

THE NATURE OF ORDER

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SOME SOBER REFLECTIONS
ON THE NATURE OF ARCHITECTURE IN OUR TIME

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Professor Alexander was the first recipient ever of the AIA medal for Research, in 1970. He was honored, at that time, for his "exceptional willingness to share his scientific findings with the architectural community." In 1996, he was elected to the American Academy of Arts and Sciences.

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Foreword

I have written the following article in reply to a Commentary, written by William Saunders, and published by Architectural Record in the May issue 2002. (1) The commentary took the form of a two-part book review, the first part dealing with a Pattern Language (a condensed version of a long review that appeared in the Harvard Design Magazine, Spring 2002) and the second part presented as if it were a review of THE PHENOMENON OF LIFE, Book 1 of THE NATURE OF ORDER. (2) However, the actual form of this second part was that of a personal attack. It was plainly intended to bring the book down not by argument, but by damage to my personal and professional reputation. The commentary gives little factual indication that Mr. Saunders has read THE PHENOMENON OF LIFE. Certainly he did not explain or summarize the arguments the book contains, nor did he offer any rebuttals to these arguments.

It is unusual for a book-reviewer to avoid talking about the contents of the book which he reviews. It suggests, to my mind, that the author either did his work very rapidly, and did not have time to examine the book carefully, or that he felt that The Phenomenon of Life contains material so damaging to the present

way of thinking about architecture, that it had to be destroyed, rather than reasoned through, so as to prevent architects from reading the book at all.

If indeed that is the case, then this attempt to hide the faults of the present profession of architecture through bluster, is of interest, because it suggests how isolated the profession is from recent developments in the sciences. The book reviewed presents a proposal, ideas, and scientific evidence which, if taken together, could have enormous implications for the practice of architecture, and will, once taken seriously, inevitably change the nature of architecture in society.

An Objective Criterion Of Architectural Value

The Phenomenon of Life, describes an entirely new, scientific, criterion of architectural value. It is based on twenty seven years of carefully recorded observation.

The basic proposal made in the book, is that degree of life is an objective and observable characteristic of buildings and other artifacts, that it depends on the presence or absence of an identifiable structure which may be called living structure: and *that it is the presence or absence of this structure which distinguishes valuable buildings from less valuable, good architecture from bad.*

And this is real science, not phony social science, not work that only apes the forms of scientific investigation with manner, wording, and presentation. This is real science, in which empirical questions are being investigated, and, in spite of their inherent difficulty, the investigations are beginning to show sharable, empirical, results, which might, within a decade or two, begin to have profound effect on our society. And it is work which has massive implications for all the most basic questions of architectural design and planning.

I have written this book because of my wish to help set architecture on a firm foundation: and because of my conviction that these questions lie, inescapably, at the core of the work all of us architects do every day.

It is presented with arguments regarding the scientific difficulty of dealing with this topic. It is presented with hundreds of examples. It is presented with a background mathematical theory, which has been applied to architectural examples from buildings through history.

It is written in simple language, with careful evolution of ideas, from foundations and first principles, to concrete results, experimental technique, comparison with other comparable methods used in architecture.

None of this is described, analyzed, mentioned, or even vaguely hinted at in Mr. Saunders's review.

There are no facts put forward to refute the theory presented, in spite of the fact that the book contains hundreds of pages of examples, facts, observations appear in the book, and in spite of the fact that the topic is germane to the interests of every architect.

After all, if there is indeed a scientific criterion, which might be used to distinguish living structure from non-living structure, and well enough formulated so it could be applied to architecture, this would be momentous for the architectural profession – and for society in general – since it would potentially show the beginnings of a way forward from our present widely recognized difficulty of building good environments. So why did this writer not describe what the book really contains.

Did Mr. Saunders avoid frank discussion of what the book contains, perhaps, simply because an awful is visible in *The Phenomenon of Life*, namely: that the criteria for living structure, if applied to current stylish architectural productions of our era, will in very many cases arrive at negative evaluations. Such a view, for

the first time throwing objective doubt on the high priesthood of architecture, would be consistent with opinions held by many ordinary people who do not like the image-fed high architecture presently supported. The possibility exists, therefore, that if this book were to be taken seriously, either by architects, or by society at large, then the bubble of late 20th-century architecture, and its effort to scam the public, might, suddenly, be on the verge of being pricked.

