true mass production. There is a lifeline that saved the early Eames chairs from becoming collectors' items and has kept them in production today: mass distribution.

In the months following the MOMA awards, Eames discovered the gap between designing for mass production and finding a manufacturer to produce. The best consumer price he could get was \$75 . . . exorbitant for a side chair at a time when only ten percent of the population earned more than \$10,000 a year. That appeared for a while to end the matter.

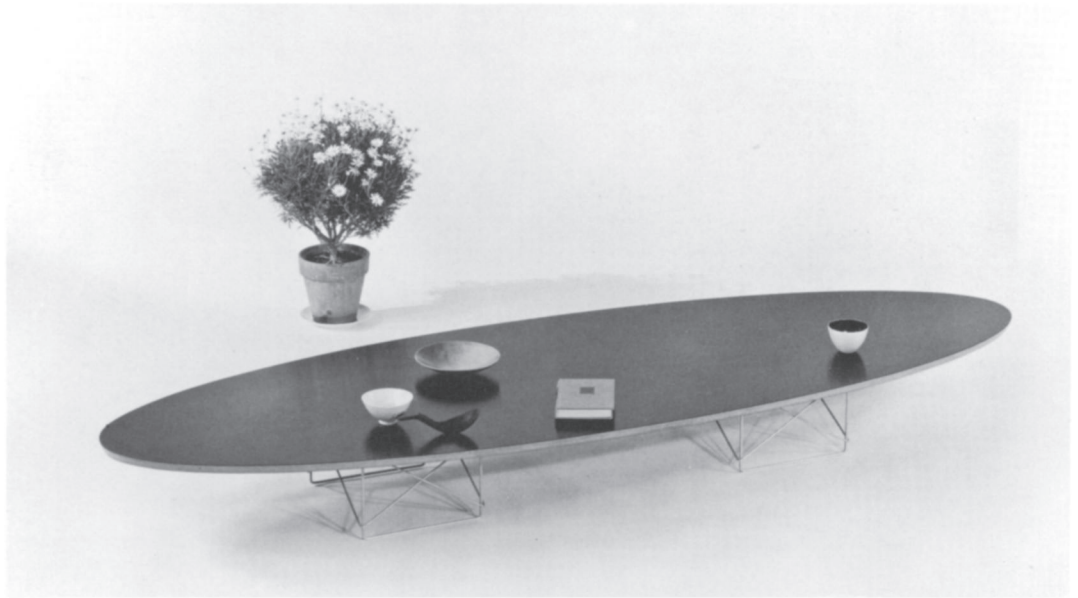
Eliot Noyes summed it up (*Arts & Architecture*, Sept. 1946): "A basic reason for the wood shell idea was the belief that it would be very easy and very cheap to stamp or press them out in quantity. In actuality, it turned out that there was no economical way of doing this, and no chance to experiment."

It was the last time Eames and Saarinen collaborated on furniture; Ray Eames, involved from the first at Cranbrook in the venture, turned her talents as painter and sculptor to a full-time collaboration. Saarinen, an associate by that time on his father's architectural projects, took over the practice in 1950 after his father's death; with the completion in 1951 of General Motors Technical Center, he became the most important young architect in the country.

Eames, reflecting later on their diverging courses, regretted that ". . . in architecture the idea degenerated," and to him furniture



Eames Storage Units (ESU) (1950) (above), were modules of plated steel and plastic-coated plywood with metal struts and lacquered masonite panels adding stability to these lightweight forms. The long, low table of black laminated plastic (center) resting on a delicate wire strut base, was also designed in 1950.

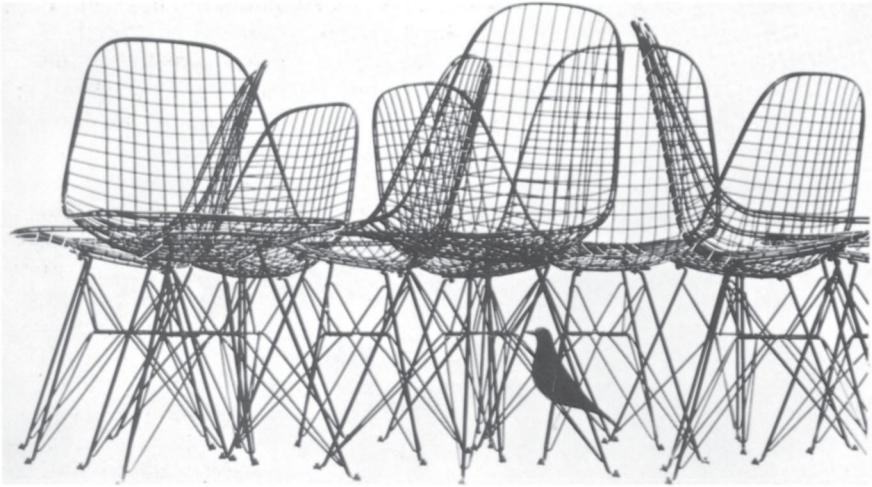


Herman Miller's first Los Angeles showroom was designed by the Eames office in 1947 (bottom). Its facade is similar to that of the Eames's house—started in 1945—with its factory-made elements, skeletal structure, opaque and transparent panels.



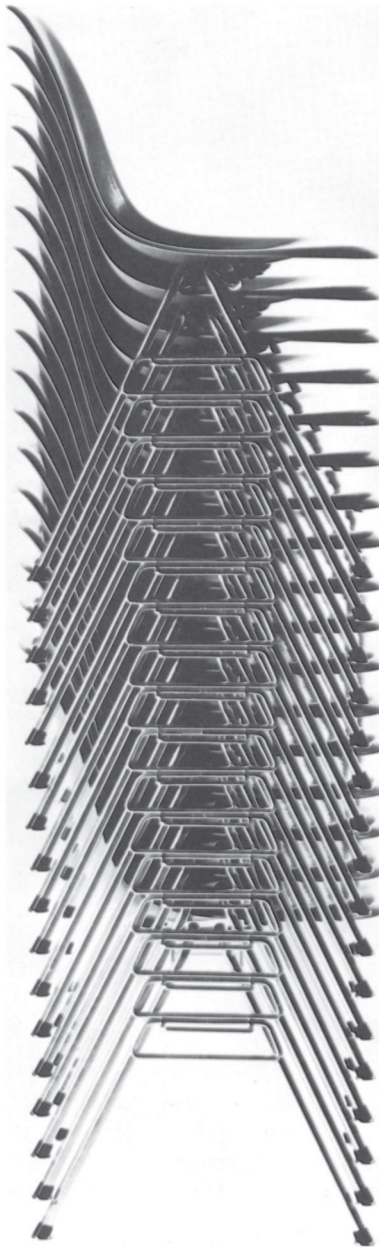
A pyramid of Eames chairs (opposite) contains many variations on the fiberglass and wire shells, bases and upholstery forms that made up the collection in the mid-50s.





Wire chairs, developed in 1951, are shown with wire strut bases, no upholstery and a black bird, their symbolic mascot (above). A stacking version of the polyester fiberglass chair (right) was added to the list of variations on the side shell in 1954.

Chair bases by the Eameses are often used interchangeably with various seats. The five bases shown on the opposite page are among the many that have been developed since the earliest bent steel rod forms for the original plywood chair. On down the column are bases of: metal struts on wood rockers; metal struts alone; a cast aluminum base; and, a cast aluminum drafting base on casters with a foot ring.



design was "... a more direct and pleasurable route." He added, "If I feel guilty about chickening out of architecture, Eero was guilty about not giving architecture the careful detailing I could give furniture."

Eames's statement that Eero treated furniture "... as a miniature piece of architecture" agrees essentially with remarks of Cesar Pelli, who spent ten years in the Saarinen office. "Eero's interest was in the theoretical concept; he was very little interested in working out the technology—he would give that to someone else to solve. He was worried about form, Eames was worried about how to produce. When Eames had to sacrifice style to keep the technology coherent, he would; Eero would have no hesitation about sacrificing the technology to keep the style and form clean."

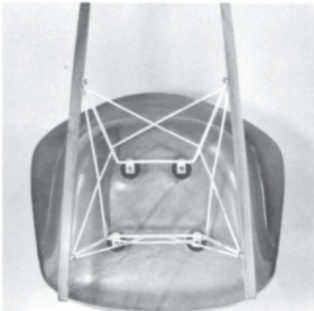
An example was their two chairs with a single vertical element. Eames clearly expressed the base and revealed the connection; the base was painted black, you could see it was steel. Technologically it was very clear. It was for intellectual enjoyment. Eero had planned to make his pedestal chair entirely of plastic but when the stem would not take the strains, he made the base cast aluminum and painted it the same color as the plastic. He didn't mind the lack of intellectuality.

Eames's convictions came out of, or were fortified by, things that happened during those six years. One was a chance to experiment. A production plant was set up by himself and John Entenza, editor of *Arts & Architecture*—a magazine which after the end of World War II focused attention on California, especially in its Case Study House program in which Eames and Saarinen participated; the Eames house, and Eames and Saarinen's Entenza house, were Case Studies. The plant in the Venice area of Los Angeles in time produced molded plywood traction splints, which Eames designed; later came molded plywood airplane parts. Entenza and Eames took what *Fortune* ("Artist in Industry," Oct. 1944) described as "... a creative approach to manufacturing problems."

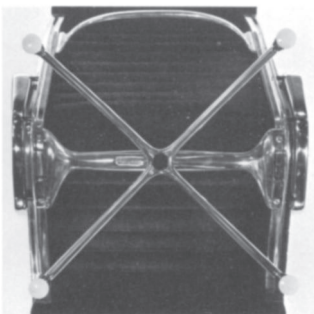
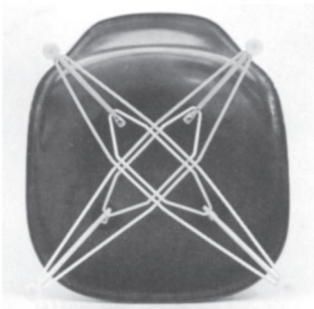
The ability to wait, learned during the six years, hardened into a discipline: it has always been in his favor. It is the source of a restricted number of designs from his office, their quality and their long life. The question is, how did George Nelson, who brought Eames to Herman Miller, sense those things in a man who "... was not at all sure what we were doing." Maybe what Eames meant was, "We are not at all sure when we are finished."



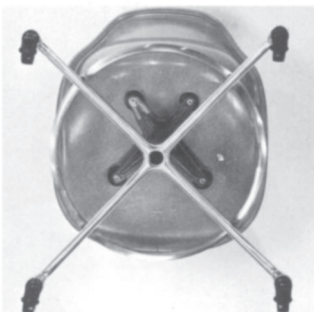
To see how careful Eames was you have only to look at Herman Miller's 1952 catalogue. The George Nelson furniture, always in context with the familiar, is nostalgic today because it so legibly created the good environment of the 40s. It was legible as sociology and economics, too: the sudden high cost of square footage, multi-use expressed in such things as the slat bench. The furniture still belonged to the wall as it had since Frank Lloyd Wright, out of the Japanese interior. And when any Nelson piece, desk or seating, had penetrated the room space, it was still wall-moored.



Then to the Eames pieces. They played Klee to Nelson's Braque. Light and mobile, they belonged to the floor rather than to the wall. In the catalogue, none appeared in context with a room except for a card table spread with breakfast for three; nor was that a cozy closed-in room—it was the dining-kitchen of the Eames glass-cage house opened to a row of eucalyptus and a stretch of meadow. Most of the presentations were fragmented, wrenched out of context; objects chosen to accompany them destroyed or suppressed scale: the marguerite in the common clay pot near the large, low coffee table with wire strut base and black laminated top. Or the presentations purposely introduced an alien object which diverted attention from the furniture, as for instance the large paper butterfly dropped prettily on the floor of an aisle between rows of storage cabinets; the rock on top of one case in the foreground.



It was a technique out of cinema, and one which they were to use later in films—odd juxtapositions that shocked the eye into seeing. What is more haunting, for instance, than the black paper bird poised on one frame of a calculated jumble of shells of wire chairs? Yet it suggested the similarities of the centers of gravity of two very different doubly-curved objects, animate and inanimate. Tough conceptions surrounded with prettiness.



What I mean to say is that someone (surely Ray) was not making things easy for the sales department of Herman Miller by presenting their creations as if they were a delicious game of jackstraws. What were the thoughts of D. J. De Pree on his pillow? But then, had occasional shivers run through the offices of Johnson Wax when the first sketches arrived from Frank Lloyd Wright? These are the brave unsung who beheld new truths.

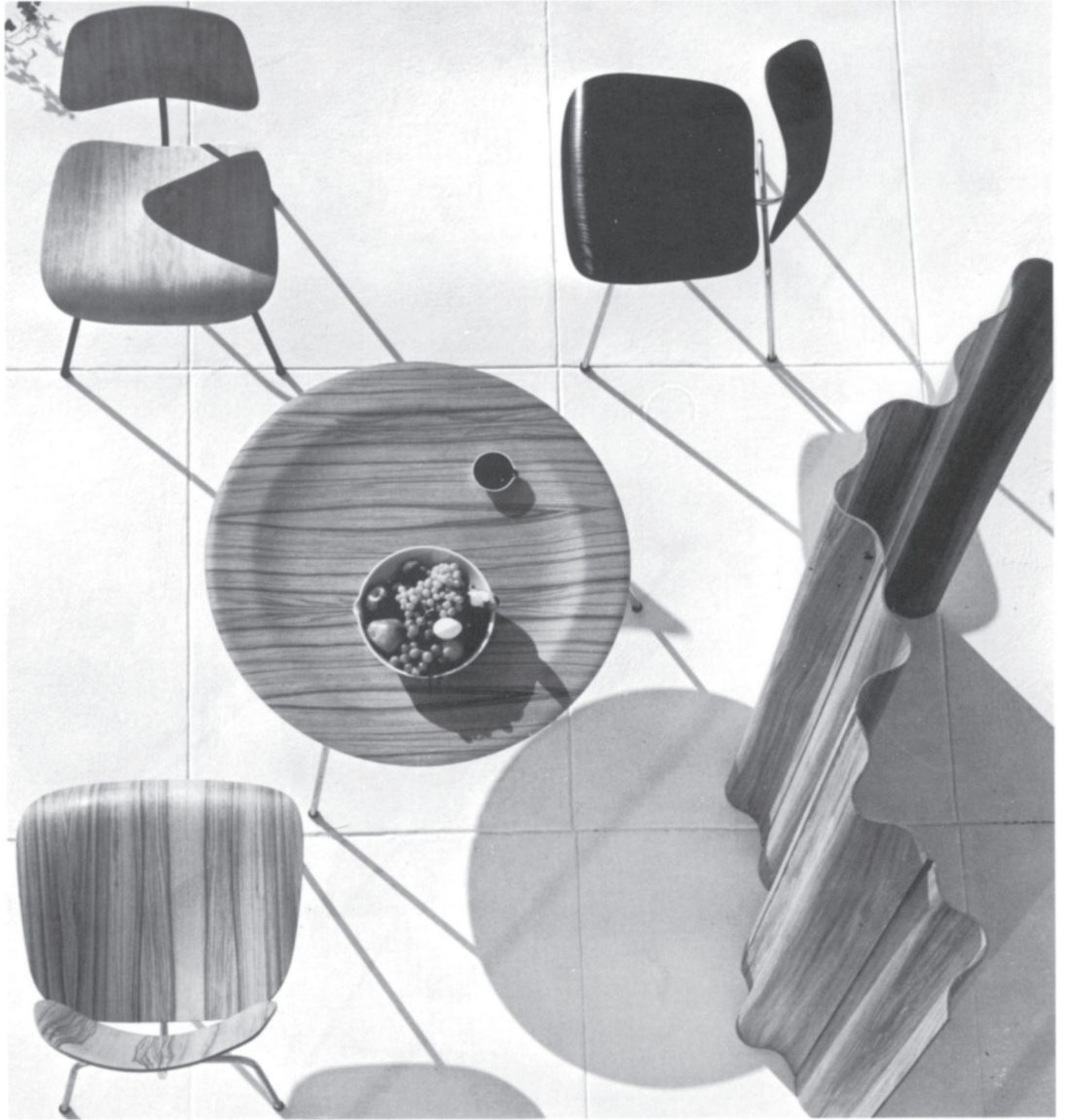
I still haven't mentioned the strange newness (in 1946) of the molded plywood chair. The first version having been sanctioned by The Museum of Modern Art and the Eames

version by *Arts & Architecture*; appearing many times in the pages of the latter, it lacked not in credentials. It was to become the darling of young architects, the obligatory foreground object in photographs of the new Modern house of the late 40s. It had the wit and scale which gave it the character of a grace note in those postwar houses. In the Nelson pieces wood appeared in planes broken by a handsomely designed and crafted piece of hardware; the wood of the Eames chair proclaimed itself plywood by revealing the plys. The hunger for that chair may have been reflected in the sales, but not the sense of achievement in owning one that was felt by any number of young architects who had finished school during the years when Modern was still an optional style (less preferred in California than Andalusian), had survived the war and opened their first office.

The chair was much in the news: *Time* referred to it as the "potato chip;" Saul Steinberg drew it for *The New Yorker* with an antimacassar on the back.

Much of the Eames furniture came out of needs we did not know we had, the most striking example being the molded polyester group introduced in 1949. The boom in civic and office buildings in the 50s created a need for lightweight comfortable seating that could take abuse; stackable chairs that could be brought out easily for overflow spectators; bright colored chairs in the spirit of an age that questioned marble monumentality and permanency. The plastic shells appeared in tandem in many of the new airport terminals; and the tandem seating for O'Hare and Dulles airport terminals came out of another Eames family, the 1958 aluminum group.

The first plan had been for the plastic pieces to be of metal, but by 1950 technology had advanced to the point where shaping plastic had many advantages over stamping out metal. The two surprising things about the Eames plastic pieces are their similarity to some of the earliest Eames forms, and the interchangeability of the bases. Compared to the molded plywood and the later aluminum group, the plastic had a built-in anonymity. Since the number of the plastic shells produced was stupendous, it was just as well that the eye came soon to dismiss them as appropriate background. They were as invisible as Thonets. Discipline indeed to have given the plastic seating invisible forms, yet in the spirit of the 50s when architecture retreated from the *tour de force* and Gropius was admired above Wright.



A child's chair (above), in natural birch or painted pink, was produced in 1945 by Evans Products, as were a child's table and stool.

The earliest plywood furniture was produced on tools designed and built in Eames's office. In addition to the chair, a plywood table and a beautiful folding screen with canvas joints were all produced by Herman Miller (above, right).

Tandem Sling Seating (the O'Hare chair) was designed for Chicago's airport in 1962 and was also installed in that same year in Dulles International Airport, Washington, D.C. These wonderfully comfortable seats use the same structural principles as the aluminum group, designed in 1958. The seat and back pads are sandwiches of heat-sealed vinyl stretched between metal frames held in tension by horizontal die-cast aluminum bars (below, right).

