Harry Bertoia, Sculptor

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Large Scale Commissions

Unlike many American sculptors today who shun the utilitarian, Bertoia likes to work with architects. Their projects give him the opportunity to do large-scale works he couldn’t otherwise afford. He considers it a challenge, an intellectual exercise, to cope with the requirements of architectural commissions. He has not sought them, but rather they have come to him, at first through his acquaintances and later, in greater abundance than he has been able to handle, through architects unknown to him, as a result of his early successes.

Eero Saarinen was the first to call upon his talent. One of the buildings in his enormous Mondrian-like layout for the General Motors Technical Center in Warren, Michigan, needed a device to enhance both its lobby and the functional part of its main floor. Bertoia set to work on the problem and the result was the golden, textured metal screen sculpture which divides the entryway from the dining area in the main restaurant building (plate 21). Visible from the outside through the glass façade, from far away it is seen as a large horizontal rectangle of brilliant gold. On closer inspection it becomes a myriad of small gold rectangles placed vertically on three different planes, connected by rods, with an occasional "trill" of smaller, more open forms placed where they add the most interest to the design. From the other side, the screen provides the dining employees with privacy (sheltering them from the street outside) as well as the interest of its variety in texture and contrast between space and form.

This, his first of several architectural screens, obviously related to his 1943 experiments (see plate 17), was an exercise in large scale design incorporating space and light. It was finished in 1953. There are two unfortunate aspects. First, its proximity to the dining tables permits people to use its projections for coat racks (Bertoia says this is all right but does not help the design), and second, from the inside looking out it loses some of its color and texture as the forms are silhouetted against the outside light. From the lobby, however, the piece is effective both in its architectural serviceability and as sculpture. The individual panels are related to each other through the shadows cast from plane to plane by the light which acts, along with the repeated modulus and varied textures, as an element of design. Here we have
the first large-scale three-dimensional result of the Guggenheim monoprints.

There followed almost immediately a commission from the Manufacturers Trust (now Manufacturers Hanover Trust) Company for a screen with a similar purpose for their building at 43rd Street and Fifth Avenue in New York City, then being built by the architectural firm of Skidmore, Owings and Merrill. This enormous sculpture wall (sixteen feet high, seventy long, and two deep), which serves to separate the public from the private portion of the main banking floor; was completed and installed in 1954 (plate 22). It contains more than eight hundred separate forms placed in five different vertical planes, with a network of connecting and supporting rods and braces, the whole anchored to both floor and ceiling. It weighs more than five tons and was constructed and shipped in seven 1,500-pound sections. It is golden in color and textured with copper, bronze, and nickel fused together on the metal plates.

Generally similar in purpose and design, the screen for the General Motors Technical Center and the Manufacturers Hanover Trust sculpture wall beg to be compared. Almost twice as big and with its component parts scaled accordingly, the latter has a greater proportion of open to closed forms, a more complicated five-plane structure, and more favorable overhead lighting, which reveals clearly the interlacing of its structural members. (Plate 23 shows the intricacy of its welded construction as well as the textural variety of some of the individual units.)

Both screens act as backgrounds for their own presentations of sculptures-within-a-sculpture—the invented abstract structures which appear here and there in intervals between the panels. Each one is a sculptural gem which could stand alone. They show to best advantage in the General Motors screen, perhaps because there are fewer of them, perhaps because each one is more delicately detailed than in the larger screen, perhaps because the smaller size of the repeated modulus gives greater uniformity to the background, thereby emphasizing the contrast. This uniformity carries with it a certain monotony, however, which is altogether lacking in the bigger and bolder Manufacturers Hanover Trust screen. Profiting from the lessons learned in working on its prototype, Bertoia here combined innovation with repetition in a buoyant manner which leads the eye along a bouncing course from one end of the wall to the other, up and down, back and forth, and yet does not destroy the unity of the whole.

The Manufacturers Trust screen received instantaneous critical acclaim. Instantaneous possibly because of its location (within easy access of New York-based art critics), but it was unanimously acclaimed for its intrinsic beauty, technical excellence, and the inventive variety of its design—one of the first successful collaborations in modern times between sculptor and architect. Ada Louise Huxtable wrote:
Large Sculptures

The screen wall is a note of Byzantine splendor in an otherwise austerely elegant interior. Brilliant gold in color, primitive in texture and pattern, it is the perfect accent for the polished surroundings. The result, here, has been the successful integration of two of the major arts.  

More recently, it has been described as “undoubtedly the outstanding example of welded metal sculpture in architectural use.”

