

STUDENT PUBLICATIONS OF THE SCHOOL OF DESIGN, NORTH CAROLINA STATE COLLEGE

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VOL. TWO NO. 2 **education**

*Benjamin B. Taylor*

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*Architecture and Technology:*

**Ludwig Mies van der Rohe**  
*Director, Department of Architecture*  
*Illinois Institute of Technology*

Technology is rooted in the past.  
It dominates the present and tends into the future.  
It is a real historical movement—  
one of the great movements which shape and  
represent their epoch.  
It can be compared only with the Classic  
discovery of man as a person,  
the Roman will to power,  
and the religious movement of the Middle Ages.  
Technology is far more than a method,  
it is a world in itself.

As a method it is superior in almost every respect.  
But only where it is left to itself as in  
the construction of machinery, or as in the  
gigantic structures of engineering, there  
technology reveals its true nature.  
There it is evident that it is not only a useful means,  
that it is something, something in itself,  
something that has a meaning and a powerful form—  
so powerful in fact, that it is not easy to name it.  
Is that still technology or is it architecture?  
And that may be the reason why some people  
are convinced that architecture will be outmoded  
and replaced by technology.  
Such a conviction is not based on clear thinking.  
The opposite happens.  
Wherever technology reaches its real fulfillment,  
it transcends into architecture.  
It is true that architecture depends on facts,  
but its real field of activity is in the realm  
of the significance.  
I hope you will understand that architecture  
has nothing to do with the invention of forms.  
It is not a playground for children, young or old.  
Architecture is the real battleground of the spirit.  
Architecture wrote the history of the epochs  
and gave them their names.  
Architecture depends on its time.  
It is the crystallization of its inner structure,  
the slow unfolding of its form.  
That is the reason why technology and architecture  
are so closely related.  
Our real hope is that they grow together,  
that someday the one be the expression of  
the other.  
Only then will we have an architecture worthy  
of its name:  
Architecture as a true symbol of our time.

## THE GRADUATE CENTER—HARVARD UNIVERSITY

Harrison Wadsworth

3rd Year Student

*“That state of affairs [borrowing from historical styles] is over at last. A new conception of building, based on realities, has emerged; and with it has come a new conception of space. These changes, and the superior technical resources we can now command as a direct result of them, are embodied in the very different examples of the New Architecture.”\**

This is an admirable statement. At the time it was written, the New Architecture was indeed new: so different in fact from that which preceded that there was much opposition to it. The New Architecture had many problems that were not yet solved. There were the canons of proportion to be worked out. The machine for living was to undergo the humanizing effects of redwood and natural stone. One of the salient arguments for the New Architecture was the inherent economies of a simplified expression in building: Corinthian columns cost a great deal, and there was a great appeal in leaving them off if one had a tight budget. In regard to Corinthian columns, one might safely say that the battle for the New Architecture is won, or at least cannot be lost because of the increasing frequency of the tight budget. An unfortunate outcome of the almost ever-present tight budget, however, is that even the New Architecture has priced itself out of the market. This state of affairs, in which architecture now finds itself, will probably be recorded as the death blow to the particular New Architecture that Gropius has fought for. The reason for its untimely demise is not hard to find: like the stirrings in the nineteenth and early twentieth centuries to meet the facts of industrialization, the New Architecture failed to discover the real giant that had to be conquered. The Bauhaus sought to meet the machine on its own terms, to utilize the ease of mass production, to remove the false reproduction of handicraft products: to train designers to design for the machine. In architecture, it was the return to realities, honesty in structure and the use of contemporary materials in a clear statement of their actual qualities: this would restore sanity in building. The New Architecture was not more than a translation of the same techniques into a new style: a revolt against wornout form, not a true revolution from hand to machine. No matter how new the material, it was placed in the building by laborious hand methods. The contribution of this revolt against historical styles cannot be lightly valued: if nothing else, the New Architecture has shown that architecture is not a fixed set of canons to which any problem may be sent to discover the perfect and sublime solution, in spite of the new canons which it has set up. From now on, perhaps we can meet totally new forms from our most powerful tool—the machine, without a backward

\* WALTER GROPIUS, *The New Architecture and the Bauhaus*: New York: Museum of Modern Art 1935

glance at the romantic forms of the past. There is no need to fear that new forms in themselves can have no romance: we have had it proven by masters of the redwood vertical siding and natural stone school of the New Architecture, such as Breuer, that beauty and romance are more the product of the designer's insight than any rigid conception of form.

Essentially the foregoing explains what is wrong with the Graduate Center. Without considering esthetics, the design is a failure because of the shrinking value received from handicraft methods in the age of the automobile and airplane. For the first time since Richardson, the President and Fellows of Harvard deserted Georgian or "Modern Manner" for the New Architecture. The main reason which persuaded this not too easily persuaded body was the promise of the Architects Collaborative to provide suitable housing for graduate students at the price that the University had to spend on such housing. The budget was met. It remains to be seen whether or not the housing job was suitable.

The undergraduate houses had provided probably the greatest luxury housing for students in the country. An individual bedroom per man, a complete bathroom per suite of three to five men, and a living room, complete with functional fireplace: all this for \$12,000 per man, 1930 prices. The main feature of the plan was vertical circulation: staircases serve about four suites per floor, a great opportunity for the display of Palladian doorways. A plan of this type has an important sociological result: the Harvard undergraduate may live for three years in splendid isolation from his next door neighbor, if he so desires. He does not need to see much of his roommates, either, since he can retreat to his private bedroom and ignore them completely. The Graduate Center does away with this splendid isolation with a vengeance. Circulation is accomplished with the minimum of two exits per floor, a central corridor, and a bathroom per floor. The graduate student cannot afford to be indifferent, like the undergraduate: he meets his fellow tenants every time he sticks his head out the door, he meets them shaving, and he can hear his next door neighbor breathe. The first two of these may be desirable, but hardly the latter. Lacking also is the living room as well as the fireplace. In its place is a common room per floor the size of a double room, 18'x12', which serves at most about sixty students, and at least about twenty-five. Such a great diversity of load causes one to speculate on just what function the architects had in mind for these common rooms. All but one building have balconies which borrow space from this interior common room, and are designed so that they cut severely into the visual space of the interior. In the first place, there is a solid concrete wall about 3'6" high on the edge of the cantilever, the point where every additional pound produces more additional moment than at any other point, thus rapidly increasing the thickness at the support. As if that were not enough, there is a redundant opaque panel of similar height in the wall which is set back from the outer wall, impinging on the already confined space of the room. Four people can play cards here, but it is seriously doubtful that they can be used for much else. Outside, the balconies provide needed relief to a well proportioned but otherwise rather severe elevation. However, the particular form chosen, wreaking such chaos inside, brings up the problem of just what is it that these balconies do. Perhaps they are our old friends, the Corinthian columns. It can be argued that these individual common rooms are not expected to substitute for living space entirely, that the primary focus of the student's life is the Commons building,

where he can eat, listen to music, and meet in large groups. If this is so, then the common rooms in the dormitories are a waste of space, except in their function for poker. Actually the most used space is the individual's room: no intermediate level between individual space and public space has been provided. Perhaps closer consideration of the pressing needs of the individual student would have been more worthwhile than building poker rooms.

The individual space per man is 9'x12'. This space is provided primarily as singles, as that seemed the preference, a guess which has been upheld in use: many of the double rooms, exactly twice the size of the singles were converted last summer into two singles. Apparently the graduate student prefers privacy at the expense of the greater visual comfort of the doubles, equipped with a curtain dividing the room. Here the student should be able to work in complete quiet while his neighbor has the radio turned up to maximum volume. The university administration has admitted that this condition is not satisfied in writing the rules regarding the entertaining of women guests. In order to maintain the required peace and quiet in the dorms during the day, women are not allowed in the dorms during the week except from five to seven in the evening. Nothing could be more distracting than girlish laughter seeping through the walls while reading Augustine. The layout of the dorms leaves much to be desired. Sound insulation seems to have been unimportant. Four inches of painted cinder block, while meeting the requirements of a durable yet light wall, provides nowhere near enough transmission loss between rooms. This fact is one which is easily obtainable from any good book on acoustics. To cut down noise, closets were placed on the corridor wall. The success of this move is almost nil, since the leakage around the door more than compensates for the transmission loss through the closet. Thus, one of the primary requirements of a good dormitory design, quiet in one's study space, has not been met. There are many other topics that might be discussed. The collaboration of contemporary artists with architects represents a needed attempt at the expression of a mature architecture. Whether successful or not, the attempt deserves to be repeated. There is the lack of craftsmanship one so often feels in contemporary building. The workman is perhaps rightfully bewildered by modern architecture's methods. The confusion must be cleared up. Modern architecture requires precision. A covered walk represented by a clear crisp line in blue prints should come out clear and crisp in actuality, not a distorted ripple. Light buff brick shows parapet cracks that never have been noticed in old Harvard waterstruck brick. All of these are relatively unimportant in contrast to the statement which has been made about how one should live at a University. I think it is clear that the Graduate Center shows a new approach, at least for Harvard, in what the University will be able to provide for housing its students. I believe that the society so postulated has many shortcomings, and that we must find some way to bridge the gap between what is needed and what we can afford to pay. Lewis Mumford is constantly pointing to the slum clearance projects in New York, and reminding us that these projects are no more than fireproof sanitary reproductions of what they replace. I feel a similar qualm about the Graduate Center. Yes, the budget was met, but what sort of a solution does the Graduate Center represent to the problem? Is it not merely a demonstration that the dollar no longer buys as much as before? Would the Architects Collaborative produce a solution such as this if there had been unlimited funds available? I hope not.

IN AN AGE WHERE ART HAS TAKEN A BACK SEAT WE QUIBBLE OVER WHAT LITTLE ART THERE IS IN OUR LIVES.  
WE LOOK FOR ARTISTS WHEN WE NEED THEM AND FIND THAT THEY ARE FEW AND RELUCTANT.  
WHY IS THIS?  
WE READ THE WRITINGS OF PAST AGES AND FIND NO LACK OF MEN THERE.  
WHERE ARE OUR MEN; WHAT IS OUR CULTURE?  
THE FAULT IS NOT IN THE AGE.  
AN AGE IS WHAT HUMANITY MAKES IT.  
THE FAULT IS NOT IN THE CHILDREN.  
THEY ARE ALL RIGHT WHEN WE GET THEM.  
THE FAULT IS ONLY IN WHAT WE DO TO THE CHILDREN IN MAKING THEM INTO ADULTS.  
WE CRITICIZE OUR PAINTING, OUR ARCHITECTURE, OUR BRIDGES, OUR CITIES.  
THE FAULT IS NOT IN THESE.  
THE FAULT IS IN THE PEOPLE AND IN THE PROCESSES BY WHICH THEY CAME TO BE THAT WAY.

