Michael Cain wrote to us for Pulsa, a team of "researchers in programmed environments," in April, 1969:

> Pulsa proposes to realize for the L.A. Museum an environment sensitive to aspects of its own condition through an input system integrated into our existing outputs and controls capable of receiving and interpreting many kinds of information from its surroundings. In the past we have developed a variety of instrumentation for generating and outputting information as perceptible wave energies and are most recently involved in the design and programming of large scale outdoor matrices of strobe lights and loud speakers. It has long been our goal to feedback information from the environment of the matrix to the matrix as its program.
>
> We feel fortunate in having an opportunity to do research on environmental sensors in L.A. where the special manmade ecology is provoking such attentive environmental studies, and are convinced that local industries will be eminently capable of helping us realize our project. We wish to consider acoustical, optical and infrared, radio, and radar scanning devices as means of designing sensors capable of determining the behavior and distribution of persons, animals and plants, local air and temperature conditions, ambient light and sound, and the outputs of the system itself. These sensors will require interface and software to adjoin them to the small tandem time-shared computer with which we intend to be controlling all of our future installations. We should like to work on this proposal with Information International, R.C.A., Litton Industries, T.R.W., and especially Gilphilin, for help in acquiring a radar system.

Our proposal for L.A. would entail using these information input devices in a large space, hopefully a square mile of open land, in association with a programmable matrix consisting of 128 strobe lights and an equal number of loudspeakers in an array conformed to the site. This system should be extant and available for presentation during the L.A. show after its initial fabrication and installation in the World's Fair at Osaka. A Digital Equipment Corporation PDP-8 computer and Grason-Stadler multiplexer with five input-output stations would accept information from the sensors and from a teletypewriter and generate patterns and sequences. This information would be transmitted to a second computer, a General Automation SPC-12 and there expanded into specific instructions to a signal synthesizer and to the output devices which would be digitally controlled. By the spring of 1970 our previous presentations in Central Park, the Guggenheim Museum, and Osaka will have given us facility to take full advantage of the very great flexibility of this system.

If other industries are willing to donate the time and money for collaboration on a second proposal, we should use the opportunity to experiment with sources of light and improve further our design for output devices.

The ideal device would include a source of light digitally controlled and widely variable in intensity, duration, and spectrum. Gas discharge tubes, fluorescents, incandescents, electroluminescent panels, phosphors and fluorescent pigments, and chemilumines cent materials have all been useful to us but none have been fully satisfactory. We should welcome assistance from Union Carbide and International Chemical and Nuclear among others.