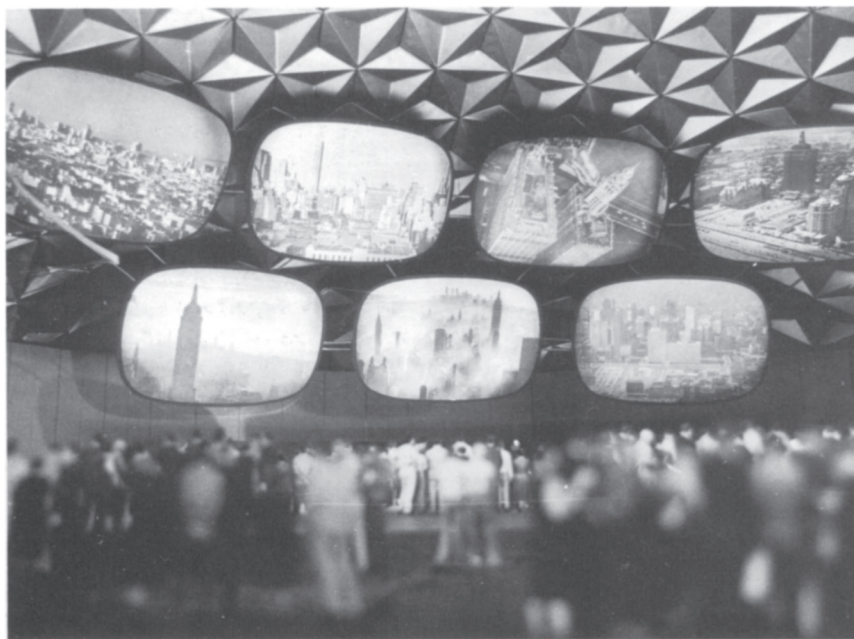
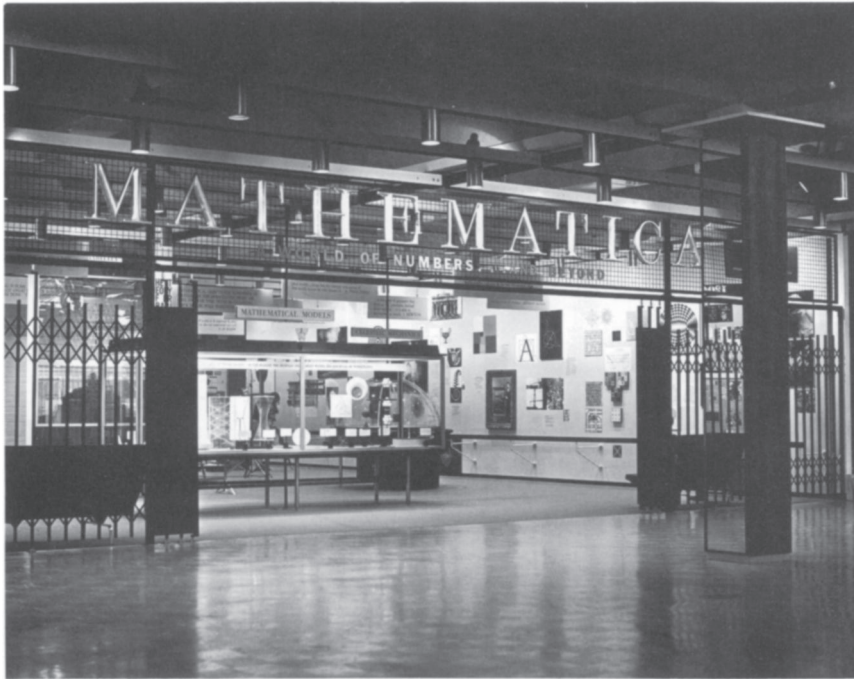




Eames's first true lounge chair (above), a very personal version of the English club chair and ottoman, is made of molded rosewood plywood and black, down-filled leather cushions, on a polished aluminum swivel base.

The lightweight Aluminum Group chairs and ottoman (right) led to several later designs, such as the 1969 Soft Pad chair.





Mathematica is an exhibition about numbers. Designed by the Eames office for IBM in 1961, it is permanently installed in the Museum of Science and Industry in Los Angeles. It is structured around a time-line (characteristic of Eames's exhibitions) that traces the development of mathematics through the centuries.

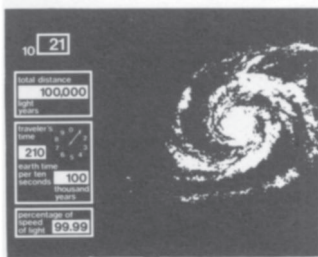
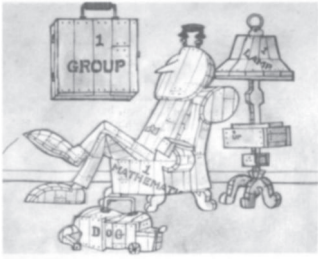
A photo of the model for the Moscow World's Fair, 1959 (below) shows the seven screen multimedia presentation on American life, with its images of New York City.

But Eames was capable of a *tour de force*—the 1956 lounge chair and ottoman of molded rosewood. Eames said that the chair sprang from his question to himself: what-ever happened to the leather chair in the Elks Clubs? His version has, rather, become the Morris chair of the 20th century as far as comfort goes. Its prestige was (still is) so high that it was often the first chair to be bought for the living room of a new house; the rising building costs of those years often ate into the budget for furnishing and it was not unusual to see an interior practically bare except for the one chair. Seeing it thus gave it an un-Eames like character: it lacked two notable characteristics of the molded plywood chair, the machined look and the mobility. It was truly in the tradition of the handcrafted Morris chair.

The Eames furniture was at the outset limited to home consumption, and although this was reversed in the 50s and today only a small percentage goes into homes, the fact remains that it travels more easily between home and office than that of any other designer I know. True especially of the rosewood lounge chair and molded plywood chair, and to a lesser degree of the aluminum group.

The aluminum group began originally as an outdoor chair with a single stem base and sling seat of a naugahyde sandwich padded with vinyl foam. It had certain shortcomings for outdoor use but quickly made a place for itself indoors. It represented a return to the spareness of the molded plywood chair. Certainly the aluminum group is tough and intellectually clear. Many swivel and tilt, thus are mobile in ways other than their inherent lightness. Craig Hodgetts, who found "a fine functional argument" for the molded plywood chair in "the rubber bumpers you can relate your hands to," would like the "knob" controlling the tilt and the combined back brace/handle spanning the side frames that eliminates the need for a cross bar at the headrest.

The aluminum group multiplied and subdivided to become Eames's most versatile seating. One of the spin-offs was the padded leather swivel chair developed for the lobby of the Time-Life Building. Breuer referred to it as "... one of the gaps Eames has filled." (He used the phrase also for Eames's airport terminal seating.) It is well known by now that Bobby Fischer used a Time-Life chair in the chess tournament at Reykjavik, and that when it was admired by his opponent Boris Spassky, Herman Miller flew in one for him.



Stills from various Eames films (top to bottom) include: *Mathematics Peep Show's* segment entitled "Symmetry;" *View from the People Wall*, a single-screen condensation of the multi-image presentation for IBM's pavilion at the New York World's Fair in 1964; *National Fisheries Center and Aquarium*, 1967, a filmed report on the proposed National Aquarium, not yet realized; *Powers of Ten*, an eight minute 1968 exponential view of our universe; *Tops* shows 123 spinning tops in marvelous colors and forms.

There are few Eames pieces that lie outside the three families—molded plywood, molded plastic and the aluminum group. The first Eames series was varied, as that of young offices is apt to be; most of the molded plywood tables are out of production, as well as a magnificent molded plywood folding screen; a 1944 molded plywood armchair with a cantilevered steel tube base was, however, the parent of the rosewood lounge chair. The amusing 1968 chaise appears to have a history in medical therapy rather than in seating, perhaps because of the over-engineered frame. The ability to draw upon imagery outside the tradition of furniture is a source not only of wit but comfort. Is not the seat of the molded plywood chair out of farm machinery, and the compact sofa of 1954 out of auxiliary seating for the automobile or bus?

Much of the Eames imagery is from the archives of American machinery or from standard catalogues of machined parts; these are taken out of context, given an elegance. Their appeal is in the mixture of familiarity and surprise.

There is a loyalty to the family groups, a loyalty to their own special imagery; and today the number of refinements to existing pieces far exceeds the creation of new ones. "But," as Konrad Wachsmann says, "the number of examples doesn't matter. In furniture the century is his. Ten churches or one, Brunelleschi had said it."

In the large industrial space in Venice, California, which the Office of Charles and Ray Eames has occupied now for three decades, the activities of furniture design, film-making and preparation of exhibitions co-exist. If the three appear to have been cut from the same bolt it is because one developed so naturally out of the other. One unifying factor is Ray Eames's rich and audacious imagery.

Ray's hand is clearest in the films and exhibitions, both initiated in 1950, but associates recognize her refining touch in the forms of the furniture.

The Eames house above Santa Monica Canyon, an early example in domestic architecture of industrial materials openly stated, is too well conceived as exhibition space as well as house to appear to be the work of Charles alone. The chasteness (frame) and richness (interiors) interact in the same way as do structure and content of films and exhibitions.

Films may have served in the beginning as a means of recording furniture design and exhibitions, the accession of toys, folk art or circus memorabilia; however, the introduction of multimedia, multi-images and such techniques as fast cutting, ellipses and surprise juxtapositions raised filmmaking to a very personal art. From the first multimedia expression ("A Sample Lesson," in collaboration with George Nelson and Alexander Girard) new visual areas were explored for communicating complex information, and by 1962 when the Eameses made *Powers of Ten* they had acquired a sharpness and economy which make their visual similes immediately accessible.

Their 50 or so films fall into two categories: information films (the two above fall into this category; also *The Information Machine*, and among others *Glimpses of the U.S.A.*, in which 2200 images were thrown on seven screens for the American exhibition at the 1959 Moscow Fair); the second category is object films such as *Tops* and *Toy Trains*. But the affection of the Eameses for objects and their love of facts blur the demarcation between the two.

The most successful of the early exhibitions was *Mathematica*, prepared for IBM in 1961; several permanent installations of this now excite the imagination of a second generation of viewers. Most of the exhibitions are either for institutions or for IBM, and are similar in being organized along a time line; by this means one can follow historical events of the same period covered in the main subject matter. For instance, an exhibition on Copernicus for IBM traces the advancement of other sciences and the arts of the day. The art lies in making the digression support the pertinent fact, and the two work together to give life and substance to a time in history.

In *Nehru: his Life and his India*, exquisitely chosen trivia give breath to the country, and a sense of place is created by erecting prison walls and placing on them Nehru's writings in prison. In *A Computer Perspective* the outline bends to receive glimpses of the friendship between an early programmer and Lord Byron's daughter.

This, in a sense, describes everything the Eameses touch: a framework as precise as the steel skeleton of their house, the clarity of the molded plywood chair, but also the butterfly dropped prettily, as in the early photos of the storage cabinets, to evoke a multi-layered experience.



Alexander Girard is one of the great colorists, pattern givers, environmental and exhibition designers of our time. These media—his joy in them and ours—is his message. Girard's statement is based upon an underlying personal humanism expressed through color and pattern, folk art and total design. He calls for spontaneity and for a fresh consideration of emotional content, for easy, fun filled simplicity in which a good replenishing environment is not a matter of size and cost, but of the integrity of its parts. He has never implied that everyone should live with the hallmarks of his style, but—through ample demonstrations—he has urged each of us toward a more personal and expressive way of life.

Girard's unique position in 20th century design is based in part on the fact that fabric design is only one aspect of his expression. More than most of us in fabric design, he is aware that the role of fabric is a supporting one. That Girard is an interior architect of great stature has influenced his fabric design in a variety of ways. First of all, architectural commissions have presented the challenge of fresh requirements—far beyond the conventions of a fabric collection *per se*. Often these commissions have provided the impetus for a bold departure in Herman Miller's fabric line. Girard's interiors, widely published, are often perfectly orchestrated demonstrations of how to use his fabrics effectively.

As his own best client for fabrics, Girard describes the genesis of his cloths and colorings:

The simple geometric patterns and brilliant primary color ranges came to be because of my own urgent need for them on current projects. As you will remember, primary colors were frowned upon in those days; so were geometric patterns. I had the notion then, and still do, that any form of representational pattern, when used on folded or draped fabric, became disturbingly distorted, and that, therefore, a geometric pattern was more appropriate for a draped fabric. Also, I was against the concept that certain fabrics were 'suited' to certain specific uses—like pink for girls or blue for boys!

Their wide availability was assured as Herman Miller put them into their collection—in a variety of cloth types. Most often these enriched colors and concise patterns went into the Miller collection "use tested" by Girard's interior and exhibition assignments. Later on, for easy correlation by a

broader, international Miller staff and client list, the Girard color schemes and pattern complexes became highly systematized.

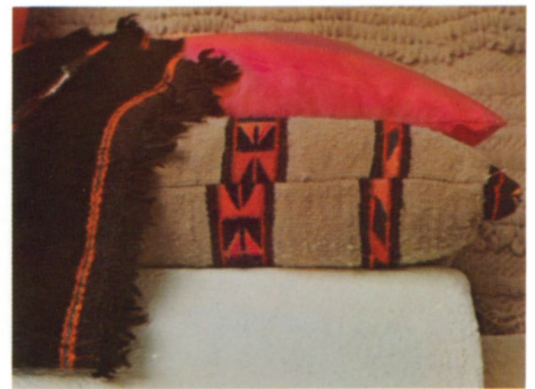
For almost two decades Girard's designs for Miller included selections from his famous Mexicotton series. His endless variations on related stripes, checks and solids primarily within the confines of one weave, one yarn and one density prove his innovative prowess. Such exercises often stultify; Girard responded to this discipline as do great poets to the structure of the sonnet form. On more than one occasion, as in his installations for The Detroit Institute of Arts, The Museum of Modern Art and Georg Jensen, he has also been the designer for exhibitions that featured his fabric designs.

In discussing the meaning and influence of Girard fabric and particularly Girard color, his relation to Dorothy Liebes and Jim Thompson* is both necessary and helpful. Although Mrs. Liebes is dead and Mr. Thompson disappeared, and despite their being older than he, these three Americans who revolutionized our sense of color and cloth had much more in common than their respective predilections for Chinatown, Siamese and Mexican pinks. All three popularized vibrant, pulsating color by making it available in fabric form. Although Girard's concern is the deepest, broadest and most durable, he shares with Liebes and Thompson a keen interest in ethnic expression and in infusing American culture with the spice of an exotic expansiveness.

Both Thompson and Girard trained as architects; Mrs. Liebes was particularly involved with the architecture of her native California. Possibly because of this, the three were not so concerned with fabric structure as with fabric color and texture. (If Girard had ever devoted himself to the complexities of fabric construction he undoubtedly would have dwarfed us all.)

However, Girard's printed fabric statements have given us a broader range of expression. Although he was the only one to rival Dorothy Liebes as colorist or as major fabric influence in the important postwar design revolution, Girard's approach has been different from hers. While Mrs. Liebes

*Dorothy Liebes, who died in the early 70s, was among America's most talented fabric designers. Weaver turned designer for industry, she used color and materials inventively. Jim Thompson, whose mysterious disappearance in the Himalayas has never been solved, brought Siamese silks to the West after World War II. Working with craftsmen in Thailand, he revitalized a home weaving craft and introduced Westerners to the wonders of eastern color and material with his handwoven silks.



Interior views of Girard's Santa Fe adobe house, remodeled in 1953, that demonstrate his masterful use of color, texture and pattern.



Herman Miller's San Francisco showroom, a turn-of-the-century music hall, was transformed in 1959 by Girard who retained most of the original architecture. Decorative and witty, the space created an appropriate envelope for Girard's folk toys and fabrics.



herman
miller
inc.



east 53 st.
new york
n.y.
plaza
3-5106



extiles



bjects



designed
or
selected
by
alexander
girard



simultaneously handwove for potentates of the establishment and promoted a variety of commercial interests, Girard funneled all his fabric work through Herman Miller. The result was pure—if warm, colorful and personal—design-by-the-yard, available worldwide through courageous retailers and the best architects and interior designers.

Alexander Girard is a serious, principled man. He has the wisdom to keep in front of him the certainty that “they”—the client, market and public—will always, in the long run, accept his design criteria. His early statement of “. . . being able to make a living doing things I want to do, in the way I want them done,” has bolstered many. He accepts market reality as a climber accepts risk; it is always there, not to be disregarded, but not the primary condition of the ascent.

Unlike Dorothy Liebes and Jim Thompson, he is a showstopper who always leaves the arena before the curtain calls. He leaves nothing to be explained. Alexander Girard is a perfectionist, both in his clear concepts and in his meticulous execution of them. Even in the areas of product design he does not work his way through problems, but in the best architectural tradition anticipates them, then follows up—gently and thoroughly.

Girard is a humanist, a student of the visual forces that move people and especially of those that delight. He is Puck, a bright boy with many toys and games to share, magician and fairy godfather. He adds fun to the matter-of-fact. Always in person, and most often in his work, the humor is as slyly thrown away as a boomerang. Through the corner of his eye he awaits our reaction.

Sandro Girard must finally be given credit for his long, single-handed campaign to inject the lively human qualities of joy and spontaneity into what has probably been one of the driest, most sensually impoverished chapters in the history of design. All through the four decades when architectural catholicism has been measured by the omission of any aspect which is not intellectual, when serious environmental design has not corrected people’s alienation from their senses and often sensibilities, but has made a headstrong, headlong plunge into judgmental intellectualism, Girard was first and loudest in suggesting the alternative of lively personal expression.

