

SOUNDSTAIR TWO:
THE PRACTICE OF ENVIRONMENTAL/PARTICIPATORY ART

by

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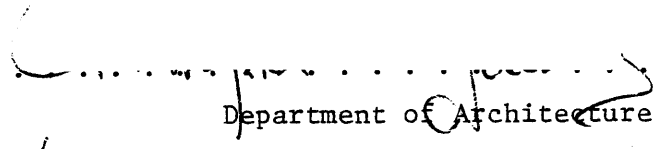
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Submitted in partial fulfillment of the requirements for
the Degree of Master of Science

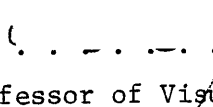
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ABSTRACT

Soundstair is an experiment integrating people's movement patterns and electronically-generated sound. A photo-cell system is installed at the edge of each step on the stair. These are then individually wired to an electronic trip-switch system which is coupled to a set of synthesizers. The synthesizers are then tuned to an ascending musical scale and coordinated with the ascending movement pattern of the stairs. As a result, when an individual walks up the stairs, it will sound as if he/she is walking up the keys of a piano. Further, when two or more people move on the stairs, they can "play" them as a communal musical instrument. Other possibilities, which will be in Soundstair Two, are to patch in taped poems instead of the synthesizers, creating random word formations like moving the dial on a radio.

Through installations such as Soundstair, I hope to illustrate and possibly generate not only new alternatives for spaces in the built environment, but stimulate creative thinking about what is around us. The following written material is a supplement to the installation of Soundstair Two. Its objective is to give the reader/participant an insight to the origins of the project, the various problems and discoveries during the construction, and the new ideas generated from the work. In order to fully understand this material, it is necessary to experience Soundstair Two. If the reader has not had this opportunity, I would hope that upon completing this written supplement one would be inquisitive enough to inquire about the actual performance and interesting transformation Soundstair Two created in Stairway 7, April 15th to June 1st, 1978.

Thesis Supervisor: Otto Piene
Title: Professor of Visual Design

Soundstair Two:

The Practice of Environmental/Participatory Art

The material contains utility
The immaterial contains essence.

Lao-Tze

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INTRODUCTION

"Like the young architect, many artists no longer are interested in producing discrete paintings or sculptures as objects. Their creativity leads them into becoming part of ongoing creativity, dealing with material, scientific, social, and indeed, artistic (in a participatory sense) processes. They begin to deal in ideas, in exchanges of feelings, and desires, in bringing other people from other disciplines into a shared creation, one shared also with the public. The separations between art, science, technology, architecture and everyday life, are beginning to appear as artificial boundaries, and hence to disintegrate. To some artists (using that term in the largest sense), no one, ideally, should be excluded from involvement in the creative process, nor even from actual participation in it." Burns, J., *Arthropods*, p.8.

By definition "environmental art" is a very elusive term, meaning anything from painting with leaves on canvas to a master plan of a city. Within the scope of my intentions "environmental art" involves two issues. One concerns the scale of environment in both architectural space and Nature. The other is concerned with "art systems" responsive to people and phenomena. As implied by Jim Burns's quote above, my intentions in these areas have little to do with traditional artistic ideas of form and color. I am interested in creating works that catalyze dialogue between people and art; dialogue and questions about humanity and its place in technology. More than any other work I have created thus far, Soundstair is the clearest exponent of these concepts. It has evolved over the past five years from a whimsical idea to a communal musical instrument.

At MIT as well as in general, it seems there are many good ideas and interesting projects to be developed. But, somewhere between the concept and the product, factors of money, time and conflicting interests dilute them to often almost nothing. Consequently, the student

lounge is filled with endless chatter and written reports of "how great this so and so would have been". While Soundstair Two is about interesting ways to animate space, it is also about this issue. As an experiment in translating movement patterns into sound, it is one concrete example of new alternatives for spaces in the built environment.

THE GENESIS OF SOUNDSTAIR

Before investigating the roots of Soundstair and the evolution of the idea, I would like to clarify a number of related terms and discuss their historical precedence. "Environmental/Participatory Art" has been a part of this culture formally since World War II. Before that, unassumed by most, it manifested itself in parades, country fairs, sports events and, most importantly, religious ceremonies. Affairs of marriage, death, Christian communion are environmental (in the broadest sense, "all encompassing") and participatory, while also being powerful social forces of cultural orientation. We have seen many of these themes in art with the happenings of the '50's. Peter Brook's environmental theater works, and outdoor art works like Otto Piene's sky events are two recent examples. All claim a certain liberation from traditional art forms as well as the need to communicate directly with the public in an effort to interact and regenerate contemporary and meaningful values. Soundstair, as an environmental/participatory installation, attempts to catalyze similar energies as well as reinforce a strong relationship between art, technology and human values in the M.I.T. community.

Soundstair evolved out of different experiences and developed as a synthesis of several unrelated areas. In 1969, while studying

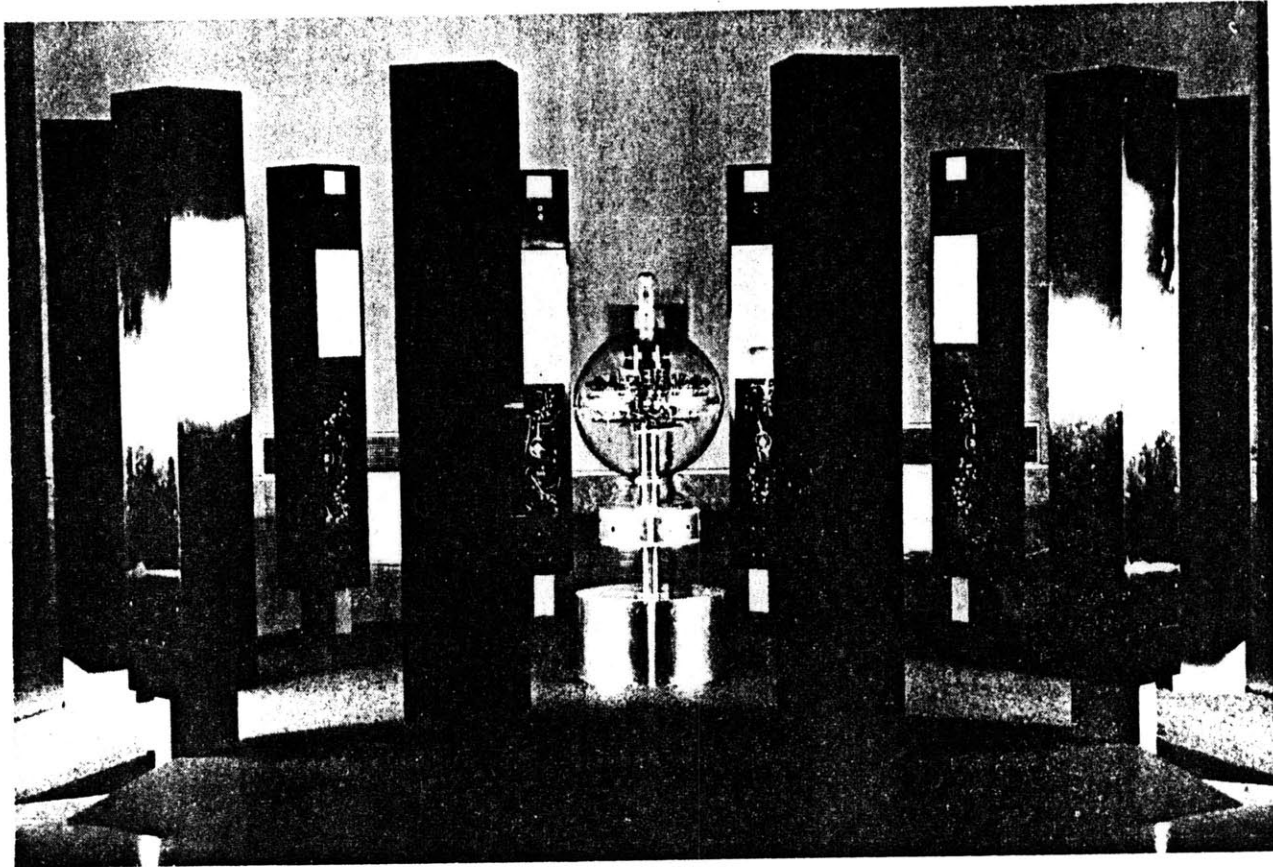
architecture at Princeton University, I worked with James Seawright in sculpture. As one of the pioneers in "art and technology", Jim was a lucid example of the contemporary artist; always seeking out new ideas, presenting "inconceivable" fantasies to me through his work and teaching. One such work was the "Electronic Peristyle" in The Magic Theater exhibition which was first shown at Kansas City in 1968. Writing on this event, Mario Amaya states,

...Thirty-seven thousand pounds of pure fantasy with a price tag of half-a-million dollars. That's one way to describe the Magic Theater's extraordinary environmental exhibition... The statistics were adrenaline to the heart of any editor, but were they enough to produce an exhibition which would have aesthetic validity, and which would really engage the spectators in some sort of new visual and emotional experience?... My mind still harbors wierd memories of Antonakos's pulsating neon light platform; Seawright's electronic-brain which responded to the movement of the spectator; HowardJones' concave sound boards, equally responding to movement; Whitman's mylar wall of mirrors;...The Magic Theater, Coe, Ralph, p.9,10.