A year later, after some preliminary experiments with cloudlike sculptures (plate 24), Bertoia completed another large screen, quite different from its predecessors, for Eero Saarinen's unusual interfaith chapel at the Massachusetts Institute of Technology. Here the screen, more appropriately called a reredos (plate 25), serves to separate the back of the altar from a stairway to a lower floor where vestments and religious objects are stored. It utilizes and magnifies the dramatic effect of the only direct light in the chapel, a shaft that descends from a skylight or lantern onto a starkly simple three-foot high block of solid marble, which serves as an altar.

The sculpture is made up of twenty-four metal cords spaced equidistantly in an arc, stretched from the skylight to the second step of the three-step circular platform of travertine marble on which the altar slab is placed. Small, textured, flat, rectangular brass plates, as well as a number of open rectangles and triangles made of wire, are welded to the rigid vertical cords at different heights and angles to catch or deflect the descending light. (The lantern also provides artificial light for night use.) The effect is of a twinkling cascade of light caught in tiny pockets quite like moonbeams reflected on the ripples of night-darkened water. The dimly lit chapel gains spirituality from this evanescent reredos which changes constantly, sometimes dramatically, as the sun traverses the sky or emerges from behind a cloud.

Other commissions followed in profusion for screens, fountains, and free-standing pieces in cities as far apart as Miami, Florida, and Tulsa, Oklahoma, but it was not until 1962 that Bertoia started working on the large bronze panel for the Dulles International Airport at Chantilly, Virginia. Dedicated by President Kennedy in the spring of the following year, the building had been designed some years earlier by Eero Saarinen. When Saarinen died prematurely, Kevin Roche took over and it was he who contacted Bertoia concerning a sculptural work. They ultimately agreed on a large mural-like poured bronze panel in the new casting technique Bertoia was experimenting with at the time. It was to be placed in front of the entrances to the restaurant, on the main floor of the south wing of the air terminal. The geophysical nature of the completed sculpture was also decided at that first meeting with Roche.

Bertoia looked upon the Dulles Airport commission as a great opportunity, culminating his experiments in working with molten bronze. After a year of preparation, an original rejection by the committee, and later acceptance of the proposed sculpture, the actual
casting of the nine eight-foot by four-foot sections of the mural was accomplished within twenty-four hours, using the method described in *Craft Horizons*.\(^3\) Four tons of bronze were consumed in the process, which involved the firing of two furnaces simultaneously to a temperature of close to 2000\(^\circ\) F. The contents of both furnaces were then poured on a flatbed of sand and manipulated according to plan during the brief liquid state of the metal—a matter of minutes. Many of the carefully laid plans evaporated with the pouring when immediate, frenzied, direct action took over. It was a physically exhausting undertaking. Originally, all the casting was to be done the same day in order to avoid noticeable differences among the panels which Bertoia felt would occur if some of the work were carried overnight. However, having started early in the morning of what turned out to be a very hot day, they had to call a halt at four o’clock in the afternoon, with two panels yet to be poured. Bertoia and his two assistants, as well as the foundrymen, were completely enervated. The differences he feared show up as minor flaws in transitions between the last two panels, but generally it all worked out very satisfactorily.

The result is a multi-colored metal mural which, in a purely abstract manner, creates a suggestion of the continuing formative processes of our universe throughout time (plate 26). The surface of the sculpture is rough and dry. The panels have a dark brown background providing a foil for the light colored swirls and encrustations in shades varying from light brown through yellow-green to blue-green. Many jagged holes and an occasional polished bronze highlight enliven the work, which has a painterly quality seldom seen in sculpture. For each viewer it creates a different vision—perhaps an agitated, boiling upheaval of the earth’s surface in the process of evolution, or a greenish milky way swirling through the darkness of outer space. The tactile sensations it engenders are so powerful and the sense of movement created by its swirling energies is so overwhelming that the spectator feels himself to be a part of the action. It is truly a monumental work, from conception to completion.

Bertoia, who had occasion to view the mural again in 1966, three years after its installation, said he had the unusual feeling of seeing it for the first time, almost as though it had been done by someone else. He was pleased by what he saw and said in a considered, deliberate tone of voice, “I have no doubt that it is a unique work in our age.”