THE RESTAURANTS

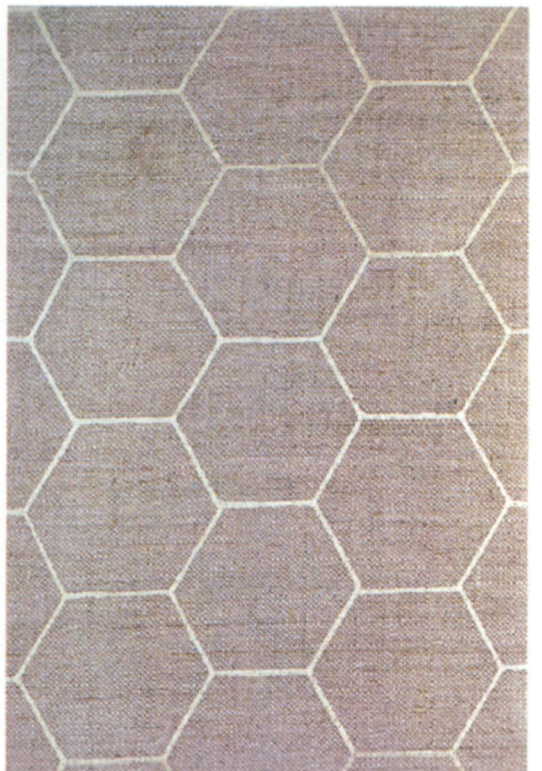
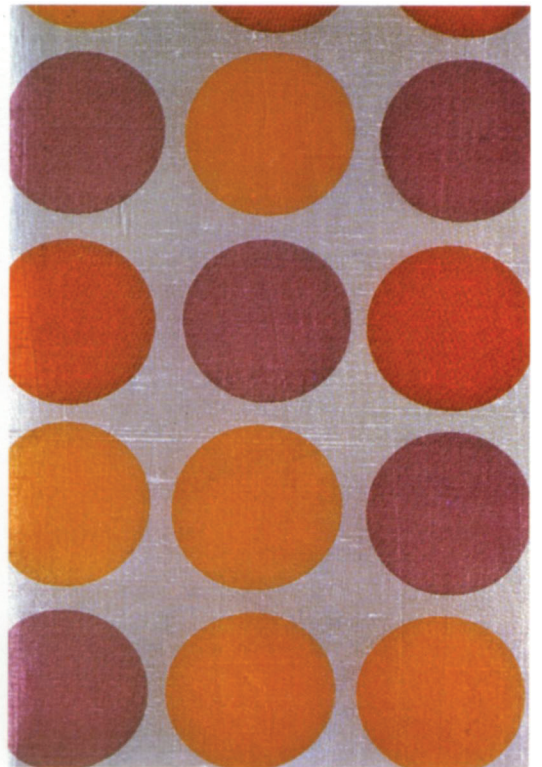
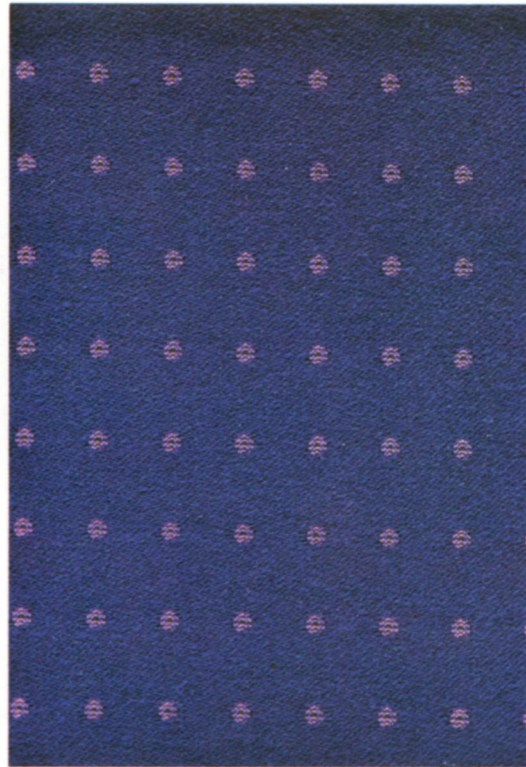
Over a ten year period in New York (1956-1966) three “food assignments” electrified a public which had primarily known Girard

as a fabric-designing insider of the new purist cult and as an exhibition designer for The Museum of Modern Art. There, even more than his installations for the Good Design Shows, his brilliant, extravagant “set” for *Textiles and Ornamental Arts of India*, 1955, should have given us a clue to the bombast to follow. In 1956, Just Lunning, president of Georg Jensen, commissioned Girard to design seven table-top environments. This history making demonstration heralded a whole new attitude toward the sensual and social pleasures of dining. His welcome message was that giving pleasure has no rules, but important elements are surprise and spontaneity, ritual and nostalgia, consideration and celebration, design and form. Sandro Girard’s underlying proposition was becoming clearer: he was urging us to celebrate, not stifle with intellectualized precepts, areas that innately belong to the senses. In these areas more *is* more.

In the postwar years New York was the only great metropolis without important new clubs and restaurants. Other American cities had them of necessity; San Francisco opened several each year. Manhattan had—and still has—some excellent chefs serving in intimate rooms without artificial flowers, neon lights or Muzak, but no distinctive new spaces or expressions of an evolving lifestyle were evident. When the Four Seasons pompously, ceremoniously opened in the lofty spaces of Mies van der Rohe’s bronze-clad Seagram Building in 1959, the ice broke; two years later, when La Fonda del Sol opened in the then new Time-Life Building, the ice melted. So did the critics and public. New York was once again a restaurant capital.

While the Four Seasons was an attempt to reinterpret, in contemporary terms, dining in the grand manner, Girard’s approach at La Fonda was revolutionary. Its *design* was grand—total, expansive, complete to the buttons on the waiters’ jackets—but the spirit was as inclusive as a fiesta. Families came; so did actors, designers, executives, foreigners and young people out on a “big date.” They came for the exotic foods of Latin America, the joyous folk art celebration, but mostly for the ambience. All these ideas were Girard’s, from the Spanish-American concepts to the exposed grills of sparkling tile, to the exotic china, evocative menus, and the extraordinary, articulated brass sun itself. High overhead stretched an acre of the best ceiling lightgrid yet designed. Beneath it the bar was enclosed in adobe, pierced for vignettes of the most extraordinary folk art ever to grace commerce. The windows were screened with golden layers of tautly stretched ribbons.





Girard's ability to work in several disciplines—architecture, graphic design, fabric design—is a characteristic of a number of designers of his generation, including Eames and Nelson. La Fonda del Sol was an example of Girard's total design ability (opposite). A Latin American-inspired restaurant (now closed), it was designed by Girard from the menus and matchbooks to the tile walls and floors. The La Fonda chair was designed by Charles Eames.

On this page, two posters and four fabrics demonstrate Girard's handling of color and pattern. Fabrics (clockwise from top left) include: *Mildot*, woven wool; *Circles*, printed silk; *Hexagons*, printed linen; and *Quatrefoil*, printed cotton.





These ribbons, warp knit of such improbable combinations as jute and Lurex, with a dozen or more variations, were—then as now—without precedent or peer.

Throughout La Fonda del Sol, color and light were used to create a dozen moods. So were the spaces, from the horizontal and open to those enclosed by parapets and canopies. Fabrics, particularly a variety of striped Miller wools, supported this orchestration. Miller solid colored upholsteries varied the hundreds of Eames dining chairs—the one constant, unifying denominator. When Girard's "other restaurant," L'Etoile (commissioned by Jerome Brody who, when with Restaurant Associates, had been in charge of realizing La Fonda) opened five years later in New York, its contrast with La Fonda and with all that the world had come to expect from Girard was pure genius. Virtually without color, without Latin or folkloric overtones, its mood was cool and chaste. The dramatic understatement, involving light and surface, gull grays with sparkling whites was, although it predated the revival of Art Deco, reminiscent of pre-war Parisian urbanity and particularly of the French liner, Normandie.

Although L'Etoile and La Fonda have long since closed, they deserve more focus than these few lines. For these environments were more than food and decor, more than a business; to thousands of people who experienced these spaces, it was a life-expanding revelation that creative, zestful informality was more convivial than "company manners." That this quality of design was out of a museum context and in actual use made it that much more influential. However, the most important statement, more durable than the totality of the planning, the props, or the color was the assertion that the prime concern of environmental design was how people *feel* in a space. This is Girard's message and main contribution.

At a time when modern architecture was rapidly becoming a larger, more standardized aspect of the corporate establishment, the success of La Fonda whetted our appetites for more romantic, diversified interiors, particularly in non-work areas. We wanted to see more Girard design. This opportunity came when a Herman Miller showplace, T & O (Textiles and Objects) opened on Manhattan's East 53rd Street in 1961. The textiles included new ranges of non-geometric handprints and earthy wool upholsteries. Since the objects were lavish folk art pieces selected and displayed by Girard, the inter-relationship of textiles and objects was inevitable.

His total design for Braniff International, 1965, brought Girard's design (and Braniff) to the attention of a very broad audience. It startled a generation into the awareness that even the look-alikes of mass transit could—through color and pattern—achieve metamorphosis. While other designers wondered where to put which exterior color, Girard bathed entire planes in the sunniest of hues—and a variety of hues at that. Similarly he color-structured all the field equipment. While others sought the "right" upholstery, Girard employed a dozen related geometries so that the whole interior sang as a choir. He designed the graphics and terminal lounges complete with folk art collections. In airline history, this was Camelot.

SANTA FE

That Girard the architect, collector, graphic and exhibition designer lives in an area so distant from major clients is exceptional but not extraordinary. But for a fabric designer to be this distant from market and media and, more importantly from the dozens of independent producers and services is without precedent. Isolation from production and market is not to be recommended to anyone starting out, but Girard has several advantages that have made his Santa Fe sojourn possible. For one, his career and particularly his Herman Miller contract were secure when he moved; for another, his move from the relative remoteness of Grosse Pointe, Michigan must have been easier than to have orbited out of, say, Manhattan. But three of Girard's qualities are more significant. His broad range of talents and skills and his wisdom in not wanting to go the large design office, high overhead route so common to his time has reduced his necessity for business travel. His extraordinary ability to communicate quickly, briefly, precisely *by mail*, gives far-away clients the confidence of being very much in touch—in touch with a responsible, comprehensible man. To Girard this ability gives accuracy, maneuverability, and a life-style that sustains his creativity.

The Girard Foundation was established in Santa Fe to formalize and permanently house not only a vast, unique collection of dolls and toys, but related segments of folklorica and ethnic expression as well. While the heart of the Girard collections is of the very order of things that normally escape preservation, their celebration of ornament and play are, in this grim world, momentous.

L'Etoile (opposite and above), another Girard restaurant, was, in contrast to La Fonda, a very cool, restrained design. Primarily black and white, it had a quiet beauty reminiscent of the best continental design of the 30s. The extraordinary glass panels around the balcony and center stair used the names of illustrious Frenchmen to create a graphic pattern. The enameled, Art Deco flower (above) created a brilliant display area for pastry.



Organizational life can't stand environments that confer nothing but status, in which you can't do anything but pose. The healthy organizational effect washes all the baloney away.
Robert Propst

Although he is a sculptor, painter and former art teacher, Robert Propst produces work that looks consistently out of place in a museum of art. His designs are not collector's items. Individually they are not even items exactly, and in the aggregate they do not comprise a collection. Rather they are components of a system.

It is difficult to admire these designs for their appearance. It is difficult, for that matter, even to say precisely what their appearance *is*, for it keeps changing. The skeletal members of a process, Propst's designs are finally indistinguishable from the activities they support.

His best known products are a system of office equipment called Action Office and a related system of hospital equipment called Co/Struc, both manufactured and sold by Herman Miller Inc. But Propst's work also includes a vertical timber harvester that can slice up four trees a minute; a system for machine-readable tagging of livestock; a pediatric bed; a mobile office for a quadriplegic lawyer; a program for making university dormitories inviting centers for student life, reducing vandalism in the process; a system of integrated information-handling accessories; a facility system for a corporation's warehousing, transportation, inventory management and laboratories; a study of the social and economic ramifications of single-use products; the conversion of an old university building into a more responsive instructional facility; the "fishbone connector," a device for making invisible joints in furniture assembly.

Propst is president of the Herman Miller Research Corporation. Much of the corporation's work is related to furniture, but from the start it represented a departure from the standard approaches to conventional furniture design. As befits a man who is committed to systems, Propst is almost aggressively uninterested in piece goods and believes in any case that the piece goods approach is particularly inappropriate to today's problems.

"It doesn't look to me as though this is a period of any vitality at all for piece-design furniture," he says. "If you look at what's coming out, you know you've seen it all again and again. Of course there are a lot of

furniture companies across the country who want that for cannon fodder."

Richard Latham said nearly 20 years ago that "the designer is an artist who vows to apply his art to the world as it operates." Propst must have been coming to the same conclusion at about the same time. His signal contribution has been to subordinate his work to a relentless *investigation* of how the world operates.

Propst grew up on a Colorado cattle ranch, which he left to study chemical engineering at the University of Denver. While there he took a design course, and responded by switching his major to fine arts. Right after graduation he went into the Navy, and became a beach master in the South Pacific, taking charge of beachhead operations after invasions—an experience he regards as a superb training ground for his career in innovation and development.

After the war Propst headed an art department in a Texas junior college, then got a master's degree at the University of Colorado and became head of the art department in its extension division. His various art experiences convinced him that artists were uniquely committed to a problem-solving process and could bring that process to bear on problems other than those to which art was normally addressed.

With that in mind he approached an aircraft company, a lumber company, and a pre-cast concrete company and developed working relationships with all three, based on a series of audacious proposals. For example, he accused his lumber clients of having "an absolute fixation on boards." As an alternative he worked out a "fabric tendon" system for assembling small pieces of wood into a variety of structures. "What's interesting about wood is that it's a great torsion material," he says.

By the mid-50s Propst had added a cosmetics company to his client list and begun an architectural sculpture business of his own. During this period D.J. De Pree, founder and at that time president of Herman Miller, called on him, intrigued with the idea of using Propst's innovative talents to extend the company's line of products. Herman Miller was not a new name to Propst (he had called on *them* a couple of years before with his fishbone connector) but he had doubts about whether the company's interests were close enough to his own. "Yet I knew that all the charging around I had been doing was superficial," Propst says now, "and Herman Miller was willing to



sponsor the kind of probing I needed to do.” The kind of probing he needed to do is represented by eight years of research, testing and design time for Action Office, ten years for Co/Struc, 17 years for the timber harvester.

The initial arrangement gave Propst a retainer to spend two-fifths of his time working on company projects on a fee basis. His early Herman Miller-sponsored research included studies of human factors in work stations, the development of a litter for burn victims and a mechanical and automatic bed-chair for quadriplegics.

That arrangement continued until 1960, when the Herman Miller Research Corporation was formed, primarily as a good way of using Bob Propst. It is located in Ann Arbor to take advantage of University of Michigan research facilities, but also because both geographical and psychological distance from the parent company are desirable to Propst, a man described by himself and others as cherishing a bristly independence.

There are times when the parent company reveals the same sort of independence. In 1970 Herman Miller announced a two-point Research Corporation commitment: “(1) To avoid all research work which is connected with the defense industry (this is about 80% in the USA), and (2) not to be involved in any projects which in relation to human environmental design are meaningless and worthless.”

At its inception, the Research Corporation began developing the ideas that became Action Office. Although Propst’s mandate was to explore problems for which “a product not necessarily furniture” might be the solution, the first general problem he focused on was the office; and the basic product, though not the only one, was furniture.

The artist Saul Steinberg once said, “You always find good design in work things.” If you look at the artifacts of labor, it is easy to see what he means. Thimble, scallop rake, plow, lathe—these have evolved over long periods of time into forms that designers cannot easily improve or, more important, harm. They are what is conventionally meant by “work things.”

Yet for those of us who work in offices, “work things” are something quite different and you don’t always (or often) find good design in them. Most offices are equipped with tools that do not look like tools, or work like them either. So we lose sight of the fact that tools are what they are. Desks and office chairs, for example, have not so much evolved as

happened. And the capriciousness of their happening has been compounded by the tendency of interior designers to make executive offices pleasant by treating them as parlors. Although this is a mistake, it is rarely a tragic mistake: most living room furniture is about as well suited to office work as most office furniture is.

It is true that performance criteria have been inescapable for certain kinds of office equipment, and such equipment has been improved and refined. Ironically it consists chiefly of tools for performing relatively unskilled tasks. Typewriters have steadily improved in design because the work of typists is a measurable (and increasingly expensive) commodity. The work of executives is presumably measurable in the long run, but not in a way that can be cleanly traced to the tools they use.

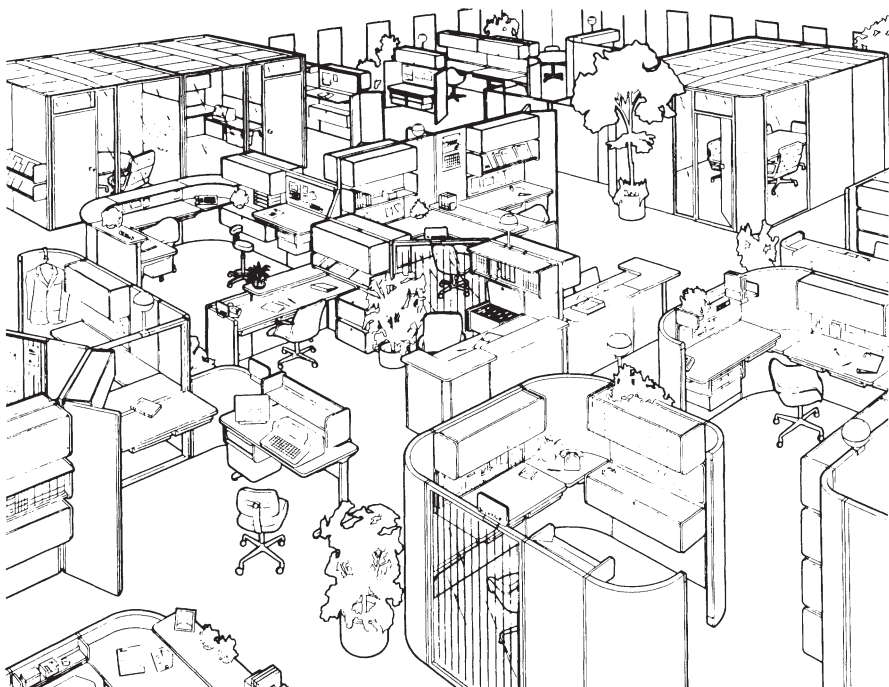
Desks, chairs and typewriters as individual objects are not the problem. The problem is the office itself, designed on the basis of everything imaginable except an analysis of what it is for and how it is used. Few designers, and few heads of corporations, have seen any urgent need for such analysis. Office work is an abstraction. There is no handy way to judge the effectiveness of the office, except in regard to its peripheral functions. Designers have established criteria for cold and warm offices, power-base offices and shirtsleeves offices, but no criteria for office performance in supporting work. There is no white collar counterpart to the straight furrow.

In 1957 C. Northcote Parkinson published *Parkinson’s Law*, a book so funny that the high seriousness of its central proposition was overlooked. Office work *does* expand to fill the time and space allotted to it. Moreover, it demands increases in both. Propst knew this. The research that led to Action Office was an effort to approach the problem from the standpoint of office system design.

The end of World War II brought with it such strong resistance to “easy answers” that answers of any kind fell instantly into disrepute. It became fashionable for college professors to begin courses by insisting that they didn’t have all the answers. Some took pride in not having *any* answers. What was important, everyone said, was to ask the right questions. Indeed it is, but it can be frustrating to stop there. Propst deviated from fashion in assuming that his questions were answerable and that the problems they revealed were solvable.

The development of Action Office began with a battery of questions that is continually

Many years went into research for the Propst Timber Harvester (opposite). Planted as a crop on southern farms, trees are automatically cut down and into manageable sizes by this machine that is so narrow, an operator can weave it in and out of rows of trees without damaging those not ready for cutting.