In the Fall of 1969, the show came to new York, and Jim took the class to see it. The impact from this experience nine years ago on my work created a foundation of thought which influenced not only my attitudes about art, but even the most recent designs of Soundstair.

Yet, for all its influence, The Magic Theater remained an exhibition in a museum. And although it did a great deal to liberate the concepts of art, my interest [primarily expressed through architectural design at the time] lay with art in the public environment.

In the summer of 1972, I worked for a company called Haus-Rucker Co., a collaborative of artists and architects based in Düsseldorf, Germany and New York. Along with other groups in the '60's such as Ant Farm and Archigram, they developed new attitudes towards architecture, creating radical concepts of art and design. In discussing



The Electronic Peristyle/J. Seawright

one of their exhibitions,

Klaus Pinter, a principal stated, "The idea of 'toy' means much more than usually accepted in the everyday sense. We think toys and play objects and environments can have deeper meanings than are usually given to them, can loosen people's attitudes and get them responding in more direct ways to each other and the environment." Arthropods, Burns, J., p.65.

Haus-Rucker's influence on Soundstair should be clear and a number of their projects were critical to the genesis of my work. One in particular, the "Big Piano", was a free-standing large-scale sculpture designed as a set of stairs leading into an artificial fog cloud. Similar in concept to Soundstair, each stair when stepped on sounded a note. However, like many of their projects, there was neither the money nor the necessary incentive to create the work.

From 1973-1975, Soundstair-related experiences involved music. (I have been a percussionist for fourteen years and although I am not playing professionally at present, music has always been a major influence in my work). In Spring 1975, I studied a technique for rhythm through body movement called "Eurhythmics"⁽¹⁾. The Dalcroze method of externalizing rhythm, of using the whole body, not simply the intellect, to experience various polyrhythms was a fascinating tool in itself. Without going extensively into the Dalcroze music education philosophy, the following quote clarifies his principles.

(1) There is some debate whether Jacques-Dalcroze or Rudolf Steiner, both working around 1900, founded eurhythmics. Steiner was more interested in developing anthroposophy or "spiritual perception" and biodynamics than in the training of musicians and artists, although he did have some affiliation with institutions of this kind. Dalcroze, on the other hand, was greatly inspired by artists such as Isadora Duncan and worked in close collaboration with Appia on dance/theater concepts. Many visual artists mention Dalcroze's work as a major force in the genesis of their ideas. One such example is Ferdinand Hodler and his painting Eurhythmy (1894-1895).

Speaking about his students, Dalcroze wrote,

...The mind perceived the variations, but the vocal apparatus was unable to give effect to them. I came to the conclusion that the motive and dynamic element in music depends not only on the hearing, but also on another sense. This I took at first to be the sense of touch, seeing that metrical finger exercises conduce unmistakably to the pupil's progress. Presently, however, a study of the reactions produced by piano-playing, in parts of the body other than the hands—movements with the feet, oscillations in the trunk and head, a swaying of the whole body, etc. — led me to the discovery that musical sensations of a rhythmic nature call the muscular and nervous response of the whole organism. I set my pupils exercises in stepping and halting, and trained them to react physically to the perception of musical rhythms. That was the origin of my "Eurhythmics". Jacques-Dalcroze, Rhythm, Music and Education, p.vi.

It was the Dalcroze experience that triggered in my mind the ways to visualize rhythm and movement.

As a powerful force in music education, Dr. Hilda Schuster, the director of the school, broaden the students' horizons about the nature of music and relationships to sound. After a few months at the school, I was aware of the different pitches and sounds ice cubes made when dropped in a glass or the various counter-rhythms of people, bicycles, cars and trucks while I was standing on a street corner. This musical training coupled with my training in sculpture and architecture catalyzed forms, objects, and ideas for installations that were sound movement related.

In the Fall of 1976, I enrolled at the Center for Advanced Visual Studies at M.I.T. under the direction of Otto Piene. Writing on the purpose of the Center, he stated,

....In 1967 the Center for Advanced Visual Studies at M.I.T. was founded by Gyorgy Kepes out of the conviction that a visually and ethically neglected environment needed the arts for essential improvement. At the same time, the arts, reelevated to this level of public competence and public responsibility, needed the companionship of science and engineering to develop and broaden the tools and the language in order to create

a new public art for, potentially, the largest audience which art has ever had. Art Transition, Piene, O., p.Xi.

As an environment in which to develop ideas for "art and technology" as well as to explore new previously unrelated areas of sculpture and music, M.I.T. was ideal.

SOUNDSTAIR VS. SOUNDSTAIR TWO

It took over five years to develop the concept of Soundstair. The actual construction took a year. It involved the building of Soundstair in Spring '77, a period of reflection on this design, and building Soundstair Two in Spring '78. It is not usually the case, in the arts, that an installation be rebuilt primarily to improve upon an original design. It seems many temporal art works are done once, built well or not, and then passed on into history books which talk about the concepts and ideas of the work, not so much of what actually took place. Because I have seen this attitude in art, I consider Soundstair's method of construction an important issue of the piece as well as an important educational tool.

The construction of the first Soundstair was a "shot in the dark". I knew very little about how to achieve what I wanted artistically. Enthusiastic about the concept of the project and believing strongly in on-the-job training, I built the first sound-feedback system using relays and small pre-fabricated oscillators. Each trigger system consisted of an artificial light source, namely a flashlight "head", and a photocell all in one box, attached to the stair railing

(see installation view). On the opposite wall of the stair railing was a set of mirrors reflecting the light from the flashlight "head" back to the photocell. When a person walked up the stairs and intercepted the beam, this set off a tone. Having in mind only that I wanted an ascending scale when ascending the stairs, all other factors were determined accordingly. There were numerous stops and starts, cold calculations and wild guessing. However, the result was, even with my limited electronic knowledge, quite interesting. That first walking on the stairs one late March morning was "magic". To actually hear notes sound in an ascending scale as I walked up the stairs was something I thought I had heard many times, but now it was a reality and others could experience this fascination as well. What I had not anticipated were the patterns generated by two or more persons on the stair. The interaction of persons with one another created a series of notes. People pleasantly coerced to make music and therefore interact. This was the "essence" of Soundstair and in its embryonic form, there was great potential.

However, my limited electronic knowledge restricted the piece's capability. Although I could vary the pitch of each note, there was only one kind of timbre, namely a high-squeak square wave with a sharp attack that irritated those who used the stairs a great deal. Also, the photocell system was not good enough, and changes in the ambient light triggered the tones. (This in itself might have been a nice piece as if the sunlight were "walking on the stairs". However I had designed the system so that when a light beam was blocked, the tone remained on, like an organ keyboard. Consequently, the piece would make continuous sounds all day and became annoying). Vandalism occurred and

became an important factor in the redesigning of the visible hardware. People stole the exposed mirrors reflecting the beam, thus turning on the tone continuously which annoyed those near the stair. Finally, the master console was stolen so I removed the rest of the installation hardware.

In designing Soundstair Two, I attempted to deal with all the specific problems presented on the first piece. The most critical factor and an important artistic one was the timbre of the tones. If I were to create a truly improved version I needed to have variation over the timbre and experiment with the possibility of changing moods on the stairs through the quality of notes. At that time, I did not have sufficient technical capability to design the necessary hardware. However, in the late Spring of 1977, I met Bob Dezmelyk, an MIT undergraduate in Mechanical Engineering. Bob had been a jazz bassist and knew a great deal about both electronic music hardware and its design. He was intrigued with Soundstair and we talked at length about possible improvements if Soundstair were to be rebuilt. As a result, I asked him to design a polyphonic synthesizer (see photographs).