*The following thoughts here presented are the result of some self examination concerning the progress of my own education. For this reason the paper has limitations which will be obvious to all who read it. This I cannot help, for I am unable to think these thoughts about anyone else. They are very personal. You will disagree with me on many of the particulars, certainly with the examples. You may even disagree with the principle. Many, it would seem, do; but if you have thought about education and particularly about your own education, then you have a basis for your conclusions. At any rate, the extent of our agreement or disagreement is unimportant. The big consideration is our own selves and not the education; for when we are through with institutionalized education, as we know it, we will have the problem of educating ourselves. We may find what we have done in school important in this respect. The problem of education is every man's problem; the responsibility for educating each man is his own, and it is this that we should remember.*

Man, according to Gurdjieff, consists of two parts—*personality* and *essence*. This idea has been proposed in countless ways by numbers of philosophers, but let us consider what the idea really represents in terms of education. "Essence in man is what is *his own*. Personality is what he has learned, or reflects, all traces of exterior impressions left in the memory, all feelings created by imitation—all this is *not his own*, all this is personality."\* The child is, of course, essence. He is what he really is with as yet

\* P. D. OUSPENSKY, *In Search of the Miraculous*: New York. Harcourt Brace and Co. 1949

no real personality. When education commences, personality begins to grow. Every effort in education (since education deals not with what is real in the individual, but with what is acquired) produces in addition to the desired results, even if it gives these, thousands of unexpected and often undesirable results. It seems to be difficult for teachers to understand that when a problem is carried out, each child will have gotten something different from the work; and some will have benefitted not at all. Now, if perhaps not always, fear seems to be at the bottom of all our troubles. Fear is used by parents in controlling their children, by the church in leading the congregation to the good life, by the schools in producing "educated" men and women, by nations in maintaining their position among nations. Our lives are "disciplined" through the use of fear. "Almost the first thing a child understands is a threat. In our classrooms children for fear of consequences are made to study what they would not study of their own accord. Even where the indignity of physical punishment has been removed, the fear of failure, the opprobrium of teachers, parents, and worst of all, classmates, hang over our young."\*

In addition to fear as a motivation for the acquisition of knowledge, we use coercion. The whole business of gold stars, ribbons, honor rolls, honor societies, in fact of grades in themselves is simply a means of coercing students to do work.

Earl C. Kelley in his book, *Education for What Is Real*, has done an admirable job of setting down some of the fallacies practiced as axioms in most of our educational institutions by many presumably educated men and women. We assume, for example, that the child goes to school to acquire knowledge which has existed for a long time and which is simply handed down on authority, and that such knowledge (subject matter) taken on authority is educative in itself. This attitude presumes that knowledge exists before and apart from learning and that complete absorption of this knowledge must take place before the learner is qualified to make the decision to quit. It moreover presupposes that the acquisition of such authoritative subject matter automatically produces an educated person. Many professors follow this assumption, concluding that since such a wonderful thing as an education is to be gained as soon as the subject matter has been absorbed, any method which will assure absorption is permissible, no holds barred. What you do to a human being in the process is immaterial. We not only assume, says Mr. Kelley, that the best way to set out subject matter to be learned is in unassociated fragments; but we also assume that a fragment of authoritative subject matter is the same to the learner as to the teacher, and that it is the same to one student as to another. Worst of all, we assume that education is preparation for life, not life itself; and that since education is not present living, it has no social aspects. The pigeonholing process is exemplified by our schools where we segregate people according to their similarities so that they cannot learn from each other. We seldom let students associate even with their own kind unless they are also of the same sex. "To the extent that a person is social we regard him as undesirable. We give our best grades and honors to our most submissive people."\*\*

With the pigeonholing process already begun at home, education *en masse* comes all too soon for killing

\* EARL C. KELLEY, *Education for What Is Real*: New York. Harper Bros. 1947.

\*\* Ibid.



curiosity. It is necessary for all of us to learn the mechanics of reading, spelling, and mathematics; but in the process the teacher, demanding class uniformity, succeeds in stifling individual curiosity on the assumption that by so doing a controllable group curiosity can be maintained.

Ask any student why he is in school, and he will probably tell you that he is there to get an education. When does he expect to have acquired it? When he gets his degree? The degree is a kind of public stamp of approval signifying that the person has spent four or five years in a controlled environment, and that now he is ready to live. Frank Lloyd Wright would have us close down all colleges for twenty years so that a generation of imaginative human beings might emerge. Robert Hutchins, formerly of the University of Chicago, described education in this country as a mass housing project designed to keep youth out of worse places until they were able to earn a living. These are not idle comments by distracted people.

What, then, are schools good for? All this brings up some old questions: 1.) What is education? 2.) What is discipline?

The two are not synonymous, but they have a working relationship. One is impossible without the other. As Goethe points out, "Everything which frees the spirit without giving us control over ourselves is fatal." I am not speaking of discipline as it is most often thought of. The assumption on the part of many schools that working on dull and meaningless tasks is good discipline and that work without purpose, that is, work for work's sake, will produce a disciplined personality is wholly false. This conception of discipline has nothing what-so-ever to do with education.

"The capacity to become educated," states Mr. Kelly, "depends, it would seem, on the capacity of the individual to relinquish what he has held and build new habit patterns in keeping with new environmental demands." Experimentation, as far as education is concerned, involves very little risk. In order to grow, a person must realize that so far as his essence is concerned he hardly exists at all. In the creation of personality (education) we are continually resisting the influence of others so that we may conceal something of ourselves from them and retain something we consider all our own—something real. In reality, by the time we are old enough to grasp the significance of the personality—essence idea, our personality has outstripped our essence to such an extent that we really have nothing to lose by submitting to the will of another or circumstances outside our control.

Where does discipline fit into the educational process? I am against the attitude that schools should produce disciplined people if it is at the expense of education, or that discipline *per se* is good policy if one is disciplined by unreal means, worse in false concepts. In our grade schools we make the attempt to instill patriotism in our young, often at the expense of truth. Glancing through a textbook of American history for the grade school children is enough to convince one that the realization on the part of the child that he is an American should be sufficient to establish a feeling of smug indifference toward the rest of the world. He comes to believe through a long process of influences that democracy is symbolized by white purity, that all other forms of government are blots or marks on this white purity

which actually exists all over the world but which in the case of other countries remains soiled. He believes that democracy is the basic heritage of all men, that the existence of democratic principles is perpetual and everywhere, but that America is the only place where they have not been buried under the superficial blot of communism, or monarchy, or dictatorship. Obviously such methods of instilling patriotism are sure to produce short-term results. It is foolish. It is the way of the *conditioners*, not the *educators*. "They recognize the concept of duty as the result of certain processes which they can control."\* They cannot, but they go on believing that they can.

Just as discipline of attitude can only come through the person seeking the discipline, so discipline of work habits can only come from within. The only good discipline is self-discipline which arises out of the chance on the part of one student to cooperate with the group and realize the greater good which is possible only with his contribution. He must have the chance to participate. The assumption of responsibility can only emerge from self-purpose. If the teacher assumes or furnishes the purpose then he must assume the responsibility. In such a situation the student has every right to believe that as long as he can manage to stick around it is the teacher's responsibility to see to it that he gets an education. After all what other duty is left to him? "When the student does something in response to the purpose of another he has not assumed responsibility but is merely obeying orders."\*\*

Learning through doing, the accumulation of empirical data rather than formula gives a working background of experiences. Moreover, learning without doing is infinitely harder than learning by doing because of the extra process of adjusting the model to the visual whole. Planning only exists in the mind and in the hands constructing the reality. What we do with a pencil and paper is not planning, it is replanning—refinement. All planning is the application of thinking through doing, complete with mistakes and all.

In setting up a problem which is 1.) real and 2.) from which is possible a greater good, the process by which the problem is solved becomes more important than the solution itself. Mistakes are possible which mean something to the participant. Frustration from doing things wrong, the very essence of growth, is only meaningful to the student when the problem is real. This is something that neither students nor professors fully understand. The age of specialists in which we live teaches us that there is someone or some handbook somewhere which will work the problem and get the right answers efficiently with us the learners never being the wiser of the process. Having had most of the natural curiosity drained out of them, this way of getting results satisfies a good many students.

None of us are capable of seeing anything in the same way as the next person. This is the beginning. As soon as we realize it we will be able to recognize each other as potential individuals as well as members of the group. We must see this, accept it, and teach this concept to our young. Unless we do so most of everything we try to impart to the student in school will go wasted. None of us see an object or an idea for the same thing. We never will. We are all of different backgrounds bringing different past

\* C. S. LEWIS, *The Abolition of Man*: New York. The MacMillan Co. 1947

\*\* EARL C. KELLEY, *Education for What Is Real*: New York. Harper Bros. 1947.

experiences to bear through which we interpret everything we see, hear, feel, smell, and taste. You cannot record a man's background. That is something he must do for himself, and any activity you promote with this idea as an end will only engender revolt and prolong any desired results.

The teacher's purpose in school is to focus the student's attention on goals of which he has been unaware, and to encourage experiment toward the exploitation of those and other goals as they develop in the student's mind. Our preoccupation with accuracy, our pursuit of detailed completeness often lead us to discard ideas because we cannot see clearly where they are taking us. As a consequence we adopt a very intellectual, often academic attitude about the nature of our efforts. Mies van der Rohe exemplifies this attitude when he says of his work: "It is the result not of an impulse but of a way of thinking."\* The opposite of this is, of course, the spontaneous rush of impulse for the sake of the doer's soul, so to speak. So far as the results are concerned, one is the spume, the other the vomit.

Education should initiate the young into a life of energetic thought and experimental activity, not merely condition them to life as we have interpreted it. C. S. Lewis uses a clear example to differentiate these two methods of education. By exercising the first method we are "dealing with pupils as grown birds deal with young birds when they teach them to fly; by following the latter we are dealing with them more as a poultry keeper deals with young birds—making them thus and thus for purposes of which the birds know nothing."\*\* The first is a kind of propagation—men transmitting manhood to men: the latter is merely propaganda.\*\*\*

The job of the schools, then, is to create "men with chests."\*\*\* The chest is the core of the man, the bridge between "cerebral man and visceral man, for by his intellect he is mere spirit and by his appetite mere animal."\*\*\*\* It is the job of the schools to place less and less emphasis on what has been learned and more on what is yet to be investigated. Our schools are the best asset we own communally. We can no longer let them merely grind out conditioned personalities while we live in a world which so tragically needs men capable of energetic productivity, imagination, and the curiosity to go beyond their training.

William Block  
4th Year Student

\* MIES VAN DER ROHE, Talk Delivered at School of Design, Feb. 11, 1952.

\*\* C. S. LEWIS, *The Abolition of Man*: New York, The MacMillan Co. 1947

\*\*\* Ibid.

\*\*\*\* Ibid.

\*\*\*\*\* Ibid.



inasmuch as the school of design has at present a strongly "applied design" bias (architecture, landscape architecture) the student finds himself cumulatively frustrated in the fulfillment of his intentions. that is, the more architecture he gets on paper, the more built-in frustrations he gets in terms of carrying the projects through to their intended conclusions.

but — the principles of design are everywhere transferable and are only modulated by intention — intention being the prime variable. realizing this, a segment of the student's total studies has not been specifically designed to provide him the opportunity to not only achieve a finished result, but to also provide a "research" laboratory in which a continuum of multidimensional experiences in the synergetic relationships of structure, form, space, color, etc. take place.