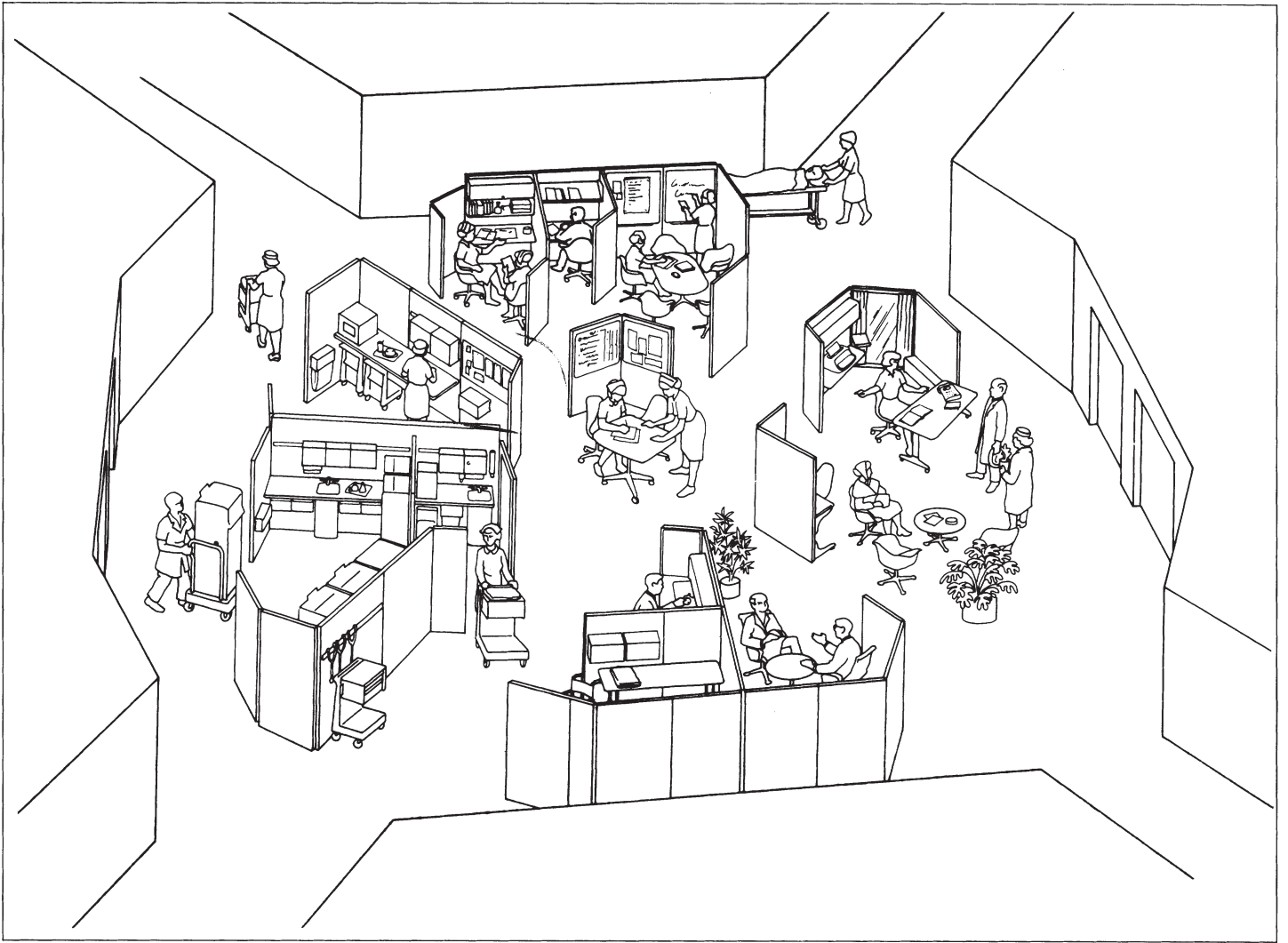
Action Office, produced in its current form since 1968, is a furnishing system for offices and other paper handling situations like libraries. Consisting of many small elements, this easily modified series of interdependent parts can be organized in an infinite number of configurations.

On these two pages, various of its units are shown in detail along with a line drawing (opposite, lower left) that demonstrates one possible office arrangement. Wall or panel hung parts can be put together to form open plan or private spaces.

Paper handling is assisted by folders, trays, dividers and shelves designed to aid both access and display. A new group of organizing elements, for use in what Propst calls the "proximate environment," is in the prototype phase. The "perch" chair, (opposite, above left), is a high, mobile seating unit for the "stand-up" desk.

AO design teams in Ann Arbor and Zeeland have adapted the system for library use. Book shelves, newspaper rack and card catalogue details are shown at right.





being enlarged and modified. How do people work in offices? Sitting or standing—or even lying down? Should a door be opened or closed, and for how long? Should there be a door? Where are phones best located? How often do executives nap in offices? Should the practice be discouraged? How much office equipment is purchased and installed for actual work purposes and how much for purposes of conferring status? Is neatness necessarily an asset? Is it more efficient to converse with colleagues in your office or theirs?

The point was not that such questions, or others like them, had never been asked before. They had. The point was not that they had never been answered before in theory; some had, usually by social scientists. But they had never before been regarded as answerable by design.

Similar concerns had been raised by management consultants, time planners and even, in the 30s, by efficiency experts, who imposed their answers on workers as if *the workers* were the equipment. Of course office behavior had been examined in literature by authors as different from each other as Arnold Bennet, Sinclair Lewis, Stephen Leacock, and Elmer Rice. But Propst was posing his questions with the idea that they could lead to designing and making some answers.

What they led to was Action Office, a system of office components, mostly panel hung or wall hung, that can be arranged in an enormous variety of configurations for particular needs and can be swiftly rearranged as those needs change. Similar questions about health care led to Co/Struc (for “coherent structures”), a materials management system for hospitals.

Because office work consists largely of processing paper, further questions arose, having to do with how information is displayed, recorded, and passed on. Also with how it is hidden in drawers or under stacks of other information, often of lower priority. Propst calculates that a pile of papers higher than three inches is too high for productivity, and has designed tambour roll tops to inhibit such piling.

Starting with the demonstrable fact of the widely reported “information explosion,” Propst set out to survey the effects of fallout. The explosion, he found, had resulted in information that duplicated what we already knew, obsolete information, information that was over specialized and insular, and information that was simply low grade.

These concerns led to the development of a range of accessories that make up what Propst calls the “proximate environment”—the collection of small objects that workers personally handle.

It is always satisfying to discover that a design anticipates your needs. Action Office does this largely through its wealth of support details: an array of such devices as pivot-arm reading stands, cassette trays, chalkboards, vinyl folders and binders and even spine labels that are part of the system. These are often very precise tools for keeping within reach the things you need, for keeping out of the way the things you don't need, and for quickly seeing which is which.

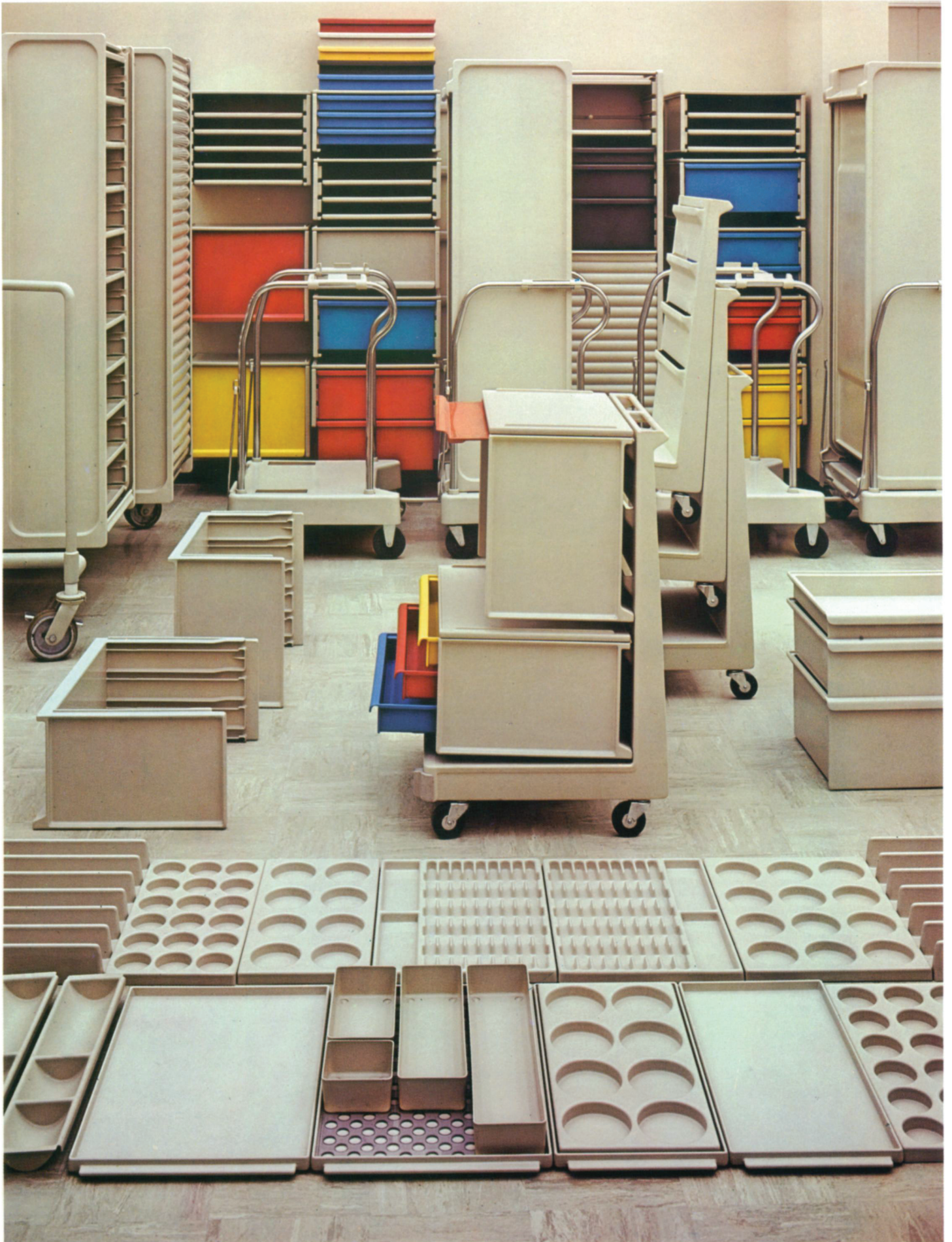
With priorities such as those, appearance may seem to get short shrift. Yet appearance is not unimportant in these designs, not truly “de-emphasized.” Rather the emphasis has been moved: the appearance Propst is after is a function of information display. Action Office has been called colorless, and in a sense it is; at least there is very little color variation in the basic components, which are a neutral color (now supplemented with a wood option). This is deliberate, partly because it makes it possible to keep a complete inventory in stock, and partly because the very neutrality of the major surfaces permits a variety of color treatments in chairs and small objects and is generally amenable to change.

Change is intrinsic to Action Office, which Propst likes to call a “forgiving” system, because its ease of revision allows the user to make mistakes without being condemned to live with them until the furniture wears out. It is also a *self*-forgiving system, continually modified and refined—a process relatively easy to do because of the anonymity of the basic components.

“Designers often express wonder at why we would want to deliberately make an unobtrusive design,” Propst says. “As opposed to the world of architects and designers we're more interested in the world of managers—low key, long term, a quiet kind of thing. We're not trying to make overt design statements. We can't come in with the shape-of-all-time. We're more interested in figuring out the context. Other people can try to do the show biz and make it as pizzazz guys.”

The work of Bob Propst is in the vanguard of design in several important respects. He designs situations rather than objects, he practices a peculiar kind of advocacy design,

Robert Propst's line drawings (opposite) demonstrate two arrangements of Co/Struc combined with Action Office elements to create nursing stations in a hospital. Co/Struc, essentially a way of handling laboratory and hospital materials, is philosophically closely related to AO. Its design principles are similar, and the two systems are compatible in use.

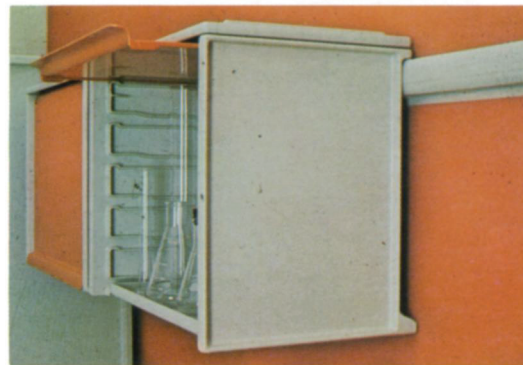




and he initiates projects instead of waiting for them to be summoned up.

Action Office and Co/Struc are attempts to deal with the dynamics of offices and hospitals, with how secretaries, nurses, executives, doctors and patients feel about each other. "What is real communication about?" Propst asks. "Distances of people—ways of staging their involvement with each other. People shouldn't be planted like onions in pots to sit somewhere." It is finally the design of the situation that interests him, the question of what a cooperative physical environment does.

Designers have been criticized, and justly, for serving commerce at the expense of society. Yet critics have had no very convincing examples of what designers ought to be doing. The examples they do have are design student projects or the equivalent—well-meaning, earnest, but inadequately researched and tested, relatively short-term solutions to local problems. While Propst's design of a van for Curtis Brewer, the quadriplegic lawyer, began as a one-of-a-kind project, the research implications relate to solving environmental problems for large populations of people with special needs.



To realize these implications means having the resources to follow through, and this requires a special talent. "If you're going to work in hospital research," Propst says, "you may have to stay in it for ten years. That's a big piece of your life and the problems may well get you in the end. You may go down, blozongo."



Finally, Propst has the habit of mind that goes after problems whether or not anyone has asked him to. And this is very much in line with the tradition that has distinguished Herman Miller since the 40s, when D.J. De Pree began turning a mediocre furniture company into a major design influence. It was a significant part of what Gilbert Rohde, George Nelson, Charles Eames and Alexander Girard brought to the company. Herman Miller's designers have not waited to find out what the market would bear. Instead they have found out what works, designed it, and discovered that it was wanted and needed.

This is in fact the way of the inventor, which Propst is. By tackling large-scale problems with fully researched systems he has developed an operating style that is nothing less than the institutionalization of the cranky loner who invents things.

Co/Struc is a system of containers, frames, carts and rails. Many of its storage and transportation elements are interchangeable (opposite).

A Co/Struc laboratory arrangement is shown (top). The wall rail system, as it is used to support storage cabinets and lockers, gives Co/Struc its unique applicability to both old and new construction.

THE DESIGN PROCESS



The interior of Herman Miller's Zeeland factory, designed by the office of George Nelson in 1962, is shown at right. An addition to the Zeeland plant, by architect A. Quincy Jones and Associates, is now under construction.

Eames's Venice, California studio—essentially a ground floor loft—has provided excellent work space for a diversity of projects since the 40s (opposite).

George Nelson's introductory description of the early days at Herman Miller explains how people in a small factory produced high quality design: they did it with the constant care and attention of every hand.

Growth complicates the process and in order to deal with it effectively, Herman Miller formed a department of design and development in the mid-60s, headed by Robert Blaich. Its programs include: 1) refining, extending and improving existing products; 2) project development such as airport seating, dormitory furnishings or specific space planning, and; 3) pursuit of pure research. In these various areas both consultant and staff designers participate in the effort to create fine objects. They work with engineers and model makers in a complete prototype facility (a mini-factory).

The integration of individual designer's philosophies into Herman Miller programs is complex and challenging. The quality levels established very early by Eames, Nelson and Girard, who operate almost independently from Herman Miller, set high standards that are difficult to match. It has been necessary over the years to develop more of a teaming program in design due to the tremendous increase in new processes and technologies.

For example, development of Robert Propst's Co/Struc system for application to medical facilities required the abilities of a diverse group of people. Taking it from invention to actual production involved a long series of steps with design engineers, production engineers and marketing managers.

As manufacturing methods directly affect the structure and appearance of the end product, they are of primary importance to the design process. At Herman Miller, designers work directly with production people in the factory, as many parts of the process depend on skilled hand work. In a series of photographs made this year in the Zeeland factory and in the prototype shop, various production techniques are illustrated and described on the following pages.



Manufacture of the Eames Lounge Chair and Ottoman has evolved over the years—it was introduced in 1956—until it is now a very refined process. As evident in these photographs, much of the work is still accomplished by hand. Though the chair has remained basically the same in appearance, there have been subtle changes and improvements in its parts, and in the machines that help to produce them. The leather covering and the cushion filling have also been modified. Eames and the production engineers continuously reassess products. Working together, they often make changes in a material or a form.

In abbreviated form, the Lounge Chair's production sequence is shown on this and the next page: 1) A completed chair and ottoman on the way to final inspection; 2) A chair's manufacture begins with selection of a rosewood flitch (sheets of wood veneer cut from the longitudinal section of a single log, laid together in sequence); 3-5) Veneer is sized, trimmed, glued and taped together to form sheets large enough to make the chair's back, seat and ottoman frame; 6) Glued sheets of veneer are hung to dry overnight; 7-10) The hot press (a match metal die) forms the wood sections by activating the dry glue so that it joins sheets of veneer and takes the final curved form that is identical for the seat, back and ottoman; 11, 12) These five-ply forms are then numbered and cut into accurate chair elements; 13-15) Sanding is accomplished by hand and machine; 17) Neoprene shock mounts are glued to the plywood forms, ready for attachment to the metal bases and back supports; 18) Wood is oil finished by hand; 19) Filling for the leather cushions that are hand cut and sewn. Cushions are attached to the chair with snaps set into the wood frame and can be replaced simply by snapping in a new element; 20) Wood edges of the five plywood sheets are exposed.



