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Round Table Talk

When a man builds a building or lays out a subdivision or puts up a sign his decisions influence his community for years to come. This power to influence carries with it an obligation to act in a responsible manner, to enhance rather than degrade, to contribute rather than exploit.

Ugly buildings, row after row of undignified developer's houses, vulgar conglomerations of neon signs, mountains of junk cars, cheap shoddy schools, miles of billboards, delapidated slums are irresponsible exploitations whose perpetrators ignore their obligation to the city and the generations to come.

Sharing the blame are those who sustain the exploiters; tax-hungry city councils, unethical architects and engineers, sign makers, "free-design" lumber dealers, ignorant mortgage brokers, insensitive bureaucrats and the host of others who must cooperate to create a sore in a city. When they fail to demand quality they become accomplices.

No one has the right to harm his neighbor, yet ugliness is privileged to damage entire cities. The ugly parts of our cities have no real right to exist.

Don Edward Legge, AIA
Mr. Chairman: I take the title and the text for this address from some lines from Walt Whitman: "fruition of success" and the "greater struggle." I hope that their pertinence will be reasonably clear when I have concluded my remarks. In any case John Flowers made the mistake of writing me—and I quote—that "we want to give you complete latitude to talk about anything." Presumably he did so because the last time I addressed The Texas Society of Architects in convention assembled, I had the temerity to talk about architects and architecture; and Executive Director Flowers certainly wanted no more of that. As I recall, in that earlier address I had the poor taste to insist that, among other things, bad architecture by even the greatest architect is shabby architecture still—and should be labeled as such. Moreover, I made the mistake of mentioning a properly "sacred" architectural name and what I considered, and still consider, an improperly "sacred" example of his genius. But this time have no fear! I will, like the ebullient school boy, merely talk about "the universe and other things!"

If one did not know better, the casual visitor to this convention might suppose that its theme, "Urban Planning," was borrowed from the cover story of Time Magazine for September 6th. On that cover there appears the handsome visage of one of your fellow architects, identified as Planner William Pereira. I am sure that most of you have read the story in question, but let me quote from it: "The wind ruffled his wavy iron-gray hair as he gazed out over Irvine Ranch. 'Right about there,' he said, 'we are going to put a city of 100,000 people. At the heart of it was a thousand-acre campus for a university with 27,500 students. There will be a university town with a mile or so of hotels, shops, restaurants, and theaters. We will have different kinds of housing—all income levels—churches, a couple of golf courses.' . . . 'And over there will be jobs, places for men to work. We expect to have about 300,000 people living and working here by 1980.'"

Time went on to say, "The handsome man who can play such a godlike game is neither conqueror nor commissar, but one of a brand new breed of artisans arising in the world—the regional planner. The regional planner orchestrates vast areas of wilderness with cities, villages, farms, and forests to serve the needs of men. As the planet teems with more and more humanity, his work with its multiple disciplines—including history, sociology, engineering, botany, geology, hydrography, and, above all, architecture—is becoming more and more a pressing necessity."

One is tempted to shout: "hurrah for architects!"; and give thanks for the fine recognition that the Luce publications gives to the importance of
I am rather certain, however, that everything is not so nicely cut and dried as the Time article would suggest. How can anyone know that in 1980 there will be jobs for the 300,000 who are to live on the newly planned Irvine Ranch development? We already have a high level of unemployment despite the fact that the work week is being progressively shortened. The 40-hour week no longer is standard; in fact, even a 30-hour week is being seriously hinted at by President Kennedy. Indeed, for certain groups 20 hours will soon be the standard work-week, or five four-hour days, and such a diminutive week is to be rewarded with no diminution of pay. It is therefore perhaps understandable that last spring, before the Senate subcommittee on Automation and Employment, the economist, Robert Theobald, made the suggestion that we ought to start paying people for doing nothing. The cynical will retort that we have long since been doing just that; but Theobald has prophesied that there will be an ever increasing outpouring of goods from increasingly automated machines. Therefore he contends that soon a lot of citizens will have to be paid enough to live in dignity even though they are destined to just sit around. Jenkin Lloyd Jones, commenting on this suggestion, has stated, “So we may eventually wind up with a brainy elite, a fabulously prosperous, if half employed, technician class and a huge mass of citizens on permanent WPA.” “The prospect,” he said, “is not entirely alluring.”