There is an additional reason for wondering what Mr. Saunders was really attempting in his review. It is extremely odd that Mr. Saunders hides the central concept of living structure, central to the book and to the thesis of the book, and never once mentions it in his review. I say it is odd because in an article on architectural value, written in 1999, Mr. Saunders explicitly mentions the theory of living structure, (he calls it the theory of maximum aliveness) which he ascribes to "John Dewey, D.H.Lawrence, Christopher Alexander and F.R.Leavis) (page 4), in these words: and then goes on to say..."an architecture of maximum aliveness ... is likely to satisfy several (if not most) evaluative criteria at once, or to satisfy one or to criteria to an extraordinary degree...." (3)

Since he plainly understands the idea and has previously expressed the view, in print, that this is one of the more important criteria for architectural value, it becomes unclear why he would write a review ignoring the 350 pages devoted to sober discussion of this topic, and to the scientific problems inherent in it? It is also not clear why he would write in such a way as to obfuscate the central empirical questions.

The Lack Of A Shared Canon Of Value

Possibly the most dangerous weakness in the architectural profession today, is the failure of the profession to have a legitimate, shared, canon of value, one which resides in the deep feelings of ordinary people, and which resonates with their

experience. or to grasp publicly experienced judgments of value as issues of fact, or to respect the values which "ordinary" members of the public have. Instead, the profession has erred, in the past, by looking down on the public, by holding up a highly idiosyncratic and specialized view of value, carried by "the few", viewing the common man as ignorant, and treating architects as people who believe they have the right and authority and political power, to keep on ignoring public opinion about architectural values, and pushing their own special brand of postmodern image architecture, that is largely out of touch with every man and every woman.

It must be said fairly, that Mr. Saunders does speak for that postmodern, disemboweled majority of the architectural profession, who have given up knowledge that there is truth about anything in architecture, in favor of the notion that there are merely attitudes, opinions and disguises, and that each person's disguise or point of view is equally valuable. This unhealthy position, inevitable under the impetus of Cartesian thought, is what dug the grave for architecture during the last fifty years. Yet those who espouse it, are wrapped in the necessity of this belief, because it is a necessary belief to bolster and rescue the absurdity of their positions. So any line of thought which actually suggests that feeling, quality, are objective, must be anathema - because to admit the objectivity of these matters, would lay bare the poverty of their conceptions, and expose the whole profession and its activities, in the 20th century, as a hollow sham.

What, then, is the actual content of Book 1, THE PHENOMENON OF LIFE, which Saunders has failed to describe, or to address, preferring to dismiss it, facetiously, with vague waffle? The thesis is straightforward. It says that the positivistic separation of fact from value, and the notion that only facts can be objective while judgments of value can only be personal matters of opinion, is flawed, *and that there is a scheme of things, in which judgments of value may be examined empirically*: and that when so examined, the feelings of ordinary people, about value, when made in a certain special

way, provide a plenum of judgment which is stable, and reliable, from person to person, and -- by the way -- conspicuously different in content from the notions of value which are prevalent among leading architects today.

There is a second part of this thesis: namely, that the value which is identified by these empirical methods, is generated by an identifiable, repeated structure that may be identified mathematically, and seen, repeatedly, in all naturally occurring structure, and especially in those structures which are commonly held to have life. By comparison with this class of structures, the structures put forward by architects of recent decades, are often lacking in life, and rather belong to a class of structures which must be considered dead.

The key issue, of course, is that both the original thesis itself, and the secondary observation, just mentioned, are supported by a wealth of empirical evidence, according to experiments which can be reported, and checked easily. The experimental procedures involved are unusual, but there are, nevertheless, sharable, and repeatable experiments. It should be said at once that the experiments are not opinion surveys, but rather experiments which use subjective judgments of a very special controlled sort, to obtain measures of life in things, events, and situations.

Thus the whole scheme of things, in which value takes on a new form, and in which judgments of value about buildings, can be checked and discussed in reasonable language, has experimental standing, and would have - if found reliable - enormous impact on the present and future conduct of architecture.