1



2



3



4



5



6



7



8



9



10



11



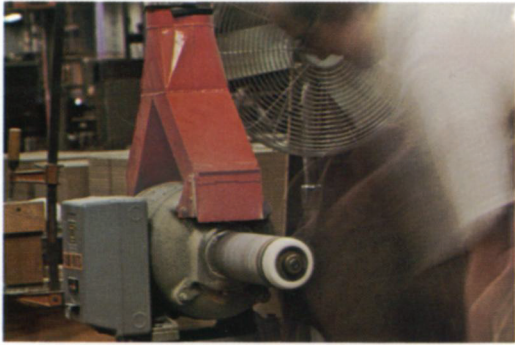
12



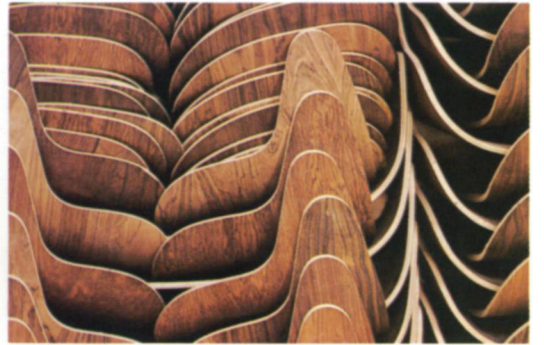
13



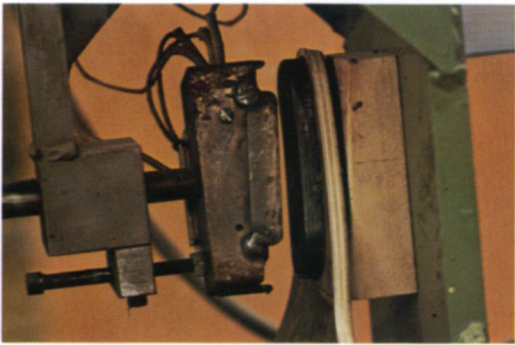
14



15



16



17



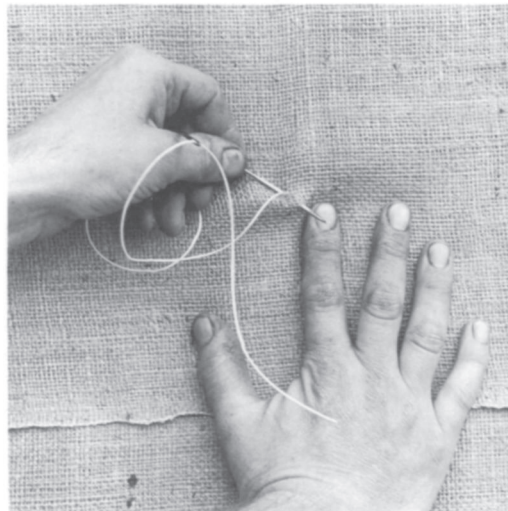
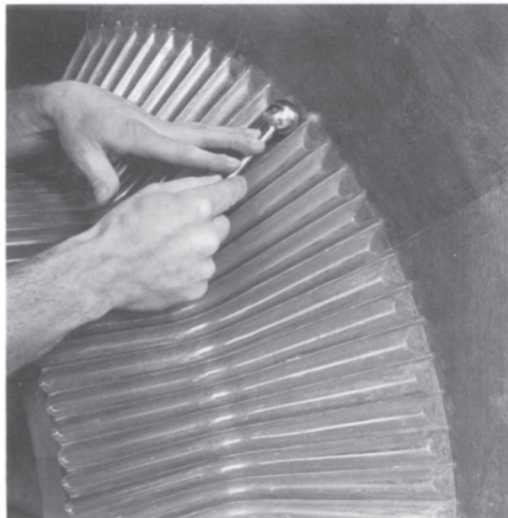
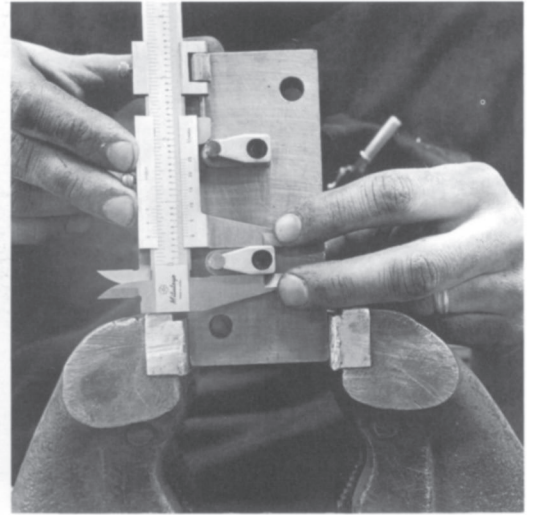
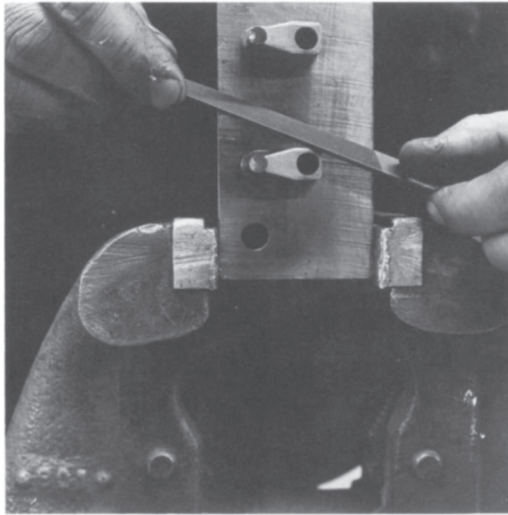
18



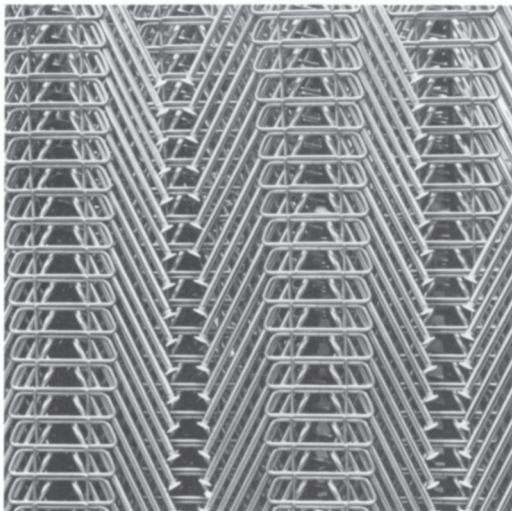
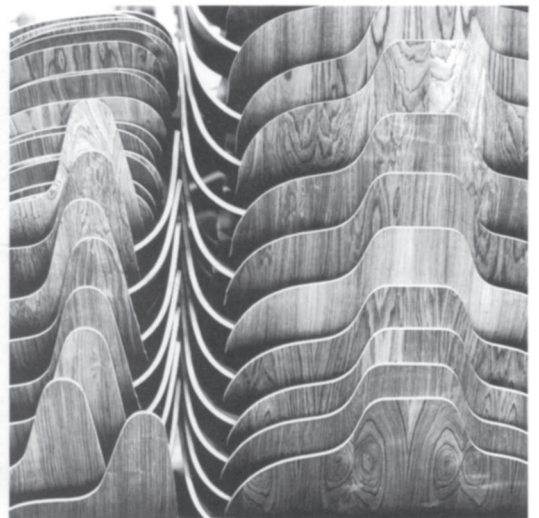
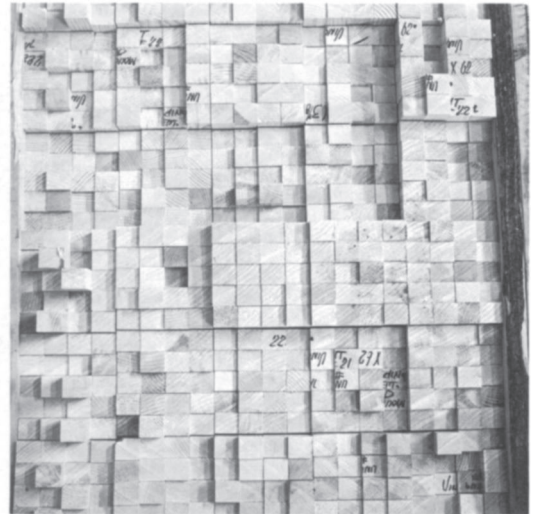
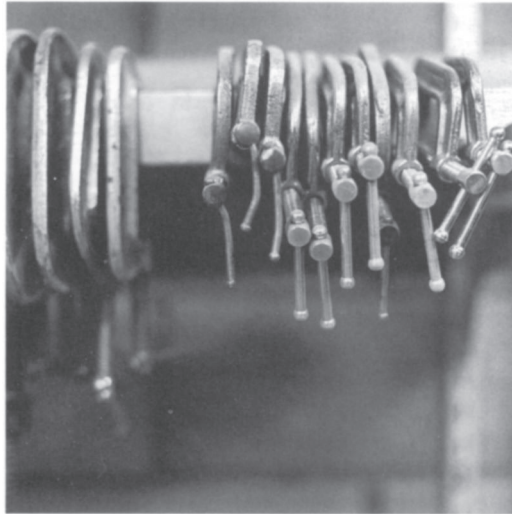
19



20



Photographs on this page were taken in Zeeland's prototype shop, where exacting full-size models are developed and made in finished form. The handmade molds and dies are later made in a more indestructible version for factory use.



Stacks of raw materials, tools and finished parts of furniture, all photographed in the Zeeland factory.

BIOGRAPHIES/
BIBLIOGRAPHIES

The following information was prepared with the assistance of the designers. In all cases, listings are selected. Furniture designs after 1945 are for Herman Miller unless otherwise indicated.

GEORGE NELSON

- 1907 Born, Hartford, Connecticut.
- 1928 Yale College, B.A.
- 1931 Yale School of Fine Arts, B.F.A.
- 1932 Graduate work, Catholic University, Washington, D.C. Rome Prize in Architecture; two years study in Italy.
- 1934 Fellow, American Academy in Rome.
- 1935-43 Associate Editor, *Architectural Forum*.
- 1936 Opened architecture office with William Hamby, New York.
- 1942 "Grass on Main Street," visionary proposal for the now-familiar pedestrian mall.
- 1942-45 Taught, Columbia University, New York.
- 1943-44 Co-managing Editor, *Architectural Forum*.
- 1944 Storage wall concept, with Henry Wright.
- 1944-45 Head, Fortune-Forum Experimental Department, Time, Inc.
- 1944-49 Consultant, *Architectural Forum*.
- 1946 Appointed first Design Director of Herman Miller Furniture Company.
- 1947 Established industrial design firm, George Nelson & Company, and associated architecture firm of Nelson and Chadwick, New York.
- 1953-54 "A Rough Sketch for a Sample Lesson for a Hypothetical Course," University of Georgia, Athens, and University of California, Los Angeles, in collaboration with Eames and Girard.
- 1965-present Board of Directors, International Design Conference, Aspen.
- 1967-69, 1972-present Board of Directors, Industrial Designers Society of America.
- 1968-75 Member, New York State Council on Architecture.
- 1969-present Board of Overseers' Committee on the Visual and Environmental Studies, Harvard College.
- 1970-present Member, *Conseil Supérieur de la Création Esthétique Industrielle*, *Ministre du Développement Industrielle et Scientifique République Française*, and *Comité de Patronage, Centre de Création Industrielle, Paris*.

- 1972-73 Visiting Critic in Architecture, Graduate School of Design, Harvard University.

AWARDS

- 1964 Industrial Arts Medal, American Institute of Architects.
- 1974 Award for Distinguished Contribution to the Profession of Design, Industrial Designers Society of America.
- 1975 Elsie de Wolfe Award, American Society of Interior Designers.

INDUSTRIAL DESIGN

- 1946 Basic Storage Components. Gateleg table. Slat bench.
- 1948 Executive Office Group.
- 1952 Bubble lamp, for Howard Miller Clock Company. Rosewood cases.
- 1954 Pedestal end tables. Steel frame group.
- 1956 Coconut chair. Modular seating. Omni System, for Structural Products, Inc. Thin edge cases.
- 1957 Daybed.
- 1958 Fire alarm, for Acme Fire Alarm. Comprehensive Storage System.
- 1959 Catenary group.
- 1963 Sling sofa.
- 1964 Action Office 1 (based on Propst concept).
- 1971 Executive Office Group (current).

ARCHITECTURE AND INTERIOR DESIGN

- 1940 Fairchild House, New York, with William Hamby.
- 1948 Herman Miller Showroom, Chicago.
- 1950 Holiday House, Quogue, New York, with Gordon Chadwick.
- 1953 Herman Miller Showroom, New York.
- 1956 Information Center, Colonial Williamsburg, Virginia.
- 1959 Loeb Student Center, New York University, New York.
- 1960 Tower Suite, Time-Life Building, New York.
- 1962 Herman Miller Factory, Zeeland, Michigan.
- 1964 Herman Miller Showroom, Washington, D.C.

- 1966 Herman Miller Factory Addition, Zeeland, Michigan.
Herman Miller Showroom, New York.
- 1968 Rosenthal Studio-Haus, New York.
- 1972 La Potagerie, New York.
The Children's Place, W. Hartford, Connecticut; Willowbrook and Echelon, New Jersey.
- 1973-present Aid Association for Lutherans Hospital, Appleton, Wisconsin.
- EXHIBITION DESIGN
- 1957 *Education for Theatrical Design*, Sao Paulo Bienal, Brazil, for U. S. Information Agency.
- 1958-60 *Design Today in America and Europe*, traveling exhibition, India. Objects selected by The Museum of Modern Art for the Government of India, sponsored by the Ford Foundation.
- 1959 *Peaceful Uses of Atomic Energy*, Cairo, Egypt, for the Atomic Energy Commission.

American National Exhibition, Moscow, U.S.S.R., for the U.S. Information Agency, the Department of State, and the Department of Commerce, with Eames.
- 1961 *Transportation USA*, traveling exhibition, U.S.S.R., for the U.S. Information Agency.
- 1962 *Abbott Medical Exhibit*, Seattle World's Fair, for Abbott Laboratories.
- 1963 *U.S.—Us Show*, New York, Chicago, Atlanta, Houston, Los Angeles, San Francisco, Grand Rapids, Aspen, 1965; for Herman Miller.
- 1964-65 *Chrysler Exhibition*, New York World's Fair, for Chrysler Corporation.
Hall of Presidents, New York World's Fair, for the U.S. Department of Commerce.
Irish Pavilion, New York World's Fair, for the Republic of Ireland.
- 1967 *Industrial Design USA*, Moscow, Kiev, Leningrad, U.S.S.R., for the U.S. Information Agency.
- 1970 *U.S. Treasury 1970*, Treasury Building, Washington, D.C., for the U.S. Treasury Department.
- 1970-72 *Research and Development in the U.S.*, Budapest, Hungary; Poznan, Poland; Bucharest, Rumania; Tbilisi, Moscow, Volgograd, Kazan, Donetsk, Leningrad, U.S.S.R.; for the U.S. Information Agency.
- 1975-76 *USA '76: The First Two Hundred Years*, traveling exhibition, 10 U.S. cities, for the American Revolution Bicentennial Administration.
- 1976 *Latin American Exhibition*, Inter-American Cultural and Trade Center, Miami, Florida.
- BIBLIOGRAPHY
- About George Nelson:
- Anderson, John, "Designs For Living," *Playboy*, July 1961, pp 46-52, 108-110, illus.
- Architectural Forum*, April 1943, pp 37-50, illus., "Town House for Sherman Fairchild, N.Y."
_____, November 1944, pp 82-92, illus., "Storagewall."
Architectural Record, December 1957, pp 128-135, illus., "The George Nelson Office: A Comprehensive Design Organization."
_____, November 1959, pp 169-176, illus., "Designing the Moscow Exhibit."
- Biemiller, Carl L., "Holiday House," *Holiday*, May 1951, pp 102-120, illus.
- Constantine, Mildred, "The Projection of Industrial Design into Advertising," *Graphis*, November 1953, pp 370-376, illus.
- Design Quarterly 86/87, International Design Conference in Aspen: The Invisible City*, 1972, pp 30-33, illus., "Experimental Urban Schools."
- Fratelli, Enzo, "The World of George Nelson," *Zodiac 8*, 1961, pp 97-122, illus.
- Industrial Design*, April 1959, pp 47-55, illus., "The American National Exhibition in Moscow."
_____, July/August 1967, pp 94-97, illus., "The Soft-sell on the Cultural Exchange" (the Industrial Design USA exhibition, U.S.S.R.).
_____, November 1968, pp 52-53, illus., "Good Design at Every Level" (Nelson's design for Rosenthal Studio-Haus, New York).
_____, April 1969, pp 76-77, "Conversation with George Nelson."
_____, October 1972, pp 30-31, illus., "Designers in America, Part 3: George Nelson and Company."
Interiors, May 1949, pp 94-105, illus., "About the Job of Designing a Furniture Showroom."
_____, May 1960, pp 120-123, illus., "N.Y.U.'s Loeb Student Center."
_____, May 1961, pp 122-127, illus., "Tower Suite—Hemisphere Club."
_____, November 1963, pp 115-117, illus., "Nelson's Way" (furniture for large public spaces by Herman Miller).
_____, December 1964, pp 82-87, illus., "The Herman Miller Action Office."
_____, November 1965, pp 138-140, illus., "25: Year of Appraisal" (interview).
_____, June 1971, pp 80-83, illus., "Soup in a Gotham Garden" (La Potagerie, New York).
_____, June 1971, pp 84-89, illus., "Mini-World for Small Fry" (The Children's Place).
- Life*, 22 January 1945, pp 64-71, illus., "Storage Wall."

Pencil Points, June 1932, pp 428-431, illus., "The Rome Prize in Architecture" (Nelson's winning design for an auditorium building).

Schroeder, Francis N., "For the Parliament of Man and the Federation of the World," *Interiors*, May 1947, pp 105-113, illus.

Zodiac 8, 1961, pp 146-147, "Questions for George Nelson and Paul Rudolph" (interview).

By George Nelson:

Periodicals:

"Architects of Europe Today," *Pencil Points*, 1935: January, pp 4-12; February, pp 54-62; March, pp 129-136; May, pp 214-222; July, pp 368-374; September, pp 453-460; November, pp 555-566. 1936: January, pp 7-14; March, pp 129-136; June, pp 289-298; August, pp 423-432; October, pp 527-540, illus.

"Business and the Industrial Designer," *Fortune*, July 1949, pp 92-98.

"Good Design: What is it for," *Interiors*, July 1954, pp 72-75.

"Holiday Handbook of European Architecture," *Holiday*, January 1960, pp 123-130, illus.

"People-to-Product Relationship," *Industrial Design*, May 1962, pp 52-59, illus.

"Architecture for the New Itinerants," *Saturday Review*, 22 April 1967, pp 30-31.

"Design, Technology, and the Pursuit of Ugliness," *Saturday Review*, 2 October 1971, pp 22-25.

"Design: Great Writers," *Harpers*, April 1973, pp 46-48, 50.

"The Humane Designer," *Industrial Design*, June 1973, pp 50-53.

"The End of Architecture," *Architecture Plus*, April 1973, pp 44-49, illus.

"The Hidden City," *Architecture Plus*, November/December 1974, pp 70-77, illus.

"Design: The Business of Survival," *Industrial Design*, March 1975, pp 36-41, illus.

"Do Small Companies Need Design," *Industrial Design*, May/June 1975, pp 26-29.

Books:

Industrial Architecture of Albert Kahn, Inc. New York: Architectural Book Publishing Co., Inc., 1939.

Tomorrow's House, with Henry Wright. New York: Simon and Schuster, 1945.

Living Spaces. New York: Whitney Publications, 1952.

Chairs. New York: Whitney Publications, 1953.

Display. New York: Whitney Publications, 1953.

Storage. New York: Whitney Publications, 1954.

Problems of Design. New York: Whitney Publications, 1957.

CHARLES EAMES

1907 Born, St. Louis, Missouri.

1924-26 Studied architecture, Washington University, St. Louis.

1925-27 Worked, Trueblood & Graf, architects, St. Louis.

1930 Established architecture firm of Gray and Eames, St. Louis.

1934 Traveled and worked in Mexico.

1935 Established architecture firm of Eames & Walsh, St. Louis.

1936 Accepted fellowship to Cranbrook Academy of Art, Michigan.

1937-40 Head, Department of Experimental Design, Cranbrook Academy of Art.

1941 Charles and Ray married and moved to Southern California. Charles worked in the Art Department of MGM film studios. Began experimentation in plywood molding.

