AIA

JOURNAL

OF THE AMERICAN INSTITUTE OF ARCHITECTS

APRIL 1958

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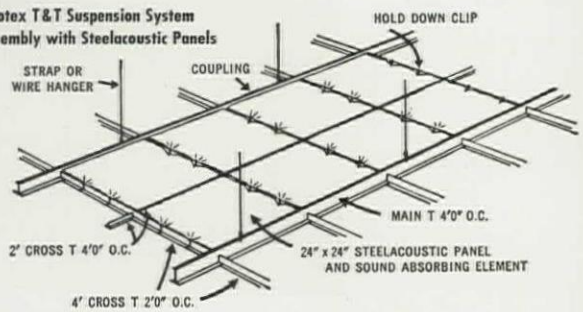

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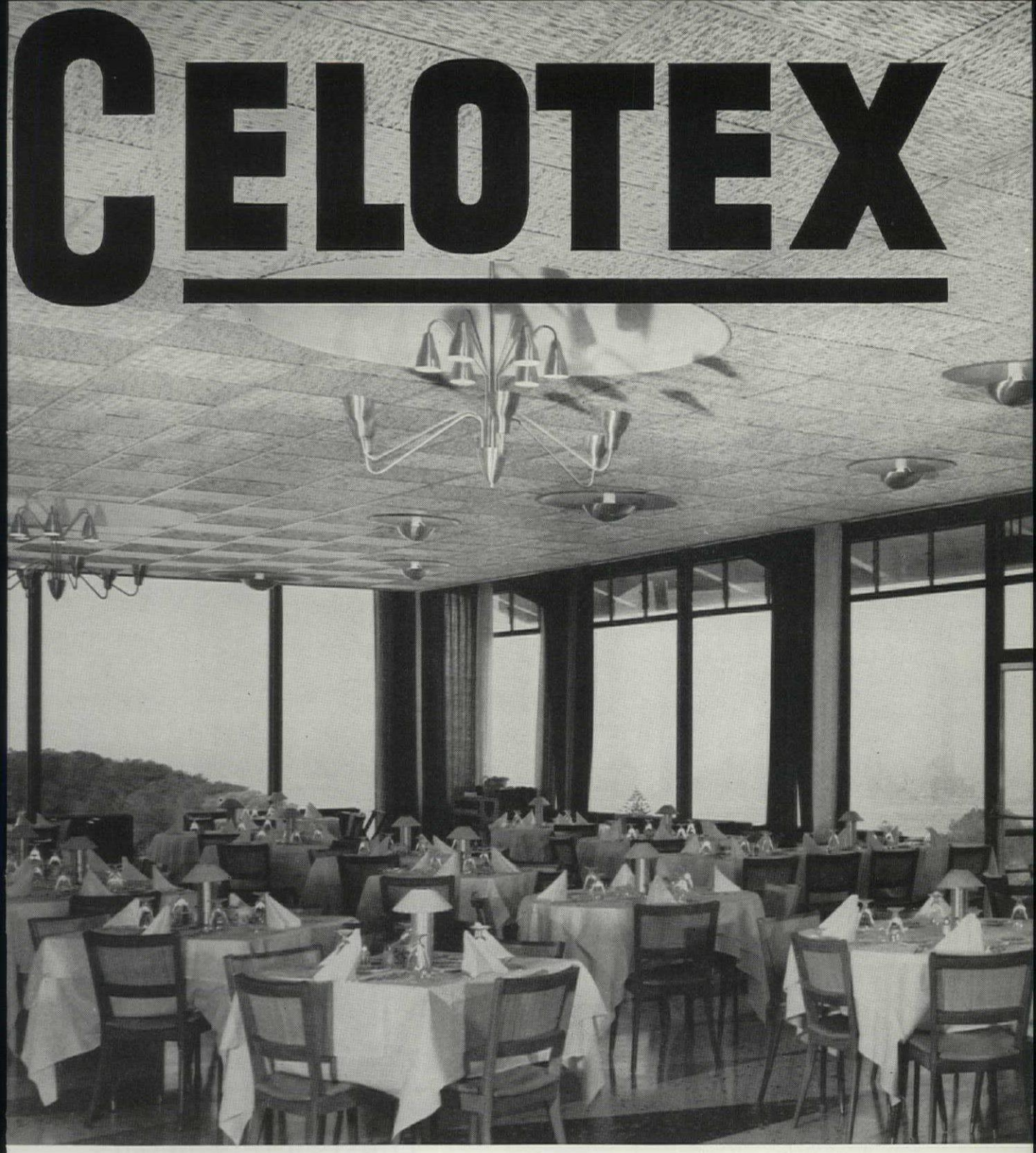

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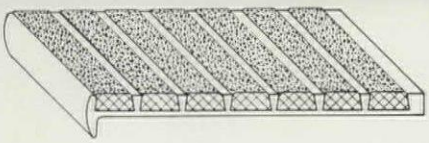

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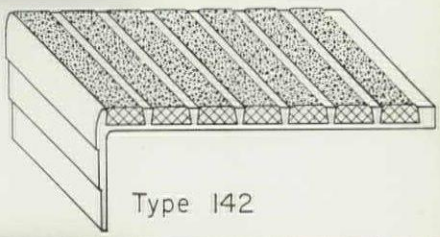

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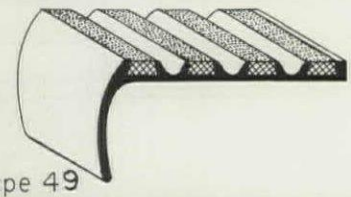

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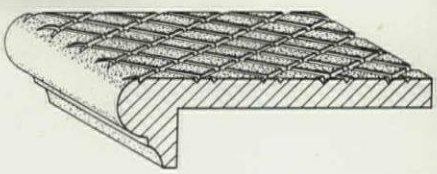

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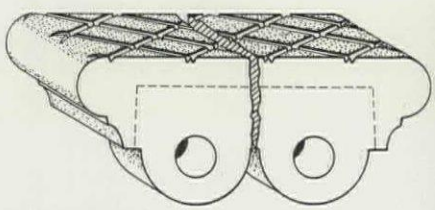

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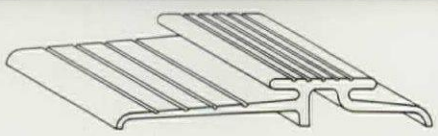

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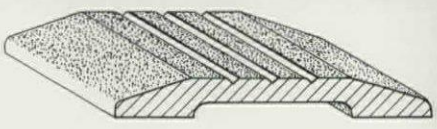

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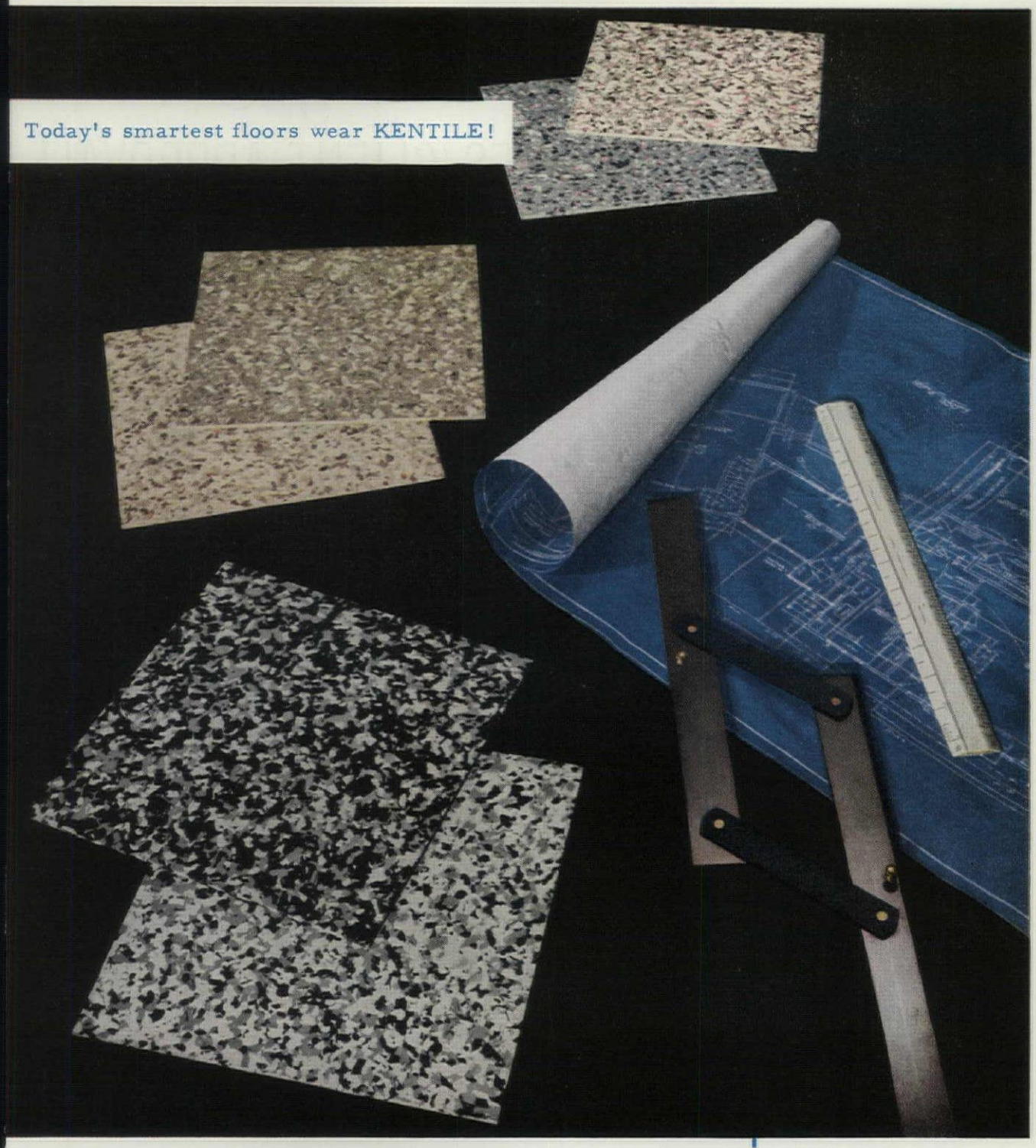

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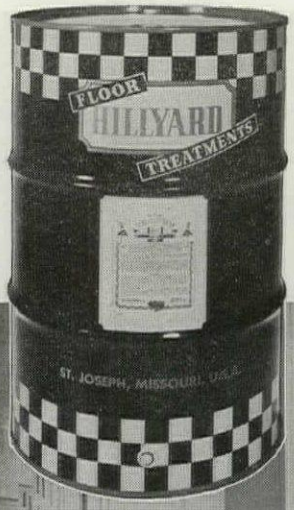