This thesis, momentous if true, and especially momentous for architecture, is clearly stated, and clearly argued in this first book of *THE NATURE OF ORDER*. It is not summarized, or discussed, in any form, by Mr. Saunders.

The Concept Of Wholeness

Scientifically speaking, what is the origin of living structure? Where does it come from? And how may it be defined, to be accessible to discussion, experiment, debate.

The core of it resides in the idea of wholeness. In the last two decades, physicists and other scientists and philosophers of science have begun to discover that a wholeness-based view of the world is, essential to proper understanding of the purely physical universe. A view of wholeness as an existing, guiding structure is essential in quantum physics; essential in biology; essential in ecology; in one form or another, essential in almost every branch of modern science. Yet even in these rather precise fields, it has been difficult to forge a scientifically precise concept of wholeness. The idea places demands on science which stretch the very notions of scientific inquiry, since they require a view in which value, and the notion of the whole, and the inclusion of the observer in the description of what is observed, seem to be at odds with scientific method; yet must be included in order to reach results.

For scientists, it has therefore become necessary to find new methods of inquiry and observation, in which the whole, the self, feeling, and value, play a role within the very act of observation – yet – if it is to be part of science – these inclusions must leave science objective, unbroken, and reliable.

The conception, experimental techniques, and even the way to modify our essentially Cartesian view, so that it can admit self, “I”, and feeling – are extraordinarily difficult. Yet they are necessary for the progress of science.

They are necessary, too, for the progress of architecture. This subject is of the greatest importance to architects and to architecture as a discipline – since every time we build a building, it is the degree of participation in the greater wholeness of the world

around it, which will determine its success, harmony, and degree of life.

Why is this so important for architecture? The harmony of a given road or building with its landscape can only be understood, and made profound, if we have a picture of the wholeness that is being harmoniously adapted. The adaptation of the light and movement in a building lobby can only be understood if, once again, we have a picture of the structure of the whole which is supporting the adaptation. A window in a wall - its well-placed, well sized, well designed, according to its harmony within the whole - and to do it well, we need to understand the whole. I remember Peter Eisenman telling me that he was not interested in harmony.! Because the world is so tormented, he wants to express the torment. Well, bully for Mr. Eisenman. Not so bully for the unfortunates who have to inhabit his buildings.

Yet, important as it is, for some odd reason architects have been among the last to wake up to the world-wide intellectual and cultural movement in the sciences which seeks understanding of the concept of wholeness and the whole -- and have been, and still are, extraordinarily hostile to this conception.

I well remember how my faculty colleagues at Berkeley reacted with intense hostility, when twenty-five years ago I first began speaking about wholeness as a necessary basis for architecture at faculty meetings. The very word "wholeness" incensed some of them and made them furious, maddened, as though it was a personal attack on them. And, sadly, it did not stop at that. In 1989 our chair, Howard Friedman, dared to propose that wholeness should, as a subject of study, be included in the Berkeley architectural curriculum. At the next faculty meeting, he was subjected to a vitriolic personal assault made against him by one of our faculty. As a result of the intensity of this verbal assault, the faculty meeting broke up. But before the faculty had even left the room, within the next few minutes Howard had a fatal heart attack. He was taken to hospital and died shortly afterwards.

Such a tragic event will not make the subject of wholeness and value go away. It merely indicates how much antagonism the concept can generate, possibly because it threatens to go deep into the fabric of present day practice and assumptions. It is painful to face the fact that Mr. Saunders's attack on my book which deals with the same subject, has a similarly irrational attack-dog quality.

The reviewer was asked to review a serious book which makes a start, trying to express, in scientific language, the foundations of a new view of wholeness which might, if successful, bring help and new perspective to architecture. But instead of giving sober reflection to the intensely difficult scientific and architectural problems (many of which are described in the book), he chose merely to try and destroy the *author* instead of the *arguments* (which he did not present). Perhaps he hopes that this strategy will make the topic disappear altogether.

But the topic remains momentous.

A Vision Of Architecture As A Discipline Which Heals The World.