The synthesizer was much more complex than either of us imagined. It took us three to four weeks to build a collaboration between engineer and artist that was often pushed to the limit. However, Bob's design worked. We had a 16-channel polyphonic analog synthesizer with individual timbre control, three filters per channel, and individual attack, sustain and decay (see photographs). With this machine, I was able to soften the quality of the notes, and as one will read in the "Participant Feedback" chapter, create pleasing tones.

A second feature of the Soundstair Two is the trigger tone system, sounding like a piano keyboard, instead of a continuous tone system, like that of an organ. When an individual breaks the beam, a tone is fired once and decays. This represents more a vandalism - influenced decision than an aesthetic one, although it results in a definite audial improvement. In Soundstair Two if any of the mirrors are removed, a tone will only fire once; It does not remain on and does not become annoying.

In the first Soundstair, the pitch could be varied by potentiometers like the volume control on a radio. But these would drift and cause dissonant and sour chords when groups of people were on the stairs. Consequently, in Soundstair Two, Bob designed a system of 100 fixed tones from which I can choose, similar to choosing notes on a piano. This prevents drift in the tones while giving us more than enough variety. At first tuning, I set the eleven stair tones perfect 4th's apart for strong consonance and fundamental harmonies. The synthesizer and all other electronic "brain" equipment are in a nearby closet and connected to the exposed hardware via a shielded-metal cable.

Concerning the design of the exposed hardware, avoiding vandalism has been an important consideration. Everything is constructed out of aluminum and housings are placed over the mirrors (see installation photographs) so they cannot be reached. Furthermore, a cut-off timer is placed at either end of the piece so that those who do not wish to participate can simply turn off the work temporarily. (Mark Mendel, a CAVS fellow, who has had many public projects vandalized had a long discussion with me about this feature and the right of a participant to turn off

the work. His feeling was not to "give in" to this attitude. However I feel destruction and the repercussions that it catalyzes should be avoided at all costs). As mentioned earlier, in the first Soundstair, the beam often fired due to the change in ambient daylight, so I designed a double lense system to focus the beam both going out at the light source and returning to the photo-transistor (see drawing in appendix). This system seemed valid in theory and in practice proved to be excellent. Focusing the light at the photo-transistor allowed me to concentrate the beam in a very tiny area of the transistor's face thus boosting the beam's intensity and making for a very efficient system. As a result of all these improvements, Soundstair Two illustrated its full potential as an environmental/participatory work, catalyzing new ideas and reactions from the participants.

THE HISTORY OF STAIRS IN ART

....."To speak of the ups and downs of stairs would seem like punning, had history not left a graphic record of their shifting importance. In the past, stairs always ranked with the noblest elements of architecture. Ascending or descending a flight of stairs called for a display of grace unmarred by any outward signs of physical exertion, while steps leading to altars and thrones imposed a veritable ritual of movement. Architects were obsessed with building monumental, not to say transcendental stairs, seeing in them a symbol of man's desire to rise above the commonplace. The fabled ziggurats and hanging gardens of old were truly apogees of stairs. So would the Tower of Babel be if that ambitious project had not been thwarted by the Lord.

Ever since man failed to get to heaven by way of stairs, their importance has declined, reaching its lowest ebb in our day. At a time when only underprivileged people walk, when the word "pedestrian" has become synonymous with dull and slow, stairs barely survive as back stairs. Flat-footed, down-to-asphalt industrial man is loath to assault as much as a single flight of steps. He considers climbing stairs as atavistic as climbing trees. Besides, stairs have been largely superseded by machines: elevators, escalators, chair lifts, and cable cars. Except in domestic architecture, stairs are but the last resort to be used only when other means of vertical transportation fail. . .

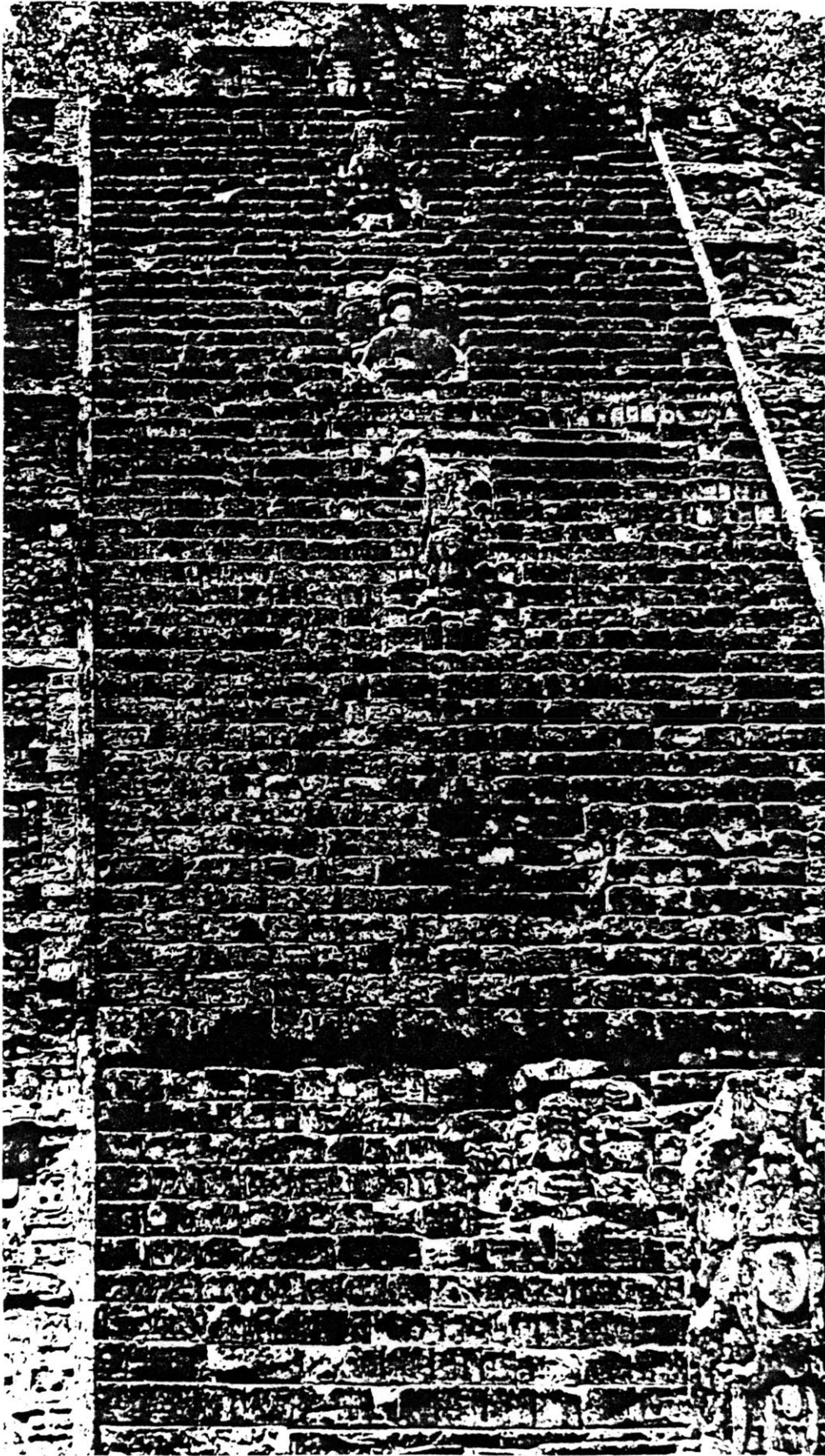
Rudofsky, Bernard, Streets for People, P.165-166

The attitude towards art and stairs in architecture has varied a great deal over time. Without attempting to illustrate its entire history, there are a few examples which may illustrate the changed importance and attitudes of the stairway that Bernard Rudofsky writes about.