1942 Began development laboratory in association with John Entenza, Gregory Ain, Margaret Harris, Griswald Raetze (joined in 1943 by Herbert Matter and Harry Bertolia).

1944 Charles and Ray formed Molded Plywood Division of Evans Products Company.

1946 Invited to become consulting designer for Herman Miller.

1953-54 "A Rough Sketch for a Sample Lesson for a Hypothetical Course," University of Georgia, Athens, and University of California, Los Angeles, in collaboration with Girard and Nelson.

1953-56 Taught, lectured, or served as consultant to: University of California, Los Angeles and Berkeley; Los Angeles Public Schools; University of Georgia, Athens; Yale University, New Haven; California Institute of Technology, Pasadena.

1959 Delivered the Lethaby Lectures at the Royal College of Art; and the Annual Discourse to the Royal Institute of British Architects, London.

1970 Appointed to National Council on the Arts. Charles Eliot Norton Professor of Poetry, Harvard University.

1971 M. I. T. Visiting Committee on the Arts.

1972 University of California, Los Angeles, School of Architecture and Urban Planning, Board of Visitors.

1974 Delivered Penrose Memorial Lecture, American Philosophical Society. Appointed to Board of Directors, Associated Council on the Arts.

AWARDS AND APPOINTMENTS

- 1940 First Prize, with Eero Saarinen, Organic Design In Home Furnishings Competition, The Museum of Modern Art, New York.
- 1948 Second Prize, International Competition for Low-Cost Furniture Design, The Museum of Modern Art, New York.
- 1951 First National Industrial Designers Institute Award Medal, for the design of the fiberglass chair.
- 1954 Diploma di Medaglia d'Oro, Tenth Triennale di Milano.
- 1955 Honorary Doctor of Fine Arts, Kansas City Art Institute.
- 1956 Citation of Merit for Excellence in Furniture Design, American Institute of Decorators.
- 1957 Diploma di Gran Premio, Eleventh Triennale di Milano. Gold Medal for Craftmanship, 100th anniversary, American Institute of Architects.
- 1960 First Annual Kauffmann International Design Award (to Charles and Ray). Fellow, Royal College of Art. Royal Designer for Industry. Benjamin Franklin Fellow of the Royal Society of Arts.
- 1962 Honorary Doctor of Fine Arts, California College of Arts and Crafts, Oakland.
- 1964 Award, American Institute of Architects, New York, for IBM Pavilion, New York World's Fair (with Eero Saarinen and Associates). Honorary Doctor of Fine Arts, Pratt Institute, New York.
- 1967 Architectural Award Grand Prix, American Institute of Architects, Los Angeles. Design Medal, Society of Industrial Artists and Designers of Great Britain.
- 1970 Honorary Doctor of Arts, Washington University.
- 1972 Industrial Arts Medal, American Institute of Architects.
- 1974 Distinguished Service Citation, American Institute of Architects (to Charles and Ray).
- 1975 Elsie de Wolfe Award, American Society of Interior Designers (to Charles and Ray).

ONE MAN EXHIBITIONS

- 1946 The Museum of Modern Art, New York.
- 1973 The Museum of Modern Art, New York. Catalogue: by Arthur B. Drexler; essay, checklist, illus.

INDUSTRIAL DESIGN

- 1942 Molded plywood leg splint, for U.S. Navy Dept.
- 1944 Child's Chair, for Evans Products Company.
- 1946 Molded plywood chair. Molded plywood folding screen.
- 1947 Folding dining table.
- 1948 ETR Table (Eames Table Rod).
- 1949 Fiberglass chair.
- 1950 Eames Storage Units.
- 1951 LTR Table (Low Table Rod). Wire chair. The Toy, for Tigrett Enterprises, Chicago.
- 1952 House of Cards, and The Little Toy, for Tigrett Enterprises.
- 1953 Upholstered fiberglass chair. Giant House of Cards, for Tigrett Enterprises.
- 1954 Sofa Compact.
- 1955 Stacking and ganging fiberglass chair.
- 1956 Lounge Chair and Ottoman.
- 1957 Solar Toy, for Alcoa Aluminum.
- 1958 Aluminum Group.
- 1960 La Fonda Chair. Occasional Stools (Ray). Time/Life Chair.
- 1961 Eames Contract Storage.
- 1962 Tandem Sling Seating (airports). Herman Miller stock certificate.
- 1968 "Billy Wilder" Chaise.
- 1969 Soft Pad Chair.
- 1971 Loose Cushion Chair.
- 1972 Executive Oval Table.

ARCHITECTURE AND INTERIOR DESIGN

- 1947 Herman Miller Showroom, Los Angeles, California.
- 1949 Own residence, Santa Monica, California. John Entenza residence, Santa Monica, California, with Eero Saarinen.

EXHIBITION DESIGN

- 1950 *Good Design Show*, The Museum of Modern Art, New York.
- 1959 *American National Exhibition*, Moscow, U. S. S. R., for the U. S. Information Agency, the Department of State, and the Department of Commerce, in collaboration with Nelson.
- 1961 *Mathematica*, California Museum of Science and Industry, Los Angeles, for IBM.
- 1962 *House of Science*, Seattle World's Fair, for the U. S. Government.
- 1964 *IBM Exhibit*, New York World's Fair.
- 1965-66 *Nehru, his Life and his India*, Ahmedabad, India; New York; London; Washington, D.C.; Los Angeles, in collaboration with Girard.
- 1968 *Photography and the City*, The Smithsonian Institution, Washington, D. C.
- 1971 *A Computer Perspective*, IBM Exhibit Center, New York.
- 1972 *Wallace Eckert: Celestial Mechanic*, IBM Exhibit Center, N. Y.
Fibonacci: Growth and Form, IBM Exhibit Center, N. Y.
Nicholas Copernicus: an Exhibition in Celebration of his 500th Anniversary, IBM Exhibit Center, N. Y.
- 1973 *Moveable Feasts and Changing Calendars*, IBM Exhibit Center, N. Y.
The Shoulders of Giants: Brahe, Kepler, Descartes, & Galileo, IBM Exhibit Center, N. Y.
Isaac Newton, IBM Exhibit Center, N. Y.
- 1975-76 *Franklin-Jefferson*, Grand Palais, Paris; The National Museum, Warsaw; The British Museum, London; The Metropolitan Museum of Art, New York; The Art Institute of Chicago; Los Angeles County Museum of Art, for the American Revolution Bicentennial Administration.

FILMS

Since 1950, the Eameses have made well over 50 films and a large number of slide shows. Most of the films are under 30 minutes in length. Many of them have been made to explain or amplify an exhibition (primarily those for IBM or the U.S. Government); and, a number have been made for Herman Miller Inc., to provide information about Eames products. Other films have been made for more personal reasons: *Day of the Dead*, about that Mexican celebration; *Tops*, pure color and motion; and *Toccata for Toy Trains*, a joyous look at one of the Eames's collections.

RAY EAMES

- Born, Sacramento, California.
- 1933-39 Studied with Hans Hofmann in New York, Gloucester, and Provincetown.
- 1936 Founding member of American Abstract Artists (AAA).
- 1937 Exhibited in first AAA group show, Riverside Museum, New York.
- 1940 Four months study, Cranbrook Academy of Art, Michigan.
- 1941 Ray and Charles married and moved to Southern California.
- 1942 First molded plywood sculpture.
- 1942-48 Designed covers for *Arts and Architecture* magazine.
- 1944 Exhibited paintings in group show, Los Angeles County Museum of Art.
- 1948-53 Designed magazine advertisements for Eames designs for Herman Miller.

For the past 35 years Ray has worked with Charles on a variety of projects including furniture design, films, and exhibitions. For details of their collaborative efforts, see listings for Charles after 1941.

BIBLIOGRAPHY

About the Eameses:

Anderson, John, "Designs for Living," *Playboy*, July 1961, pp 46-52, illus.

Arbitaire, June/July 1970, pp 42-45, illus., "Hi, Mister Eames!"

Architectural Design, September 1966, pp 432-471, illus., "Eames Celebration" (special issue devoted to the Eameses. Six essays: Peter Smithson, "Just a few chairs: an essay on the Eames-aesthetic;" Alison Smithson, "And now Dhamas are dying out in Japan;" Michael Brawne, "The Wit of Technology;" Geoffrey Holyroyd, "Architecture creating relaxed intensity," and "Children as experts;" Charles Eames, "Designing a Lota," extract from a report to the Government of India. Extensive chronology; fully illustrated).

Architectural Forum, September 1950, pp 90-96, illus., "Life in a Chinese Kite" (Eames Santa Monica house).

Arts and Architecture, December 1945, pp. 45-51; March 1948, pp 40-41; 1949: January, pp 32-33; February, p 37; March, pp 30-31; April, p 40; May, pp 38-39; September, p 33; December, pp 26-39; illus. (The Eames and Entenza Santa Monica houses).

_____, October 1949, pp 26-29, illus., "Furniture Show Room Designed by Charles Eames."

Camp, Holly, "The Serious Business of Show and Tell," *Signature*, March 1974, pp 36-39, illus.

Design Quarterly 80, Making the City Observable, 1971, pp 19-22, "Eames Films on Urban Communications."

Goldberger, Paul, "At the Modern Museum: The Thoughts of Chairman Eames," *Art News*, summer 1973, p 73, illus. (exhibition review).

Gueft, Olga, "For Alcoa's Forecast Program Eames Creates a Sun Machine That Accomplishes: Nothing?" *Interiors*, April 1958, p 123, illus.

Haber, Michael, "Designed for Play," *Graphis*, March 1958, pp 126-130+, illus. (Eames toys).

Hamilton, Mina, "Films at the Fair II," *Industrial Design*, May 1964, pp 36-41, illus. (review of IBM exhibit).

Interiors, April 1958, pp 118-122, illus., "Three Chairs/Three Records of the Design Process" (Aluminum group).

_____ March 1965, pp 146-151, illus., "Nehru and India: a Walk Through History" (exhibition review).

_____ November 1965, pp 130-132, illus., "25: Year of Appraisal" (interview).

McCoy, Esther, "Eames Perspective," *New York Times Magazine*, 15 April 1973, pp 74-75, illus.

_____ "An Affection for Objects," *Progressive Architecture*, August 1973, pp 64-67, illus.

McCullough, Jane Fiske, "Some Thoughts About Eames," *Zodiac 8*, 1961, pp 122-125.

McQuade, Walter, "Charles Eames Isn't Resting on His Chair," *Fortune*, February 1975, pp 96-100, 144-145, illus.

Miller, J. R., "Mathematica," *Industrial Design*, May 1961, pp 38-43, illus.

Noyes, Eliot, "Charles Eames," *Arts and Architecture*, September 1946, pp 26-45, illus.

Progressive Architecture, November 1962, pp 140-145, illus., "Evolution of a Design" (tandem seating).

Schrader, Paul, "Poetry of Ideas: The Films of Charles Eames," *Film Quarterly*, Spring 1970, pp 2-19, illus. (in depth discussion of Eames films with filmography).

By Charles Eames:

Periodicals:

"Design Today," *California Arts and Architecture*, September 1941, pp 18-19, illus.

"Organic Design," *California Arts and Architecture*, December 1941, pp 16-17, illus.

"General Motors Revisited," *Architectural Forum*, June 1971, pp 21-28, illus.

Book:

A Computer Perspective, from the office of Charles and Ray Eames, edited by Glen Fleck, produced by Robert Staples; Introduction by I. Bernard Cohen. Cambridge: Harvard University Press, 1973. Based on an exhibition of the same name conceived and assembled for IBM.

ALEXANDER GIRARD

1907 Born, New York City.

1929 Graduated, The Architectural Association, London.
Florence Traveling Scholarship.

1930 Opened office in Florence.

1931 Graduated, Royal School of Architecture, Rome.

1932 Opened office in New York.

1935 Attended New York University.

1937 Opened office in Detroit.

1952 Appointed Design Director, Textile Division of Herman Miller.

1953 Opened office in Santa Fe, New Mexico.

1953-54 "A Rough Sketch for a Sample Lesson for a Hypothetical Course," University of Georgia, Athens, and University of California, Los Angeles, in collaboration with Eames and Nelson.

1961 Established Girard Foundation, Santa Fe, New Mexico, an international collection of toys and related objects, consisting of over 100,000 pieces.

AWARDS

1929 Gold Medal, Barcelona Exhibition.

1946 Fabric competition, The Museum of Modern Art, New York.

1948 Member of winning team, St. Louis Memorial Competition, St. Louis, Mo.

1962 Silver Medal of Honor, Architectural League, Design and Craftsmanship, La Fonda del Sol restaurant, New York.

1965 Collaborative Medal of Honor, Architectural League of New York, for John Deere Co., Industrial Historical Mural, Moline, Illinois.

1966 Honorary Distinction of Royal Designer of Industry Diploma, Royal Society of Arts, London.
Elsie de Wolfe Award, American Institute of Interior Designers, New York.
Allied Professions Medal, American Institute of Architects, Washington, D.C.

1967 Award for Outstanding Institutions Interiors, for L'Etoile restaurant, New York, Institutions Magazine, Chicago.

1974 Burlington House Award, Burlington Industries.

FABRIC AND WALLPAPER DESIGN

1952 Wallpaper collection for Herman Miller.

1952-present Fabric collections for Herman Miller.

INDUSTRIAL DESIGN

- 1955 Design program including china, glass, leather, linen mats for Georg Jensen, Inc., New York.
- 1956 Special aluminum shelving unit for interiors, designed for Aluminum Company of America.
- 1967 Girard Group, furniture collection for Herman Miller.

ARCHITECTURE AND INTERIOR DESIGN

- 1930 G. Uzielli apartment, Florence, Italy.
- 1946 Ford Motor Company offices, Dearborn, Michigan.
Lincoln Motor Company cafeteria, Detroit, Michigan.
- 1948 Own residence, Grosse Pointe, Michigan.
- 1951 General Motors Research Center, Detroit, Michigan, color consultant for Eero Saarinen, Architect.
- 1953 Herman Miller Showroom, Grand Rapids, Michigan.
- 1955 Irwin Miller residence, Columbus, Indiana, in collaboration with Eero Saarinen.
Irwin Miller offices, Columbus, Indiana.
- 1957 Billy Wilder apartment, Los Angeles, California.
- 1958 Herman Miller Showroom, San Francisco, California.
- 1960 La Fonda del Sol restaurant, Time-Life Building, New York.
Cummins Engine Co., Inc. airplane interiors, Columbus, Indiana.
- 1961 Herman Miller Textiles & Objects Shop, New York.
- 1963 San Francisco Civic Auditorium rehabilitation, color consultant, for Wurster, Bernardi & Emmons, Architects. Main Street rehabilitation, Columbus, Indiana, design and color consultant, for Irwin Union.
William D. Gregory, II, residence interior, details and furnishings, Wayzata, Minnesota.
- 1964 Interiors, Cummins Engine Co., Columbus, Indiana.
- 1965 Redesign of all visual aspects of Braniff International, Dallas, Texas.
- 1966 L'Etoile restaurant, Sherry Netherlands Hotel, New York.
The Compound restaurant, Santa Fe, New Mexico.
- 1972-73 Offices for Irwin Management, Columbus, Indiana.

EXHIBITION DESIGN

- 1929 Italian Pavilion, *Barcelona Exhibition*, Spain.
- 1949 *For Modern Living*, Detroit Institute of Arts, Detroit, Michigan.
- 1950 *Design for Modern Use, made in U S A*, traveling exhibition to Europe for The Museum of Modern Art, New York.
- 1954 *Good Design*, The Museum of Modern Art, New York, and Merchandise Mart, Chicago.
- 1955 *Textiles and Ornamental Arts of India*, The Museum of Modern Art, New York.
- 1956 Table setting exhibit for Georg Jensen, Inc., New York.
- 1962 Nativity exhibit, Nelson Gallery of Art, Kansas City, Missouri, sponsored by Hallmark Cards, Inc., for the benefit of the People-to-People Program.
- 1965 *Nehru, his Life and his India*, Ahmedabad, India; New York; London; Washington, D.C.; Los Angeles, in collaboration with Eames.
- 1968 *El Encanto de un Pueblo*, Hemisfair 1968, San Antonio, Texas.
- 1974 *African Fabrics*, from the Girard Foundation collection, Museum of International Folk Art, Santa Fe, New Mexico.

BIBLIOGRAPHY

- Architectural Forum*, February 1949, pp 95-99, illus., "Grosse Pointe Home of the Architect."
- _____ February 1957, pp 132-139, illus., "House of Many Colors" (Girard's Santa Fe house).
- _____ June 1967, pp 60-63, illus., "Alexander Girard Invites You to Dine at The Compound."
- Dixon, John Morris, "Columbus, Indiana," *Architectural Forum*, December 1965, pp 40-49, illus. (Main Street rehabilitation program).
- Domus*, July 1961, pp 19-26, illus., "La Fonda del Sol ristorante a New York."
- _____ April 1967, pp 12-16, illus., "Colours of France in New York" (L'Etoile).
- Fortune*, December 1964, pp 144-147, illus., "Rural Mural for a Tractor Maker" (John Deere Historical Mural).
- Horizon*, Spring 1966, pp 72-77, illus., "Artless Art."
- House Beautiful*, February 1953, pp 66-87+, illus., "The Girard Story."
- Interiors*, February 1959, pp 86-91, illus., "Barbary Coast: Girard Designs Miller's New San Francisco Showroom."
- _____ February 1961, pp 88-99, illus., "Inn of the Sun" (La Fonda del Sol).

_____ July 1961, pp 78-85, illus., "Girard's Air Conditioned Bazaar" (Textiles and Objects Shop, N.Y.).

_____ November 1965, pp 136-137, illus., "25: Year of Appraisal" (interview).

_____ February 1966, pp 99-105, illus., "Out-Maneuvering the Plain Plane" (Girard's work for Braniff).

_____ May 1973, pp 136-137, illus., "Girard Exorcises AO2" (Environmental Enrichment Panels).

_____ February 1975, pp 60-65, illus., "And Now—Carpeted Ceilings" (New offices designed by Girard).

Look, 2 August 1960, pp 47-49, illus., "Alexander Girard and his Wonderful World of Light," produced by John Peter.

MacMasters, Dan, "The Luminous Landscape of Alexander Girard," *Los Angeles Times Home Magazine*, 3 November 1974, pp 12-13.

Storey, W. R., "Interior Decorators of Today: Alexander Girard," *London Studio*, July 1938, pp 54-57, illus.

ROBERT PROPST

1921 Born, Marino, Colorado.

1943 University of Denver, B.A.

1946-48 Head, Department of Art, Tarleton College, Dublin, Texas.

1950 University of Colorado, M.F.A.

1950-53 Established The Propst Company, Denver, Colorado. Designed architectural sculpture, church interiors, playground equipment; also formed design and development relationships with aircraft and institutional equipment companies.

1960 The Propst Company merged with Herman Miller Inc. to generate a Research and Development activity in Ann Arbor, Michigan.

1968-present Named President and Research Director of Herman Miller Research Corporation, Ann Arbor, Michigan. Conducts man-environment research in several areas including health care, learning environments, offices, and the timber industry.