The essence of the situation is an entirely different way of looking at architecture, in which every action, small or middle-sized or large, is governed by one all-embracing rule: *"Whatever is done must always be done in such a way as to provide maximum possible healing of the whole: the land, the people, the existing structure of the city."*

This rule is then to be applied when a window is placed in a wall; it is applied when a building is placed on a street; it is applied when a neighborhood is constructed or reconstructed in a city. In every case, what is paramount is the healing of the whole, the living wholeness of the earth, in that quarter, and the love and dedication which sustains it and preserves it and extends it.

This is entirely – totally – different from the present conception in which each thing done lives largely for itself: in which development, stylishness, and profit, are the guiding motives.

It is a new conception in which a new triad (Wholeness - Healing - Structure-preserving transformations) governs and replaces the old triad (Style - Profit - Advertising and Marketing advantages obtained through design), which governs all classical postmodern architecture of the mainstream today.

These are two different worlds: and no matter how much talk there may be, today, about ecology it is the second of these triads which ruled the architecture of the second half of the 20th century, in the 2% of the world where architect-designed buildings play a role.

The Earth, the city, the metropolis, may be shaped instead by a process focused on life, and on the healing of the Earth's surface, in metropolitan areas, and in nature, to work towards a living structure. In that case, the geometry, the design, the construction processes, will all be different – and what we now think of as architecture, will be given up in favor of a new vision, which is aimed primarily at the good of the Earth, and at its people, and the places, and animals, and stones of earth.(6)

Great Changes Coming In The Discipline Of Architecture: The Idea Of Healing

Mechanistic philosophy and the present arbitrary views of value that hold sway in architecture today are intimately connected.

First, the developer's ideal of profit, and the profit oriented approach to architecture, building, and planning, inevitably work against wholeness, and against the healing of the earth. That is because the goals of value that can be stated within concepts of

mechanism, are inherently unable to increase wholeness, or to heal systems.

Second, the very idea of healing, presupposes that we know what it means to heal, what health is, what, therefore, wholeness is. Still more vital, when thinking and speaking in the framework of a mental world governed by mechanism, any thought of value becomes an arbitrary, value impressed on the logic of the machine, external to it, and arbitrary therefore, in every respect that can be entertained or thought within the mechanistic world.

So, our values in architecture during the last fifty years, have been arbitrary, because they have been invented arbitrarily. They are protected by professionals only because they serve the goal of capital-induced development – the postmodern architect's bread and butter. So the values which have been created – the post modern images – like all other passing styles and images – work for capital, for profit, for development, but against wholeness, against health, against the well-being of the earth.

That is the literary and artistic heritage now being taught in schools of architecture, and now propagated through architects buildings that serve the process of capital induced development.

This heritage does not serve wholeness. It does not serve the whole. It does not help to heal the world, or to rebuild Earth as a place where bees, people, breezes, stones, and lizards can run free... nor the starlings, spiders, urban foxes, water, businesses, restaurants, and taxicabs that populate the city.

I have spent my life, trying to find a sharable, rational, scientific model which brings this topic of life, wholeness, and harmony, into the open – especially as it touches the geometry of buildings, so that it allows us to share discussion and observation of its effects.

It is in our power to take an alternative path, one in which every single act of building, design, ornament, economic improvement –

is always done in such a way as to be part of the healing of the Earth. This is possible even in the high-density metropolis, since there, too, we are capable of making nature.

But we cannot achieve this, or even move in this direction, without a respect for wholeness, made clear as a concept, and formulated so that it transcends all our current pretensions, concepts, and short term ideals.

The future lies with profound understanding of wholeness as a concept, and as a basis for practice. Turning away from it is more than just short-sighted. It would be a tragedy for architects to inflict further damage on the troubled Earth.

Going the other way, in search of a viable, scientific view of life, which can become a basis for our architectural practice, is more moral than what we do now, more just, more beautiful. It goes more to the service of life. And all those who practice such a revised form of architecture, will probably feel more wholesome in themselves.

When the life of the environment plays such a fundamental role in the well-being of the Earth, and when science itself is struggling to understand the nature of wholeness in the majority of new scientific fields, it would be a great pity if a philistine attack on necessarily preliminary efforts to make progress in this direction, were to keep architecture as the last of the philosophical dinosaurs from the mechanistic age.