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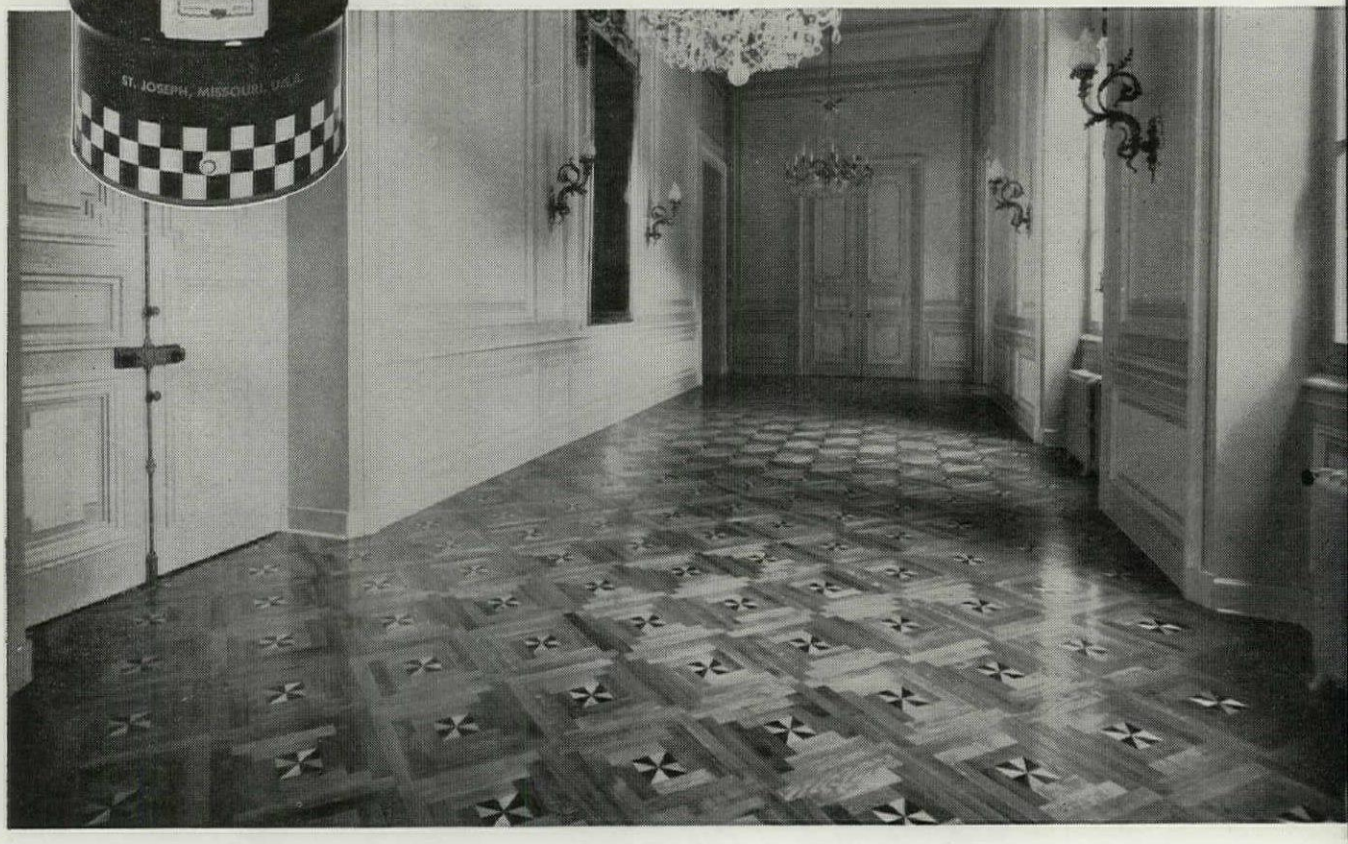

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Interior Walls: *Plastic coated coverings in classrooms, Common Room and halls.*
Heating: *Hot water radiant panel system, zoned and thermostatically controlled.*
Ventilation: *Exhaust fans in classrooms, toilet rooms and kitchen. Tempered air supply units in Common Room.*
Lighting: *Semi-indirect fluorescent fixtures.*
Floors: *Vinyl asbestos tiles on concrete slab over insulated concrete fill and moisture barrier.*
Roof Surface: *Translucent corrugated panels over playroom and covered walks. Built-up tar and felt with white graveled surface over remainder of building.*

chitects: O'Connor and Kilham, New York City • General Contractor: George L. Hickey, Inc., Stamford, Conn.

PHOTO
Typical classroom showing exposed timber beams and decking. School is built around a paved court yard, and contains fourteen classrooms, Common Room, library, kindergarten wing of two rooms, administrative quarters and covered play area which is sketched above.

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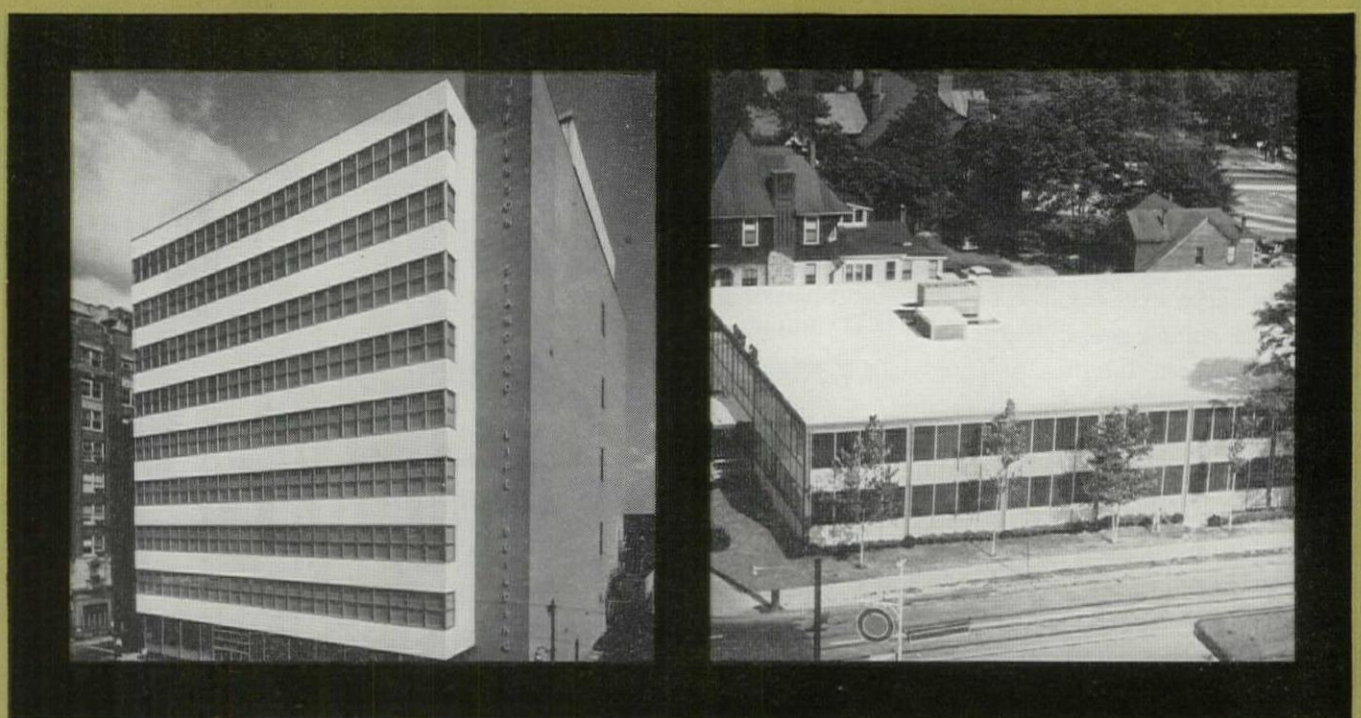

JOURNAL

OF THE AMERICAN INSTITUTE OF ARCHITECTS
VOL. XXIX, NO. 4 APRIL 1958

CONTENTS

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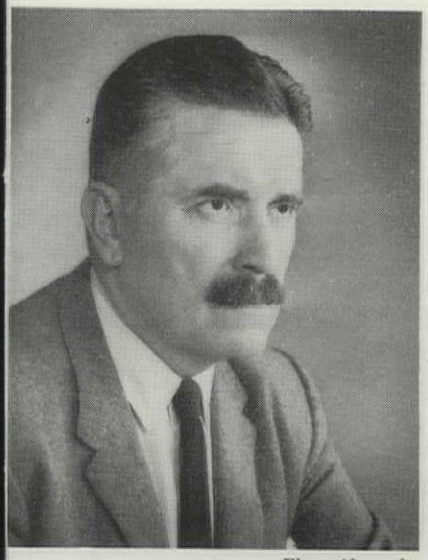
THE AMERICAN PAVILION

The Brussels World's Fair

This photograph, taken last January, shows construction work being carried out on the American Pavilion, designed by Edward D. Stone. The Brussels Fair opens this month and will run through October 19th.



Elson-Alexandre

Aluminum Balls in the Air

BY GEORGE VERNON RUSSELL

MUCH HAS BEEN SAID OF ALUMINUM BALLS and the hell they have played with our complacency, and, we hope, our thinking.

We have suddenly become aware that scientific proficiency is not a proprietary interest of our country and that, by some hook or crook, education in engineering and science seems to be getting through to the benighted peoples of other lands.

The shocking realization that international parity, in at least some of the facets of scientific endeavor, might possibly come to pass has led to a sudden reappraisal of national dogma and our standards of education.

The sudden cry for scientists and mathematicians has been loud, often from those whose knowledge of mathematics is limited to the vote counts of small precincts—and from all appearances the fourth-grade reader will soon be laced with articles on inertial guidance and the quantum theory.

Our sense of alarm is a great and commendable reaction but, in our stimulated anxiety to establish position in outer space are we neglecting shortcomings in the other manifestations of our culture—our earth-bound surroundings, for instance?

In the mad scramble to keep aluminum balls in the air, we must hope for thoughtful consideration of our nation's place in the field of man-made environment—environment as inescapable as death—yet a basic ingredient of life.

Assuming early top billing in the international juggling act, it seems only reasonable to expect an eventual return to long standing issues in world politics, among which environmental improvement has long loomed large. Let us hope that in this case, we shall be there first with the most and the best.

If we architects are following the course of other aware Americans in these uneasy moments of re-evaluation, then certainly we must take stock of our position in the creation of this new environment.

How willing are we to devote time, talent and clinical effort to the ills of our environment, or to the education of tomorrow's young architect, who, we hope, will really play a large part in day-after-tomorrow's world?

Can, and will, we evidence a stimulated interest in civic affairs thereby leading to greater inclusion of architects in the policy-making bodies of our communities—communities that are, in the eye of thoughtful architects, so medieval in concept and primitive in execution?