About the time of the Dulles Airport bronze, several non-functional sculptures were done on commission through architects who availed themselves of Bertoia’s talent to enhance their buildings. In 1962 the Banker’s Trust Company commissioned, through Henry Dreyfuss & Associates, a delicate wall-hung piece of welded brass rods for their headquarters building in New York (plate 27). At the instigation of President Clarence P. Bryan, the Cuyahoga Savings Association of Cleveland, Ohio, ordered a ceiling-suspended stainless steel wire hemisphere, completed in 1965 (plate 28). For Minoru Yamasaki’s
Woodrow Wilson School of Public and International Affairs at Princeton University, Bertoia created on a pedestal a rugged fifty-inch globe of bronze rods emanating from a central core, the outer ends forming a rippling, penetrable surface (plate 29). Though the globe is massive, Bertoia wanted to do it without a solid surface in order to hint at the realities of atmosphere. Its complex character, as well as the implication of its setting in the center of a glass-enclosed sky-lighted lounge-lobby, make of it a globe of the modern world (plate 30). It seems to represent a planet in turmoil, almost about to burst asunder by force of its internal struggles, yet somehow serenely contained in all its lumpish contours.

That same year (1964) saw the completion and installation of another large sculpture (fourteen feet high, forty-six long, and four deep) in the lobby of Yamasaki’s elegant building for the Northwestern National Life Insurance Company in Minneapolis. This was an enormous undertaking requiring a full year for construction. Photographs were made to document the work as it progressed.

The commission resulted from a recommendation by the architect, who accompanied Northwestern National’s President John Pillsbury Jr. to Bally, Pennsylvania, to examine Bertoia’s work. Bertoia then made preliminary drawings and a scale model (plate 31). He worked from architectural plans furnished by Yamasaki, and once the commission was approved, experimented with methods of construction.

The Northwestern National sculpture is composed of thousands of textured metal rods welded together in groups like loose bundles of straw which jut out in different directions.

Six months were spent in coating individual steel rods with a brass alloy to produce a textured surface something like that of a dripping candle (plate 32). Designed to be seen overhead like a Greek frieze, the piece was suspended from the ceiling of the studio in order to get the proper perspective during construction (plate 34). This also facilitated the welding process, which required two men for each operation, as the rods had to be made rigid at the proper angle (plate 33). Some time later Bertoia met with Yamasaki and Northwestern National officials to look over the architectural space in the nearly finished building (plate 35). When completed, the sculpture’s 600-pound sections were shipped to Minneapolis by flatbed truck (plate 36). After being hoisted onto the ledge in the building’s lobby (plate 37), the sections were mechanically joined together (plate 38).

The completed sculpture seems to float in space, although it actually rests on tiny feet, which are invisible from the ground level (plate 39). Its position, two feet away from the wall against which it is placed, allows light to penetrate around the rods and reveal the complicated woven structure (plate 40). The focal point of a white marble lobby, this sculpture is delicate and lacy in appearance in spite of its enormous size. It faces the viewer in close proximity overhead as he enters the building through a glass wall, and his attention is caught by
the warm gold of its rough, dry texture contrasted against the smooth coldness of the marble walls. The color, dryness and texture of the rods combine with the contrasting bits of turquoise, like the flash of a butterfly’s wings, and the airiness of the whole effect, to suggest the totality of the Midwest farmland—its spaciousness and its bountiful harvests.

The only major Bertoia sculpture to be given a name, this one came to be called *Sunlit Straw* by a rather complicated process. When the people at Northwestern National pressed him, Bertoia asked each member of his family to make a list of suggestions. They came up with a total of thirty-three names, from which he chose three to submit to the company. From the three, John Pillsbury chose *Sunlit Straw*. The story circulated by Northwestern National’s public relations department—that the name was given after a group of Amish people visiting the studio while work was in progress commented on its appropriateness for the Midwest because of its resemblance to a field of golden grain—is at least partially true. Amish people living in the vicinity of his studio did see the sculpture and make such a comment. The members of Bertoia’s family were aware of this.

‘Reaction to the work has been almost universally favorable, in fact, more often enthusiastic,’” wrote Kenneth K. Wunsch of Northwestern National. Professor Laurence Schmeckebier, dean of Syracuse University’s School of Art, called it “one of the most significant examples of twentieth century sculpture in America,” and wrote Bertoia a letter to that effect. Certainly it represents another successful architect-sculptor collaboration, and one that is completely different in both tone and technique from his previous large commissions.

Another major work was completed and installed in September 1966. It is the fountain sculpture for the River Oaks Shopping Center at Calumet City, Illinois, done at the request of the center’s architects, Loebl Schlossman Bennett and Dart. “I am a great admirer of Bertoia’s work and have one of his pieces in my home,” wrote Jerrold Loeb. “In doing the shopping center, we naturally envisioned the possibility of having Bertoia do a piece of sculpture for the fountain….