That such a prospect has received more than casual consideration is underscored by the fact that not too long ago a serious national conference was held on the subject “Education for Total Unemployment.” Stated in realistic terms, we may soon require education for total leisure and pay for cultured idleness. But if such a quite possible eventuality does develop, you may be sure that the short hours, or no hours at all, for the drones and technicians will require that desperately long hours be the lot of all managerial and creative groups—including architects. And this is true because increasingly we will need architecture for blighted people as well as blighted areas, not to mention suitable and satisfying architectural designs for living in deserts or jungles, or even on the Moon or Mars. I suggest, therefore, that the answer does not lie in anything as simple as some novel type of prefab construction, or new and grandiose types of urban development or redevelopment. In large part it probably lies in a type of education which will make it possible for architects to administer masterfully the people’s unforeseen problems resulting from cultural and social revolutions.

In short, Pereira’s urban development may well have 300,000 inhabitants by 1980; but the projected number of employed residents may turn out to have been fantastically overestimated, and thus the present master plan obsolete. Or, returning to our title, the fruition of technological and scientific advances is very likely to necessitate a greater struggle to cope with the new and unpredictable problems stemming therefrom.

Let us now examine the general problem I have raised from another angle. In early May of this year the American Assembly held a joint meeting with the Battelle Memorial Institute on the subject of Automation and Technological Change. Professor James R. Bright, of the Harvard Graduate School of Business, made the point during the Assembly sessions that our era of dynamic business change is based in large part upon technological change. He therefore saw the very survival of various businesses as depending upon the ability of their managers to respond effectively to every technological advance. He presume we can, with considerable validity, extend his conclusion to the fate of architects and architectural firms. If they do not respond effectively to all of the technological advances and resultant social and cultural changes, and demands, they certainly will not succeed—in fact, they may not survive.

In this connection it may be instructive to summarize the modern technological trends which Professor Bright attempted to categorize, for they all have architectural connotations.

As a result of the last few decades of progress in transportation, major geographical features have lost their traditional significance in man’s social, economic and political affairs. Sheer distance is no longer a critical factor in war or peace, or, for that matter, in trade or in architecture.
The ramifying effects of new energy sources—and new means of utilizing old ones—on architecture and architectural developments should be apparent to all. One significant example is the growth of power pooling, and the possibility of bringing needed power and light to new architectural developments wherever located. The increasing practical availability of atomic energy and solar energy also will certainly greatly affect architectural trends in the near future.

Increased technological know-how has already made possible some alteration in all living things—for example: the ability to develop toleration of extreme climatic conditions, to control growth, to extend the effective life span, and to increase resistance to disease. Similarly, new technologies make possible reduced deterioration in physical goods, which can now be treated effectively to inhibit insect infestation, or corrosion, or wear. Thus is made possible better construction and design, which, in turn, leads to less maintenance, longer life, and fewer parts.

We also have an ever increasing ability to alter the characteristics of materials. President Le Du Bridge, of Cal Tech, has given this general technological activity the designation: "molecular engineering." The resultant impact on architecture is recognized by many, but we have seen only the beginning. We now have combinations of materials to provide unique characteristics which result in lower cost for many materials. There are all sorts of fantastic synthetic materials which have been developed, and are developing. There have been significant results from the attempts to provide new properties for old familiar materials through chemical and metallurgical knowledge. Of great interest to the architect is the fact that in many cases the metamorphosis has resulted in improved strength, decreased weight, or greater heat or corrosion resistance. The end, of course, is not nearly in sight.

The extension of man's sensory capabilities has made possible refinements of vision, and hearing. In the architectural world the applications are just beginning. The sheer extension of our knowledge of the universe, the development of new methods of education and entertainment, the ready availability of high-fidelity radio, phonograph and general sound equipment, inevitably lead to new architectural concepts, while man's ability to develop increasingly precise measurement techniques gives the architect ever more delicate controls.

The growing mechanization of physical activities of course, leads to higher mechanical input and much lower manual output—or automation. Architectural concepts and construction costs are, of course, involved. The use of power devices, mechanical items too numerous to mention, electronic and electrical equipment, various inspection and automatic packaging machines, all result in not merely greater machine use but also very much larger investments. These, in turn, result in changes in work force skills, and a reduction in manual labor per unit output.

There is now an increasing mechanization of all intellectual processes. For example the analysis of data and complex mathematical relationships were, except for simple calculating machines, pretty much human activities until the advent of the computer in 1952. In the eleven ensuing years we have manufactured and installed sophisticated calculating devices equivalent to 10,000 general purpose computers. The obvious result is that the manpower required to process information is being steadily reduced, and there is increased speed in the preparation of papers of all types. Moreover we now can speedily summarize and analyze business conditions which have such an impact on architectural developments.