As a native Californian—one of the comparatively few of my generation—I hope that our greater participation might lead to some *collective* self-appraisal, and less self-praise, and that the excellence of our cities might be the basis of a pride far more justifiable than one based on size alone.

And what of our efforts as individual architects? In my role as a consultant to several small community planning and architectural review boards, I too frequently see work of appalling standards appallingly executed by ordained members of our profession.

In my embarrassment before lay members of these boards, I can't help feeling that if in some way the efforts dedicated to restrictive legislation against Philistine designers were directed toward wiping out *slobism* in our own ranks, restrictive acts might become unnecessary. Neither legislation nor contrived public relations programs can rival competently done work as a panacea for the weaknesses of our position.

In our moments of introspection, we must review the development of our personal acumen since admission to practice. Too often we bog down in the swamp of self-complacency. Has the fund of creative adventure been superseded by the easy way out—recourse to our own warmed-over plan files and details? Have we become attuned to the realities of our time and have we come to terms with the inevitable changes of our environment?

How frequently do we ignore the first blooms of design consciousness—the hopes of a young couple or the small business owner who have high faith in the worth of design and a low budget for its execution?

The grass roots of architecture are really in these areas, yet we so often disregard their potential in the hectic rush for major commissions.

Is the younger man in our ranks culturally preparing himself for a selective approach to architecture—a sense based on disciplined experience—or is he falling prey to the vulgarisms, clichés and shoddiness of the inept?

All of this might seem to lead to public expiation of our aims or voluntary exile to Texas—rather it is the expression of a hope that in this recently born period of national contemplation of our position in the world of science, we will take it upon ourselves to alert our country to the perils of bad planning and the creation of environments which might, in the eyes of tomorrow's world, be even more embarrassing than second place in the celestial pinball game.

It is also the expression of a hope that the AIA will assume a position of leadership among those who believe in improvement of the whole as well as its parts.

Scientifically trained baboons are going to look pretty silly carrying Geiger counters.

CALENDAR

April 17-19: South Atlantic Regional Conference, Sarasota, Fla.

April 17-October 19: Brussels World's Fair, Brussels, Belgium.

April 18-19: Great Lakes Regional Conference, Morris Inn, Notre Dame, Ind.

April 18-19: Middle Atlantic States Regional Conference, Belvedere Hotel, Baltimore, Md.

April 19-26: Historic Garden Week in Virginia. Sponsored by the Garden Club of Virginia.

April 21-23: Building Research Institute, seventh annual meeting, Shoreham Hotel, Washington, D.C.

April 28-May 2: Board of Directors Meeting, The Octagon, Washington, D.C.

April 29-May 11: Twenty-first Annual Maryland House and Garden Pilgrimage.

May 8-9: AIA Committee on Hospitals and Health, Mayo Clinic, Rochester, Minn.

May 9-June 15: Exhibition of School Architecture, The Octagon, Washington, D.C.

May 14-17: British Architects Conference. Newcastle-upon-Tyne, England.

May 18-21: American Institute of Decorators' 27th Annual Conference, Sheraton-Plaza Hotel, Boston, Mass.

May 19-23: 62nd Annual Meeting of National Fire Protection Association, Palmer House, Chicago, Ill.

June 11-14: Annual Assembly of The Royal Architectural Institute of Canada, Ottawa, Canada.

June 22-27: Annual Meeting, American Society for Testing Materials, Hotel Statler, Boston, Mass.

June 27 thru summer: Exhibition of Contemporary Danish Architecture, The Octagon, Washington, D.C.

July 7-11: AIA Convention, Hotel Cleveland, Cleveland O.

July 13-August 23: Ninth Annual Design Workshop, Institute Tecnologico de Monterrey, Mexico. Additional information may be secured from Professor H. L. McMath, School of Architecture, University of Texas, Austin 12, Texas.

July 20-28: Fifth Congress of the International Union of Architects, Moscow, Russia.

August: International Federation of Landscape Architects, Washington, D. C.

September 25-27: Seventh Annual Conference, Western Mountain District, Continental-Denver Hotel, Denver, Colo.

October 2-4: North Central Regional Conference, St. Paul, Minn.

October 8-10: Gulf States Regional Conference, Biloxi, Miss.

October 9-12: Northwest Regional Conference, Harrison Hot Springs, British Columbia, Canada.

October 15: New York District Regional Conference, Rochester, N.Y.

October 15-19: California Council, AIA, annual convention, Monterey, Calif. California-Nevada-Hawaii Regional Conference will be held as a part of this convention and will meet on October 17.

Mid-October: Western Mountain District Regional Conference, Denver, Colo. Date to be established later.

October 22-24: Architects Society of Ohio, 25th Annual Convention, Sheraton-Gibson Hotel, Cincinnati.

October 30-November 1: Central States Regional Conference, Kansas City, Mo.

The Vanishing Point in Architecture

BY WILLIAM ROGER GREELEY, FAIA

Mr. Greeley's article "Cheaper Schools, Please", in the November, 1956, Journal, *aroused widespread interest and sold several hundred reprints.*
He now turns his interest from schools to the vanishing and once universal language of the great classic era of the past.

TURNING OVER THE PAGES of a recent *National Geographic Magazine* devoted to colored views of the city of Rome we were struck with the enduring appeal of the masterpieces of Roman architecture. This appeal came as a revelation to our eyes, so accustomed in recent decades to a completely different set of values. We had come to accept the point-of-view that these classic antiquities were in more than one sense old stuff, no longer eloquent of anything but a bygone sophistication, but then, turning one page of vibrant color after another we suddenly were overwhelmed with the grandeur of mass, the commanding dignity and the—well, we used to employ the old fashioned word "beauty"—of these buildings.

Another thought came to us. It was not alone the appeal of color and proportion and composition, it was the realization that, even in an air view taken at a distance, we nevertheless realized that we knew intimately, even as if we could see them, all the grace-notes and elegancies that embellished and enriched the imposing mass rising before us. It was as if we had met an old friend whose innermost thoughts and habits shone in his face in a way that we could read and understand.

So, looking down at St. Peter's we knew in a flash that all its details were revealed through old acquaintance to our inward eye, that we could re-create it, line for line, as a musician could re-strum an old air once dear to him. As in such an ancient air, so in this venerable temple we could recognize an inevitability in its capitals and cornices, its balustrades and pediments; even in the rhythms of its acanthus leaves and the fluting of its columns. Here were the words and phrases that taken altogether made of this building an epic that could be read—words and phrases that had become the accepted language of an articulate architecture, a language inseparable from the culture of the western world.

And we gazed and gazed with a new feeling of awe upon those pictures (which should have left us unmoved if not actually bored!) We found ourselves in a reverie. We imagined that we were once more looking at air views of buildings 500 years old, but the pictures were taken in the year 2500 showing the buildings of 1975, but these were pictures of models, for the original 20th century buildings had collapsed and disappeared because they were metal and glass, or had been demolished to make room for more efficient structures.

There was nothing left of 20th century New York, but 16th century Rome was still standing and was carefully guarded and protected, a priceless heritage from the past. And as we meditated we tried to picture to ourselves the marvelous architecture of 2500 A.D. and to relate it to the architecture that evolved slowly step by step from the Egypt of the Ptolemies through the Glory that was Greece and the Grandeur that was Rome, and down through the miracles of the middle ages to the end of the Renaissance in the 19th century—an evolution paralleling and illuminating the growing, expanding culture of which it was an expression and a flowering. We tried also to relate the 26th century architecture to the 20th century revolt from all that long development of the fifty centuries up to 1900, and to derive it from the one or the other—the older pervading architecture of evolution, or the briefer architecture of revolution. Did the revolt provide the essential stimulus for a transition to concepts new and flexible, or was it only a refreshing interlude, after which the

culture of the West resumed its coordinated growth, unfolding new forms out of old experiences? This question is essentially in regard to the future. The only way to answer a question involving prophecy is to study the characteristics of behavior in the realm of the known, and project the known forward into the unknown. The known is history, and it shows few if any cases of sudden revolt or reversal of the evolving processes of culture.

In architecture, Greek civilization went down and Rome rose to dominance, but the Romans, far from revolting against Greek culture, did their best to understand and perpetuate it.

The Roman culture in its turn survived the overthrow of Roman power. The Roman arts, including architecture, persisted, evolving from the classic into Romanesque, Gothic, and Renaissance without any repudiation of the past, but, quite the contrary, interpreting one after another what had gone before. To quote Repplier, "The popular notion that everything is a matter of opinion, and that one opinion is pretty nearly as good as another, is immeasurably hurtful to that higher law by which we seek to rise steadily to an appreciation of whatever is best in the world. Nor can we acquit our modern critics of fostering this self-assertive ignorance when they so lightly ignore those indestructible standards by which alone we are able to measure the difference between big and little things. It seems a clever and a daring feat to set up models of our own: but in reality it is much easier than toiling after the old unapproachable models of our forefathers. The originality which dispenses so blithely with the past is powerless to give us a correct estimate of anything that we enjoy in the present."

Chapman warns us, "A jaded palate calls for pickles. The whole band of caterers to what used to be relaxation have become acidulated and bitter prophets of something that is serious and clever . . . The historic fact is that art is shy and seldom comes at all, and when it does come it is founded on folklore, tradition, and a reverence for the past . . . The worst augury for futurism is that it looks toward the future and patronizes the past; whereas the votaries of every art that has come to greatness have always worshiped the past. They have claimed and reclaimed the treasures of experience and technique which lie buried in all the great works of the world, which exist nowhere else, and which poets and painters rediscover as their natural inheritance, rejoice in, and reissue to mankind in new deliverances of human feeling."

Opinion indicates that the pattern of the development of human culture is woven in the broad unbroken loom of the continuing life of a people and that the threads are long and seldom broken in the woof, never in the warp; for the threads of the warp are the accomplishments of the past, and are fixed, and the woof must fit into them, else the fabric will become confused and the pattern lost.

The Committee on Education

A statement by the Chairman, ALEXANDER SMITH COCHRAN

THE COMMITTEE ON EDUCATION was given large responsibilities by the recommendations of the Survey Report. Under the leadership of Chairmen Feiss and Hunter vigorous action programs were initiated. These were concerned with every stage of the teaching of architecture from preschool through school itself to post-school for both new and old practitioners—a cradle to the grave story.

It is my conviction that this committee should continue and if opportune increase its field of activities with continued close connections with ACSA, NAAB and NCARB. We have discovered that cooperation with these groups has worked best at the subcommittee level and expect to so continue whether AIA action is initial or responsive.

I am counting on the continued interest and support of the Institute Board and am most grateful for the able help of Walter Taylor and the Institute staff.