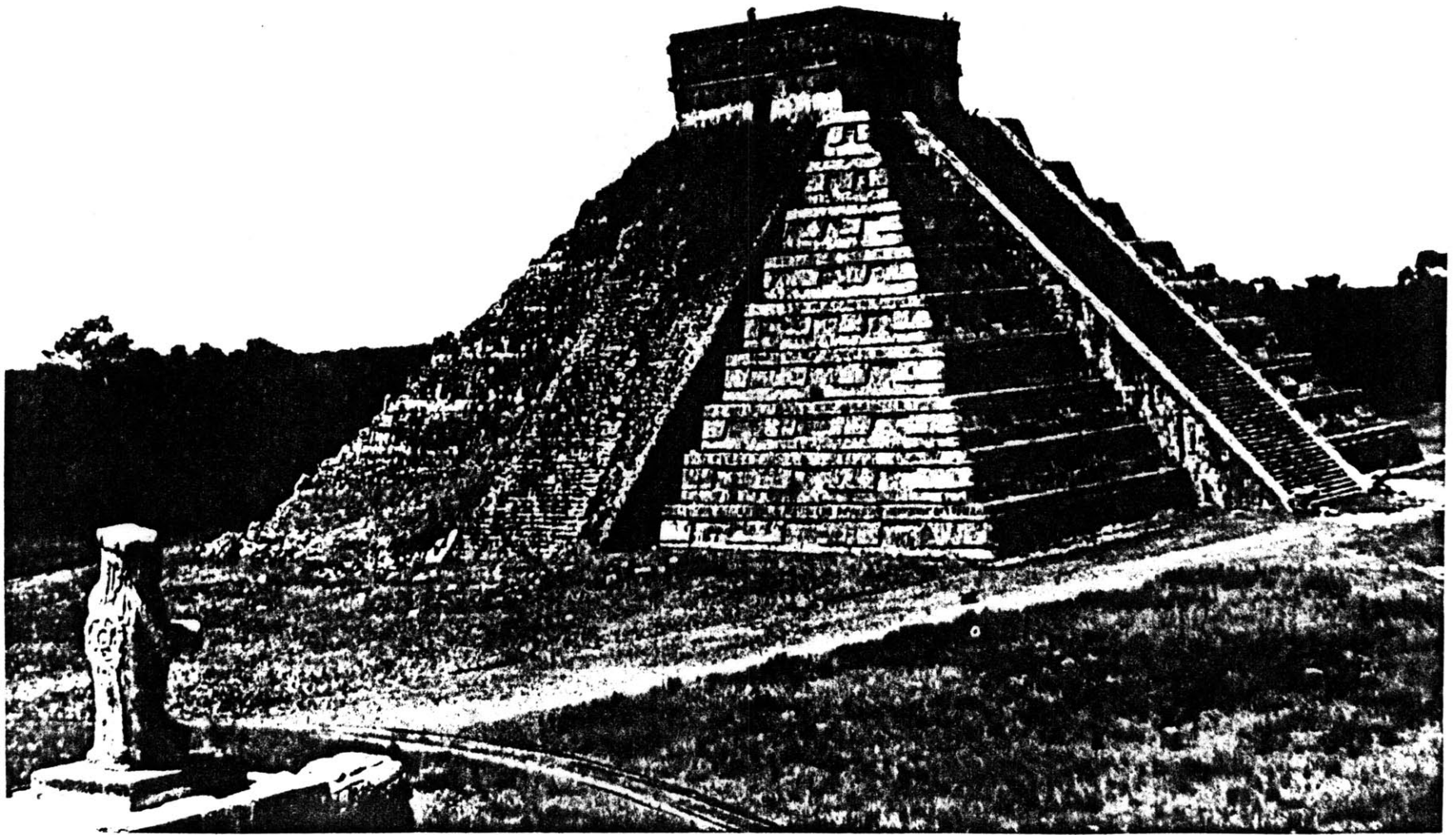
In ancient cultures, stairways were a very important part of the religious architecture. Serving as both a functional and symbolic element of elevation "towards heaven", in many buildings the stairway was the main portion of the structure. For example, in the Mayan culture, the "hieroglyphic stairway" (A.D. 545-745) was a free-standing "sculpture" composed of over 2500 signs carved into the structure. A more well-known example in Mayan culture is the Chichen-Itzá, Castillo, a temple on top of a seventy-eight foot stepped pyramid. Each step or terrace symbolized one of the underground worlds. Disciples could walk up one of four grand stairways to the 19x14 foot construction atop. Clearly, the use of stairs in this case as in most ancient religious architecture was designed to convey meaning through scale and movement.

In Renaissance architecture, one of the grandest stairs ever constructed is Michaelangelo's staircase leading from the vestibule to the reading room in the Laurentian Library designed in 1525. His treatment of stairs, not merely as a transitional zone between two rooms, but a "tranquil domain, cool and dim, Purgatory, a place of catharsis in which to prepare for the well-lit reading room... de Tolnay, Charles, Michelangelo-Painter, Sculptor, Architect, p.133.

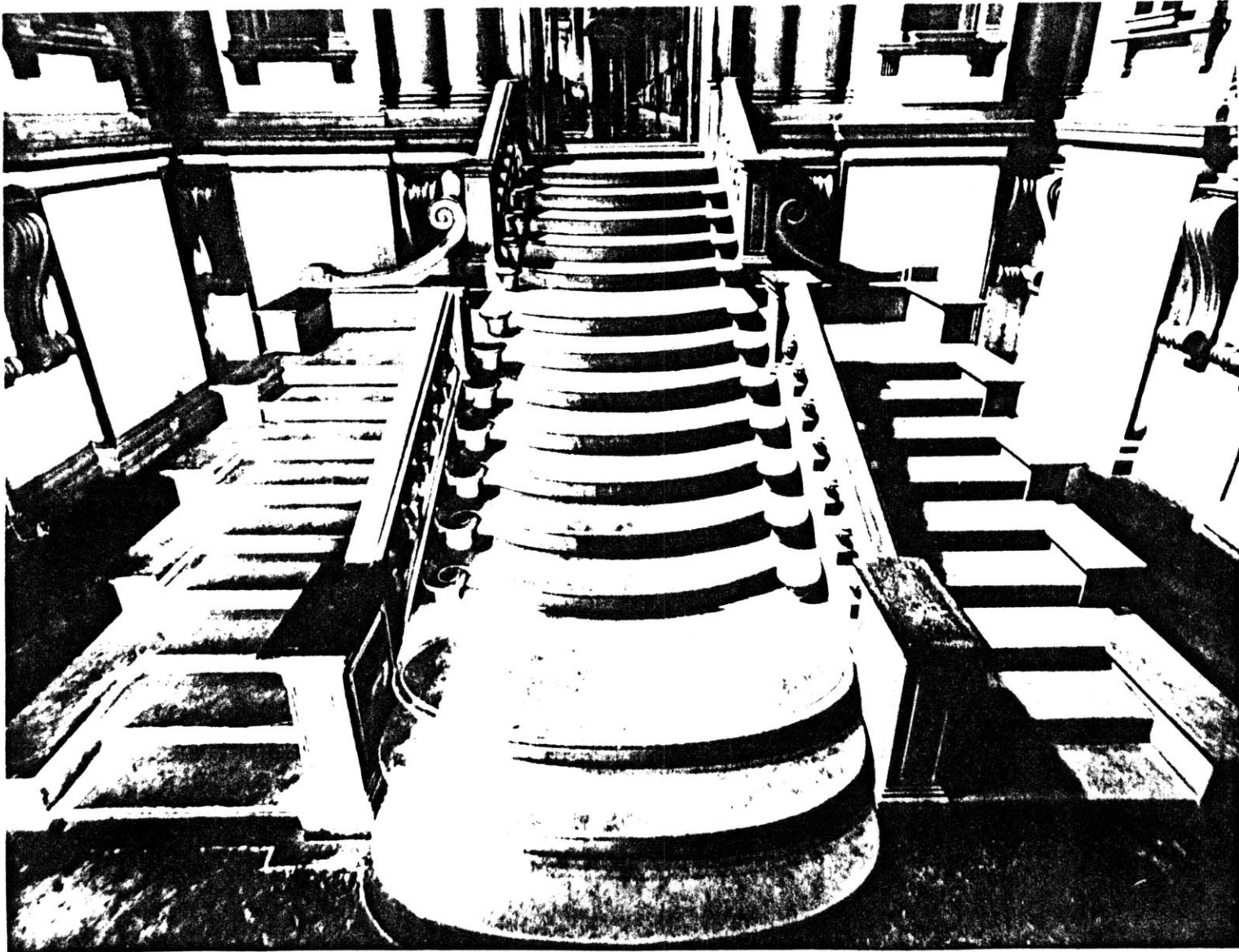
is astounding. Furthermore, the stairs stand as a sculptural object in the space completely dominating the room, not just to one side as a means of entering the space. This relation of the stair to the architectural environment, dealing with the control of human feelings is



Heiroglyphic Stairway



Chichen-Itza: Castillo



Stairway to the Laurentian Library

lacking in contemporary architecture, yet it is evident in a number of Baroque works.

