

DESK WATCH

by Frank Harmon, AIA

EDUARDO CATALANO, A NATIVE OF Argentina, taught at NCSU's School of Design from 1951 to 1956. The house he built for his family in Raleigh — with its soaring roof made of laminated wood — became an icon of modern architecture and received praise from Frank Lloyd Wright and *Time Magazine*, who described Catalano as "one of the 10 most influential architects of the world" in 1956. Catalano left NCSU to teach at MIT and now lives and practices in Cambridge, Massachusetts.

An exhibition of Catalano's work opened April 10 at the NCSU Visual Arts Center. In response to my request for an interview, Catalano sent written answers to the following questions.

Harmon: *What are your thoughts on architectural education today?*

Catalano: In spite of the introduction of computer technology into schools, the educational approach has not changed in the last 60 years — not since Walter Gropius revolutionized education in America. My mind is revisiting all the great innovations introduced in all the fields of science and technology since that time. With the hope of being constructive, I will mention several areas that require radical change.

One is the need for creative research, without which no ideas or processes can advance. We need to treat such subjects as how to create a new physical environment, especially an urban one, how to work with industry in the development of new technologies leading to total systems and industrialization and studies to be performed in the science of materials in order to correct physical material deficiencies, to simplify construction and to provide it with more nobility.

No school of architecture has yet faced the reality that architecture and landscape architecture are indivisible endeavors. Both are the makers of our physical environment. Architecture needs to become more organic, to join the systems of the earth and to become the container of green nature, the contents. Their unification would mark the end of styles. No one has better described architecture and nature than the poet e.e. cummings: "All the visual offenses built by man on the earth are silenced by the outburst of spring."

Harmon: *What is the goal of architectural education?*

Catalano: I see the goal of education as not to "train" future practitioners, but to educate, to inspire, to teach how to think, to advance knowledge through creative research.

However, this seldom happens in schools of architecture. If we observe the processes used to teach architectural design, we will see that their main goal is to "train," because each exercise is a simulation of professional practice. Each one starts with a building type, a program, a site, some regulations and at times a "client." The intention is to present the students with the "real world." This process is obsolete, unimaginative and most dangerous. First the students begin to believe in the forces that are supposed to shape the "real world." There is no such thing. The real world varies according to the attitude of resignation or of high aspirations of each individual. What is insurmountable to the first can be easily overcome by a creative mind.

Besides, by designing a number of building types, the students become acquainted with the characteristics of a species without ever analyzing in depth what the genus of that species is. As a result, they do not know that all the species, or building types, have common denominators, or constants, which are the main components that all designs should emphasize. Repeating an aphorism of Oscar Wilde: "They know the price of everything and the value of nothing."

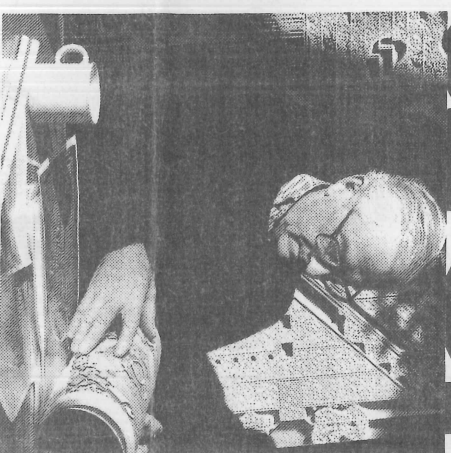
Architectural design should comply with three natural laws: The preponderance of the genus

over the species (Linneaus), the theory of evolution and the survival of the fittest (Darwin).

These three theories lead to universal or genetic buildings as systems of change, transformation and growth. They are extremely flexible, perform multifunctions, can change form and size at will while preserving the organic properties of their origin. They are the fittest to adapt to the industrialized process and to survive time.

Harmon: *What are the possibilities for computers in architecture?*

Catalano: They are unlimited. But in this age of systems, the computer is not being used to develop systems in architecture. It is directed, instead, to perform as a clean efficient draftsman or renderer, as a secretary and as an archive. It should be used primarily as a generator of new system-forms, as a "transformer" of dynamic three-dimensional systems in space, as a creative geometrician, as a descriptor of complex structural configurations in which the parameters can be constantly changed. This would provide us with multiple variations of flexible geometrical-



structural systems satisfying a myriad of functions, physical conditions and scales. It would lead to a new process of design. First we develop a vast vocabulary of flexible systems of geometry, structure and space: the "containers." Then we relate given functions, the "contents" to the most appropriate one.

Harmon: *Can you discuss the significance of creativity and freedom of expression in architecture?*

Catalano: Creativity and freedom of expression have been associated with art, while order and determinism were associated, in the past, with systems. That distinction is arbitrary today as the boundaries of art are expanding and as systems are becoming dynamic concepts that create others in a process without end.

Creativity and freedom of expression lead to unique and inflexible forms. Systems lead to a universal or generic approach to design that allows buildings to be adapted to continuous change. This property is essential in an urban context because buildings, by becoming multifunctional, can survive the passing of time.

Systems are not static forms but patterns adaptable to limitless variations, thus providing the same freedom of expression that is attributed to art. The difference between the two concepts, as applied to architecture, is that systems can also provide a poetic message, but with a greater elegance than art. This is due to their mathematical precision and economy of means.