In a day when the disciplines of academic architecture are no longer and when the technical advances of building are becoming more and more difficult to assimilate, the *teaching* of architecture becomes more and more important and must be the real concern of the practicing members of the profession. I hope that our committee may help to inspire an interest in the subject among the members of the Institute as a whole at the individual and chapter levels. We will welcome all criticisms and suggestions.

From the Executive Director's Desk:

Photograph by Van Tassel

IT IS UNLIKELY THAT ANYONE ever entered an architectural school with a more open mind than did I. (I use the word "open" rather than "vacant.") Architectural education, or what passed for it in those days, had a unique opportunity in my case to impress itself on virgin soil. My mind was a freshly stretched piece of pristine drawing paper yet to be embellished or defiled by the HB pencil. I had just turned seventeen when I entered architectural school, so that I met my architectural education without bias, or preconceived notion. At that time one went directly from high to architectural school without wasting time and money on years of conditioning. My youthful entrance came about because there was no vacancy in the appropriate class in high school. I was pushed a year ahead, a vantage point to which I clung, not by reason of intellectual capability but because of the threats of my parents and by dint of the tuggings and haulings of my high school teachers, a collection of patient and determined Quakers to whom I am forever indebted.

I entered architectural school in 1914 when education in the subject had not become the processing hedged about by criteria, rules, restrictions, and formulae without which training is not countenanced today. I simply passed a single examination (Quaker schools enjoy prestige), entered and waited to be told about architecture.

My introduction to the art, science, profession or business of architecture was puzzling. The first lecture I attended given by the Dean, in person, was devoted to an impassioned exhortation to learn the difference between the cyma recta and the cyma reversa. I was impressed that should I fail to grasp this vital difference I would never amount to anything. Just what this difference (which I grasped) had to do with the educational foundation for providing shelter for human beings or what it had to do with my success eluded me then as it does now.

My next exposure was scarcely more enlightening. We were handed scale drawings of the orders and required to copy them. The logic, if any, behind this dreary task was never divulged. It all seemed such a distant step to the challenges of architecture. There was no escaping the portrayal of the Ionic, a torture sharpened with the admonition that failing to produce the perfect spiral would mean that neither the volute nor the student would come to a good end. I was beginning to mistrust the system, so the warning did not intimidate.

Then along came trial by India ink wash. The rules called for individual ownership of a greasy little stone saucer, a stick of black repulsive stuff, both expensive items. We were made to push the little stick around the saucer for hours, an exercise which, if successful, produced a sinister liquid.

My father, an intelligent and successful business man, asked me what I had learned. I told him I had learned to grind India ink, not perfectly of course, but with a passing grade. Like both his business and industrial colleagues, he took the prevailing view of architects. He was dismayed, but not altogether surprised. It probably just seemed part of the game played by those frivolous enough to enter architecture and thus avoid the rigors of the competitive American business world.

We were told to apply this liquid on paper and keep a puddle moving so delicately that no settling would occur. No architect whose wash had settled would ever lure a client to his office. I timidly inquired just exactly what one's ability to cover a piece of paper skillfully with a solution of soot had to do with success or with architecture for that matter. I was never enlightened.

Eventually we were exposed to the history of architecture, a course which held promise of fascination. But the soporific reading by a bored member of the faculty of the notes written by his predecessor soon dispelled the promise. We started with the

Babylonian, or something, and as illustrations shown to us were based on conjecture they were not entirely convincing. Then along came the Egyptian, a style which I have no doubt is beautifully suited to its native land and climate but whose manifestations in the Western world are just plain hideous. We were never told just exactly what the history had to do with the pursuit of architecture. This was distressing, and even more distressing was the failure on the part of the school to bring to life the glory that was Greece and the grandeur that was Rome. Dull slides accompanied by the monotonous rumble of a lecturer constituted the instrument of communication. Perhaps most discouraging of all were (and are) the pedantic imitations that surrounded us. The innumerable, indifferent reproductions of classical architecture in American cities did not serve to inspire the American student, especially one who avidly sought a guidepost to knowledge and progress. Even the Acropolis fared badly, for the student was confused by the unexplained hodge-podge of its plan and depressed by the grimy austerity of its derivatives reared as they were in the cities of the Western world.

The possible benefits of my architectural education lay in the inevitable incitement to question and the stimulation to revolt against the autocratic impositions of the doctrinaires. In my position I hear expressions of discontent with architectural education today. However, I am certain that no matter what the current faults may be, architectural education today is infinitely better than the variety which it was my misfortune to have been confronted with.

One searches for truth continually, one occasionally comes upon it. One occasionally and fortunately comes upon accomplished and unexpected beauty.

A month or so ago I was in Yucatan and at Uxmal I saw what had been conceived and produced by stone age people, people cruel and without our classic philosophy. They had produced a magnificent architectural composition of breadth, scale, and understanding that succeeded where the classic failed. No matter how meticulous their attention may have been to the refinement of detail, our "classics" achieved only too often a cluttering of ill-assorted buildings without thought, without relationship to each other and without grand concept. I wonder if my architectural faculty could have ever explained that.

Edmund D. Purves

An unfortunate typographical error appeared in the Executive Director's column in the March issue. The first word in the tenth line of the opening paragraph should have been "bathos," not "pathos."

Imitation and Understanding

Why are men made who copy what is seen
But cannot see the value in ideas?
Form may be fact, but what a form may mean
Has more significance than what appears.

The copyist tries painting a dead shell,
As a small chick will imitate the hen.
The child through sight and hearing learns to spell
And so can read the written words of men.

But meaning and ideas are Godlike things
Which set alight the Logos in the brain;
And understanding lifts ideas on wings.
Clear thinking men are God's transcendent gain.

Art serves the truth when it finds ways for giving
Imaginative thought to ways of living.

By Arthur C. Holden, FAIA

resident Chatelain gave an address before the 39th Annual Convention f the Associated General Contractors of America in Dallas on February 11th hich aroused nation-wide comment. We print it here in full.

Our Problem of Ignorance

BY LEON CHATELAIN, JR., FAIA

SEVERAL DECADES AGO, an address by an architect to a major convention of general contractors ould have been considered surprising, if not downght odd. The architect, in those days, frequently ubled as a builder. At the same time, the genal contractor dabbled in design and operated on the eory that he could get along just fine without an chitect to bother him. During this period of rapid owth in America, we both made many mistakes nd they are still cluttered around us in the form buildings. That's the awful thing about a bad uilding. You can't burn it easily, as you would a or piece of music or a bad book, and you can't rn it to the wall, as you can a bad painting. Like verest, the building just stands there and outlives l our apologies. Needless to say, there has been vast improvement in design and building over the st half century. One major reason for that imrovement is the effective teamwork which exists toay between the architect and the general contractor. he American Institute of Architects will not have a ember who builds or who, in any way, profits from e use or sale of materials. As a professional man, e architect must serve only one person—the client. e relies on the skill and experience of the conactor for the translation of design into structure. he contractor relies upon the architect for design. oday, we are partners, well-equipped to help each her, and—more important—to serve the public. It a very good thing that we enjoy this harmony, st and mutual faith because we bear a tremendous sponsibility, you and I.

We represent the biggest industry in the United ates—the construction industry. It is going to ow bigger, and even today, it is changing before r very eyes. In these changes, we are going to ve to accept many new ideas and learn many w things. We may also find that our responsibility es not end with building alone. In fact, I believe at this day is here now.

For one thing, our client has changed. It is very seldom today that we design a building for one person. This is the age of the corporate client—the collective client, if you will. The criteria for an office building are decided by a committee appointed by and responsible to a board of directors. A church project is supervised by a building committee. A school—when the job is planned properly—is dependent upon the entire community for the conceptual process which guides the design. There is no segment of the public to which we can point and say—it has no connection with architecture and building. The Girl Scout leader and housewife of today are among the people who will decide upon a new civic center, a church, a school, or even a bank tomorrow. They will participate in planning a new kind of architecture—building in the mass.

If the client is seldom an individual today, the building may not be an individual tomorrow. Architecture is no longer a single house, a church, a school. It is a plaza, a community redevelopment, a vast clearance of worn-out buildings and congested land. We are finding that we must adjust our minds and imagination to new ideas—tearing down and re-building to fit rapidly-changing needs—re-building on a scale which, a few years ago, seemed more fancy than fact.

We also will find, in the near future, a demand for *new* types of buildings. The *suburb,* as a word and idea, is disappearing as metropolitan belts overlap. Middle-aged people are moving back to the nerve centers of the population areas. This has given rise to new architectural thinking about a new type of city house, designed and built to provide utility, economy, and privacy in the busy life of the metropolis.

In the not too distant future, we may find ourselves designing and building new types of reinforced structures for blast protection—at the very least we will have to provide shelters against nuclear fall-out. A more pleasant thought is that the con-

junction of nuclear energy with automation and new developments in water purification promise almost certainly that we will soon break the chains that now hold us to the transportation lines. This is an exciting thought. When man first emerged from the cave and began to do business with his neighbor, his commerce grew up along the footpaths. Later, business expanded along the waterways, and, still later, acquired new room by stringing itself along the railroad lines. Man has always needed facilities at hand to renew his source of power. Today, we face real change.

According to the Atomic Energy Commission, there were one hundred and two nuclear reactors being operated by industry in the United States as of last October. If you count all kinds of reactors—civilian and military—those used for research and training as well as power—an estimated two hundred and forty reactors are either operating, being built, or in the planned stage. If you still have any doubt that we are in what we might call the practical nuclear age, consider this: In Washington, D. C., a private school for technical training is inaugurating a home-study correspondence course for high school graduates in the operation and maintenance of nuclear reactors. This is a serious, practical project, which has the blessing of the government.

Now we are told that, within the next ten years, it almost certainly will be commercially feasible to pipe sea water into the great southwestern desert and turn it into fresh water. This could make the frontier-era migration to the western United States look like a Sunday outing by a bird-watchers' club. At the same time, progress is being made with the reclamation of used water—so that a given quantity of water may be used over and over again for a variety of purposes. Entire industrial communities—powered by nuclear packages and supplied by inexhaustible supplies of water— will spring up and transform that great western desert which for thousands of miles today looks like the face of the moon without benefit of telescope. This is the future—in our country—on earth, and one could wish that outer space were not so near, because we have so much to do here.

HOWEVER SOME DOUBTS about our future are being raised today because we seemed to have lagged behind Russia in some areas. To overcome this lag, there's a good deal of talk going on about how to catch up. Some of this talk involves us—the architect and the builder—and we had better pay heed. We had better pay heed because there's confusion and misunderstanding about public education. A good deal of this confusion involves school buildings—what they are, what they're worth, and wha they should cost. The confusion comes from ignor ance, and this is a sad commentary on America life. The average parent and home owner is affecte more by the condition of his schools than nearl anything else in his community life. His schoo cost him money and affect the welfare of his chi dren—they hit him in the pocketbook and in th family. Yet, by and large the public knows next t nothing about its schools. This ignorance is n confined to the proverbial John Smith of Everytow U. S. A. It has been disseminated recently by number of prominent non-educational writers, thu compounding the confusion, and, even worse, en couraging school boards to embark upon unwise an wasteful ventures.