There are many examples of grand staircases in the Baroque period and, in general, the architect's attitude towards stairs was one of great exuberance. Writing on Baroque palaces in Italy, Martin Briggs states

....The overwhelming craze for display exhibited in the churches also influenced the homes of noble families in the direction of fine staircases and approaches as well as in the suites of gorgeous apartments... it may be recalled that the natural obstacles of the sites produced the finest series of vestibules, cortili, and staircases ever invented by the mind of man. Briggs, Martin, Baroque Architecture, p. 125.

One fine example of this work is the Scala Regia designed in 1663-66 by Lorenzo Bernini. Beyond the tricks of perspective space created by this master, there is the simple treatment of the stair as a "celebration"; the fascinating treatment of light, vaulted space and sloped site that made this period of architecture so rich.

The treatment of stairs in painting both as a spatial and symbolic element is abundant. Although there are numerous examples of this in the Renaissance, Baroque and earlier periods, two examples from the modern era have always been an influence in my work. One is "The Stairway at the Bauhaus" by Oskar Schlemmer. Schlemmer's portrayal of energies on the school stairs as well as the painting's formal color and design are strong examples of the pictorial use of stairs in painting. The other painting is "Nude Descending the Staircase" by Marcel Duchamp. Although not now considered one of his most influential works by some artists, Duchamp's various intertwined metaphors of nudes, stairs, motions of passage, and dematerialization represent the different aspects of the



Scala Regia

creative process and his exploration of cinema.

Although stairs are again being used for exciting spatical experiences in art and architecture, it should be mentioned that, despite commercial overtones, set designers have always been utilizing these concepts. Las Vegas floor shows, the Paris Lido, Hollywood and Busby Berkeley productions use stairways as an integral part of choreographed works, exploiting the joy of celebration and movement.

In the contemporary art world, certain individuals and groups have used stairways in various ways. Alice Aycock is a contemporary earthworks and environmental artist, basing most of her ideas on Gaston Bachelard's Poetics of Space, has done a number of environments where ladders or stairs, as part of level changes both below and above ground, are instrumental in exploring concepts of "sacred and profane" space. Other artists including Robert Morris, presently a major conceptual artist, and GRAV, a group of artists in Europe, have explored many associations of stairways in the Twentieth Century.

PARTICIPANT FEEDBACK/CRITICISM

With the exception of environmental art students working in stairway 7, the stairways at M.I.T. have not been developed as any sort of "celebration to movement", but insignificant transition space. Concerning Soundstair, what separates this work from the early designs of Haus-Rucker Co., the Magic Theater and most attempts at using stairs in art, is the integration of the work with an existing environment.

Soundstair is an attempt to transform an existing space rather than

create a new space. Its objective is to clearly illustrate the animating possibilities of sound in the built environment. This is an important artistic possibility which I believe too few architects and builders consider. Existing spaces can be transformed and renovated without destroying their inherent beauty and energy, and Soundstair's feedback from both projects testifies to this fact.

A comment sheet was placed on a nearby wall to the stairs which allowed individuals to "soundback" about the project as well as give me some indication of their feelings concerning Soundstair and environmental/participatory art. In the first Soundstair, although the tones were at times unpleasant, participants on the whole supported the project and expressed keen insights about the work. One individual said -

I think it's a fine idea and greatly lessens the dehumanizing effect of the corridors here. I hope to see and hear more in the future. Good luck getting funding and thanks for making the 'tute less unpleasant.

Another stated -

I'm not crazy about the sounds, but I must admit Soundstair has made me more aware of the acts of ascending and descending than I've ever been.

Many comments calling for varying compositions, and counterpoint and showed enthusiasm for the musical aspects of the work. When the master control was stolen, I received disheartened comments concerning the theft and expressions of hope that Soundstair would return.

Since the implementation of Soundstair Two, I have received fifteen pages of comments with only rare negative criticism. There are applause and congratulations for the improved work as well as other interesting anecdotes.

Students write,

Tremendous! Now the stair has a sense of humor!

I'd rather dance your stairs than take the elevator!

Big tonal improvement over S.S.I. Keep up the good work.
Good luck, I hope people treat this stair a little more
respectively. [Sic]

Improves personal relations of a passing order.

Your are giving people such JOY! Thanks.

When I was on the stair a few days ago making some tonal changes, one woman stopped and asked if Soundstair Two was my project. I replied affirmatively. She stated how happy the piece made her feel about the space; furthermore, that no one took the elevator between the 3rd and 4th floors anymore, so that one could play on Soundstair Two. I have observed numerous people who might otherwise walk through this space quickly and without expression, now smiling, laughing and interacting with one another. Soundstair Two is transforming the stair from a transition space into an active space of joy. It is an environmental/participatory work; one which catalyzes life-supporting energy and stimulates dialogue about art and technology.

HOPES FOR THE FUTURE -

Art in the thick of it. Art in its broadest sence (architecture, planning, design, politics, etc.) as the environmental explicator and energizer of cultural change. (Art.)... mobilized against the "reification and repression" of feelings and creative instincts on a broad scale; it aims to return the life to the streets to experience the city's erogenous zones; to encompass the open-ended strivings of citizens, and explore the world; to grow synergistically in a fluid balance; to perceive the layer of fantasy-reality between ourselves and life; to release the drama all around us; to experience it in drunk and sober, vivacious and placid ways; to make provision for nonmaterial needs and aspirations and to create a world of variety...J. Burns, Arthropods, p.11.

Where to go from here with Soundstair may seem a premature question at present. However, new possibilities are generated daily-"a healthy sign" indicating a living, breathing work. Soundstair is not a sculpture; it is not an idea which sprung forth "full blown". Rather it is an instrument, a communal musical instrument. At present I often go to the space to observe and to work on the synthesizer with other interested individuals, generating new tones and timbres. At this point, Soundstair is as much a process of discovery to me as it is to others, catalyzing new ideas from all involved.

Although the timbres of the synthesizer alone present endless possibilities, I would like to experiment with other concepts as well. One such idea, "Radio Dada", would be to disconnect the tones from the synthesizer and substitute taped poems or radio station channels. As a result, individuals walking on the stairs would trigger random word formations and interesting phonetic sound structures. Mark Mendel, poet and fellow at the Center for Advanced Visual Studies, is working on a poem for this piece presently, and we hope to do this as a one day event in the near future. A second idea is to couple the synthesizer with a small computer which would give again numerous possibilities. One thought is to sequence a series of different timbres, from flutes to kettle drums, and allow these to change throughout the day. Consequently, walking on the stairs at 10 a.m. the tones might resemble oboes, while at 11 a.m. they would resemble cellos. Imagine if there were a symphony of tones throughout the day! Also, with the computer, each light system could fire a series of notes, or the bottom light system could trigger a memory pattern of the previous two minutes. All these are real possi-

bilities and experiments I hope to explore in the next month.

One obvious use of Soundstair Two would be to film a dance/theater piece exploiting its many musical and dance possibilities while also exploring the historical context of stairs in art. Presently, "The Stairway of the M.I.T." would use a number of dancers actually "playing" a piece of composed music with it. Other segments might compare the different movement patterns of dogs, cats, children, tennis balls, slinkies, and on and on. Soundstair has become a generating force for new ideas not only for the participants but for me as well.