Through Fairweather Hardin, Bertoia came and spent some time with us. All we could show him at the time were our mall and landscaping drawings and the general concept we envisioned. He came back a month later with several different schemes. We decided on one which was then created for the space.”

The River Oaks fountain was based on Bertoia’s studies of sound in sculpture (plates 41, 42). Made of one-half inch thick Tobin bronze rods welded into a vertical position side by side on a thin metal base, the piece weighs about 4,500 pounds, and is nine feet high, ten wide, and eight deep. The rods are of differing lengths and are free at the top so that when the wind moves them against each other there should be a deep reverberating sound, like that of many bells. Tobin bronze was
especially chosen as the material for the rods because of the sound it produces. Since the winds of the region are reputedly very strong, Bertoia used fairly heavy rods and was prepared to muffle them if necessary. Apparently he overcorrected for Chicago’s windy conditions as, unfortunately, the sound is heard only occasionally. He calculates now that he could change that situation by extending the rods.

Such an extension would, of course, change the basic proportions of the sculpture and would improve its relationship to its surroundings. The River Oaks center is one of the most beautifully landscaped shopping centers in the country. However, the buildings surrounding the Bertoia fountain are all low and architecturally undistinguished, except the Marshall Field building, which has an arcaded façade of very high archways. A more vertically oriented sculpture would balance nicely between the archways and the repeated horizontals, and would be a more prominent feature of the general landscape.

The pool in which the piece is installed is circular and the fountain is limited to six two-foot high jets around its outer edge, so that the play of water has little or no bearing on the effectiveness of the sculpture. The color of the oxidation (a bright turquoise) and the repeated verticals of the rods give their own suggestion of water, which a directed spray would merely detract from.

Two very different pieces—one for the center of another fountain and the other a functional architectural screen in color—were completed in 1967. The latter, in the Federal Court Building in Brooklyn’s Civic Center (plate 43), was commissioned by the General Services Administration on the recommendation of the architects, Carson, Lundin & Shaw and Lorimer Rich, who had the problem of coping with an unattractive view at one end of a long marble hall (one hundred and twenty-five feet). Bertoia’s solution was a screen composed of uniform twenty-four inch squares of laminated asbestos, each textured and finished in a flat paint on both sides in one or another of three shades of yellow, or white. The squares are mounted in vertical positions on four different planes in front of a glass window-wall (plate 44). The choice of colors and the positioning of the squares were carefully calculated to allow for the reflection of light from the back of one form to the front surface of another, thus multiplying the range of color values.

The finished screen is twenty-four feet high and thirty-six feet wide. A sun-colored design that changes by the hour as well as by the day according to the changing light, it provides the only bright color in the enormous marble hall. Viewed from inside or outside the building, the shadows formed by the squares in one plane reflected on those in another plane create an intricate and constantly shifting display of large and small rectilinear patterns in a variety of tints, reminding one once again of the 1943 experiments at Cranbrook. “Of the many possible shapes, the square offers the greatest variety of combinations,”
Bertoia has said. The Brooklyn Federal Court screen demonstrates intriguingly the validity of that statement, in spite of the incongruity of the materials of which it is made with the materials of its interior setting.

A fountain piece, the other major 1967 commission was arranged for according to the standard procedure of the city of Philadelphia, which has an official policy for the "aesthetic ornamentation of city structures" and an art commission which must approve expenditures. Edward Durell Stone, in consultation with the architect for the new Philadelphia Civic Center, Davis, Pool & Sloan, wrote a letter to the Philadelphia Art Commission recommending Bertoia. Upon approval by the commission of a preliminary sketch, Bertoia’s contract was drawn up with the architect.

The fountain structure is made of copper tubes, bronze-welded together to form a wildly undulating membrane-like surface and a central stem (plates 45, 46). Water does not flow through the tubes but is played onto the sculpture from six large jets close to the piece and about eighty smaller jets encircling it and playing onto its fantastic form from the outer perimeter of a waist-high pool, forty-five feet in diameter. The sculpture is the focal point not only of the pool but also of the entire plaza, an elevated square open to the street on one side and otherwise enclosed by the contiguous buildings of the Civic Center. These white-walled buildings are of different heights, the lowest between the other two, but they have the same severely rectilinear ornamentation. In its saucer-like pool the dark (almost black) fountain structure is well-proportioned and provides a maximum contrast to its setting as its form swoops and swirls like the most fantastic mushroom of a forest before the stark white geometry of the center’s façade. A walk around it reveals new descriptions of positive and negative space with each step.