In the matter of public education, basically, w are dealing with two kinds of things—those we know and those we do not know.

The architects and general contractors *do* kno about the planning and building of schools, and th fact that many people do *not* know is our own fau It is this story which we must tell, not for our ow aggrandizement but because, without public unde standing and public support, the building of enou good schools that combine quality with econom will not be possible. There are many opinions abo school design and construction, and also a numb of facts. Here are some of the facts:

The cost of school buildings has doubled in th past twenty years, due to advances in the price land, materials, labor, and other expenses. Yet du ing this same period in which school-building cos doubled, the costs of building generally have *triple* In the difference between the two figures lies a re tribute to the dedication and ingenuity of the nation educators, contractors, and architects. The fact that the school-building is still the best bargain, do lar-for-dollar, on the building market today.

Yet some people claim that schools are ove priced and represent a heavy tax burden upon th homeowner. Are they a tax burden? The simp fact is that if schools were built for nothing at a it would make very little difference on the avera tax bill. Let's say that Mr. John Smith receives a annual property tax bill of two hundred dollars. T chances are his bill will show that about half, or o hundred dollars of that amount, will be spent f education. But of that one hundred dollars, on about ten per cent, or ten dollars, will be spent o his municipal school-*building* program. In oth words, Mr. Smith's share of his community's schoo building costs will cost about the same amount th he would spend in one evening by hiring a bab sitter and taking his wife to dinner and a movie.

If school building increased at the same pace for fifteen years, Mr. Smith would pay about as much for his new school buildings during that time as he spends on one modest television set. This does not seem unreasonable.

The substantial expense of school buildings is the interest paid on financing and the annual cost of maintenance and repair. For this reason, we have this seeming paradox—only the *wealthy* community can afford a *cheap* school. We reject the argument that school buildings should be monuments. We feel that we won this argument many years ago. We *can* save money by avoiding the trappings and ornaments of the past—the fake columns, the parapet roofs, and the gingerbread. Forcing schools into a certain "look" adds nothing to education, creates community eye-sores, and wastes imagination and money. Contemporary design is simply the freedom to solve a problem without boxing a building into an artificial style.

Recently, several writers have stated that schools are being designed as palaces, and that they're costing too much; that this is so because educators, architects, and contractors want it that way. *This is sheer nonsense.* In each of these diatribes, the writers have pointed to two or three specific schools as examples which prove their statements. The alleged high cost of one of the schools was cited over and over again. However, no one mentioned that the community in which the school is located has an average annual family income of twenty-one thousand dollars. Who are we, or anyone else, to say that the citizens of this rich suburb wasted their money by buying a truly first-class school?

On what should they have spent their money? Has anyone criticized them for buying new cars, new clothes, and new television sets? Since when is a school less important than incidental, personal luxuries? It seems to me there is a serious question of human values at issue here.

MONEY CAN BE SAVED on schools. Of course it can. But it is rare when very much of it can be saved on the job site. The real savings to the community accrue through long-range planning of school buildings. A ten-year advance program is not unrealistic. Community studies on population trends, projected locations of industry, residential building plans, and zoning development can be made at great future savings to the community. Planning targets can be adjusted from year to year. Architects are given time to make thoughtful design studies. Contractors may bid more accurately. Jobs are not dumped together on saturated building markets which deprive the school board of bidding competition. School boards are not stampeded into rash decisions and cut-rate schemes. Communities are not persuaded to accept temporary "package" buildings, fabricated without professional advice and without the needs of the individual site and educational program in mind. It may seem a new thought to some, but the fact is that it would be hard to find two municipal school systems in our entire nation which teach the same thing in exactly the same way. This is basic to American education. As the architect and contractor know, seemingly minor changes in teaching methods and material can make substantial differences in the school building. Take a science classroom, for example. Will the students be taught mainly at their desks, or while standing at the chalkboards? The answer to just this one question will affect the amount of wall space needed, the size of the wall boards, the amount of storage required, the type and size of seating equipment, and the intensity and location of lighting.

When you add to these questions of curriculum and method the peculiar needs of the local soil, the climate, the degree of natural light available, and the availability of materials and labor, you begin to realize why educational facilities cannot be mass-produced on a stock basis.

Besides long-range planning and design tailored to specific community needs, permanence of building is essential to economy. Consider the cost of replacing temporary buildings; not just the construction, but the financing. The difference between a two per cent and three per cent interest rate can be twenty per cent of the cost of the entire building. Today's school should be built of first-class materials and it should be built to last for forty years. This is not incompatible with flexibility. The good school is situated on enough ground to allow for expansion. It is designed so that additional units can easily be added without tearing down existing walls and laying new utility lines. It is designed, as we like to say, for *ultimate use.*

These are some of the things that we know about education, and it is our job to tell this story through our organization and individually, to the people we meet and do business with. There are many other things that we do not know, but which are of interest to all of us.

I hope I have not given the impression that we know *all* there is to know about designing for education. One considerable area of uncertainty concerns the psychological effects of architecture upon man. There is considerable hope, I am happy to report to you today, that we will shortly begin to find out many new things about this subject. The

National Science Foundation has granted a sum of money for us to hold a conference—which will include psychologists and sociologists—to define needed areas of basic research in architecture. These definitions have not yet been made but I believe it can be predicted fairly that some of them will have to do with finding the answers to questions about human scale and the psychological effects of color. We know, for example, that lower ceilings cut down the cubic footage of a room, and, all things being equal, help reduce the building cost of the unit. However, what effect does this have on the students in a schoolroom? We really do not know. This may seem a rather obscure question. But it is not when you consider that the design of one building can give the occupant a sense of freedom and space while another—containing the same square footage —seems to cramp and constrict. We know this much by observation. We also know that we must find out the *why* to these questions before we can do as much as we should to design a building which materially encourages the learning process.

LET US EXAMINE another part of the educational problem. There is an avalanche of effort today to provide more and better scientists through public education. As architects—the people who plan human environment and whose work must be tailored to the function of the structure in question —we are greatly interested in this subject. Frankly, I had intended to come before you today with recommendations of a specific nature on what we should try to do about improvement of public education. However, the things which we do not know and cannot find out are so vital to a clear understanding of our educational condition that a clear-cut recommendation would be ill advised.

The United States Department of Health, Education, and Welfare has proposed a far-ranging scholarship award program to worthy high school students throughout the nation. When we heard this, we immediately thought of the logical connection between the awarding of scholarships—mostly for science students—and the need for physical facilities in the schools. It doesn't make much sense to have one without the other. We've been told by Secretary Folsom that we're in trouble because only one out of three high school students get a year of chemistry, and only one out of four takes physics. It seemed to me that someone should speak out about the obvious need for new and better classroom facilities for science. It did, until my staff looked into the subject a little further. The available facts were, to say the least, confusing.

According to the Department of Health, Education, and Welfare, ninety-two per cent of the senior high schools in the country were offering chemistry and physics in 1956. *But,* at the same time, only thirty-six per cent of the senior high school students were taking chemistry and only twenty-six per cent were taking physics. The figures seem to show clearly that the facilities are there, the courses are available —the students just aren't taking them.

There is another disturbing factor here. The figures themselves don't tell us what *kind* of facilities our schools have; what *sort* of programs are being offered. Are they good programs? We couldn't find out. Several educational organizations have told us within the past few days that they're just now planning to find out. The National Science Teachers Association tells us that we don't even know how many science classrooms in the country have gas, electrical outlets, and running water. In this proud nation of push-buttons, new car styles, color television, and the chemise, this is lamentable ignorance. There is another element which is much harder to measure. This is the imagination and interest of the teacher. The best laboratory in the country won't produce a good science program if the teacher is inadequate. However, it can be argued that an imaginative teacher can conduct a good science program *without* elaborate classroom facilities. Physics can be taught with a book, a buzzer, a dry cell, and a few brain cells. A running stream near a schoolhouse can be used for water-flow experiments and chemical analysis. Another question we must ask concerns the number of science students we want. Is it a bad thing that one out of three high school pupils takes chemistry? Isn't that enough? Will mass scholarships and more facilities produce Einsteins? Would more music schools produce Beethovens? You can encourage geniuses, but can you mass-produce them? It is relatively easy to raise many serious questions concerning all of the crash programs which have been outlined to us.

Obviously, we need a thorough understanding of our assets and needs before we can draw enough solid conclusions to put us on the proper path. This is of more than passing interest to architects and contractors, because the improvement of teaching methods and curricula will inevitably lead to improvement in the physical facilities of schools.

From what we now know, I offer several personal observations. They are not original or new, yet I think they are valid. We do know that we need more school buildings so that classes do not become too large for effective teaching. We do know that we should pay our teachers more—much more —in order to get and hold the best possible people for the important job of teaching.

I believe we also face a fundamental problem of reassessing our thinking about education. We cannot turn back the clock and say that everything will be much better if we just re-concentrate on the three R's. There are no longer sharply divergent schools of progressive and conservative education. Experimentation is always necessary to progress. In many American cities today, school boards are experimenting with teaching by means of closed-circuit television systems. This can hardly be called a frill or a waste of money.

I do think, however, that we need to place a good deal more emphasis on scholastic excellence, on competition among students within the schoolroom. I also firmly believe that we all have a big job to do outside the schoolroom. We blame youth for lack of interest in science and explain it on the ground that our youth considers scientists to be "egg-heads" and therefore social oddities. Yet in the face of this statement, youthful experimentation in rocketry has become so widespread that there is serious concern over the likelihood of personal injuries. This does not sound as though youth lacks interest in science. One priceless and unique characteristic of youth is its perpetual curiosity. We, as adults, have the power to direct that curiosity into worthy channels. There seems to be evidence that we have failed to do this; instead, we have forfeited these opportunities through preoccupation with amusing and coddling ourselves with material comforts and needless luxuries.

Perhaps it is *we* who really need re-education. Certainly we need re-education which will make us want to put our spare dollars into better schools rather than into more personal gadgets. It is for us to set the examples, else youth, as it always has, will reflect our attitudes and lose sight of those things in life which are worthy of its time.

I am not at all sure that the education our children are getting today is any worse than it was twenty years ago. However, I am sure that today's children need far more and better education than has ever been necessary in the past. As architects and contractors it is our joint responsibility to build schools which, unlike the prison-like, pompous buildings of yesterday, serve to *encourage* learning. If such buildings can be combined with imaginative teaching that stimulates student curiosity in the physical sciences—and the arts—it is entirely possible that our young people may come to consider the acquisition of knowledge as something which is not only socially desirable, but pleasurable. If this is done, we as a nation will have nothing to fear from anybody—not even ourselves.