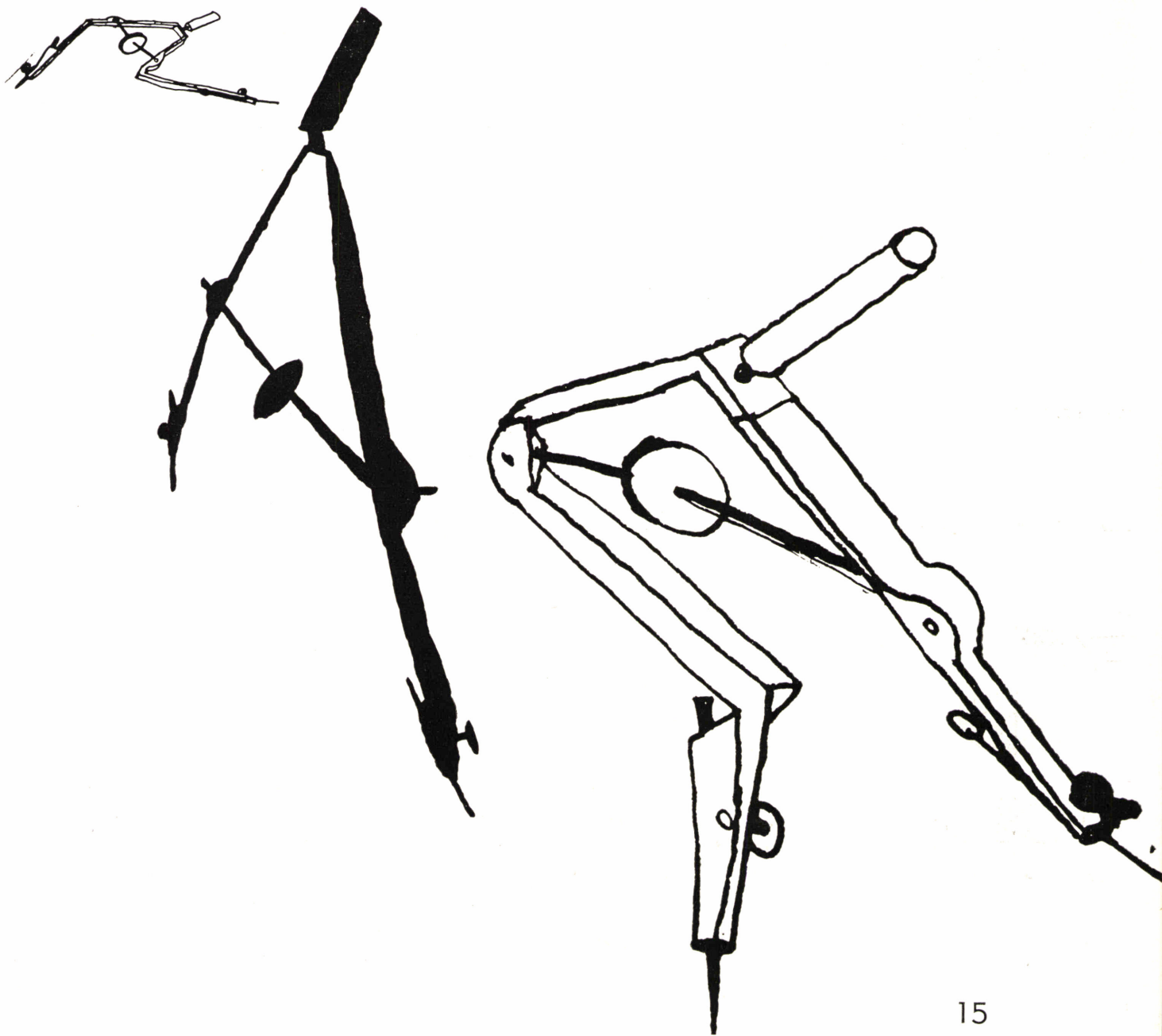
on the pages which follow you will see a group of related fulfilled intentions from the school of design's descriptive drawing course. they are not diagrams of potential events, they are the events themselves.

duncan stuart  
manuel bromberg

# DRAWING

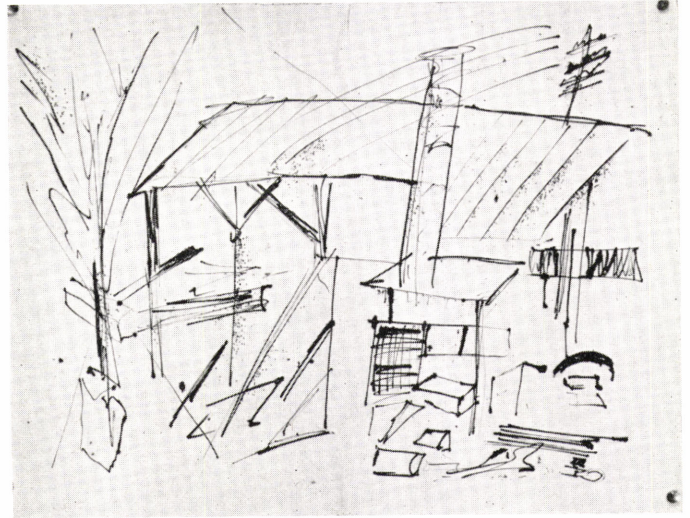
*James Thacker, Freshman*





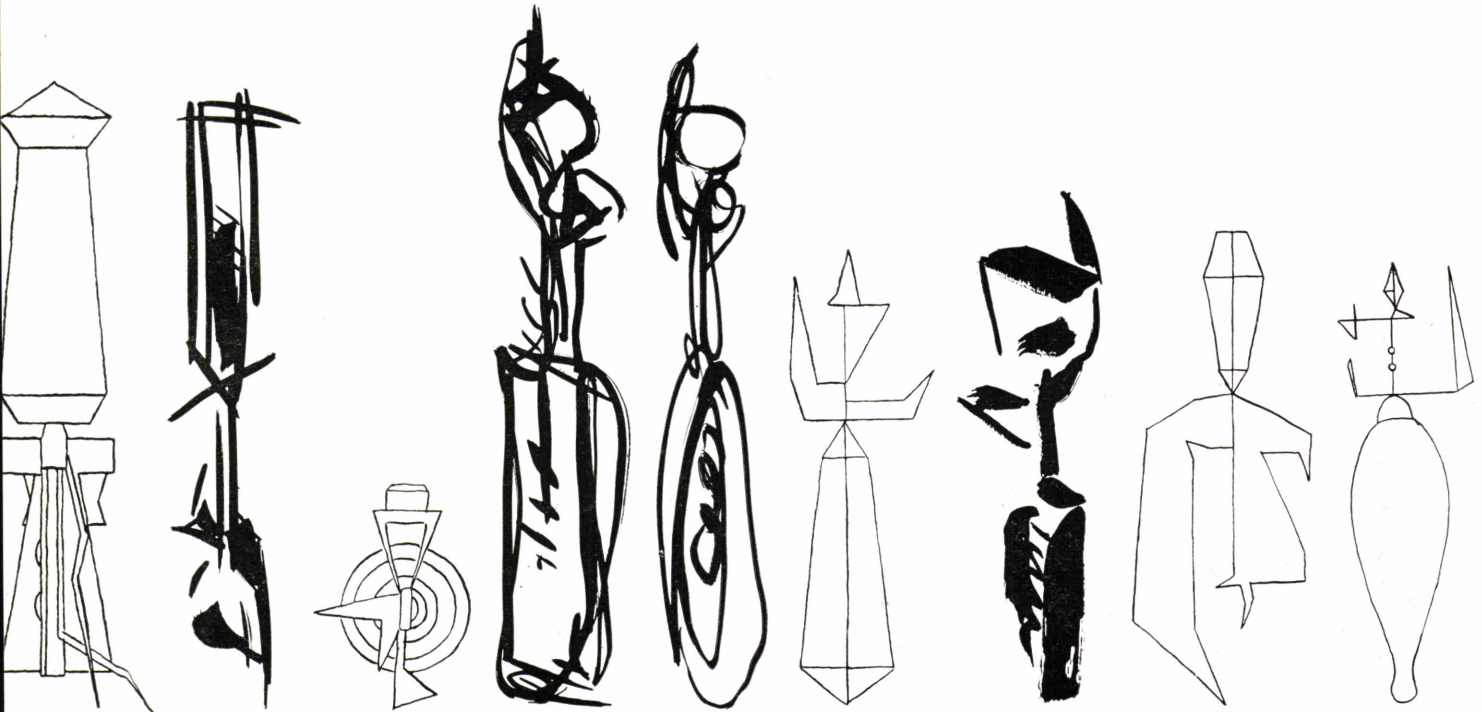


*Truman L. Newberry, Freshman*



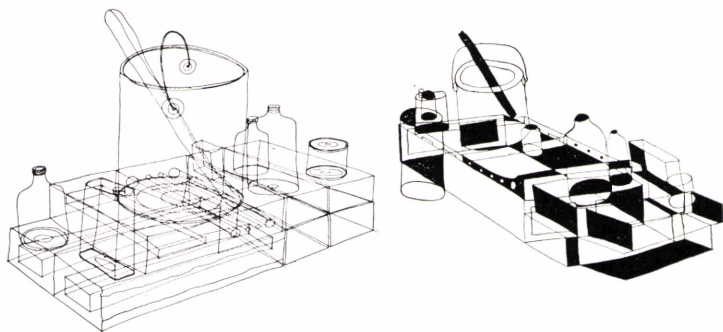
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*Pete Jacobsen and Ben Gary, Freshmen*