The blessings resulting from all of these technological advances, however catalogued, are real and obvious for all to see, but they are not unmixed blessings, for each presents a new problem for solution. As a simple example, crowded urbanization begets a togetherness that is commonly disliked: in fact, it may be highly resented, even by a majority of those who have sought the blessings, so-called, of urbanization. For example, the late Robert Frost put well the discontent of many of the unwillingly "urbanized" in a letter to Louis Untermeyer when, in 1930, he wrote: "Why will you continue to mess with the masses, or is it mass with the messes? I loathe togetherness. The best things and the best people rise out of their separateness. I am against a
homogenized society because I want the cream to rise.” Architects should recognize that there are very many who share poet Frost’s views. Urbanization may be more artificial than communal. Often it results merely in a physical mixing rather than in a chemical synthesis. Of course, the daily demands simply for food and drink, for clothing and housing, now present formidable problems in the area of logistic supply, and a seemingly obvious, if imperfect, solution is the chain store, the chain bank — in short, big businesses with a reduced number of competing units.

Perhaps what I am trying to say is that all thoughtful citizens, including architects, of course, should try to understand the reasons why everyone today seems so subjected to ever-increasing strains and stresses. I do not say that this malady is new — we merely suffer from its increased virulence. Consider “The Education of Henry Adams” — a famous biography, which Mr. Adams completed in 1905. Even at that early date Adams, a non-scientist, faced with scientific advances that he did not understand, was deeply disturbed by the technological changes of his time. As early as 1893, that he brooded over “the child-like ignorance and babbling futility of the society” which had not permitted him to understand what was transpiring in the scientific world. Much later the famous philosopher, Alfred North Whitehead, wrote that: “The conditions of our lives have been basically more altered in the past fifty years than they were in the previous 2,000 — I might say 3,000.” Actually the situation to which Whitehead referred a generation ago is much more serious now than he even imagined. Everything appears to be growing in an exponential way. For example, during thousands of man’s early years the world population grew gradually until, in 1850, there were about a billion people living on the globe. Then in a period of 80 years, from 1850 to 1930, an additional billion was added to the world’s population. In thirty years between 1930 and 1960, another billion appeared, and by 1975 it is confidently expected that we will have to be supporting four billion persons. The proportion of the population composed of scientists of all kinds, however, is increasing at an even more fantastic and, if you wish, frightening rate; and it is generally believed that about 90% of all the scientists who ever lived are still alive and working today. With the phenomenal increase in scientists, engineers and technicians, there has been a similarly spectacular increase in the number of automobiles, just to name one of the obvious technological end-products. In fact, the Bureau of Public Roads has recently reported that there are now 82,058,000 vehicle registrations in the United States, and the number is increasing at a rate of about 4% per year. The increase in new drugs alone is so spectacular that it is generally estimated that more than half of the drugs dispensed by pharmacists today were not even known as recently as five years ago. For that matter, the National Aeronautics and Space Administration has just celebrated its fifth birthday, and it has already spawned new cities, Rube Goldberg-like structures, and extraordinary new budgetary requirements which provide all sorts of architectural possibilities — and problems. In short, since World War II, indeed since the first atomic reaction, and particularly since the advent of Sputnik in 1957, changes have taken place so rapidly that no one, not even the most intelligent, can, with any assurance, prophesy what the future ramifications are going to be. One can be certain, however, that they will have a great impact upon architects and architecture. Putting it another way, all of the changes are not merely trends. They are properly to be described as bursts, or explosions; and just as every atmospheric atomic bomb has a radioactive fallout, all of the varied technological explosions have cultural, social and architectural fallouts as well. Without question, they all increase the needs and demands for architectural ingenuity and creative thinking.

For example, what has the architect or the planner done to advance or retard the development of the “megapolis,” which phenomenon has been commented on by many an astute observer, but with conclusions by no means uniform. In contrast to relatively successful megapolitan areas, we have great regional blighted districts, such as the ailing so-called Appalachia, a nine-state area in the East, which has made little headway in curbing its chronic ills. In such relatively unsuccessful have-not areas, education lags behind and architecture tends to wane. Perhaps in just such an area it should wax. But
presently it is the "megopolis" which is the home of the "ideapolis," which
President Clark Kerr of California has recently called "an institution unique
in world history." In the "megopolis" a group of universities is likely to
provide a united fountainhead of new ideas central to the conduct of the
entire society. They function under a new and appropriate designation, the
"multiversity," in which creative architecture should flourish.