A Statement *by Lester C. Rogers, President of The Associated General Contractors of America at the 39th Annual AGCA Convention in Dallas*

The construction employers of the nation demand action from the building and construction trades unions in supporting the principle of giving a full day's work in return for a full day's pay.

The Associated General Contractors of America has sought at the national level and at the local bargaining table to eliminate non-productive, wasteful practices and to hold wage increases to reasonable levels in line with productivity and the cost of living.

This association supports the appeals of the President of the United States to control unreasonable demands and to reduce inflationary tendencies.

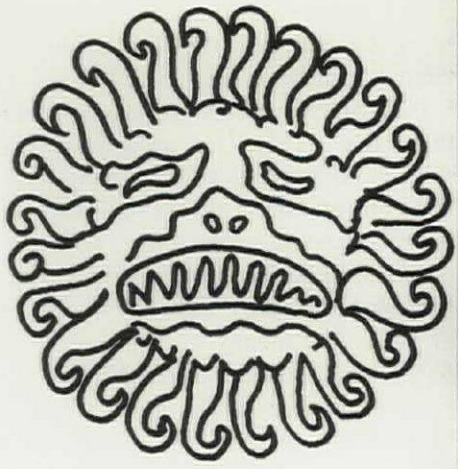
"Make work," "featherbedding," and other restrictive practices exist and increase despite lip service repeatedly given by labor leaders to the idea of a full day's work for a full day's pay.

The public interest is always at stake in the performance of the construction industry, and never more than now when construction is one of the main props in the national economy.

The time for action is now. The time for talk and promises has passed. This vital matter can no longer remain buried in high level committee discussions, but must be acted on at the bargaining table.

The Associated General Contractors of America, whose members employ the bulk of construction labor, calls on the Building and Construction Trades Department of the AFL-CIO, and each of its international union presidents, to act now to eliminate restrictive "make work" practices in construction, which are beneath the innate dignity of the American workman.

The association appeals to industry as a whole and to citizenry in every community to support this campaign to restore full productivity and to give the public full value for its investment in the construction of homes, schools, hospitals, highways, factories, defense facilities, and all the other structures needed for the progress and security of the nation.



SYMBOLISM FOR LIBERAL RELIGION

BY BERND FOERSTER

This article is based on a chapter from a booklet "Architecture for Liberal Religion," soon to be published by the Beacon Press.
The author is an Assistant Professor at Rensselaer Polytechnic Institute.

AT SOME TIME IN HISTORY, pyramids, bulls, anchors, roses, snakes, and many other items or their representations, as well as signs, letters and numbers have had symbolic meaning to men. In the course of their use, many of these symbols came to be worshiped themselves instead of what they represented, and eventually this gave rise to iconoclastic movements. Whenever the worship of a fetish took the place of genuine religious thought, the eventual clean-up would throw out the symbols together with their misuses, without recognition that symbols are not an end in themselves.

Even to some people today, symbols seem to be on a level with tribal rites, alchemism, and a variety of superstitutions of our own and other civilizations. Such critics say that symbols over-simplify, arouse unchecked emotions, and cause conditioned responses which short-circuit the reasoning process. They point out that symbols have been used as a rallying sign for fanaticism or a lightning rod for collective frustration, leading millions to misery and destruction as in the case of the hammer and sickle. All this had lead some to think that symbols are necessarily evil, and should be avoided in liberal religion, yet the fact of their misuse hardly constitutes a reason for their elimination.

There is no question about the usefulness of symbols, as any advertising agency can readily confirm, and their utility is by no means limited to the selling of products. For instance, people who display a certain symbol get a sense of identity and belonging, a fact churchmen and military leaders recognized when Madison Avenue was still a virgin forest. Conversely, people who do not wear such a symbol are apt to get a feeling of being outsiders, especially if the symbol is frequently seen, and a symbol is always noticed more than its absence.

Despite their usefulness, symbols are also attacked because of their vagueness, their dependency on the personal experiences of each individual, and their failure to cause identical reactions in different people. With regard to this it is important to recognize their efficiency. For example, when the names of Roosevelt and McCarthy can summarize the philosophy of the New Deal and a complex political disease, it is clear that symbols eliminate the need for endless definition, providing the audience is familiar with the special shade of meaning the speaker attaches to such emotionally charged expressions. Language consists of symbols and symbolic relationships, and the use of words is varying and often vague, but this does not call for the elimination of speeech for clarification.

Symbols are in no way an insult to intelligence

mathematics could not exist without them), but just as we are concerned with achieving clarity in the meaning of words, the use of visual symbols should be accompanied by efforts to make their concept understood. Not only are symbols useful and efficient, but man could not get along without them since all communication and all thinking is based on them.

A symbol can sum up a wide variety of religious experiences, and there has been a growing awareness in liberal churches of the relation between religion, symbolism, architecture and art. Various people have felt the need for a liberal religious symbol, and have given the matter serious thought. To symbolize the freedom and diversity inherent in liberal religion seems very difficult. Some feel that no single symbol could or should ever stand for such a complex and thoughtful religion, but the simple truth is that such symbols already exist—for instance in the word "unitarianism." It has a meaning so far beyond anything merely affirming the concept of a single God, that we must recognize that the narrow interpretation of the word has been replaced, and now has an entirely new significance. A graphic symbol could do the same.

It was not only caution in appealing to emotion that has held up the emergence of generally accepted liberal religious symbols, but a desire to recognize all aspects of a profound belief in one graphical representation. It is, of course, impossible to incorporate all present and future ideas about a religion in one visual symbol, but this is neither necessary nor desirable. It is unnecessary because any symbol can attain the meaning we attach to it, just as in the case of the unlikely word "unitarianism." It is undesirable because a serious flaw of a symbol is when it tries to say too much.

A symbol is created by artistic design and general acceptance. Its requirements are:

1. abstractness
2. simplicity and attractiveness
3. immediate comprehension
4. easy retention
5. quick recognition
6. lack of undesirable connotation
7. facility of imitation

A symbol is charged with meaning through continued use, and it evokes an emotional response far beyond the scope of its geometry. Almost anything can come to serve as a symbol, and frequently does. An important Christian symbol developed as a result of the accident that certain initials spelled the Greek word for fish.

There is no inherent meaning in a geometric form, and its interpretation is open to rationalizations. The swastika, worshiped by some, meant a perversion of the cross to others, and the triangle of Christian orthodoxy symbolizes the holy trinity to some, while others take it as a sign of the instability of a speculation which lacks any real base. The circle may mean unity, eternity (no start, no finish), perfection, and universality, while its completeness may signify exclusiveness to those on the outside.

As an illustration of how a symbol for liberal religion might be developed, let me simply design one, and then interpret it.

This symbol, derivative of the letter U (Unitarian, Universalist, Unity, etc.), appears to fulfill in varying degrees the seven requirements I previously listed. When put into words, the symbol of an "open circle" applies remarkably well to liberal religion, which welcomes both men and ideas. The opening also indicates the freedom of liberal religion. The design lends itself very well for ritualistic use, and can be made in one simple gesture. Because of its incompleteness, the symbol invites action, and serves as a reminder that there will always be more to learn, and new tasks to be performed. Please note that these justifications were invented AFTER the symbol occurred to me. I am not advocating its adoption, but trying to show that if this or any other symbol were chosen a great variety of meanings would be attached to it. I can imagine how sermons would enrich it, and how inventive members would add to its content. It is possible to attach independent and changing ideas to a constant symbol. On the other hand, one must be prepared to exchange symbols when the need arises, in order to avoid that tradition will preserve something that has lost its utility.

One danger of symbols is their ritualistic use without genuine understanding, another is the difference in meaning to those outside the group; the cross surely did not signify love to Moslems during the Crusades. This aspect puts a desirable obligation on users of such symbols; they must develop a philosophy for which it stands, and act accordingly, realizing that beliefs will not be judged by declarations but by the life of its adherents. But this is the same whether the symbol is graphic or verbal.

Symbols should be the basis of thought rather than a substitute for it, and they can, if properly used, represent a truth or experience which it might be impossible to state otherwise.

FAVORITE FEATURES OF RECENTLY ELECTED FELLOWS: HOWARD R. MEYER, FAIA

APARTMENT BUILDING
Dallas, Texas
Howard R. Meyer, Architect

Public Relations — the individual office

This is the seventh of a series of articles by ROBERT R. DENNY

PUBLIC RELATIONS ON THE NATIONAL LEVEL embraces staff and committee activity devoted to the elevation of professional competence; liaison with government, business groups and allied associations; and production of materials for the state societies, chapters and AIA members.

On the regional level, it may be defined operationally as an instrument for two-way communication within the profession and, of course, as a vehicle to attract public attention through conventions. Public relations for the state organization ordinarily concerns itself with registration, legislation, and the activities which these matters suggest.

For the chapter, public relations means community action whose targets are the public at large as well as specific groups within the community.

To the individual firm, public relations means professional competence *and* the promotion of the firm. Since the former is the preoccupation and objective of every national AIA committee and the Octagon itself, we propose here to concentrate upon the latter—the matter of promoting the services and merits of the individual office.

In order to obtain a sampling of views and account of activity in this important field, we recently sent a questionnaire to seven successful architectural firms located in various parts of the country. The answers were quite interesting and provide information on what is being done and can be done to attract public attention to the firm.

We asked these questions: Does your firm maintain what you believe to be a good public relations program? What does it consist of? Do you retain professional counsel? If not, who handles it for the firm? Do you have a brochure? Do you send releases, photographs, renderings, etc., to the newspapers in your community? Do you write articles for other types of publications? Do you belong to community service and civic organizations? (If so, please name them.) On the average, how many speeches, appearances, etc., do you make before public groups in your community? Do you support speeches with visual props? Is your firm's office a good showcase of design? What should the average firm do, in your opinion, to strengthen its position in public relations?

Here is a box score on the answers:

. . . Four firms reported they conduct what they consider to be a good public relations program. One is in the process of building a good program. One reports negatively.

. . . All seven handle public relations without outside counsel. However, one plans to hire professional help.

. . . Three report that firm principals supervise the program. Two have staff publications directors.

. . . Four send releases, photographs, renderings, etc., regularly to community newspapers. One does so irregularly. Two do not; one reports his firm should do it.

. . . Four regularly prepare articles for professional and trade magazines in various fields. Three do not; one reports his firm should do so.

. . . *All seven* see to it that at least one of the firm's principals is active in community civic and

service groups. (One reports that "five members of our firm belong to Rotary, Kiwanis, Optimists, Lions, and the Chamber of Commerce.")