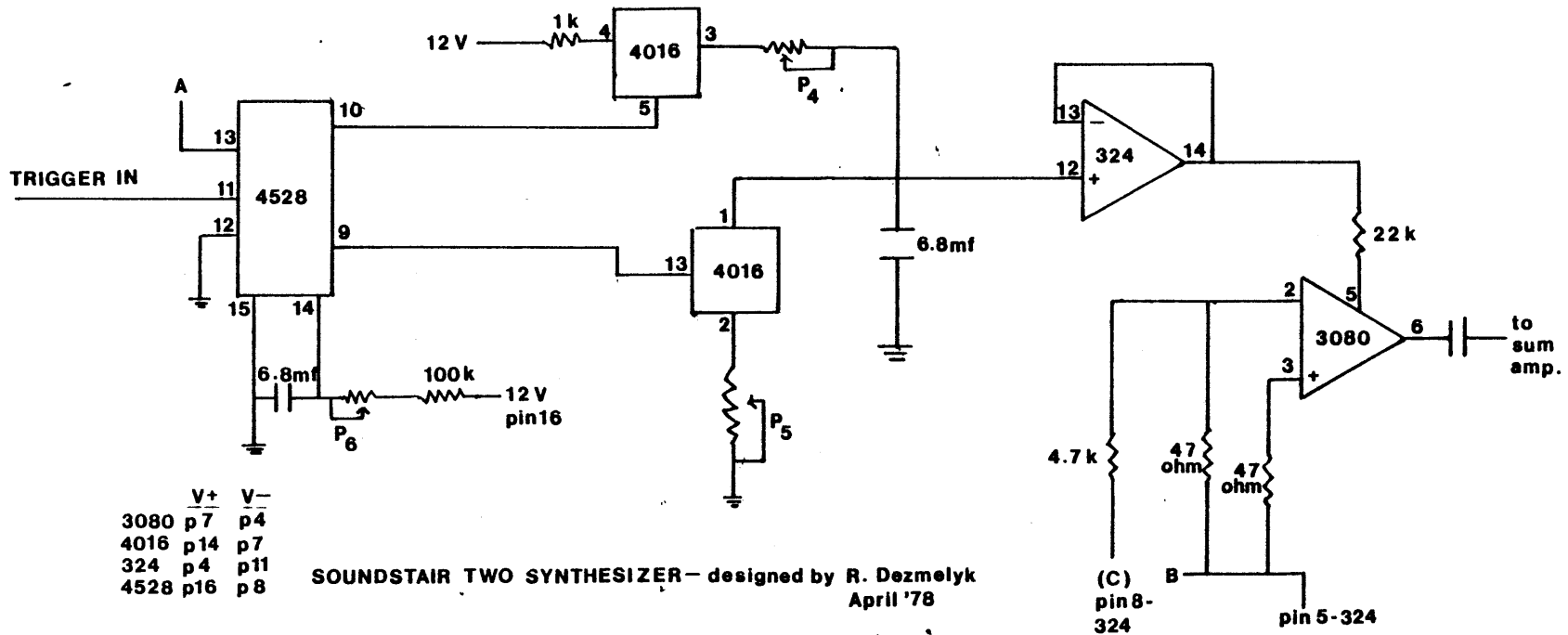
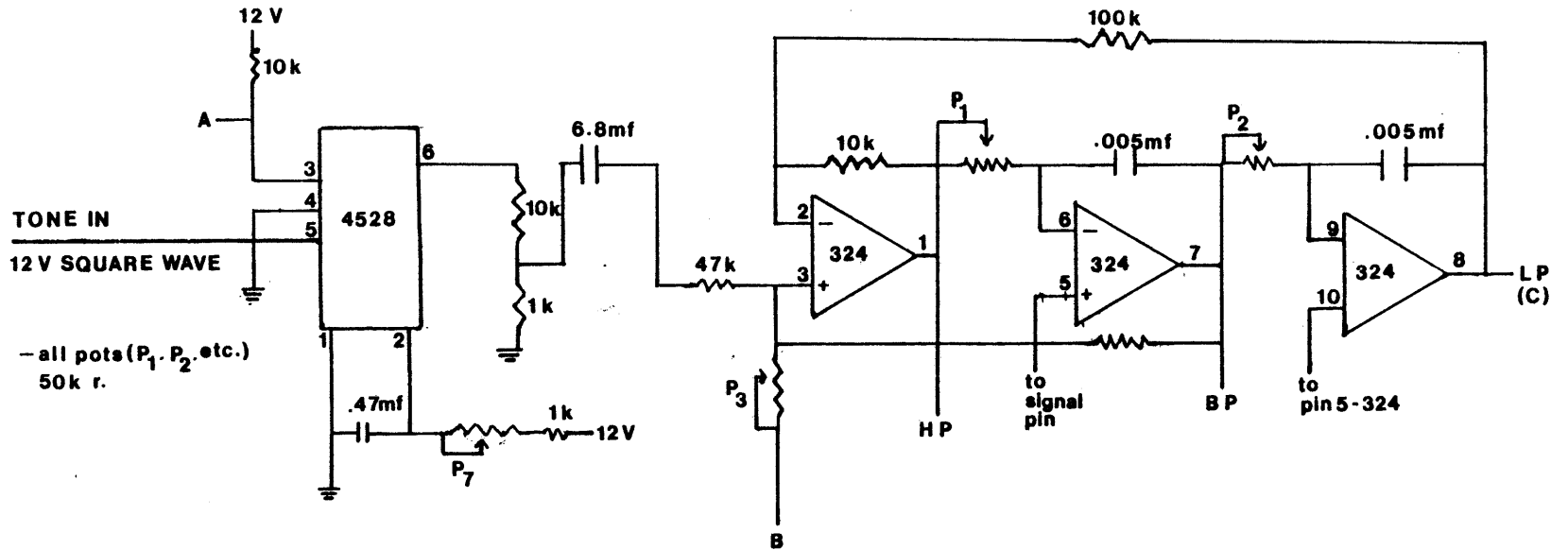
An idea for an outdoor sound installation is Soundwalk: The 21st Century Japanese Garden. This consists of the "brains" of Soundstair, i.e. the synthesizer, computer and power system, coupled with a set of pressured sensitive, glass-topped boxes about 18" square, and 12" deep. The boxes have a floodlight in the bottom pointing straight up and are placed in the ground so the glass top is at ground level much like a series of stepping stones. When an individual steps on one of the boxes, the box lights him or her up from underneath while simultaneously triggering a tone as in Soundstair.

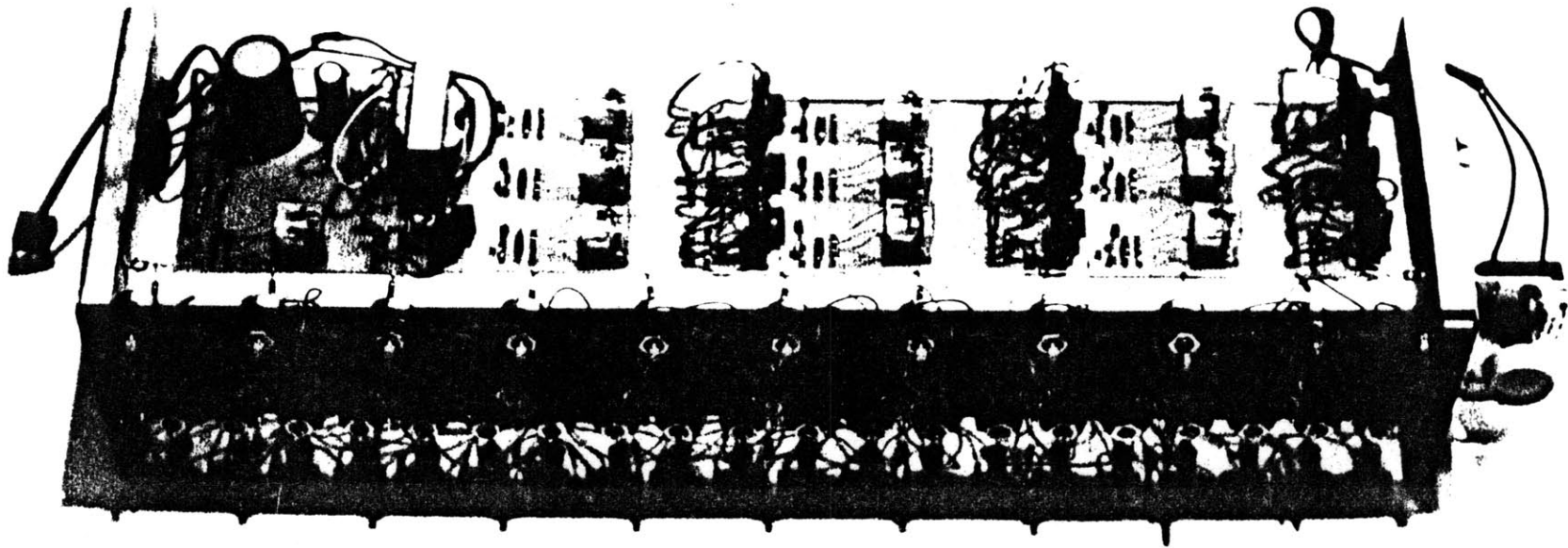
In conclusion, I would like to reflect on some words of James Schelley, an author quoted by Jaques-Dalcroze -

"Rhythm is to intuition, emotion, and aesthetics, what scientific order and logic are to the intellect. One of the essential qualities - if not the essential quality - of rhythm is its power of conveying the presence of life. Mechanical order, on the other hand, is objective and impersonal.... Time passes and is scientifically recorded by the mechanical oscillations of the pendulum. And yet, for some of us time 'ambles withal', for others he 'trots and gallops withal', for others, again, he 'stands still withal, ...Dalcroze, Jaques, Rhythm, Music and Education, p. 316.