AWARDS

1964 Best Collection of the Year, Home Furnishings Daily.

1970 21st Annual International Design Award, American Institute of Interior Designers.

1972 Distinguished Service Citation, Institute of Business Designers.

INDUSTRIAL DESIGN

1964 Action Office 1 concept.
Perch chair.

1967 Pediatrics Bed.

1968 Action Office 2.

1969 Co/Struc (Coherent Structures Hospital System).

1970 Timber harvester.

1974 Proximate environment objects for Action Office.
Interior of a mobile office for a quadriplegic lawyer, New York.

BIBLIOGRAPHY

About Robert Propst:

Conway, Patricia, "Robert Propst/Herman Miller Research Corporation," *Design Quarterly* 88, *Industrial Design USA: Human Systems*, 1973, pp 35-40, illus.

Hamilton, Mina, "Herman Miller in Action," *Industrial Design*, January 1965, pp 26-33, illus.

Industrial Design, January/February 1972, pp 62-65, illus., "Hospitals Come Clean."

Interiors, December 1964, pp 82-87, illus., "The Herman Miller Action Office."

_____, April 1972, pp 144-149, illus., "Co/Struc—the Systems Answer for Hospital Furnishings."

By Robert Propst:

Periodicals:

"Process and Project Management," with Frank M. Lewis, *Hospitals* (Journal of the American Hospital Association), 1 February 1972, pp 117, 120-124, illus.

"Process Aesthetic: Some Thoughts on the Thinking Process," *Progressive Architecture*, November 1974, pp 78-81, illus.

"Clear Creek High School, Idaho Springs, Colorado," *Design Quarterly* 90/91, *New Learning Spaces and Places*, 1974, pp. 52-53, illus.

Books/Research Reports:

The Office—A Facility Based on Change. Zeeland: Herman Miller, Inc., 1968.

Contribution and Consequence of Single Use, with Howard Propst and Michael Wodka. Ann Arbor: Herman Miller Research Corporation, 1969. Research report prepared for the Kimberly-Clark Corporation.

Co/Struc: A Coherent Structures System for Hospitals: A Research Report. Zeeland: Herman Miller, Inc., 1971.

High School: The Process and the Place. New York: Educational Facilities Laboratories, 1972.

The University of Massachusetts Dormitory Experiment, with Claudia G. Propst. Ann Arbor: Herman Miller Research Corporation, 1973. An examination of the influence of the direct living environment on the attitudes and behavior of the residents in high-rise dormitories. A report on the introduction of changes and their implications to the satisfaction of residents and to management feasibility.

PHOTO CREDITS

Office of Charles Eames: pp 20, 21, 22, 24, 25, 26 (top, right and bottom), 27, 28, 29, 30, 32, 33, 36, 38, 39, 51.

Courtesy of Herman Miller Inc.: pp 12 (top), 19, 23, 45, 48, 50.

Courtesy of Herman Miller Research Corporation: pp 40, 41.

Courtesy of The Museum of Modern Art: pp 6 (left, top to bottom).

Courtesy of George Nelson & Company: pp 6 (right), 8, 10, 12 (bottom), 13, 14, 15, 16, 18.

Judith Olausen: pp 2, 5, 52, 53, 54, 55, 56.

Gerald Stableski: pp 26 (top, left), 37.

Eric Sutherland: pp 44, 49.

WALKER ART CENTER STAFF FOR THIS EXHIBITION

Direction	Martin Friedman
Administration	Donald C. Borrmann Miriam Swenson
Design and Coordination	Mildred S. Friedman Dean Swanson
Handling of Works	Carolyn DeCato Gwen Bitz
Secretarial Assistance	Linda Krenzin Linda Buschbom
Graphic Design	James E. Johnson Wayne Henrikson
Public Information	Peter Georgas
Research	Lisa Lyons, Rockefeller Fellow
Installation	Douglas Caulk Terry Fisher Eldor Johnson Ron Elliot Mary Sundstrom Betty Nelsen

Walker Art Center Board of Directors

David M. Winton, Chairman of the Board
Thomas M. Crosby, Jr., President
Roger L. Hale, Vice President
Mrs. James K. Wittenberg, Vice President
Martin Friedman, Secretary
Donald C. Borrmann, Treasurer
Dean Belbas
Pierce Butler
Gary T. Capen
Russell Cowles
Mrs. Julius E. Davis
Mrs. Kenneth N. Dayton
Mrs. Harold D. Field
Miles Q. Fiterman
E. Peter Gillette, Jr.
Mrs. David H. Griffith
Ann McKeever Hatch
Philip Von Blon
Wellington S. Henderson, Jr.
Thomas E. Holloran
Mrs. Malcolm A. McCannel
Glen D. Nelson
Mrs. Gary B. Rappaport
Mrs. Michael Roeder
Mrs. Edmond R. Ruben
William G. Shepherd
Justin V. Smith
Mrs. Justin V. Smith
David Stanley
John C. Walker
Walter W. Walker
Fred Weil, Jr.
Mrs. Calvin B. Yeates

Ex-Officio

W. Harry Davis
Hon. Albert J. Hofstede

T. B. Walker Foundation

Trustees

Justin V. Smith, President and Treasurer
Walter W. Walker, Vice President and Secretary
Hudson D. Walker, Vice President
Mrs. Malcolm A. McCannel, Vice President and Assistant Secretary
Brooks Walker, Vice President and Assistant Secretary
Mrs. Calvin Goodrich
Mrs. Wellington S. Henderson
Mrs. Justin V. Smith
John C. Walker
Mrs. Theodore S. Walker
Mrs. Willis J. Walker
Mrs. Calvin B. Yeates

Honorary Trustees

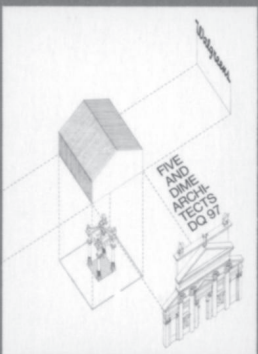
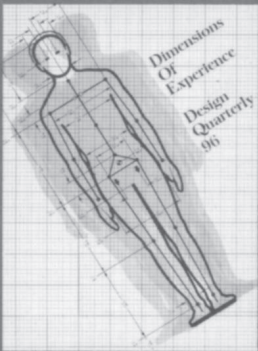
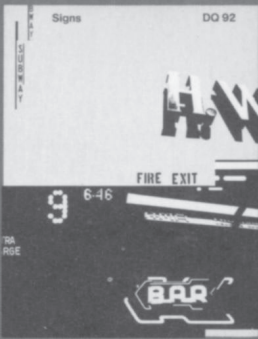
H. Harvard Arnason
Dana C. Smith
Mrs. James F. van Löben Sels

Members

Calvin Goodrich
Mrs. David H. Griffith
Wellington S. Henderson, Jr.
Mrs. L. Robert Marsh
Mrs. Michael Roeder
Dana C. Smith
R. Lance Walker



MINDSCAPES DQ89



Design Quarterly issues available
Single issues \$1.60
Double issues \$3.00
Design Quarterly 90-91, special double issue, \$4.00
Postage and handling included in these prices
Payment must be made in advance on all orders for back issues

Number

- 1 Hand-Made and Machine Made Art
- 2 American Ceramics
- 3 Moholy-Nagy and the Institute of Design in Chicago
- 4 Sectional Furniture
- 5 Idea House 1947
- 6 Plastics in the Home
- 7 Modern Jewelry
- 8 Children's Toys
- 9 Outdoor Furniture and Accessories
- 10 Product Review 1949
- 11 Textiles and Designers
- 12 Lamps and Lighting
- 13 Everyday Art Exhibitions
- 14 Useful Objects/Work of Alvin Lustig
- 15 Tradition in Good Design
- 16 Tradition in Good Design: 1940-1950
- 17 Product Review 1951
- 21 Product Review 1952
- 24 Product Review 1953
- 25 Fabric Designers and Their Work
- 26 Product Review: 20th Century Ballet Design
- 29 American Design
- 32 Tenth Triennale Product Review
- 34 The Story of Orrefors Glass
- 35 Product Review 1956
- 36 Eight British Designers and Their Work
- 38 Product Review 1957
- 39 Eight Designer Craftsmen
- 40 Industrial Design in Germany
- 41 Product Review 1958
- 44 Product Review 1959
- 47 Product Review 1960
- 54 Pottery of Warren and Alix MacKenzie
Mendota Sculpture Foundry
- 71 Mass Transit: Problem and Promise
- 72 Toward the Future
- 73 Form Follows Fiction
- 74-75 Process and Imagination
- 76 Easy Come, Easy Go
- 77 Projects for Urban Spaces
- 78-79 Conceptual Architecture
- 82-83 Advocacy: A Community Planning Voice
- 85 Urban Renewal: 19th Century Vision, 20th Century Version
- 86-87 Aspen '72: The Invisible City
- 89 Sottsass/Superstudio: Mindscapes
- 90-91 New Learning Spaces & Places
- 92 Signs
- 96 Dimensions of Experience
- 97 Five and Dime Architects



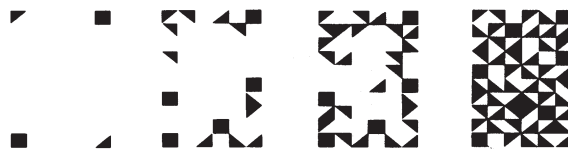
NELSON



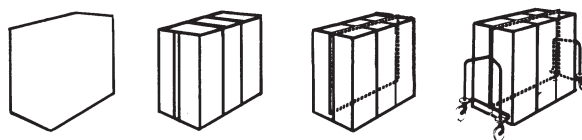
EAMES



GIRARD



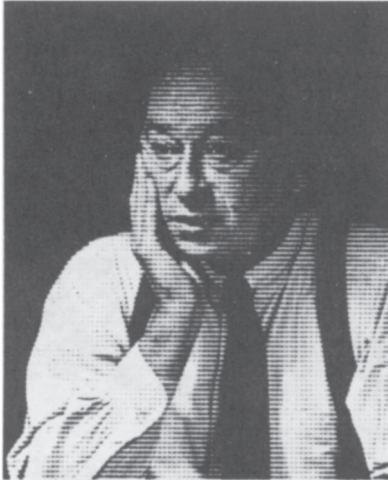
PROPST



THE DESIGN PROCESS AT HERMAN MILLER

CHECKLIST OF THE EXHIBITION

All dimensions are in inches. Unless otherwise noted, loans are courtesy Herman Miller Inc. Numbers in parentheses preceding entries indicate quantity of object in the exhibition.



GEORGE NELSON

SEATING

- N1**
Arm Chair 1946
birch; foam rubber upholstered seat and back 31h x 23w x 24d
Collection James Eppinger, Sr., New York
- N2**
(3) Slat Bench 1946
natural birch; ebonized wood base 14h x 48 (or 92)w x 18 1/2d
Collections Arlene Benton, Grand Rapids and Hy Bomberg, Zeeland
- N3**
Chaise 1954
polished chrome base; foam rubber upholstered in "Woolstretch"
28h x 30w x 67l
- N4**
Modular Seating 1956
satin chrome plated base; foam rubber cushions upholstered in "Millermetrics;" white laminated plastic table top
3 tables, 2 cushions, 4 seats and backs, each 30 x 30
- N5**
Daybed 1957
birch frame; aluminum legs; foam rubber seat and bolsters upholstered in "Millermetrics" 25h x 75l x 33d
- N6**
Sling Sofa 1963
steel; chrome; leather fibercoil cushions; neoprene straps and platform
29 3/4h x 87w x 32 1/4d, sh 15 1/2

- N7**
(3) Arm Chair 1971
bright polished aluminum base, column and arms; black vinyl covered armrests; foam padding upholstered in "Polynit;" tilt-swivel mechanism; aluminum casters
34-35 1/2h x 25w x 27d, sh 17-18 1/2

STORAGE

- N8**
Chest/Cabinet 1946
oak; aluminum legs and pulls
24h x 56 1/4w x 18 1/2d
- N9**
Miniature Chest 1952
natural teak; porcelain pulls; cast aluminum base 44 1/2h x 10 3/8w x 19d
Collection Robert Blaich, Grand Rapids

- N10**
Miniature Chest 1952
natural teak; white laminated plastic; porcelain pulls 5 5/8h x 30 1/8w x 13d
Collection D. J. De Pree, Zeeland

- N11**
Miniature Chest/Cabinet 1952
natural teak; white lacquered door; porcelain pulls 10 1/2h x 20 1/4w x 13d
Collection Hugh De Pree, Zeeland

- N12**
(2) Chest 1954
steel; plastic; baked enamel finish; polished chrome
29 3/8h x 33 1/2w x 17 1/4d
Collection Pep Nagelkirk, Zeeland

- N13**
Comprehensive Storage System (CSS) 1958
Front hanging components: shelves; file bins; work surface; sliding door case; organizer; pigeon hole; flipper doors
walnut veneer; laminated plastic; extruded aluminum 84h x 128w x 18 1/2d

TABLES

- N14**
Gateleg Table 1946
walnut veneer
29 1/2h x 40w x 64 7/8l (fully extended)
29 1/2h x 40w x 18 1/2l (closed)

- N15**
Tray Table 1949
molded walnut plywood; polished chrome base 19h x 15w x 15d
Collection James Eppinger, Sr.

- N16**
Pedestal End Table 1954
white laminated plastic; polished aluminum base 22h 17 dia

- N17**
Pedestal End Table 1954
white laminated plastic; white enamel base 22h 17 dia

- N18**
(2) Low Pedestal Table 1954
white laminated plastic; white enamel base 16 1/2h 28 1/3 dia

- N19**
Table 1963
granite; chrome plated steel base
14h x 72l x 22w

DESKS

- N20**
Action Office 1 Stand-up Desk 1964
polished aluminum; walnut roll top; laminated plastic; vinyl
43 1/2h x 65 7/16w x 32d

- N21**
Action Office 1 Low Desk 1964
polished aluminum; walnut roll top; laminated plastic; vinyl
28 1/2h x 49 7/16w x 32d

- N22**
Work Organizer L Desk 1964
(H-leg left, organizer right with sliding doors) walnut veneer; bright chrome plated legs
Desk: 29h x 59w x 29 1/2d
Organizer: 44 1/4h x 74w x 18 1/2d



CHARLES AND RAY EAMES

EARLY PLYWOOD FORMS

- E1**
Sculpture 1942
molded plywood 38h x 27w
Collection Charles and Ray Eames,
Santa Monica, California
- E2**
(2) Leg Splint 1942
molded plywood 4 3/4h x 7 3/4w x
41 1/2l
Collection Charles and Ray Eames
- E3**
Elephant Stool 1944
molded plywood 16h x 15w x 30l
Collection Charles and Ray Eames
- E4**
(2) Child's Chair 1944
a) molded wood
b) molded wood with pink paint
stained finish 14 1/2h x 13 1/2w x
10 1/2d
Collection Girard Foundation, Santa Fe
- E5**
Child's Stool 1944
molded plywood 8 1/2h x 14 1/2w x
10d
Collection Charles and Ray Eames
- E6**
Experimental Chair (no base) 1944
molded plywood 16h x 19 1/2w x 20d
Collection Charles and Ray Eames
- E7**
Experimental Arm Chair (no base) 1946
molded plywood 26h x 30w x 24d
Collection Charles and Ray Eames
- E8**
Folding Screen 1946
molded ash plywood; canvas joints
68h x 60l
Collection University Gallery,
University of Minnesota, Minneapolis

SEATING

- E9**
(2) Low Chair (LCW) 1946
molded and bent walnut plywood
27 3/8h x 22 1/4w x 25 3/8d, sh 15 1/4
- E10**
Dining Chair (DCM) 1946
molded rosewood plywood; bright
chrome plated steel; rubber shock
mounts; removable rubber glides
29 1/4h x 19 1/2w x 21 1/4d, sh 18
- E11**
(2) Dining Chair 1946
molded walnut plywood; bright chrome
plated steel; rubber shock mounts;
nylon glides 29 3/8h x 19 1/2w x
21 1/2d, sh 18
- E12**
Side Chair Base 1949
polished aluminum; black column;
swivel mechanism; nylon glides
15 1/2h x 23 1/2 dia (at base)
- E13**
Side Chair Base 1949
polished aluminum; black painted tube;
swivel mechanism; injection molded
glides 15 1/2h x 24 3/4 dia (at base)
- E14**
Side Shell 1949
fiberglass reinforced molded plastic;
foam padding upholstered in "Milnilo;"
vinyl edge 17h x 19w
- E15**
(6) Side Shell 1949
fiberglass reinforced molded plastic;
foam padding upholstered in vinyl
17h x 19w
- E16**
Side Shell 1949
fiberglass reinforced molded plastic;
foam padding upholstered in "Hopsak;"
vinyl edge 17h x 19w
- E17**
Arm Shell 1949
fiberglass reinforced molded plastic
16 3/4h x 24 1/2w
- E18**
Arm Shell 1949
fiberglass reinforced molded plastic;
foam padding upholstered in "Milnilo;"
vinyl edge 16 1/2h x 24 3/4w
- E19**
(4) Arm Shell 1949
fiberglass reinforced molded plastic;
foam padding upholstered in vinyl
16 1/4h x 25w
- E20**
Arm Chair Base (DAX) 1949
bright plated tubular steel; nylon glides
16 3/4h x 19w
- E21**
Arm Chair Base (LAR) 1950
bright plated wire cage
10 3/4h x 20w x 15d
- E22**
Arm Chair Base (RAR) 1950
birch runners; wire 14h x 27l x 16 1/4w
- E23**
Dining Chair Base (DKW) 1951
birch; wire 18h x 17w x 16d
- E24**
Dining Chair 1952
black wire; two-piece pad upholstered
in "Hopsak" 32h x 19w x 21 d,
sh 18 1/2
Collection Jeffrey Martin, St. Paul
- E25**
(2) Sofa Compact 1954
bright polished chrome plated steel legs
and spring system; particle board; foam
cushioned seat and back upholstered in
"Polynit;" stainless steel glides
34 7/8h x 72 1/2w x 29 7/8d, sh 15 7/8
- E26**
(12) Side Chair 1955
fiberglass reinforced molded plastic; zinc
coated steel; side hooks for stacking and
ganging; nylon glides
31 5/8h x 23w x 21 1/2d, sh 18
- E27**
(2) Side Chair 1955
fiberglass reinforced molded plastic;
bright polished zinc plated steel tube
legs; foam padding upholstered in vinyl;
nylon glides 31 1/4h x 18 1/2w x 22d,
sh 18
- E28**
(3) Lounge Chair and Ottoman 1956
molded rosewood plywood; black leather
cushions with foam, down and feather
filling; black and bright polished alumi-
num pivot base
33 3/8h x 32 1/2w x 32 3/4d, sh 15
Ottoman: 16h x 26w x 21d
- E29**
*Aluminum Group Lounge
Arm Chair* 1958
bright polished aluminum frame and
swivel base; black column; foam padding
upholstered in "Hopsak"
33 3/4h x 24 3/4w x 28 1/2d, sh 17 1/2
- E30**
Side Shell Base 1958
bright polished aluminum; silver column;
swivel mechanism; stainless steel footring
19h x 17 dia (at base)