. . . *All seven* make speeches before community groups. One speaks on the average of twice a month. Two speak once per month. Three average a speech every two months. One speaks once or twice a year. In their speeches, five use visual props.

. . . Four consider their offices to be good showcases of design. One says his office is designed to provide the feeling of a "lively workshop." Two report their offices are poor in appearance, but one reports he is planning to move into excellent new quarters.

. . . Five of the seven agree that the most important ingredients of good public relations for the architectural firm consist of competent work and regular participation in community affairs. One says simply that the average firm can strengthen its community position if it will "get its feet off the desk."

Asked for general comments, respondent "A," a successful Philadelphia architect, exhibits a firm grasp of public relations principles and operation:

"The staff organization," he says, "must be such that the principals have ample time for contact with the public. Press relations should be the major responsibility of one member of the staff, who should see that the firm's achievements, both in building, awards, and professional activities, are made known to the public.

"The firm should work with the local AIA chapter to establish certain principles (i.e., recognition of the architect in news about buildings) and to plan chapter activities that will draw public attention. In our public relations work, we try always to focus on the client himself, who is the best potential salesman of our services."

Some illuminating answers were given to the question about participation in community affairs. Architect "B", a successful practitioner in Little Rock, Arkansas, reports that he serves as a director of both the Chamber of Commerce and the Community Cultural Center, and is president of the Citizens' Planning Association of Pulaski County.

Architect "C", who with his partner heads a large Los Angeles firm, reports:

"The firm belongs to such organizations as the Chamber of Commerce, Greater Los Angeles Plans, Inc., the All Year Club, the Symphony Association, etc. In addition, I am completing my third year as a vice president and member of the board of directors of the Symphony Association, and my second year as president of AID-United Givers, which is the charitable organization in southern California. Last year, we raised seven million dollars for the various charities."

At this juncture, more than one of our readers will stop and say, "This is all very well, but my firm is small and there just isn't enough available manpower to do all that."

A justifiable comment—up to a point. The seven firms which were surveyed range in size from five persons to several hundred. Yet all participate in community affairs. The architect who speaks most often to community groups is one of two principals in a firm of modest size. This same architect maintains his firm's promotional program, as he says, "through the primary efforts of myself by personal contact, participation in politics, etc., *and* by providing really good service and personnel."

Concerning his publicity and literature merchandising efforts, he says: "We used to have a stock brochure. We abandoned it because it didn't fully meet our needs. Now we maintain a photo file and compile information on our buildings. We bind the material into a brochure for special cases. We regularly send photographs, renderings and information on our projects to area newspapers, particularly where we're active. They have space and they'll run practically any photo and article we send them."

Quite often, the apparent—or imagined—intricacies of press relations serve as a sort of mental obstacle which prevents the firm from getting its share of newspaper publicity. (The December issue of the *Journal* carried our story on publicity procedures, which, although aimed primarily at the chapter, has application to the individual office.)

Several points may bear repetition and amplification. The two most common comments we hear from members on this subject are (1) "We can't seem to get our names in the captions of our pictures and renderings," and (2) "The newspaper won't publish our material because we don't advertise."

To provide authoritative answers to these comments, we recently taped interviews on the subject with four editors—Sidney Epstein, of the Washington D.C. *Evening Star;* Abe Mellinkoff, of the San Francisco *Chronicle;* Glenn Fowler, of the New York *Times;* and William Davey, of the Greenville, S.C. *Piedmont.*

There was marked similarity in the answers given to a set of questions concerning press relations for architects. First, to dispell one myth, all four said flatly that they were *not* interested in having architects as advertisers; as editorial people, they weren't interested in the subject of advertising at all. All they want, they said, is newsworthy infor-

mation. The *Star* editor went so far as to say that pressure from the newspaper's advertising department is viewed with such disfavor by the editorial department that, on the infrequent occasions when it occurs, "the release winds up in the wastebasket."

The four editors said they would welcome information about new building projects in their communities. A phone call and/or letter to the city editor (or building page editor, if it seems appropriate) will almost always be enough to get the editorial staff working on the story, they said. Then, if the project appears to the editor to be newsworthy, the architect can be told what information and visual material are needed; an interview may be requested, or the architect may be asked to "write up" the facts about the project and mail it in. The editors asked for information about any kind of project which encompasses unusual design or construction features; new uses of materials; new ideas of function, etc. Office buildings were singled out as especially interesting to the newspapers. Also mentioned, were churches, banks, industrial plants, and public buildings of all types. The editors expressed interest in the architectural design of houses and several called attention to the design awards programs in their cities.

Here were some other tips offered by the editors:

Always identify the photos and renderings which you send editors by affixing a caption that gives the name and address of your firm. Don't depend upon the lettering in the corner of the rendering to do it for you. When the rendering is reduced to newspaper "cut" size, the name will be illegible. Don't try to "force" identification of your project by copyrighting the art. It will only reduce the probability of publication. Do not write on the back of the print. It will probably damage it so that it can't be used. Tape or paste a typed caption to the bottom of the art. Unless you're an awfully good photographer, have your pictures taken by a professional photographer and send the newspapers 8x10 glossy prints. An edited, 31-minute master tape was made of the editors' comments. If your chapter requests it, the Octagon will give you a copy for $5.00.

Let's explore a few more uses for pictures:

If you're proud of your new building, have several extra prints made and offer them to trade magazines in the appropriate fields. If you've done a good school, you might cover not only the local newspapers and the State school administrators' publication, but also *The Nation's Schools* and *School Executive* magazine. The same applies to publications interested in hospitals, industrial plants, and other specific building types. If you do not know which magazines serve the various "vertical" fields and how to get in touch with them, you can write to the R. H. Bacon & Co., 14 E. Jackson Blvd., Chicago 4, Illinois. The company publishes Bacon's Publicity Checker, which contains in several handily-assembled categories the names and addresses of some 3,000 publications serving 100 different markets. The handbook costs about $25.

If you think you have a really worthy project, have some good color photos made and offer them to the architectural magazines. True, publication in a professional magazine won't get you a commission. But you can obtain reprints of the article and send them to your clients and any prospects and business friends with whom you have had previous acquaintance. This is entirely within the bounds of professional ethics. You can also make slides from your color photos and so build up, through similar attention to other projects, an entertaining visual presentation for use in talks before public groups.

One opportunity which architects often ignore is that of offering aid to building owners, realtors, and, sometimes, builders in disseminating publicity on building projects.

When an architect has designed and produced renderings of an apartment house, let us say, he should keep in mind that both the owner and realtor will be extremely interested in developing publicity so that the units can be rented as quickly as possible. Often, the realtor will send out releases on his own. He can send out a better release, and the architect will not be ignored, if the latter takes the trouble to offer the realtor an explanation of the design for publicity purposes. It is always a sound policy to check these things in advance with the building owner, the realtor, and the builder. It may be that the architect will wind up handling the story. So much the better. At any rate, he will get a fair shake when publicity *is* sent to the papers.

If you stop to think about it, nearly every client has an interest in getting publicity on his building. The pastor would like publicity on his church, not only because he is proud of it, but because he naturally wants to keep the church in the eyes and minds of the congregation. The banker wants publicity on his new branch bank because he wants more customers. The university would like attention because it depends upon donations from alumni, and so on.

Next month, we'll answer a number of requests by doing an article on how to get the maximum public relations benefit from conventions. For now, and by way of recapitulation, here's a quiz by which you may "measure" the public relations perform-

ance of your firm. Score yourself five points for every question answered affirmatively. 80-100 is superior; 70-80 is good; 50-70 is fair. Below 50: You must be a *very* good architect.

Yes No

1. Is your office a good showcase of design? — —
2. Does someone have specific responsibility for supervising and maintaining a public relations program for your firm? — —
3. Do you know personally the building page editor of your community newspapers? — —
4. When you have completed a rendering of a new building for your community, do you send photographs or copies to your newspapers? — —
5. Have you made a speech before a public group in your community during the past three months? — —
6. Do you offer material to your professional magazines? — —
7. When you design a bank, school, or other building of specialized interest, do you offer information on it to the trade magazines which service that field? — —
8. Does your firm have a brochure to hand to prospective clients? — —
9. Do you maintain a file of slides of your best projects for use in appearances before public groups and prospective clients? — —
10. Do the principals of your firm belong to community civic and service groups? — —
11. Are you personally acquainted with the heads of your municipal government? — —
12. Are you personally acquainted with the congressman from your district? — —
13. Do you support the public relations program of your chapter? (If your chapter does not have such a program, but you have campaigned for one, answer affirmatively). — —
14. When new partners, associates, and project heads are appointed or promoted, do you send the information to your newspapers' business pages and/or city editors? — —
15. Do you have an established system of informing your employees on what your firm stands for and how it serves the community? — —
16. Do you handle all callers and prospective clients courteously, even though you are not interested in handling the type or size of projects they may outline? — —
17. Do you offer aid and counsel to building owners, realtors, and builders with whom you deal in their development of publicity on building projects? — —
18. Do you personally, or through your chapter, offer counseling services to your municipal school system in vocational guidance programs? — —
19. Do you keep track of the policies and activities of your professional organization through the AIA *Memo, Journal,* and your state and chapter publications? — —
20. Do you personally see to it that your chapter keeps your regional public relations committee member informed on your community's public relations problems so that the information can be transmitted to AIA public relations counsel? — —

NEWS

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS has announced that any members of the AIA who may be in England in May, 1958, will be welcomed *as delegates* to the British Architects Conference, May 14-17, at Newcastle-upon-Tyne, to celebrate the Centenary of the Northern Architectural Association. A detailed program will be available later.

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY will present a special summer program on "The Dwelling House: An Emerging Technology" during the 1958 Summer Session, from June 23 through July 2. Surveying aspects of the growing dwelling house industry, the program will review the industry's present position and give special attention to trends for the future. The program is being presented jointly by the Department of Architecture and the Course in Building Engineering and Construction of the Department of Civil and Sanitary Engineering. Inquiries regarding registration should be directed to J. M. Austin, Director of the Summer Session, M.I.T., Cambridge 39, Massachusetts.

LIFE IN A MARTINI GLASS:

HAVING JUST RETURNED FROM EUROPE, I am beleaguered by my friends and others about Russia, Sputnik and the attitude of Europeans toward us, and asking my advice on how things should be done to calm everybody's fears.

Since my knowledge of European languages is limited to speaking English with concierges, taxi-drivers, waiters and street-walkers, I feel free to advise the State Department. I think, first, that we should make one overseas Russian airliner land in New York in a foggy overcast. This alone would so unnerve them that forever afterward they would be content to shell us from submarines or drop a couple of Sputniks on us rather than test a New York Airport reception.

We went to Portugal, Spain and France to draw and write. My last living brother had just had his first coronary attack and we hesitated; but all the medical beards assured us that we should go; he seemed fit for years. You know that line and I thought I did.