My long experience with musical rhythm as well as visual rhythm has illuminated this point many times. The power of rhythm through sound is something I have tried to use in Soundstair to transform an otherwise audibly normal transitional space into an exciting, thought-provoking installation. Through Soundstair and Soundstair Two, I have hoped not only to have made a contribution to the M.I.T. community regarding the synthesis of art and technology, but to have illustrated the real possibility of more human, life-supporting spaces in the built environment.

Appendices

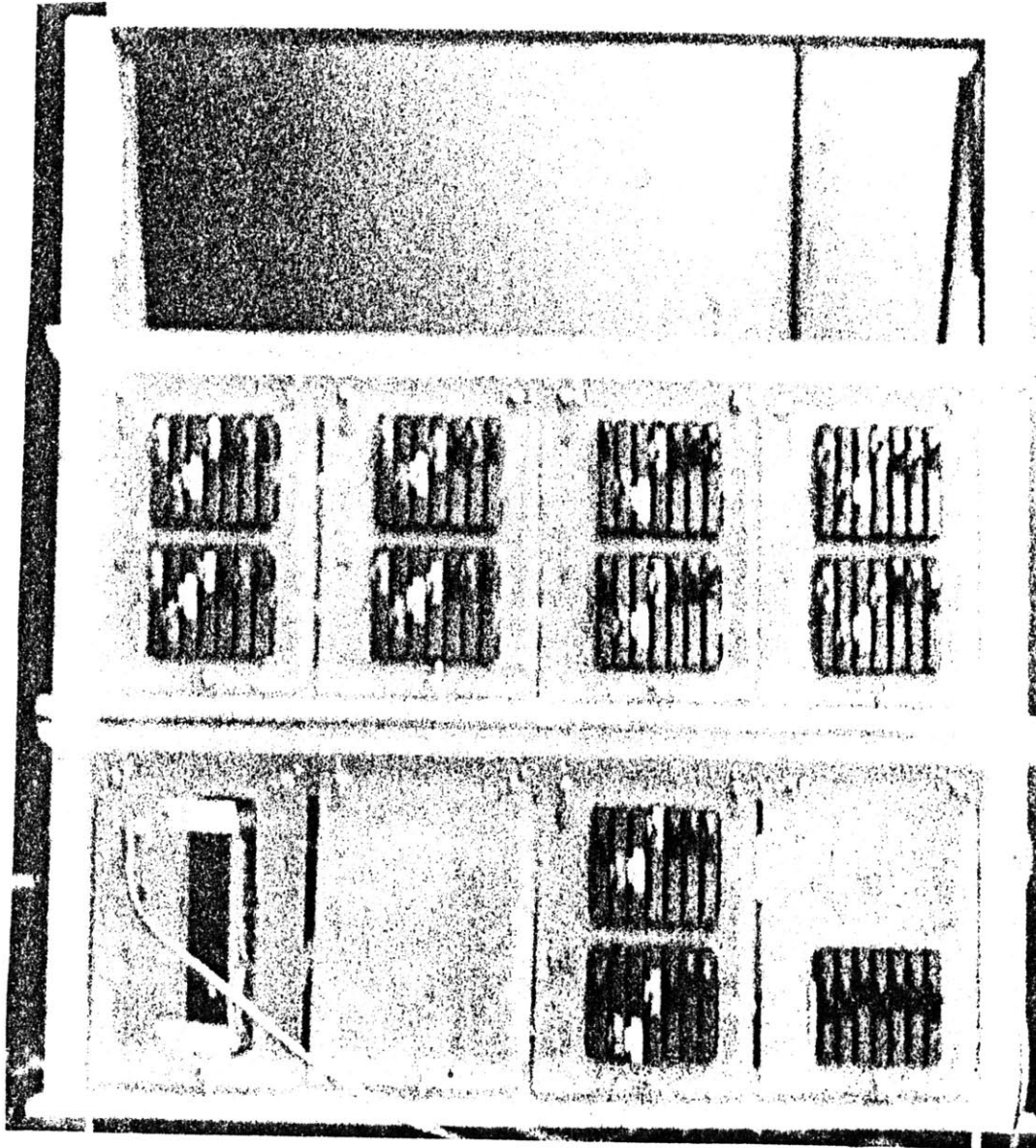




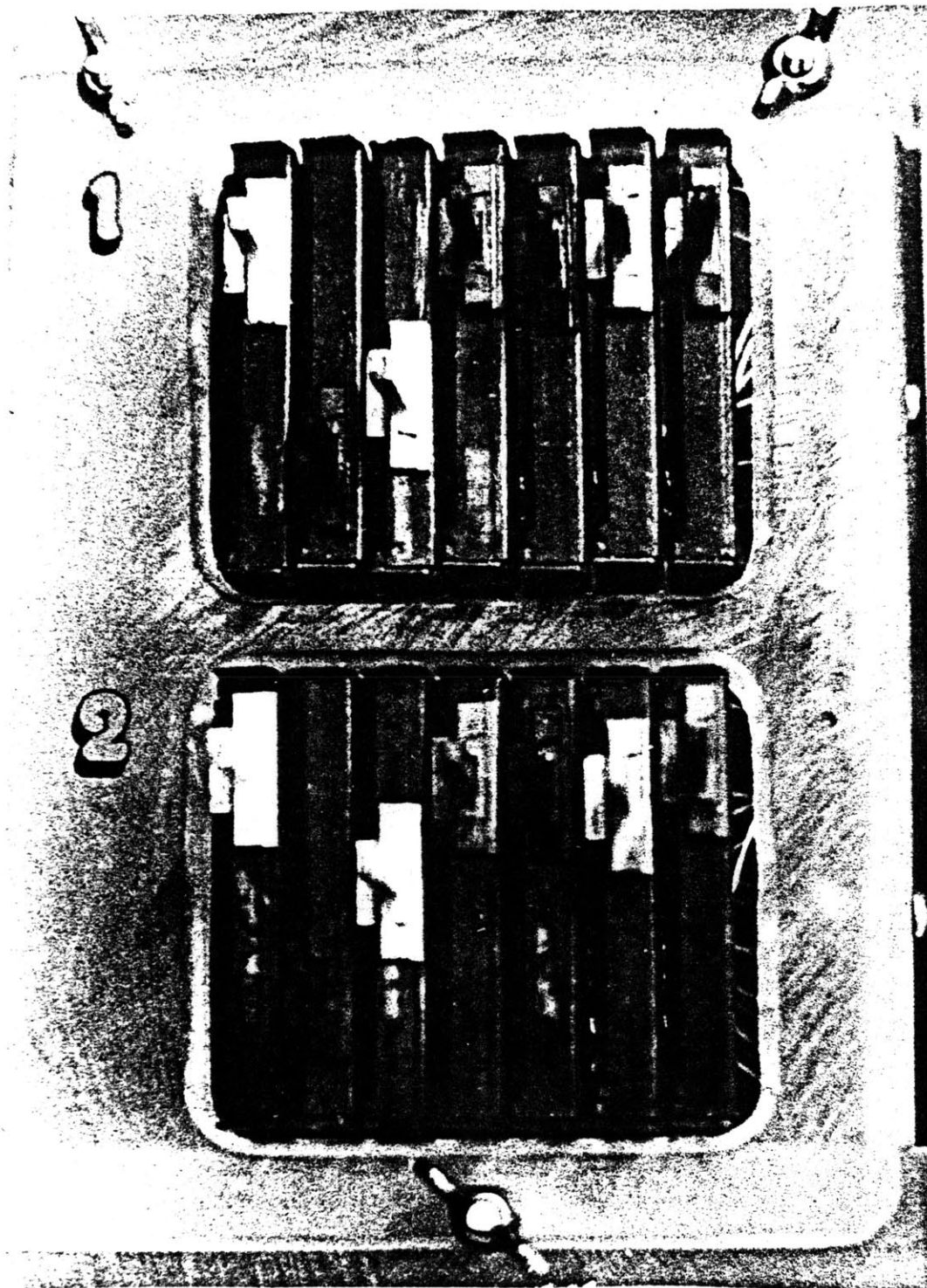
Relay/oscillator system. Soundstair, Spring 1977.