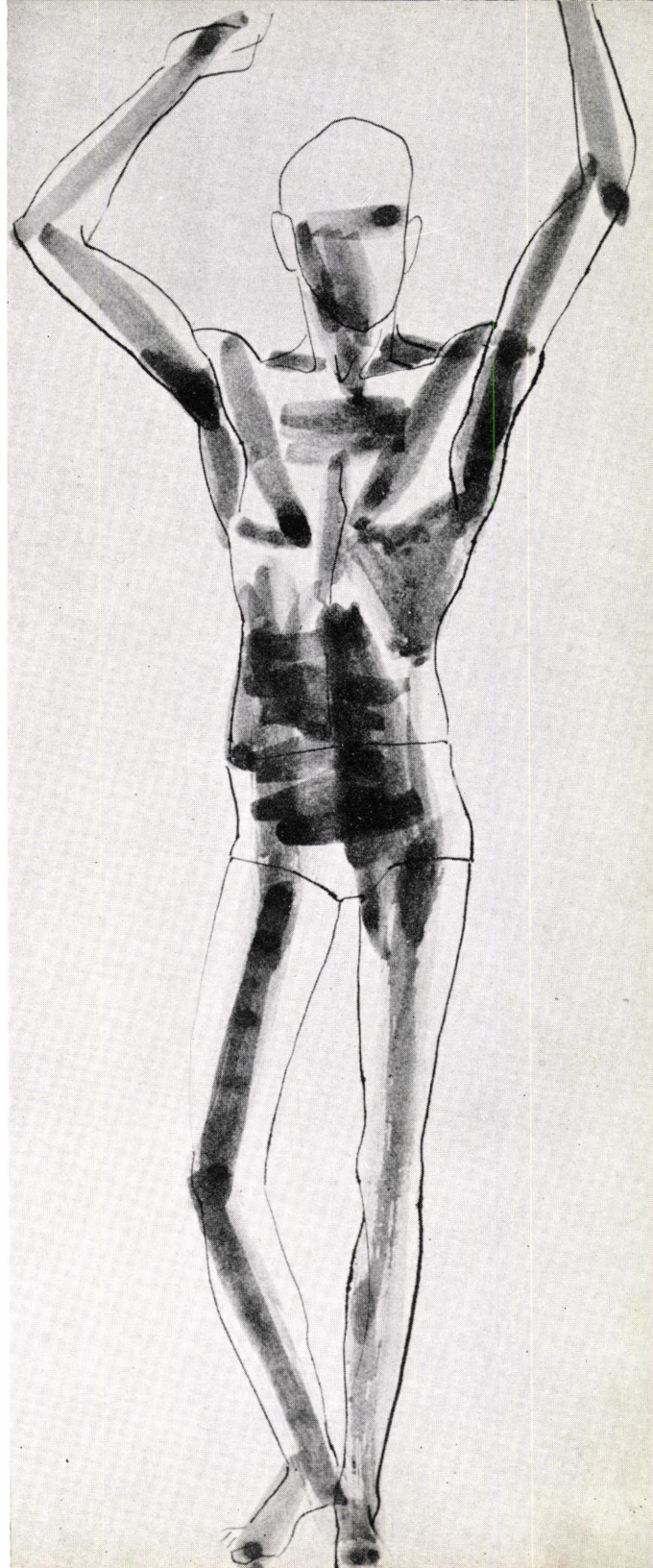
*Wayne Coulter and Jimmy S. Caddell, Freshmen*



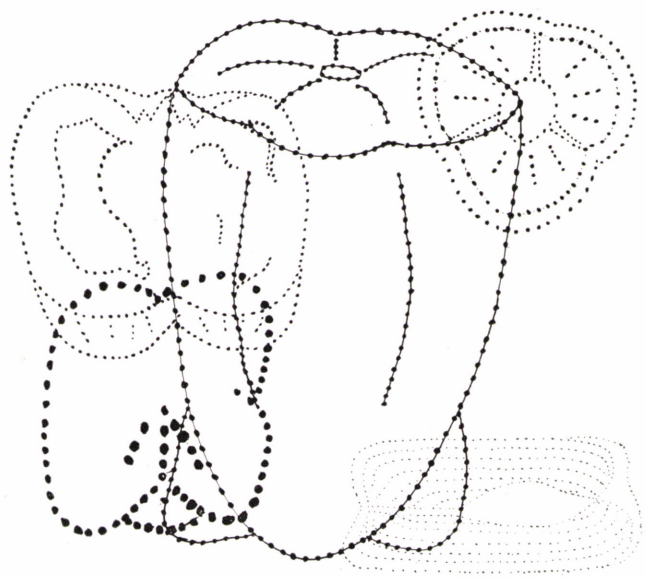
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*William Penland, Sophomore*