The height of the water jets is controlled by a wind sensor placed in a nearby flagpole. At its highest setting the water splashes over and into the sculpture, almost obscuring its form, running down and out of its mysterious convolutions, and adding animation to the scene (plate 47). People often break into smiles as they approach and circle round the fountain. The first winter of its existence it choked up with tons of ice one night when someone failed to turn off the water. The structure withstood the added weight without damage and Philadelphians were treated to an unusual sight until the thaw.

In 1968 another fountain based on the same technique was completed and installed in front of Yamasaki’s skyscraper for the Manufacturers and Traders Trust Company in Buffalo (plates 48, 49). This one is in an oval pool surrounded by a large open plaza. Since Buffalo has long winters with too much wind and ice for splashing water jets to be practical, the fountain is constructed with an open center and water pipes emerging therefrom unobtrusively follow the contours of the sculpture, some underneath and some on top of its surface membrane.
Water drips lazily from its amply curved or cut edges as from a full-blown flower in a light rain. The variegated patina of pastel shades of blue-green and brown is as appropriate to the flower-like unfurling of this sculptural form as black is to the more tumultuous form of the Philadelphia fountain.

Also in 1968 an enormous project was undertaken for Seattle-First National Bank through the architectural firm of Naramore, Bain, Brady & Johanson—a ceiling sculpture thirty-two feet in diameter, consisting of thirty-six stainless steel wire sprays of varying diameters and lengths, suspended singly and in groups of two and three, one within the other, from twenty separate points of support. A photograph taken in November of that year shows Bertoia installing one of the sprays (plate 50). The sculpture hangs from a twenty-six foot high ceiling in a fifty by seventy foot glass pavilion which forms part of the main banking room. It is visible from an approach at a higher level and also as one descends an escalator to the banking floor.

In addition to the works already mentioned, Bertoia has completed many other commissions of varying size and importance since 1953. A 350-pound, fourteen-foot hanging piece, made for W. Hawkins Ferry’s lakeside home in Grosse Pointe Shores, Michigan, was conceived during the processing of the Northwestern National commission and comes to grips with the same concepts (plate 51). Its construction helped clarify the physical procedure for the larger Minneapolis piece.

William H. Kessler of Meathe, Kessler & Associates, architects of the Ferry residence, which houses a remarkable collection of modern art, suggested a sculpture for the area near the entry to the dining room. When Mr. Ferry asked Bertoia to do one, he at first hesitated, being occupied at the time with the paper work for the huge piece for Minneapolis. However, on seeing the Ferry house under construction, while in Detroit for the opening of the J. L. Hudson Gallery’s showing of his late father-in-law’s art collection, he decided to accept the commission. He did six drawings, from which Mr. Ferry made his choice.

Having more color (red and brown as well as turquoise in irregular flower-like shapes at the ends of the rods), it is also more intricately interlaced than the Minnesota sculpture. Though it is hung by a supporting rod from the second story ceiling, Bertoia also provided it with feet so it could rest on the floor if desired. At night the light from an overhead spot appears to emanate from the golden rods themselves, and the sculpture is reflected, along with a nine-foot tall, columnar Giacometti figure of a woman, in the glass window wall across the living room, creating a marvelous effect.

Among Bertoia’s other commissioned works, the following were done in cooperation with the architects indicated (a checklist of commissioned works is provided in the Appendix):

Edward Durell Stone, a ten-foot sphere of twenty-four karat gold-coated wire which swayed on a slender twenty-foot steel stem
above a lagoon in front of the Perpetual Savings and Loan Association Building in Beverly Hills, California (plate 52). This sculpture, composed of 84,000 parts, was a project in engineering as well as design balance. Light and fluffy in appearance in spite of its enormous size, it seemed to be reaching for the sun through a cloud of mist created by fine jets of water at the base of the fountain, according to one description.

Victor Gruen Associates, two vertical metal screens made in the manner of the Manufacturers Trust screen, but composed more freely, for the Dayton Store, Southdale Center, Edina, Minnesota (plate 53).

George Leighton Dahl, a sculptured metal screen, for the Dallas Public Library, Dallas, Texas (plate 54).

I. M. Pei, a balanced sphere and a free-standing metal "tree" screen, for the lobby of the Denver Hilton Hotel (plates 55, 56).

Kevin Roche John Dinkeloo & Associates, three four-foot cubes made of poured bronze panels, used as tree planters in a glass enclosed space at the Rochester (New York) Institute of Technology's new campus.