E31
Time-Life Chair 1960
 contour molded plywood; bright polished aluminum base; dacron-filled cushions and foam rubber armrests covered with black leather; black enamel tilt-swivel mechanism; nylon glides 32–34 1/2h x 26 1/2w x 27d, sh 16 1/2–18 1/2

E32
La Fonda Base 1960
 anodized aluminum 15 1/2h x 22w x 15 1/2d

E33
Arm Chair 1960
 fiberglass reinforced molded plastic; bright polished aluminum base; black column; swivel mechanism; injection molded glides; foam padding upholstered in "Milnilo" with vinyl edge 29 1/2h x 25w x 22d, sh 18 1/2

E34
Arm Chair Base 1961
 bright chrome plated steel; nylon glides 15 1/2h x 22w x 15 1/2d

E35
 (16 seats)
Tandem Sling Seating 1962
 bright polished cast aluminum; black epoxy-coated steel; vinyl foam and fiberthin sealed between black vinyl cover; foam rubber cushioned black vinyl arm pads each seat: 33 3/4h x 23 1/2w x 28d, sh 17 5/8

E36
Side Chair 1965
 fiberglass reinforced molded plastic; zinc coated steel; side hooks for stacking and ganging; nylon glides; arm support is bright plated steel, top surface is neutral laminated plastic 31 3/4h x 23 1/8w x 25 1/2d, sh 18

E37
Side Chair 1965
 fiberglass reinforced molded plastic; foam padding upholstered in "Milnilo;" zinc coated steel; side hooks for stacking and ganging; nylon glides; arm support is bright plated steel, top surface is neutral laminated plastic 31 3/4h x 23 1/8w x 25 1/2d, sh 18

E38
Side Chair 1965
 fiberglass reinforced molded plastic; foam padding upholstered in vinyl; zinc coated steel; side hooks for stacking and ganging; nylon glides; arm support is bright plated steel, top surface is neutral laminated plastic 31 3/4h x 23 1/8w x 25 1/2d, sh 18

E39
Side Chair 1965
 fiberglass reinforced molded plastic; foam padding upholstered in "Hopsak;" zinc coated steel; side hooks for stacking and ganging; nylon glides; arm support is bright plated steel, top surface is neutral laminated plastic 31 3/4h x 23 1/8w x 25 1/2d, sh 18

E40
Chaise 1968
 nylon-coated aluminum; fiberthin; six foam padded black leather cushions connected with zippers; two loose cushions 28 3/4h x 75w x 17 1/2d, sh 20 1/2

E41
Soft Pad Lounge Arm Chair 1969
 bright polished aluminum frame and swivel base; dacron-filled black leather cushions 43 1/4h x 24 3/4w x 29 1/4d, sh 19 1/2

E42
Arm Chair 1969
 fiberglass reinforced molded plastic; polished aluminum base; black column; swivel and adjustable tilt-swivel mechanism; foam cushioning upholstered in vinyl/"Hopsak;" injection molded glides 30 3/4–34 1/4h x 25 3/4w x 24 1/2d, sh 16 1/4–19 3/4

E43
 (2) *Side Chair* 1970
 fiberglass reinforced molded plastic; bright polished chrome plated steel legs; bright chrome plated base and back support; foam padding upholstered in "Polynit;" vinyl edge; nylon glides 29 1/2h x 19 1/2w x 21 1/2d, sh 19

E44
 (2) *Loose Cushion Arm Chair* 1971
 fiberglass reinforced molded plastic; polished aluminum base; black painted tube; adjustable tilt-swivel mechanism; nylon glides; injection molded foam upholstered in "Hopsak;" vinyl edge 31–33h x 26w x 28d, sh 17–19

E45
 (2) *Secretarial Chair* 1972
 fiberglass reinforced molded plastic; bright polished chrome base and back support; thick foam pad upholstered in "Polynit" 29 1/2–33 1/4h x 25w x 25d, sh 18–20

E46
 (3) *Secretarial Chair* 1973
 fiberglass reinforced molded plastic; bright polished chrome base and back support; thin foam pad upholstered in "Polynit" 29 1/2–33 1/4h x 25w x 25d, sh 17–19

E47
Stool 1973
 fiberglass reinforced molded plastic seat and back upholstered in "Polynit;" satin stainless steel footring; bright polished aluminum and chrome base; swivel mechanism 40 1/4–45 1/4h x 27 3/8w x 27 3/8d, sh 27 3/4–31 1/8

STORAGE

E48
Eames Storage Unit (ESU) Chest 1950
 plated steel; birch; lacquered masonite panels; crossed metal struts 26h x 24w x 16d

TABLES

E49
Table (ETR) 1948
 black laminated plastic top; bright zinc base 10h x 89 1/4l x 29 3/8w

E50
 (4) *Table (LTR)* 1951
 bright plated steel wire base; white laminated plastic top 10h x 15 5/8w x 13 3/8d

E51
Executive Oval Table 1972
 Italian white marble; polished aluminum base; chrome plated steel columns; nylon glides 29 1/4h x 78w x 42d

MISCELLANEOUS

E52
Arm Chair Shell 1949
 fiberglass; drawing by Saul Steinberg added in 1950 26h x 20w x 18d
 Collection Charles and Ray Eames

E53
House of Cards 1952
 picture and pattern deck of cards; slots for joining each card: 3 1/2 x 2 1/4

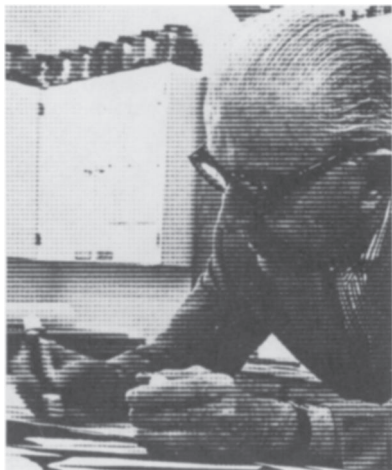
E54
 (2) *Dolly* 1955
 hardboard; vinyl; casters 4 3/8h x 24w x 24d

E55
Herman Miller Stock Certificate 1962
 8 x 10

E56
IBM House of Cards 1970
 deck of cards with computer element images; slots for joining each card: 3 1/2 x 2 1/4

RAY EAMES

E57
 (3) *Occasional Stool* 1960
 solid oiled walnut 15h 13 dia



ALEXANDER GIRARD

FABRICS

G1

Fabric Forest 1952-1967

22 prints produced especially for this exhibition at Herman Miller Inc.:

"Alphabet Stripe," "Alphabet,"
 "April," "Braniff," "Computer,"
 "Crosses," "Flores," "Fruit Tree,"
 "Firecrackers," "Grid," "June,"
 "Jogs," "January," (positive)
 "January," (negative) "Leaves,"
 "Lines," "Number Stripe," "Pebbles,"
 "Pumpkin Seeds," "Rain," "Shower,"
 "Super Stripe," "Triangles"

Other prints:

"Names," "Mikado," "Sansusie,"
 "Feathers," "Pepitas," "Eden,"
 "Hexagons," "Quatrefoil," "One
 Way," "Circles," "Small Squares,"
 "April," "Ribbons," "Jax," "Splinters,"
 "Diamonds," "Double Triangles,"
 "Palio," "Graph"

Printed tablecloths:

"Lace," "Diamonds & Triangles,"
 "Checkers"

Samples of "Mexicotton Stripes" and "Mexicotton Solids"

Pillow fabric lengths: 1) "Nest,"
 "Baby's Breath," "Blooms," "Daisies,"
 "Blossoms," "Rose;" 2) "Concentric
 Square," "Squares and Triangles,"
 "Cross;" 3) "Circle," "Two Rectangles,"
 "Square;" 4) "Boy and Girl," "Hand
 with Flowers," "Bird with Flowers;"
 5) "Sun," "Heart," "Angel," "House,"
 "Mother and Child," "Moon;" 6) "Love
 Heart;" 7) "Snake," "Maze"

Selections of Environmental Enrichment Panels

Collection Girard Foundation, Santa Fe

G2

Fabric Panels

(7) "Mildamask" 1965
 66% cotton, 34% spun rayon 54w
 (8) "Wooldot" 1958
 64% wool, 25% cotton, 11% nylon 54w
 (27) "Checks"
 "Small Squares" 1965
 63% cotton, 37% nylon 54w; 48w
 (2) "Jacobs Coat" 1959
 46% cotton, 33% wool, 21% nylon 54w

G3

Fabric Panels

(8) "Woolstretch" 1973
 99% wool, 1% spandex 48w
 (2) "Superweave" 1966
 72% wool, 28% cotton 50w
 (3) "Lanalux" 1967
 100% wool 52w
 (7) "Millerwool" 1960
 64% wool, 20% cotton, 16% nylon
 54w
 (3) "Miltoo" 1967
 100% nylon, acrylic backed 54w
 (2) "Superwool" 1964
 60% wool, 40% cotton 54w

G4

Fabric Panels

(8) "Polylok" 1973
 65% cotton, 20% polyurethane foam,
 15% nylon 48w
 (21) "Milnilo" 1972
 100% nylon, acrylic backed 54w
 (14) "Best Aucht Leather" 1973
 special colors and finishes
 (15) "Nilo" 1968
 100% nylon 54w
 (22) "Hopsak" 1963
 100% nylon, acrylic backed 54w
 (25) "Polynit" 1969
 70% nylon, 30% vinyon 55w

G5

Fabric Panels

(5) "Standard AO Fabric Stripes" 1973
 100% cotton 50 1/2w

G6

Fabric Panels

(2) "Standard AO Fabric Stripes" 1973
 100% cotton 50 1/2w
 (21) "Standard AO Fabric Solids" 1973
 100% linen 50 1/2w
 (5) "Decor Naugahyde" 1971
 elastic back, expanded vinyl 54w
 (21) "Expanded Vinyl" 1973
 cotton knit back 54w, 66 ga. thick,
 48 ounces per lineal yard

G7

Fabric Studies

(top, right)
Crosses
 multi-colored tissue collages
 25 x 18 (left)
 24 1/2 x 22 1/2 (lower right)

Collection Cooper-Hewitt Museum of
 Decorative Arts and Design, New York

G8

Geometric Patterns

blueprint 28 x 34
 Collection Cooper-Hewitt Museum of
 Decorative Arts and Design

G9

(6) *Small Geometric Designs*

red tempera on white paper 16 x 24
 Collection Cooper-Hewitt Museum of
 Decorative Arts and Design

G10

(6) *Small Geometric Designs*

red tempera on white paper 16 x 24
 Collection Cooper-Hewitt Museum of
 Decorative Arts and Design

G11

Feathers

line drawing in colored pencil and
 crayon on vellum 30 x 32
 Collection Cooper-Hewitt Museum of
 Decorative Arts and Design

G12

(clockwise from top left to bottom right)

(3) *Chrysanthemum*

colored tissue cutouts on transparent
 tissue 13 1/2 x 18 1/2; 13 x 18 1/2;
 15 1/2 x 19

(lower left)

Multi-Colored Loops

crayon on white paper 22 x 16 1/4
 Collection Cooper-Hewitt Museum of
 Decorative Arts and Design

G13

(above, left to right)

Assorted Geometric Patterns 1952
 "Small Squares," "Triangles," "Circles"

(below)

Pumpkin Seeds 1959

a) pencil drawing on vellum
 12 x 31 1/2

b) blue line print 8 1/4 x 27
 Collection Cooper-Hewitt Museum of
 Decorative Arts and Design

G14

(clockwise from top left)

(4) *Collages* (series 630) 1954

paper; tissue
 27 x 24 1/2; 21 1/2 x 15 1/2; 17 x 15;
 17 1/2 x 14 1/2

Collection Cooper-Hewitt Museum of
 Decorative Arts and Design

G15
(above)
(21) *Geometric Pattern Studies* 1954
crayon and colored pencil on tissue
mounted on cardboard 4 x 7

(below)
(3) *Brocade Designs and Color Charts*
(series no. 125, 130, 135)
crayon on tissue; colored paper
9 x 15 1/2
Collection Cooper-Hewitt Museum of
Decorative Arts and Design

G16
(clockwise from top center)
(6) *Studies for Quatrefoil* 1954
colored tissue on transparent tissue and
white cardboard
17 1/2 x 9; 21 x 15; 18 x 26; 12 x 18;
13 x 17; 12 1/2 x 12 1/2 (center)
Collection Cooper-Hewitt Museum of
Decorative Arts and Design

G17
(left, top to bottom)
(7) *Studies for Multiple Stripes*
multi-colored paper collages
4 3/4 x 8 1/2; 5 1/4 x 6; 5 x 9 1/2;
5 x 6 1/2; 5 x 9; 5 1/2 x 8; 5 1/2 x 9

(top center and right)
(2) *Studies for Shower* 1958
multi-colored paper collages
13 x 14 1/4; 12 3/4 x 13 1/2

(below)
Screen Pattern for Shower
pencil drawing on vellum 21 x 33
Collection Cooper-Hewitt Museum of
Decorative Arts and Design

G18
(9) *Studies for Geometric Fabric Designs*
1961

(top row, left to right)
"Exes," "Diamonds," "Crosses"
(2nd row, left to right)
"Dumbbells," "Seeds," "Jacks"
(3rd row, left to right)
"Dumb Bells," various patterns, "Jacks"
india ink on vellum each 13 x 15
Collection Cooper-Hewitt Museum of
Decorative Arts and Design

G19
*Graphic Design for La Fonda
del Sol* 1960
(5) *Envelope*
(4) *Stationery*
Note Card
Wine List
Collection Girard Foundation

G20
*Graphic Design for La Fonda
del Sol* 1960
Poster 22 x 26
Menu 20 x 14 1/2
(9) *Matchbook* 2 x 2
Collection Girard Foundation

G21
*Graphic Design for Textiles & Objects
Shop* 1961
Stationery 8 1/2 x 11
Invitation to shop opening 5 x 5 3/4
Collection Girard Foundation

G22
T & O Angel 1961
stuffed toy 6 1/2h
Designer Marilyn Neuhart

G23
*Graphic Design for Textiles & Objects
Shop* 1961
Objects Poster 32 1/4 x 37 1/4
Collection Girard Foundation

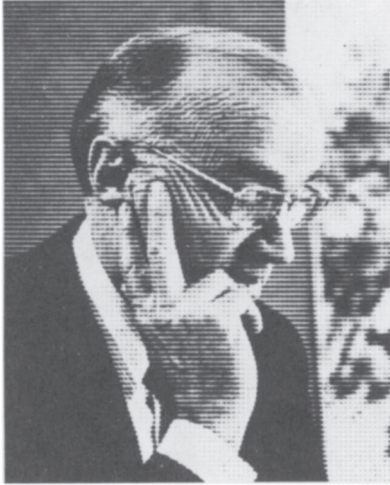
G24
Graphic Design for Braniff International
1965
Poster: Ecuador 18 x 22
Poster: Bolivia 18 x 22
Memo Sheet
In-flight Stationery
In-flight Envelope
(4) *Letterhead Stationery*
(4) *Envelope*
Collection Girard Foundation

G25
Graphic Design for Braniff International
1965
(2) *Poster* 20 x 26
Menu
(2) *Baggage Tag*
Bar Service Order List
Postcard
(2) *Ticket Envelope*
Seat Occupied Sign
Collection Girard Foundation

G26
Graphic Design for Braniff International
1965
Poster 20 x 20
Annual Report
Annual Report Cover
(6) *Gummed Shipping Label*
(13) *Air Cargo Sticker*
Flight Schedule Brochure
Collection Girard Foundation

G27
Graphic Design for Braniff International
1965
Poster 20 x 26
Collection Girard Foundation

G28
Graphic Design for L'Etoile 1966
(2) *Menu* 13 1/2 x 4 (closed)
13 1/2 x 8 (open)
Napkin 5 x 5
Postcard 3 3/8 x 5 1/2
Stationery
Envelope
Collection Girard Foundation



ROBERT PROPST

P1
Action Office Installation 1968
a system of interchangeable components for office use
vacuum formed plastic; Kraft honey-comb core panels of wood, vinyl and steel—may be fabric covered; work surfaces, plastic laminate on particle board with vinyl edge; polished aluminum bases
84 lineal feet of Action Office and Library Components

Chairs by Charles and Ray Eames

P2
Adjustable Swivel Perch 1964
polished aluminum; black painted steel column; chrome plated ring and back support; hard rubber casters; foam padding upholstered in leather
41 1/4–43h x 27 1/2w x 27 1/2d,
sh 30 1/4–33

P3
Co/Struc Installation 1969
a system of interchangeable components for use in hospitals and related health care facilities
injection molded polyphenylene oxide (frames, lockers, drawers, trays and flipper doors); low profile sheet molding (case lids and L-carts); extruded polyvinyl chloride (rails); vacuum formed polyallomer (locker tambour doors)
64 lineal feet of Co/Struc components

Chairs by Charles and Ray Eames

Medical supplies used in the Co/Struc installation, courtesy University of Minnesota Hospitals and Clinics

P4

Prototypes for the Proximate Environment Product System 1974
a selection of desk-top objects for use with Action Office, designed to assist in the organization of papers and related office objects such as paper clips, pencils, tape, etc.:

- (2) *A Box* 4 1/2h x 8w x 4 1/2d
- (2) *B Box* 4 1/2h x 4 1/2w x 4 1/2d
- C Box* 4 1/2h x 2 1/4w x 4 1/2d
- D Box* 4 1/2h x 1 1/4w x 4 1/2d
- (2) *A Drawer* 2h x 7 1/2w x 4 1/4d
- (2) *B Drawer* 2h x 3 11/16w x 4 1/4d
- Pencil Holder* 4 1/4h x 7/8w x 4 1/4d
- Note Paper Dispenser* 4 1/4h x 4 1/4w x 4 1/4d
- B Cassette* 4 1/4h x 2 1/16w x 4 1/4d
- (2) *C Cassette* 4 1/4h x 7/8w x 4 1/4d
- Ash Tray* 1h x 4 1/4w x 4 1/4d
- Tissue Dispenser* 4 1/4h x 4 1/4w x 4 1/4d
- Time Quantity Impression Clock* 4 1/4h x 4 1/4w x 4 1/4d
- Stapler & Holster* 4 1/4h x 2 3/4w x 4 1/4d
- AA Box* 12 1/2h x 12 1/2w x 10d
- (3) *AA Drawer* 4 1/4h x 12 3/8w x 9 3/4d
- (3) *A Paper Case* 12 h x 3/4w x 9 3/4d
- (3) *B Paper Case* 12h x 1 1/2w x 9 3/4d
- (2) *A Stuffer* 8h x 3/4w x 9 3/4d
- (2) *B Stuffer* 8h x 1 1/2w x 9 3/4d
plastic
- Shelf* 4h x 47w x 4 1/2d
extruded aluminum
- (10) *File Folder* 11 3/4h x 1/8w x 9 1/4d
paper

Courtesy Herman Miller Research Corporation, Ann Arbor