*Pete Jacobsen, Freshman*



*Lucius Evans, Freshman*

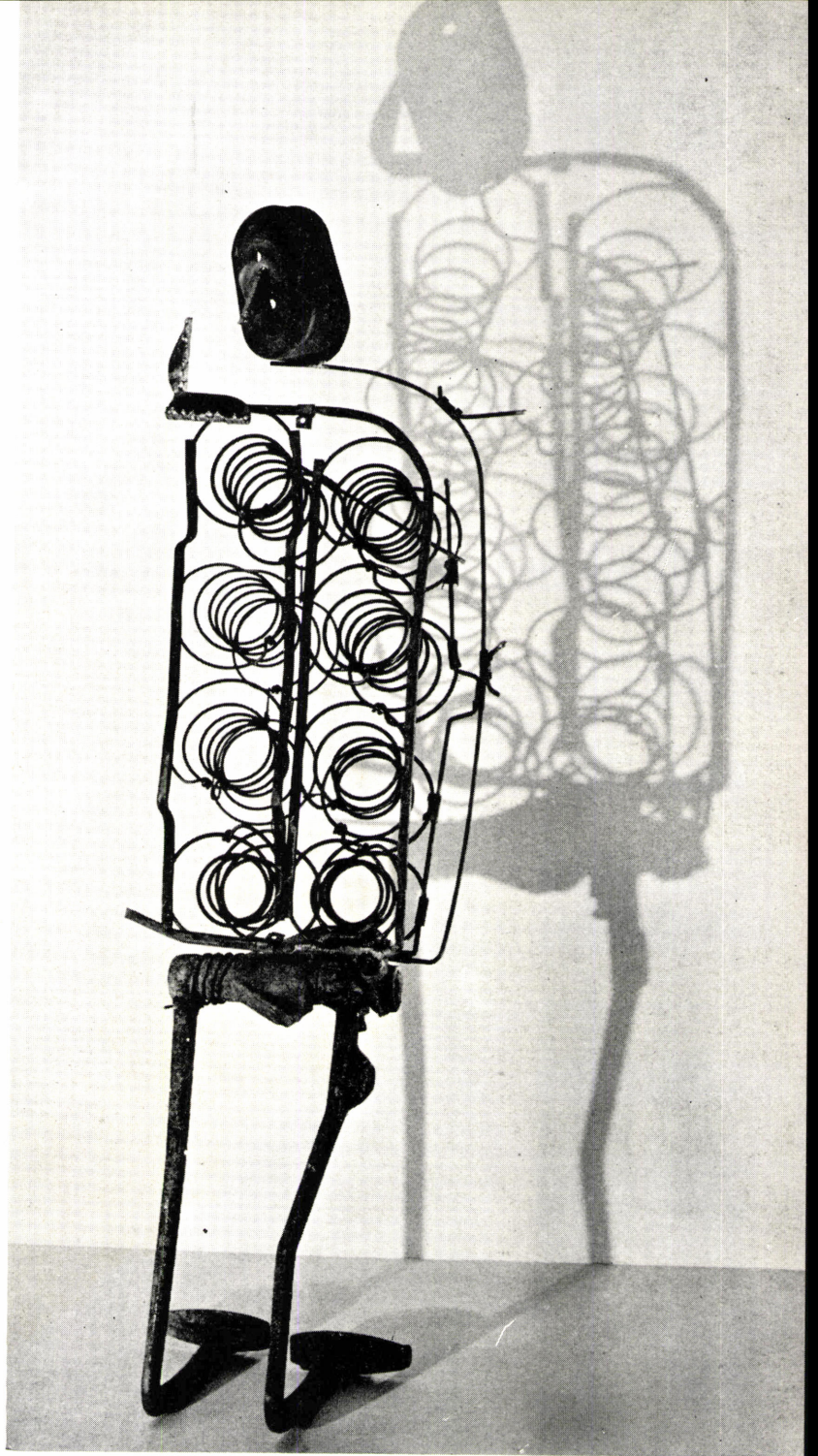


*Otho G. Duke, III, Freshman*

# SCULPTURE

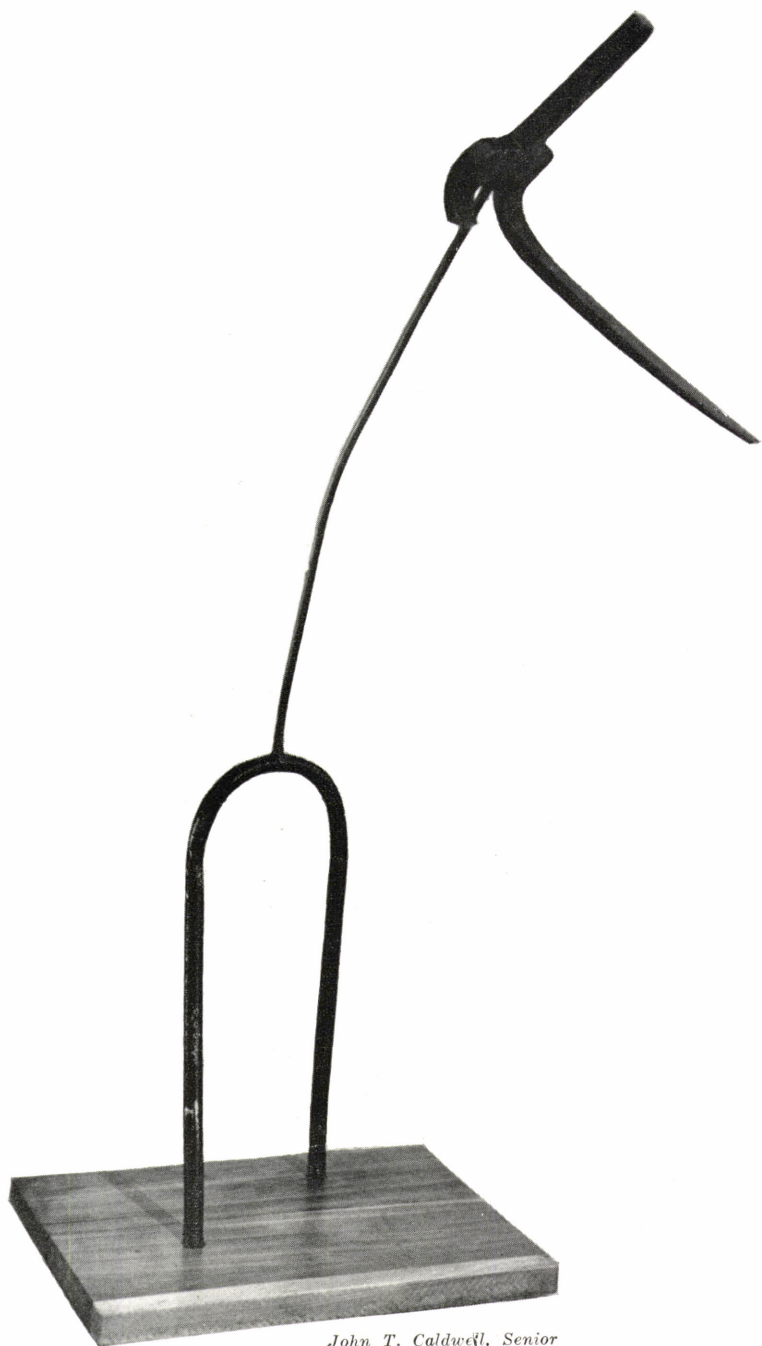


*Sam Hodges, Senior*

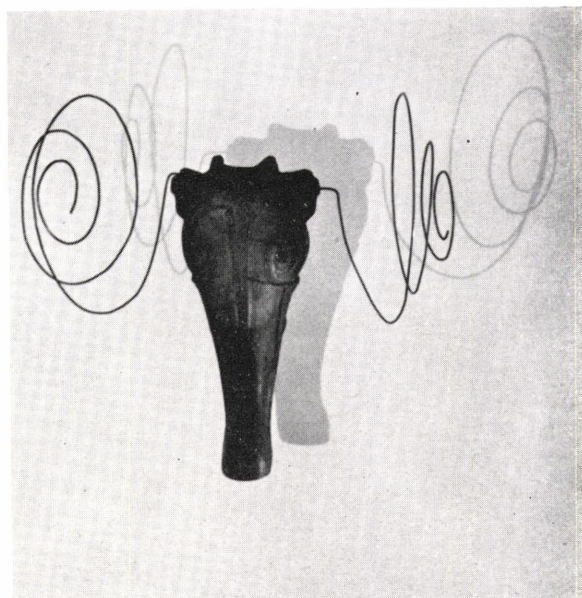


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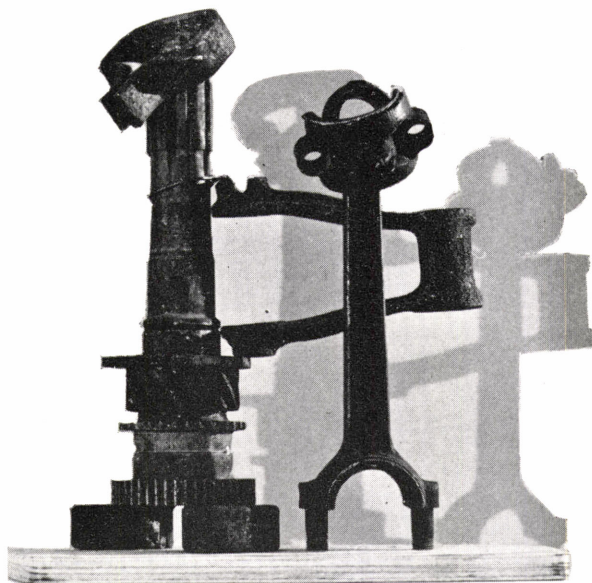
*Donald Wincoff, Senior*



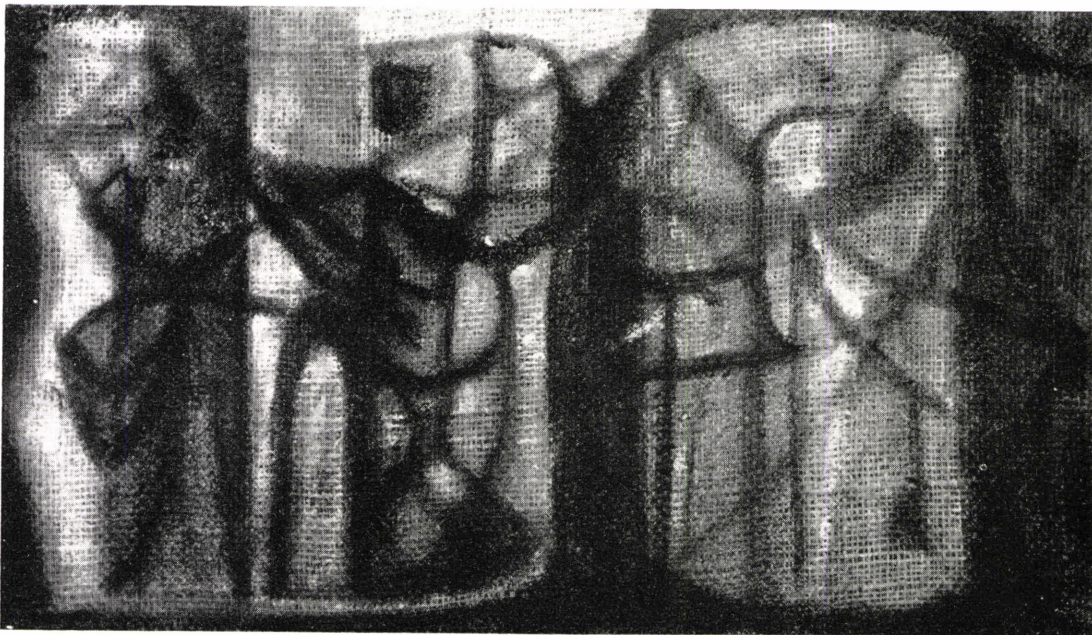
*John T. Caldwell, Senior*



*Sherman Pardue, Jr., Senior*



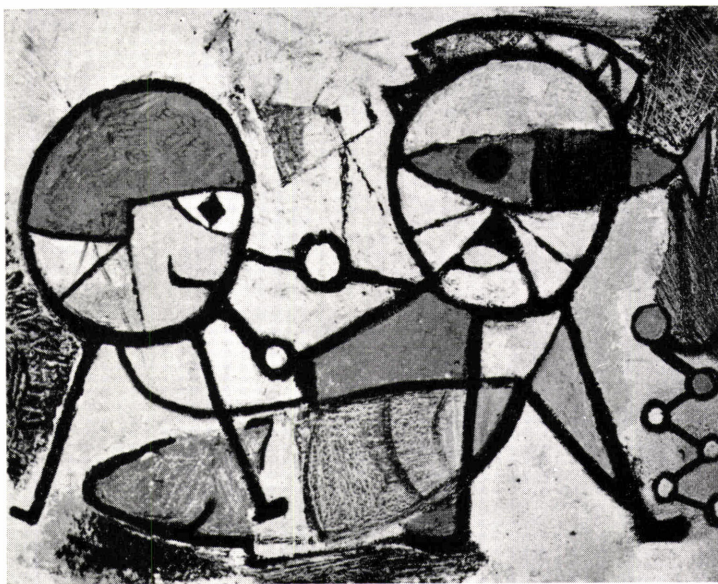
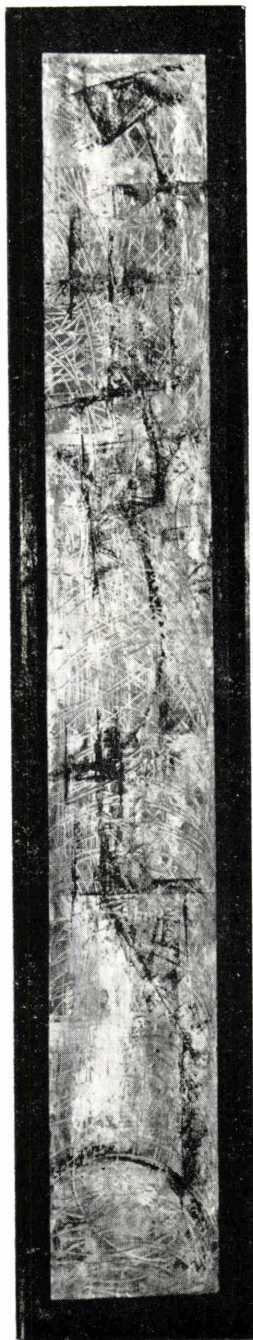
*Sherman Pardue, Jr., Senior*