I want now to turn to several parables from geology, or more properly
from paleontology, which may have applicability for architects in these
troubled times. Any organism tends to adapt itself both biologically and
physically. This is a demonstration of the unending quest for equilibrium,
but when perfect equilibrium has been reached the organism is necessarily
perfectly adapted to its environment, and at such a point in time the animal
or plant ceases to change, or, if you wish, to evolve.

Arnold Toynbee has called such a static situation, when applied to man-
kind, "the nemesis of creativity;" and, if one thinks about evolution of any
kind, it is proper to consider the Gloomy Dean's (William Ralph Inge)
aphorism, "Nothing fails like success." That is to say, any adaptation to an
environment, or to a situation, which is nearly if not quite complete, makes
for equilibrium or temporary success. The unadjusted maverick, however, who
fails to be in perfect adjustment with his environment necessarily fights against
it, and thus has the advantage of what might be called "creative instability."
Evolution or, if you wish, success, stems only from unstable organisms or
situations. Translating to the architectural world, the architect, or the architectur-
al firm which becomes more and more efficient in meeting its routine day-by-day
problems, will be superior to most or all of its competitors momentarily, but
poor indeed will be its fortunes should its special field of competence be changed,
or the need for it be wiped out by technological advances. In short, one sees
everywhere in the world the demonstration of Edward Arthur Milne's hypo-
thesis of universal evolution everywhere marked by a kinetic acceleration.
That is, all events, trends and changes are accelerating, and the architect who
does not pay attention to that acceleration is certainly going to be lost. Here
I refer again to Walt Whitman's "Song of the Open Road," which at one
point has these words:

". . . From any fruition of success — no matter what —
Shall come forth something to make a greater struggle necessary."

Let us put this idea in more concrete form. Suppose, for simple example,
private airplanes with near perfect vertical-lift capacities were to become
as common as automobiles. Then plans for highway butterflies of increasing
complexity, for vast new networks of freeways, and many of the exciting
projections for new urban development or redevelopment, would have to be
restudied — and, indeed, some would become essentially obsolete.

Getting a little more speculative — for what I have just suggested is
quite possible — let me also refer to the recent discovery by biologists of the
chemical control system which governs heredity and therefore all life. Our new
knowledge of deoxyribonucleic acid, called DNA, the molecules of which are
present in every living cell, now gives man the possibility — nay, the prob-
ability of being able shortly to control evolution. The evolutionary process
up to now has been carried out largely by means of chance mutations, or
kinetic changes caused by cosmic radiation, or by certain chemical actions.
In the future there will be great temptations to produce new mutations arti-
ficially. Through experiments with DNA scientists have already been able to
produce new hereditary traits in bacteria and in insects. There seems to be
no insurmountable obstacle to clear before, eventually, the experiments will
also involve human genes. Although the problems to be solved are extraordin-
arily complex, without being sensational one can envisage the time when the
structures presently occupied by, or planned for, man could be all obsolete simply
because "man" in the geological tomorrow may not too closely resemble "man."
1964 model. What a field for future architects!

Fortunately, the chances for satisfactory solution of future problems are
enhanced because most good architects have a strong cultural background,
and are interested in history and literature. This is a hopeful sign. Let me
explain. The English psychologist Liam Hudson, of Cambridge University, has
pointed out that too often liberal arts majors, and presumably those majoring
in architecture, have the impression that the physical science majors are intellectually superior. But this is definitely not the case. Two well known University of Chicago psychologists, Jacob W. Getzels and Philip W. Jackson, put forth, in 1960, an idea—now generally accepted—that a high I.Q. is not necessarily a reliable sign of “giftedness.” It may simply represent convergent thinking, or “mental gray-flannelism.” Truly creative young people are “divergent types” who tend to find I.Q. tests boring and always wish to challenge the obvious “right answers.” Accordingly, Getzels-Jackson tests have been developed to determine “creativity,” and they have been given to many persons in this country, and to a number of English schoolboys by psychologist Hudson. Those who turn out to be the least creative, according to Hudson’s findings, are physical science students. The young scientists, says Hudson, “tend to be less intellectually flexible than young art specialists and, in fact, they are more restricted emotionally.” I take it that all architects are completely unrestricted emotionally, and that they are certainly flexible intellectually. I hope and confidentially expect that such intellectual flexibility and their flair for creativity will stand all architects in good stead. At any rate, I am certain that you will approach the exponentially developing problems resulting from the fruition of technological successes in such a fashion that you will be able to cope masterfully with those unforeseen “greater struggles” which are the inevitable consequence of every scientific triumph.
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