Installation view - Soundstair, Spring 1977.



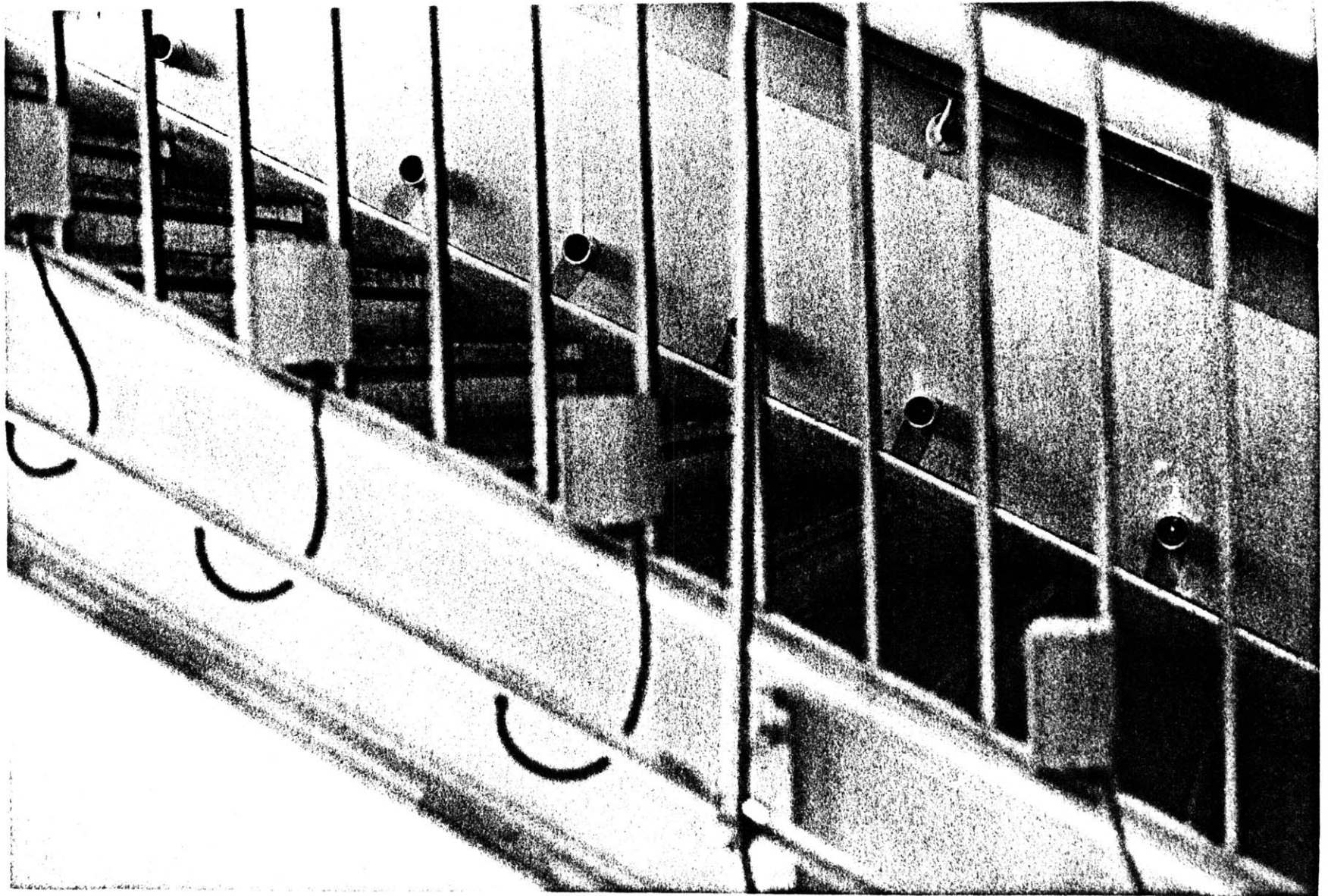
Synthesizer - Soundstair Two



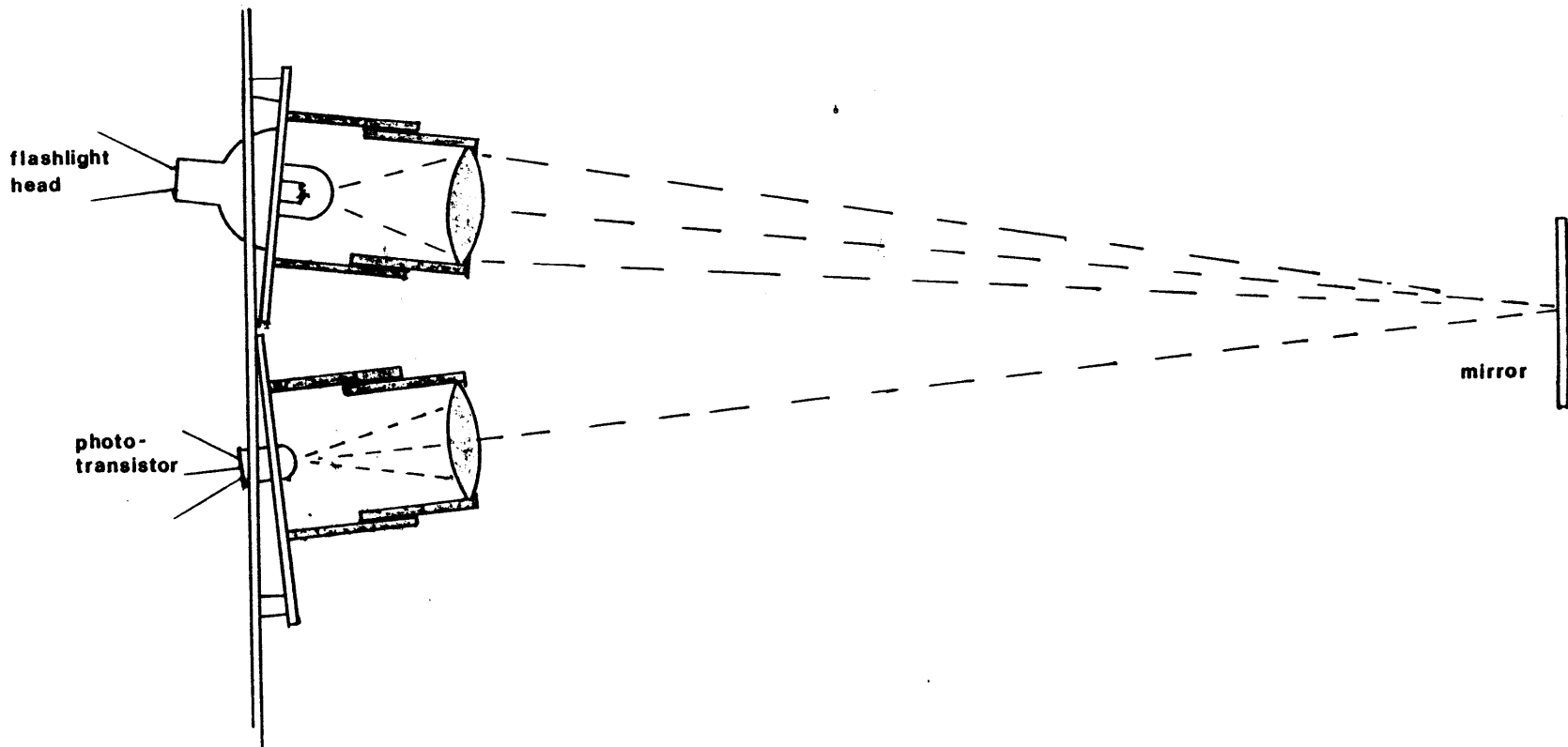
Individual synthesizer switch panel. From left to right.
Pulse with modulator, attack, sustain, decay, three filters



Installation view - Soundstair Two



Installation view - Soundstair Two



SOUNDSTAIR TWO DOUBLE LENSE SYSTEM - designed by C. Janney
April '78

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