*Ligon Flynn, Junior*

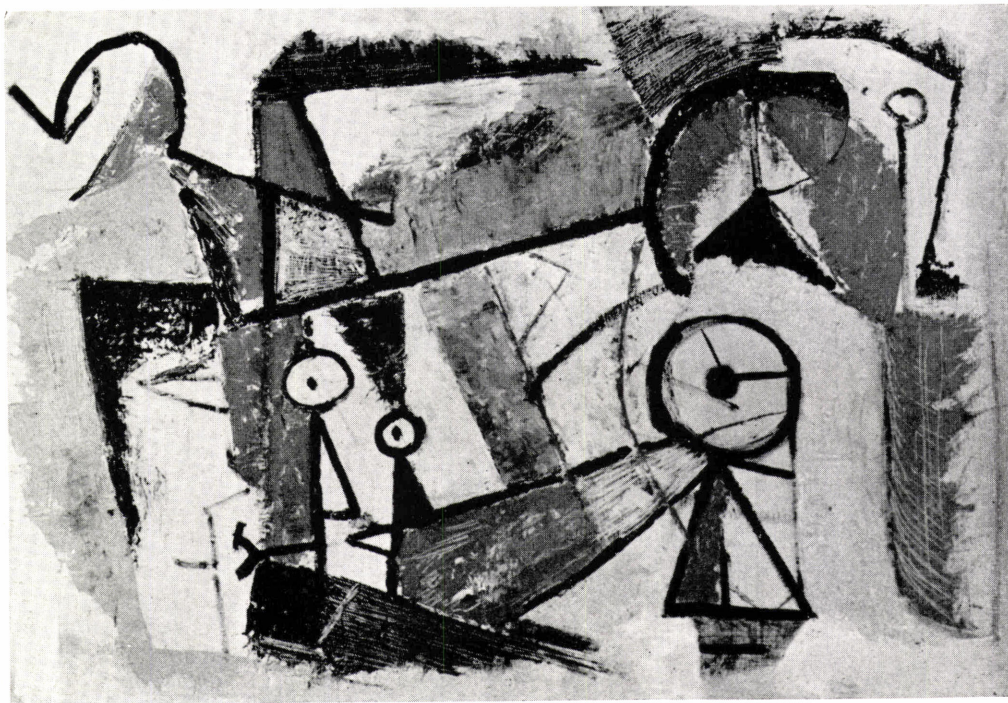
# **PAINTING**

*Max Isley, Junior*



*Morris Nakayama, Junior*

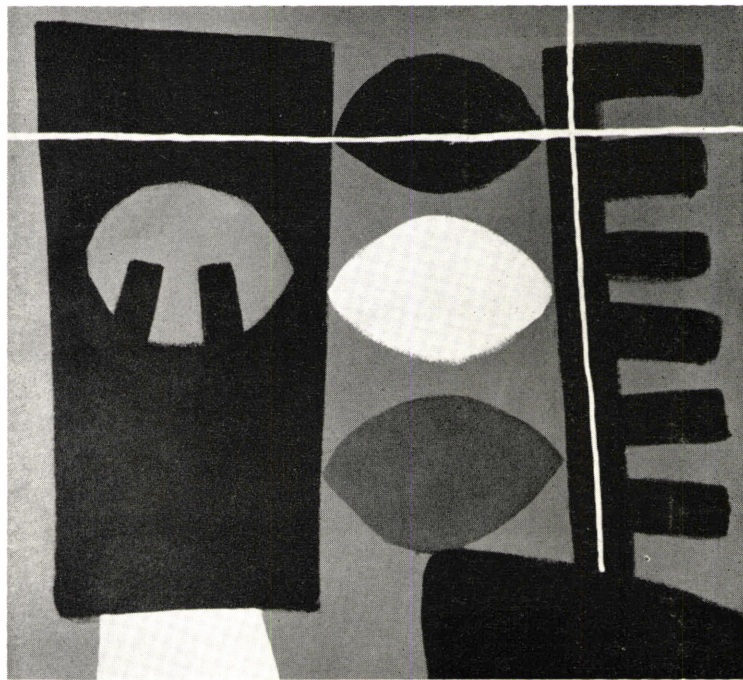
*Morris Nakayama, Junior*







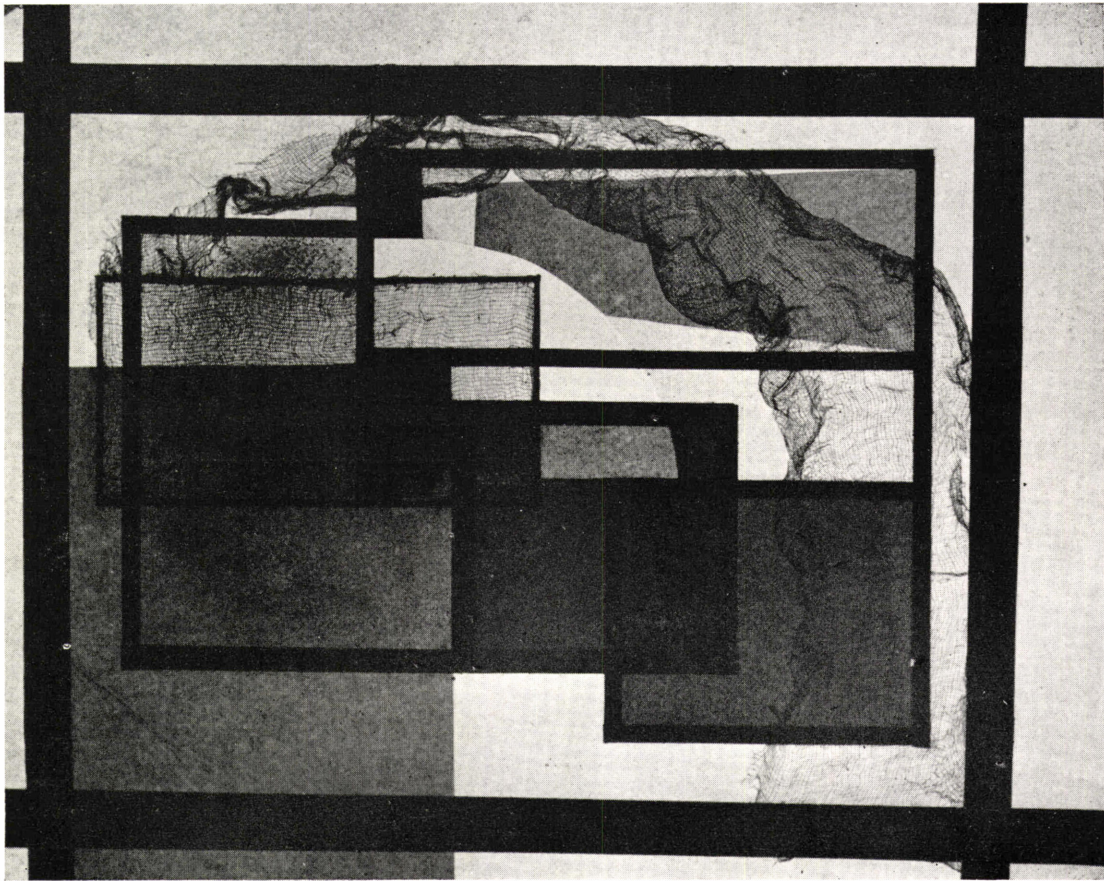
*James R. Washburn, Senior*



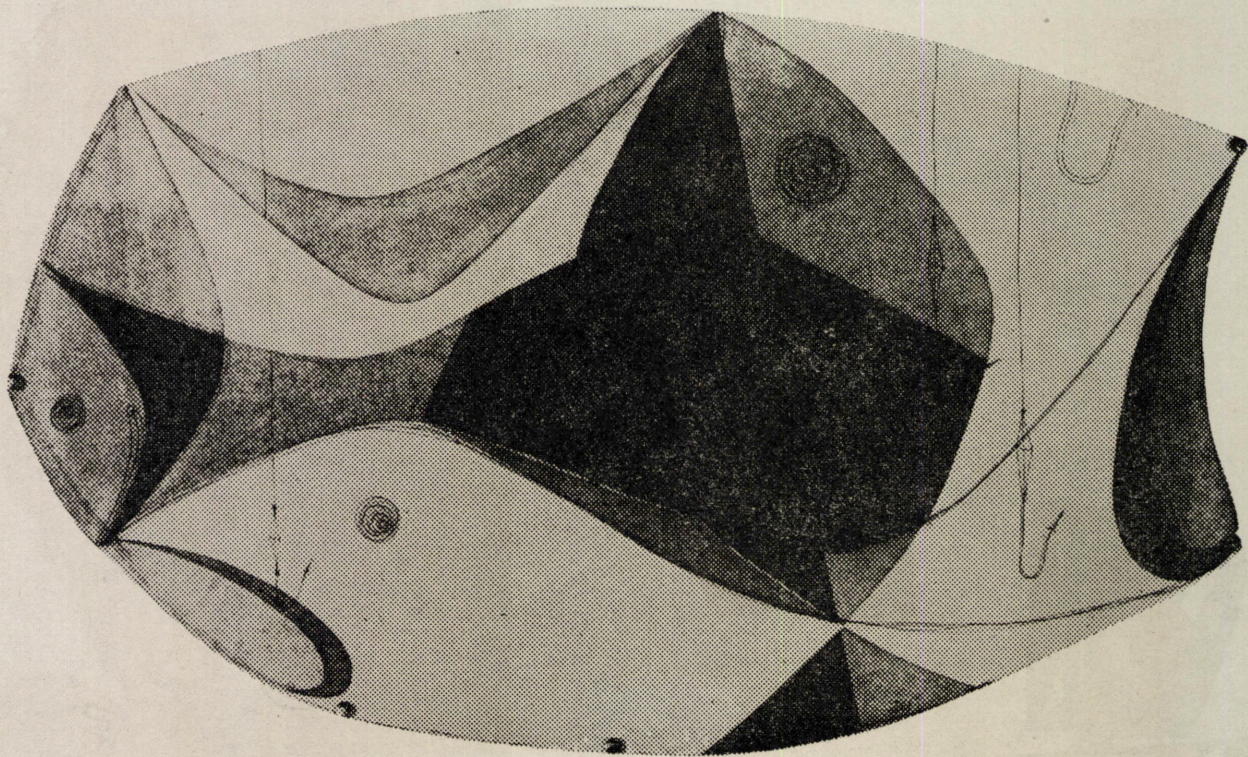
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*Max Isley, Jr.*

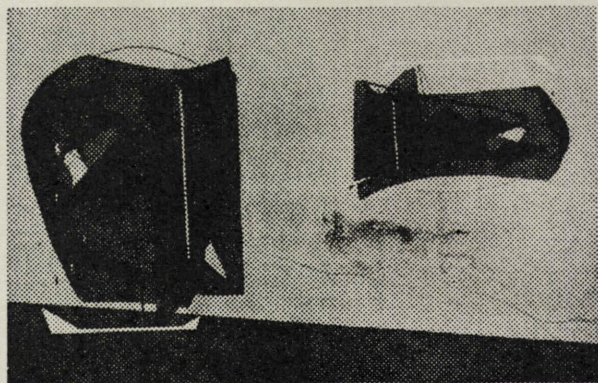




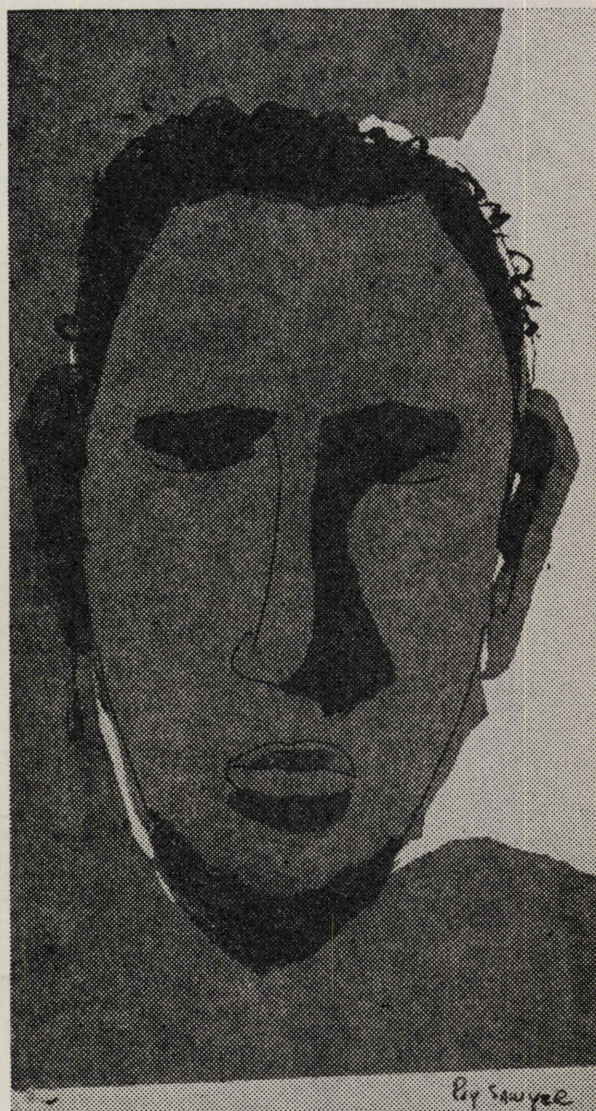
*Edmon Ely, Graduate*



*William Sloan*  
*Graduate*



*Charles Moss, Graduate*



*Ray Sawyer, Graduate*

*What Should the Aims of a Student Architectural Magazine Be?*

What should be the aim of a magazine by architectural students for architectural students? Let me divide my opinion into contents and form.

As for contents I take it that you want me to write on matters concerned with architecture. I say that explicitly, because you may well wish to include purely literary features, poems, short stories and so on. I see nothing against that, but there is nothing either that I would have specially to say about that. Now regarding architectural features, they will at first glance much resemble those in the technical or professional press, but there are characteristic differences. The students' magazine should express views less guardedly than the technical press which is bound by so many diplomatic considerations. Criticism should be forceful, and reply criticism of critical articles, by being equally forceful, should keep a watch on writing to be at the same time cogent and to the point.

The philosophy of architecture and design should play a more prominent part than in the professional press. It is the privilege of youth to generalize. It is the ordeal of older age to become bogged down in particulars. That is why there is such a shortage of published papers and books on style, on space, on ornamentation, on monumentality, on religion and architecture, society and architecture, and so on. The students' magazine need not be afraid of such subjects. Its readers will be sufficiently young to be interested in them.

Discussion of narrower topical problems is equally important: architectural education, professional etiquette and such-like problems. Here again lack of experience can well be balanced by fresh ideas and stimulating treatment.