What, then, Are The Implications Of Wholeness Based Architecture On Our Prevailing Architectural Values

The theory is so rich in detail, that we may draw extraordinary consequences from it. These are presented in volumes 2, 3 and 4 – not yet reviewed by Mr. Saunders or by the AIA. These consequences from theory have implications for the processes

which a successful architecture must use, to reach buildings which have life. (4)

They have implications which dictate some, and eliminate other, relationships between design and construction, as a necessary part of architecture. (5)

It has implications for the involvement of people, in the design of buildings, and for the detailed ways in which this involvement is likely to be successful, or unsuccessful.

It has implications for the flow of money. It has implications for the handling of architectural detail, and for the successful integration of structural engineering, into the framework of design.

It has enormous implications, too, for the unholy alliance between architects and developers: an unholy alliance, possibly the darkest secret in the history of modern architecture, and one which has made architects little more than salesmen, writing advertisements several hundred feet high, claiming to be art, yet actually designed mainly as sign language to stimulate the flow of money into the developer's pocket.

It affects virtually every part of the profession we now know as architecture, and it indicates necessity for change, in almost all of them.

There is no question, that under the impact of this theory, architecture will be deeply changed: and it will be changed, for the better.

A Note On Science

It may be worth concluding with a short statement about what science is, and what it is not.

You are doing science, when you figure out how something works. Especially, if you figure out how something works, that people have not figured out before. You don't need to dress it up, you just need to work it out.

All the rest is dressing. Pompous language, format of summary and text and findings, footnotes, erudite references, carefully marshaled precedents ... all those are the trappings of science, the appearance of science, not science itself. Too often the trappings and appearance are presented making something seem like science: but it is rare that someone actually figures out how something works.

The material in the Phenomenon of Life, and the material in a Pattern Language 25 years earlier, are both science. In both cases, partial workable answers have been given to questions about the way the structure of the environment affects people. In both cases we did, to a first approximation, genuinely figure how this works. It would have been possible, in both cases, to dress it up the actual discoveries in fancy dress: but it would not have changed the actual discoveries very much.

For example, it would have been possible to dress the 253 patterns in a pattern language, as anthropology - thus giving them the dressing of science, references, language and so on. It might have helped create an illusion of science. But it would not have changed the fact that we did genuinely work out, in part, how the environment supports human life in society. Of course not all 253 patterns are equally profound: but in nearly all of them something has been figured out about how the world works, and we knew more about it after the work was done than we did before. And because it is published in an available form, we know it for always - or until someone else goes further, and finds out more exactly, or more deeply, how those things work.

In The Phenomenon of Life other, deeper, discoveries are presented. They would not be made more significant by

anthropological dressing, or psychological dressing. They stand by themselves, and the reader can see that, easily, by studying the text. There will be time for scientific fancy dress later, when the hard work of going into more detail, and doing more careful experiments, really begins. But the really hard work has been done. It is a pity that Mr. Saunders couldn't see it.

The slighting references to "bad science" which appear in Mr. Saunders article, only betray a rather undergraduate notion of what science is, and how it is done.

The Phenomenon of Life defines criteria for life in buildings, and replicable tests for deciding how much living structure exists in different buildings. Of course the appearance of a real test of value in architecture may give the sweats to the profession; but if the profession is worth its salt, and they fear the concept, they can disprove the argument rather than failing to see the point. This is an invitation for adult debate.

Notes

(1) Christopher Alexander, *The Nature of Order*, Book 1: *The Phenomenon of life*, CES Publications, 2003.

(2) William S. Saunders, "From Taste to Judgment" *Harvard Design Magazine*, Winter-Spring, 1999, number 7.

(3) William S. Saunders, "A Pattern Language: reviewed" *Harvard Design Magazine*, Winter-Spring, 2002, number 16.

(4) Christopher Alexander, *The Nature of Order*, Book 2: *The Process of Creating Life*, CES Publications, 2003.

(5) Christopher Alexander, *The Nature of Order*, Book 3: *A Vision of a Living World*, CES Publications, 2003.

(6) Christopher Alexander, *The Nature of Order, Book 4: The Luminous Ground*, CES Publications, 2003.