Harmon: *How would you define research in architecture?*

Catalano: No school or architectural office is engaged in such an endeavor. I am not referring to an activity falsely called research which is based on the study, analysis and repetition or imitation of what has been done by others. I am referring to creative research. The one and only. Its mission is to advance ideas, processes, to discover what exists and is not seen, to unify apparently disparate systems, to improve our technology, to envision new environments and to broaden the services provided by computers. There is no limit to how much remains to investigate.

Let me list a few subjects that are essential to explore.

One is the development of a vision for the cities of the future. Genetics and cybernetics are already pointing a clear path because both sciences are radically changing the way we live and work. This begins to change the nature, size and location of our buildings, and the integration of their function and physical relationships.

excellence in architecture

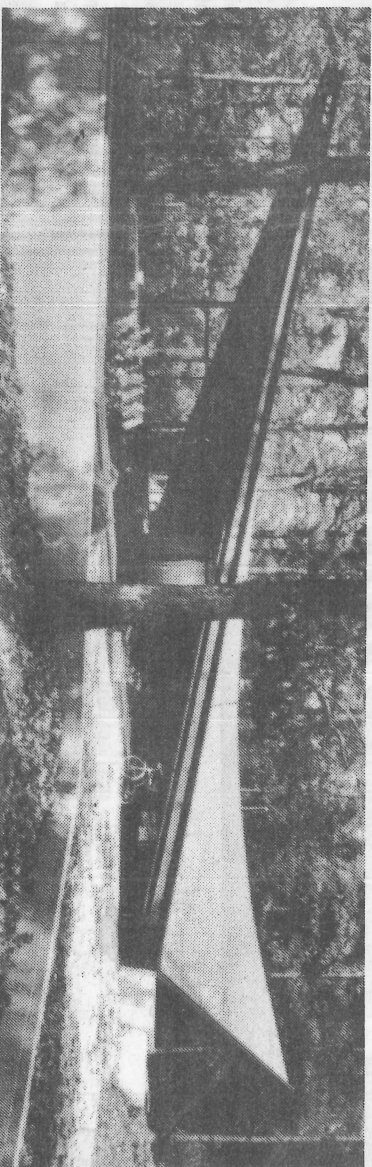
AN INTERVIEW WITH ARCHITECT
EDUARDO CATALANO

Another is the curriculum, which should reintroduce the study of spatial geometry, of systems of transformation in space, without which the use of computers becomes confined in scope and architecture [becomes] limited in imagination.

Lastly, the schools should perform research in collaboration with industry, which our technology depends upon so much. Industry manufactures parts and subsystems without any coordination or understanding that a building, to be a system, needs to be much more than the sum of its parts. Until this takes place we will be patient consumers without a voice, and architecture will become even more backward.

Harmon: *What is your opinion of historic preservation in architecture?*

Catalano: That it is our responsibility to preserve buildings that have a true historic or architectural value, the latter not only as urban art but as a symbol of the culture of a time. However, many buildings that are being preserved in the name of history have nothing to contribute. They are simply *old*, mostly imitations, inflexible or out of place. Communities have developed a strong voice in preserving them out of ignorance about what is authentic.



The Catalano House in Raleigh

Also out of sentimentality. Architectural preservation has no place in our educational system. Any competent architect can perform the role of a "preservationist." Those who claim that it is a specialty have created a myth for their own professional survival.

Harmon: *Can you discuss the meaning of systems in architecture for you?*

Catalano: I will discuss this broadly by relating architecture to its urban context. By context I do not mean its character but something more critical, the ability of cities to adapt to continuous change. Therefore, its buildings must be conceived as systems of change, transformation and growth.

As a building system evolves through phases it does not have a final form. Cities should be forever modern. By modern I mean that they should fulfill the highest cultural, human and environmental aspirations of man, expressed by means of the most advanced technology of a given time. However, due to the forces of tradition, preservation of the false, architectural self-expression, as well as a lack of political vision and an erroneous sense of economy, urban changes are always much behind the times. As a result, each generation has been condemned, for centuries, to live in the past. I am not thinking about Raleigh, but of the many aging and densely populated cities of the world. Raleigh is still a virgin prairie when compared with them.

Harmon: *What were the strengths of the school of design at NCSU when you taught there?*

Catalano: The high level of creativity and commitment displayed by a young faculty, experimentation, research and the enthusiasm shown by the students at all levels and times. Also the high quality of the lectures, represented by the best-known architects and engineers of the world. A small city like Raleigh, hard to find on American maps, became the center of architectural education.

Harmon: *What has been most satisfying to you in your career?*

Catalano: To study with Walter Gropius at Harvard, to have been invited by the School of Design to return to America and teach; to win national architectural competitions; to write books; and to have had the chance to design with total freedom all the buildings that fell victim to my hands.

Harmon: *What advice would you give to a young architect today?*

Catalano: To make of the profession not a business but a fountain of ideas. This will prepare him to meet the challenges to be faced in the

third millennium. He is the only maker of his own bright future. Excellence in architecture is a product of creativity. This comes from within and from the daily expansion of our knowledge. ■

The work of Eduardo Catalano will be on view at the NCSU Visual Arts Center through June 27. Telephone 919-515-3503.