Then there is the whole question of the presentation of new buildings. Here the students' magazine can't compete with the professional papers. But it can nonetheless do several helpful things. If the professional papers are too narrowly national, it can introduce new buildings abroad from illustrations in

foreign magazines (by their permission, may I add). It can also illustrate controversial buildings and invite controversy. In fact, architectural criticism of which the professional papers (with few exceptions) are too shy, is one of the chief functions of students' magazine. But let criticism be detailed and exact, not just an airing of fads and idiosyncrasies in inflated or apodictic language. You might even invite architects to present their own buildings with chapter and verse for the individual points of plan and elevation and then discuss the buildings on the strength of that. Finally there are the usual "travelogue" features—or that is at least what we call them here—students' tales of travellings, with their own photos or drawings, and preferably with intelligent remarks on buildings of the past. These features are, I think, to be welcomed. But—and that brings me to the question of form as against contents—their success depends entirely on how they are done.

The chief dangers in students' magazines are lack of self-criticism and sloppiness of presentation. The illiteracy of architects is something shocking anyway. If the architect is to be more than a specialized technician he must keep his eyes open, take in everything of aesthetic interest, whether it is the churches of France, or the ranches of New Mexico, or the texture of a cobbled street and an old stone well. So travelogues should be visual reports primarily, but they should also be informed reports when it comes to architecture of the past. Now that students need no longer be afraid that they are taught history in order to enable them to imitate, they might start to appreciate past styles as what they are, the visual expression, in terms of volume and space, of the changing spirit of changing ages. To appreciate them one has to learn what are their characteristics, and learning is usually done by reading. So no travelogues please which are ignorant, even if they are stimulating.

And now one last point: layout and typography. There the students' magazine needs least encouragement from outside. Let them by all means be adventurous and experimental, as long as here also some seeking for information precedes the creative act. There is much that can be learnt about the characters of various type-faces, the effects of white spaces, the treatment and sizes of illustrations and so on. Any architect will find that it will repay him to take layout and typography seriously and devote some private study to it.

Nikolaus Pevsner

## HOUSING AT THE CROSSROADS

Hugo Leipziger-Pearce  
Visiting Professor of Architecture  
School of Design

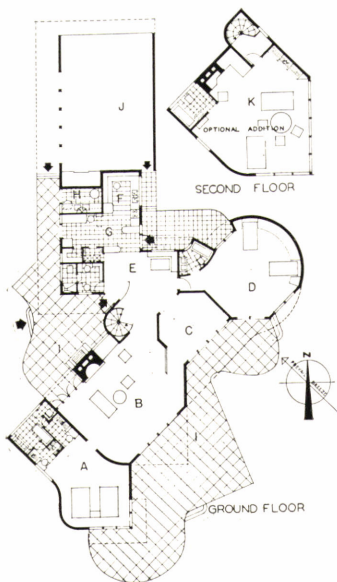
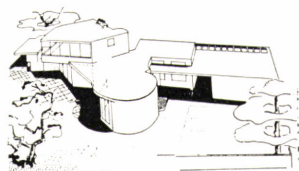
Housing is one of the most pressing peace time concerns in the world today. According to population expert estimates, between 30 and 60 million refugees are on the move. These victims of war, political persecution, natural catastrophes, and overcrowded lands are confronted with finding new homes. In this country, ever since the beginning of World War II housing is at a premium. Population trends of the 1940 census have been upset and even reversed as a consequence of unexpected increases in birth rates and accumulated obsolescence, while expedient construction methods have boosted the heritage of already existing slum conditions.

To what serious proportions this problem has already been permitted to develop, is illustrated quite authentically by the bitter complaints about new sub-standard housing sent to a congressional committee investigating the nation's housing problems. This committee is looking into the practices of the Federal Housing Administration and the Veterans Administration which have guaranteed mortgages on some 18 million dwellings. This inquiry, collecting testimony from all over the United States, has become a sounding board for countless disappointed small house buyers.

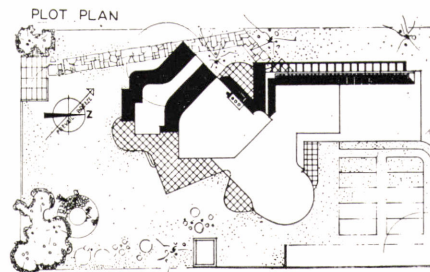
As a result of this flood of complaints, the committee is beginning to wonder "whether anybody is satisfied with his living quarters." It is also most interesting to note that, according to recent scrutiny by the American Institute of Architects, "there is not much doubt that architects have failed to capture any significant portion of the record breaking volume of speculative housing produced with federal credit aids since the war, and which is responsible for most housing activity today."

It is quite obvious that under such adverse conditions of expediency little interest in improving design standards has been shown. True, stepped-up efforts by the American Institute of Architects and architectural magazines are designed to meet this situation. However, it does not take much foresight to predict that only greatly improved *research in design for mass production* methods and the application of sound neighborhood and community planning principles can give a more satisfactory solution here as well as abroad. It seems to be the only conceivable approach for supplying the large volume of housing needs at a steadily increasing design quality. This process will permit the commodity of housing to become a balancing factor in the economic cycle. The new product will also assure quick turnover, so necessary for a constant supply of work. Furthermore, it will make possible a sizable reduction in cost per unit, prerequisite for any mass production method.

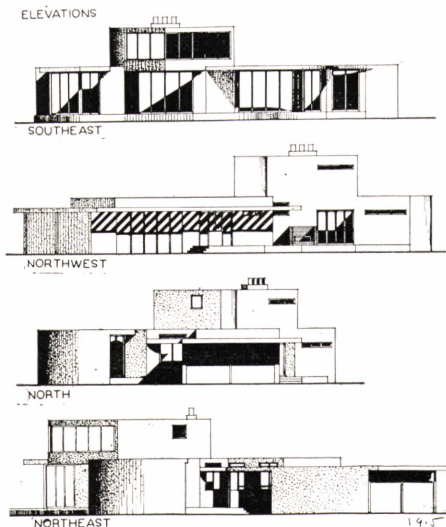
A continuous investigation into this complex problem is being conducted by the School of Architecture and Planning and the Bemis Foundation at Massachusetts Institute of Technology. Research work and annual conferences are being held under the topic of "Housing, a National Security Resource." This



- A—Bedroom
- B—Living
- C—Study or Guest
- D—Nursery
- E—Dining
- F—Kitchen
- G—Workspace
- H—Laundry
- I—Outdoor Living
- J—Double Garage
- K—Study or Sleep



ELEVATIONS



CASE STUDY for mass fabrication (no prototype) design by author in 1944 for California Arts and Architecture competition. Materials: Aluminum sheet cavity walls with sponge concrete (Higgins, New Orleans patent) Scientific-functional design principles, resulting from scientist-designer collaboration. Offer unlimited possibilities of using form and color in a dwelling as Mental Hygiene and Therapy elements. Psychiatry will find such environmental quality control most effective in counteracting neurosis and other negative symptoms produced by modern mechanization. New structural materials like aluminum, alloys, or plywood including the still undeveloped skeleton frame, provide unlimited means for producing the new functional forms in compliance with therapeutic requirements, utilized by the designer along principles of the "Language of Vision."

year's discussion was confined to the problem of applying better design quality to some of the existing mass production methods. It brought together leading figures in this field such as Fritz Burns of Kaiser Homes, Foster Gunnison and Alfred Levitt. The Acorn House, as well as Buckminster Fuller's Geodesic principles, were the subject of scrutiny.

It may be of interest to recall efforts of this nature made almost three decades ago. If nothing else, it can prove how slow developments in the housing field have been compared with the almost unbelievable



pace in other fields where scientific research is applied internationally for the betterment of life. In the middle twenties, Ernest May succeeded with mass production methods for several large scale housing projects in Frankfurt, Germany. Simultaneously, comprehensive design efforts produced excellent results in neighborhood and housing unit planning. This was at a time when a high level of professional competition among the European Architects was reflected in constantly growing design quality which still compares very favorably with what happened during the intervening twenty-five years. Stuttgart, scene of the famous Weissenhof experiment in 1927 and successive similar projects still stand out today as exemplary methods for attaining significant experimental design and construction results.

The procedure seems effective and simple. It consists of inviting competent Architects on an international basis for experimentation under suspended building code restrictions. Conducted on a small scale but on a continuing yearly basis, these projects offer a medium for comparison under actual living conditions. Such or similar procedures of scientific and design research should be considered for the pending large scale production of homes.

Recent exhibitions such as were shown during the international housing and town planning convention in Amsterdam in 1950 or at Constructa in Hannover, Germany 1951 brought together the achievements of various countries. While efforts of city planning particularly in war damaged areas, show significant developments from both the technological and design angles, housing design shows little advance beyond the pre-war pattern. France particularly has made outstanding progress showing also accumulative results of Le Corbusier's relentless efforts.

In this country, the Housing Act of 1949 has opened new and significant avenues for the rejuvenation of small and large communities. This has revealed great leadership and public awareness of a problem to which the architect will have to bring increased professional qualities in order to meet the challenge. In the past, the great opportunity offered by public and war housing did not yield as much design experimentation as could have been possible even under existing handicaps.

We recognize that certain new design principles for housing have been introduced such as the "Open Plan" or "Inside-Outside" relationships. No doubt, this has improved living conditions. The west coast, particularly through the leadership of architects in California, has established a daring departure from the sterile design patterns of the past.

But housing research on the whole is not yet coordinated. It can only point to isolated efforts such as carried on by the American Public Health Association through its committee on the Hygiene of Housing, Buckminster Fuller's Research Foundation, The Albert Farwell Bemis Foundation, or the Research Division of the Housing and Home Finance Agency. The John B. Pierce Foundation, sometime ago, started research studies for "Family Living As The Basis For Dwelling Design." Thus establishing a new and badly needed point of departure. Nevertheless, all these efforts have not produced much more in the way of guidance for housing design than was provided already by such excellent analyses as Katherine Bauer-Wurster's minimum standards and requirements in "Modern Housing."

An interesting experiment was started in England when Lord Nuffield in 1938 endowed Oxford University with a Chair of Social Medicine tied into a Research Institute of similar description. It is designed to investigate the subtle processes of environmental causes which seem responsible for the alarming rate of increase in ill health among industrial populations. Although interrupted by the contingencies of war, this approach should yield significant stimulation for housing design principles. The effort is much broader in scope than recent public health considerations and projects in this country such as the establishment of the Smog Medical Commission in which 2,803 doctors participate countrywide. The latter constitutes only one among many adverse environmental influences brought on by industrialization and division of labor. There is no question in my mind that this approach opens a new challenge to the designing of the human habitat, made possible by the widest utilization of mass fabrication methods. Indications are that this new trend will be guided by the demands of curative as well as preventive medicine. Housing, as a corrective agent, could become one of the most effective therapeutic means against many modern occupational diseases of a physiological as well as psychological nature. This therapeutic value of design, still largely unexplored, should be of vital interest to both the medical and design professions with housing having to depend increasingly upon the results of such coordination.

To many, this may seem an ill-advised complication of an already confused enough situation. Yet, by analogy, we can expect public acceptance after valid results from research and experimentation. This has been the case in the field of nutrition. Here, an ingrained heritage of obsolete and by now even detrimental eating habits has given way to dietetic considerations. As daily routine or specific treatment, "this has become" a most successful therapeutic tool of modern curative and preventive medicine. As we know, these changes are necessitated by the shifting requirement of specialization and division of labor upon the human mind and body. At the same time, the resulting facilities of industrialization make it possible to proceed with the involved scientific intricacies for both balanced nutrition or therapeutic housing design. Environmental control of quality in nutrition as well as in housing does not interfere with the freedom of choice, as might rightly be feared. It constitutes simply a necessary adjustment which the modern scientific age will have to consider as part of its complex nature.

Ever since this medical research started in England before the war, but also based on my own housing design experience, I have been advocating in numerous publications a simultaneous interest on the part of the architectural profession. Following the line of reasoning that housing will have to depend increasingly on refined methods of design as well as of mass production, it may be argued that housing design should become a basic discipline in architectural education. Although on a different level from city planning, housing design will also have to depend on inter-departmental cross fertilization in our colleges between the physical and social sciences as well as design. In fact, efforts should go into the direction of setting up a *New Discipline of Environmental Design* as coordinative agency in the sense of geography.

By referring to housing design in the above sense, a difference is implied between this and other phases of architecture. In order to understand more fully such a differentiation, I would like to refer to "Modern Architecture Needs A Frame of Reference."\* There I am setting forth the reasons why I believe we must distinguish between *scientific-functional* and *symbolic-functional* design principles. Needless to say that both approaches are dependent for expression upon the "New Language of Vision."

\* HUGO LEIPZIGER-PEARCE, *Modern Architecture Needs A Frame of Reference*, Journal of Architecture, Engineering & Industry, Vol. 10, No. 4, The University of Texas. (Reprints available from author.)

## THE ARCHITECT — CRAFTSMAN OR BUILDER ?

The position of the architect in today's society, as an interger between art and industry, is a non-existent factor. The profession from which he inherits his name is fast degenerating to a mere business attitude, and his all-too-willing departure from professional procedure is resulting in the decay of practice and practitioners.

There are, basically, a few prerequisites for one having the title of architect. He should be an individual whose academic and practical training enable him to aid society in fulfilling the natural desire for orderly environment, integrated community, and efficient shelter. As an aesthetician, he should be capable of satisfying this desire in a beautiful manner. Man-consideration, being one of his greatest limitations, makes it impossible for him to disregard economy. Technological know-how, being one of his greatest attributes, makes it possible for him to look ahead in order to give due consideration to materials, structure, methods of building, and their relationship to the universal plane of reference—man. Because the architect deals with the enlargement and the enhancement of human needs, he assumes the responsibilities of a professional man.

It is evident, however, throughout the realm of today's architect, that there is little realization and even less manifestation of the full extent of this profession. With this in mind and with the basic requirements stated above, let us attempt to make a comparative analysis of the situation, past and present, in an effort to discover whether or not the architect is detrimental to, or is a necessary part of society.

ARCHITECT, which comes from the Greek *architecton*, is defined as chief artisan: MASTER-BUILDER. In retrospect, we find the architect as a MASTER-BUILDER who, according to Vitruvius, should be well versed in the arts of music, literature, mathematics, medicine, astronomy. He was a designer who was completely aware of what went on in his world. A centripetal force, he WAS the center of industry, commerce, and art. From him, all constructions radiated. He was not only familiar with available materials, tools, and slaves, but also he experimented and invented in order to solve a contemporary problem in terms of future possibilities. He was, as master-builder, capable of exploiting the not-yet-so complex technology which confronted him: a technology which stemmed from a forward moving society and which was realized in advanced structural forms whether they be buildings, aqueducts, boats, or wagons. The architect, then, was an organizer; a turnbuckle between art and technological advancements and one whose manifestations are evidenced in the pyramids, the Parthenon, the Crystal Palace.

Today, Vitruvius and Leonardo are but names; quotable quotes with implications which are heeded only superficially. We see the architect as a mere shell of the master-builder of the past. And, by the very nature of the word **shell**, the architect becomes now a peripheral observer who is no longer in the center of constructional activity; but who is precariously perched on the extreme rim of his complex world: an observer, who, insensitive to what is happening around him, makes no obvious effort to participate, and who is, consequently, bound by sheer gravitational force, to lose his grasp therefrom.

We are now able to discern the introduction of certain forces which are tending to crush the artist-architect—the contractor, the builder, the speculator who considers that he has arrived at a standard that suits everyone, and the client whose role has changed from emperor to man-in-the-street (and who, because of his desire to economize, buys from the builder on the installment plan much in the same way that he buys his furniture and automobile.) The question is—does he get his money's worth? Though the builder claims that he provides maximum accommodation for the money that is permitted by the methods and materials that he employs, he is not employing the most rational methods and the most economical materials. When we but superficially analyze present day building techniques, we find a confusion which results only from obsolescence. When it becomes necessary to call in twenty or more specialists to erect even the smallest of structures and when we observe a chaotic unorganization of mason, carpenter, plumber, electrician, glazer, not to mention prolific helpers, we cannot but wonder whether there is no other method for the performance of the important social work which the speculative builder at present controls.

Herein lies the architect's obligation to society and the profession; not as a negotiator with the people who control this confusion but as an exterminator of superfluous labor, materials, time and their inevitable added expense, through invention (in terms of tomorrow's potential) of a mode of building which will effectively relieve this laborious disorder and which will produce an efficient structure: one that can easily be erected and one that will be economical. There is, it seems, but one logical approach which is so obvious that it is, to a great extent, unseen. By approaching the problem from the fitness side rather than from an aesthetic standpoint, we may begin to become aware of the vast wealth of power that is part of our physio-social makeup: that of the machine and its ability to mass-produce and standardize. Design, in this light, will be rid of preconceptions and prejudices and will be dictated not only by convenience and efficiency, but by economical machine production, handling and distribution of parts, and by speedy erection by unskilled labor.

The airplane and automobile, as manifestations of the potential of our machine-production technology, are but two examples of the concentration of knowledge and resources which are beautifully keyed to production, economy, and man. Similarly, the weapons and the numerous utilitarian objects are evidences of mass-produced articles which are unhampered by sentimentality and which reflect a pure conception of advanced technology.

Admittedly, buildings have tended in this direction but in a lesser degree than is desirable. It has been found unadvantageous to attempt to translate handicraft Cape Cod or Greek temple architecture in terms of the machine. The machine can duplicate hand-work, but any attempt to do so results in the loss of self-expression. Therefore, it is necessary to adapt the **building** to the **machine** with no adherence to previous modes; and in doing so, we will become aware not only of a new aesthetic but of a resource which has heretofore been unexploited for constructional purposes.

This is not to say that the architect has remained dormant. He has, knowingly or otherwise, been fighting for a cause, and still is, though he fails to realize that the battle between eclectic and modernist is over and that it is now possible for him to erect any number of structures in the modern vogue with little or no opposition. Yet even though the modernist disguises his expressions with a seemingly different sensitivity to proportion, color, and texture, he retains much of the eclectic. His so-called organic buildings remain, beneath the surface, as obsolete in their methods as do those of the eclectic. Here we notice this process of evolution involuting. The eclectic, in his attempt to retain the appearance of the handicraft structure, also attempts to duplicate it in terms of the machine; the modernist discards the appearance of this structure but retains the craftsman. Today, handicraftsmanship, in view of the machine, means luxury—an unnecessary expense. Consequently the architect-designed building has become an extravagant luxury product when architect-service should be no more of a luxury than that of a doctor.

If we can forget imaginary feuds and obsolete constructional retrogressions and if we can fully exploit that factor which is an expression of the industrialized world in which we dwell, we may again equate ARCHITECT with MASTER-BUILDER and weave him into his rightful position in the center of the pattern of advanced construction.

**B. J. Blech**  
3rd Yr. Student

The School of Design is devoted and dedicated to the development of a native architecture and its accompanying art forms for the southern regions.

The School and its teaching recognizes the dangers inherent in materialist-mechanistic civilization where there may be an over reliance on the machine and the mechanical devices available for use to man in his constructions for shelter. We give attention, therefore, to that larger responsibility of architecture, the art of humanizing the environment.

And while natural and organic aspects of design are stressed, the inter-national and universal aspects are also respected and related to the humane patterns of life. We seek to integrate the architect as a social human being and the architect as scientist-engineer, and we encourage and nurture the architect-engineer as the coordinator of the structural dynamics in the over-all pattern of life.

While our first aim is to serve North Carolina and the regions of the south, our students, through the teaching of the school, will be equipped, we believe, to work in any region.

Because character, a profound devotion, and an absolute professional commitment are prime ingredients of any creative activity where the social responsibilities are as vital as in architecture and design, we foster and cultivate the integrity of the individual.

Individual creative expression is emphasized as the epitome of good design, but teamwork is also encouraged and developed as a necessity of humane progress in the machine civilization of the day. We believe that the primadonna who isolates himself behind the intellectual barrier of his own self-sufficiency fails to recognize and understand the importance and necessity of the formal technique of compromise as a dominant factor of design as related to the social pattern of life—just as nature in all her workings adjusts to all pressures and all tensions.

The faculty of the School of Design have been selected for their individual and diverse personal philosophies and their individual yet divergent professional qualifications. We have brought together creative personalities willing in their teaching to subordinate their own professional interests to the pedagogically more important interests of their students. Here a community of scholars working each in his own way searches for the truth as he sees it, giving the young student the benefit of his professional knowledge, his technical training, and his experience as a citizen. We encourage the student to sift and sort this diversity of opinion, even though in this process, while usually stimulated, he is sometimes confounded. In the end we are confident he arrives through this process at an ability to shape his own conclusions.

To combat the dangers of over-specialization we seek to develop the personality and character as a whole. The goal in the growth of the student is not only the mastery of the techniques of the profession architecturally, but through the stimulation and development of the intellectual and emotional capacities together, a readiness is developed to meet the challenge of any environment.



*Dean Henry L. Kamphoefner Residence  
Raleigh, North Carolina*

*Photos by Andre Kertesz*

Benjamin B. Taylor

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*Visitors* to the School of Design for the Spring Term will be:

**Pietro Belluschi** (March 31-April 2) conducting 3 seminars: Two on the Equitable Life Insurance Building in Portland, Oregon. One on the Oregon House.

**Lewis Mumford** (April 14-19) conducting one lecture: "A Personal History of Our Time"; five seminars on Mies van der Rohe and Le Corbusier.

**Naum Gabo** (April 14-26) directing a selected group of 12 students; seminars.

**Robert Le Ricolais** (March 24-June 1) Structural Consultant to the fifth year design class.

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