"It is all over and hurry home, please," said my sister and sister-in-law. The call came on a Sunday at six o'clock in Paris.

I called Air France and reserved two seats for Monday night. I called a friend who said, "Travel TWA and *get* there." I called TWA and they had only two of the most expensive sleeper accommodations on a first class flight from Paris at nine PM for Monday night. I took them.

I called the AAA in Paris and told them my problem. Mr. Noel Yanna said, "Come in and drop the keys to your car and your insurance policy and go home. Call American Express and they will forward your baggage."

The Holland American Line cancelled my reservation, and with AAA sent my car home as unaccompanied left-behind baggage.

Everybody in Paris helped and everybody cried as we got on the bus for Orly which then headed through Montparnasse, the Dome, Coupole, Select, Rotonde, and L'Hôtel des Etats Unis area to make us that much more unhappy. Finally, we were at Orly at 7.

At that moment DIOR was exporting forty live Paris mannequins to Australia and the airport was floating in perfumed tears. I could have wished for them on the New York plane but Betty said "No, no." As it turned out, they probably were in bed with New Zealand long before we reached New York.

The French got us through customs with a question about my drawings being "Works of Art." Then we sat in that "No Man's Land waiting room" which is neither France nor America. Scotch and soda was a dollar twenty American. The place was jammed with Texans going home on a delayed plane and surly drunk, but soon they cleared out in a farewell whiff of five gallon hats, stale whiskey and cigar smoke.

The announcer said our "Flight 833 TWA" would be delayed one hour and would all passengers please go to the airport dining room and have a free supper.

The steaks and wine and dessert were fine. As coffee was being poured the airline hostess came quietly to each table and said, "Would all passengers on Flight 833 please leave their coffee and proceed immediately to the plane because the French General Strike was due to start in fifteen minutes and if the plane was not airborne we would be stuck in Orly."

We grabbed at everything and boarded and as the purser closed the door he yelled, "We are missing a passenger and tell him to get the next plane."

As we taxied down the field, the purser said to the stewardess, "I guess we better let 'em have it" and in sweet-honeyed words he announced the procedures for "ditching."

The Stewardess asked if we would like a nightcap and we ordered double scotches and ice. It was ten PM. The stars were out. We let the seats slide back to sleeping position and relaxed in the arms of the TWA and Johnnie Walker.

All night long the air was full of the sweet rhythm of the motors, the seemingly endless babble of the stewardess as she fixed bottles for the babies,

coffee for the pilots, pap for the nervous and soothing syrup for the insomniacs.

Finally, it was four AM and the aisle filled with early risers. The sun rose. At four-forty the TWA Florence Nightingale cooed sweetly to us that we would be served breakfast immediately since we had gained lost time and were due to land at five-fifty. It all seemed too good.

Six o'clock passed and still we were floating around in Heaven while G.O.D. put on a sunrise show.

At seven the pilot announced in braided authority that we had been circling Idlewild in a fog for over an hour. Idlewild was closed but the tower hoped that it would clear in another hour and we would continue to circle. "Have no fear and trust in the CAA, the TWA and the Tower" said he. "We are stacked." The passengers were overworking the ladies' and gentlemen's rooms.

At seven-thirty the pilot announced brassily that we would probably proceed to Philadelphia or Washington. We called the stewardess and told her to tell the Captain that we would be happy to land in Philadelphia. The stewardess said that she would rather be stuck in the air.

At eight, the pilot announced that we would land, real soon, in Newark. At eight-thirty, we made a perfect landing at Newark Airport. The motors flicked off and we were told to stay in our seats. The cabins started to heat up and the toilets began to nauseate the customers. Finally, the chief purser opened the port door. A breath of Newark air, compounded with smog and fires smelled fresh and lovely. The pilot and crew assembled and breathed deeply and told the passengers to stay seated and loosen their safety belts. A flight officer walked to the plane and the purser asked if he couldn't get us some food and coffee.

After an hour of immobility, I rose unsteadily and headed for fresh air. "Look Bud," said I, shaking off my best French. "I am trying to get home to my brother's funeral. Can't I please get off and send a telegram or maybe call to them to tell them that we are safe in Newark, New Jersey, USA, since six a.m." The purser looked at me like a foreigner and said haughtily, "Nobody can get off this plane, Mister. We are sealed cargo until released by the United States Health Service and the United States Customs. There is no Health Service or Customs at Newark and nobody can even get off this plane except the Captain."

"Look, Bud," said I, in my best side mouth. "I gotta funeral to get to. Can't the Captain deliver a message, charges collect, to tell my family that we are in the good old USA by courtesy of TWA?" The purser took my message to the Captain, but it never was delivered. We sat in the heat and stench of a grounded plane.

At ten AM the pilot sang out sweetly that Idlewild was open. We taxied to the strip with nineteen other grounded aircraft. After about another hour we took our turn headed down the strip at full tilt. About half-way down a motor gave out. We skidded around a corner and headed back. The pilot announced acidly that we would go back and bring Customs and the Health Authorities to Newark.

Again we sat in the smelly close of the dead plane. The kids who were air sick were now ground sick. The purser and all the crew came back and cheered us with the news that lots of other planes were grounded. The hostess tried out the forced-landing canned soups and baby foods. Newark looked lovely, and the ground crews waved to us.

Another hour passed and the pilot announced that the Customs and Health authorities were coming to Newark. Five minutes later the motors were turned over and we headed for the air strip and were airborne. The announcer said that we were going into Idlewild.

We headed into the clouds and started circling again. The Captain came back and chatted sweetly telling us that planes were sent as far north as Canada. "Look boy," I said. "Next to tired salesmen, white slavers and television guests, I've been riding planes for a few years on both continents and this baby takes my prize for bum service." The Captain asserted that everything was under control and that we should be happy to be with such a competent organization.

I said, "Far be it from me to hurry because I was only wishing to attend my brother's funeral and we are seven hours overdue already."

The Captain returned to his seat and we watched the clouds swirl by. At two PM the Captain announced that we were coming down to Idlewild. "It has been trying for all of us" said he sweetly, "and we hope that you will ride TWA the next time you fly." With this greeting we dipped through the clouds, the roof tops of the slum clearances greeted us and we landed in wet Idlewild.

As the door opened a New York voice yelled, "Where the hell you guys been? We been standing by since six AM but figured you run out of gas and headed for Newark. Is there a passenger named Bendiner aboard? A dame's been waiting since six AM to take him to a funeral."

We jumped out of our seats and headed for the door. "Wait a minute, wait a minute," said the purser. "You have to wait for the health officer to come aboard." I said, "Did you hear that somebody has

been waiting since six AM to take us to a funeral?"

"Mister," said the purser. "You can't leave. This plane is quarantined. We got a passenger who is suspected of having small-pox."

The Health Officer came aboard, saying, "Don't tell ME. I can smell it. I tell you I can smell it." We couldn't imagine which of the smells was small-pox. He walked through the plane, looked carefully at a man in a Texas hat who had been using our accommodations all night and most of the day, and ordered him off first.

After a half hour we finally were allowed off and sat in the filthy shed where the Health authorities welcome visitors to America. I said, "can we leave or has he small-pox?" "Naw, he hasn't small-pox," said Mr. Health. "He probably has a barber's itch or sunburn. We will facilitate matters and get you out." The last bags to come through customs were ours and at four PM we finally were allowed to greet my sister-in-law who had been waiting since six AM.

"Every hour and every half hour I would go to the desk and ask for your plane but if anybody knew what happened to you they kept it a big secret." Fly TWA and get there but leave yourself plenty of time and patience. "It seems so cruel to have put you through the wringer twice. I cannot understand why they took off again after they had you safe and landed, even in Newark, New Jersey, and as for sealing you up in that smelly plane for eight extra hours, that seems inexcusable. I just think you should sit down and write somebody a letter," said my sister-in-law.

"Look," said I, "maybe later, but I got enough trouble now. We are here and safe and sound. It reminds me of a story Irvin S. Cobb wrote. He had travelled in a train and when he got up in the morning he had fleas. When he got home he wrote the Railroad Co. explaining the situation. They answered with a long tearful apology which made Cobb almost ashamed of himself for having complained. But, whoever wrote the apology, slipped, and attached Cobb's original letter to the answer. Scribbled across Cobb's original complaint was a blue pencil notation which read "Send this guy the bedbug letter. . . ."

EDITORS NOTE:

Shortly after the return from Europe so discouragingly described above, the ebullient Mr. B. let an ice cube fall from his Martini pitcher and slipped on it (or was it those icy Philadelphia sidewalks?) Anyway, he broke his left arm and is currently enjoying a plaster cast. The labors of the postal clerks were enlivened by this sketch on the envelope in which he sent his manuscript, addressed to "Mr. Watterson and all the boys and girls of the AIA Journal." The boys and girls extend their sympathies to the one-armed Mr. B.

Necrology

According to notices received at The Octagon between January 30, 1958 and February 26, 1958

BETTMAN, HENRY A., Cincinnati, Ohio
COLLA, CASPER P., Brooklyn, N. Y.
DAY, KENNETH, Philadelphia, Pa.
DEMOLL, CARL, Swarthmore, Pa.
FELDMANN, LOUIS W., New York, N. Y.
GEBHART, ROLLIN E., Dayton, Ohio
GOODWIN, PHILIP L., FAIA, New York, N. Y.
GOWEN, LANCELOT E., Seattle, Wash.
HUNT, ROLAND E., Cincinnati, Ohio
JACKSON, RALPH T., Phoenix, Ariz.
MATKIN, GEORGE H., Houston, Texas
NOLL, ROBERT J., Poughkeepsie, N. Y.
PARKER, HAROLD, Sandusky, Ohio
RICHMOND, MILES STANDISH, Little Compton, R. I.
SULLIVAN, FRANCIS P., FAIA, Washington, D. C.
TIETIG, RUDOLPH, Cincinnati, Ohio
TURNER, JOHN D., Wichita Falls, Tex.
UEBELHACK, HOWARD J., Wilmette, Ill.
VAWTER, JOHN T., Los Angeles, Calif.
WAEBER, MAX L., Washington, D. C.
ZISLER, LYLE F., Detroit, Mich.

HONORARY MEMBER

MACALISTER, SIR IAN, Kent, England

BY EDWIN BATEMA

Trinity (

THIS ANCIENT CHURCH I believe I would not have seen were it not for the wedding. That's the way with weddings. You are low in your mind about them at first; but out of it all comes good. The Mendelssohn wedding march does it, it may be; a builder-upper, which makes the headliners come tripping down the aisle with that bring-on-your-troubles look.

The assemblage thereupon as one man rose out of its wedding gloom. Tears disappeared. Cheerfulness rose high during protocol concerned with the escorting of mothers, with movings of ribbons, with shaking of hands, with wavings, with kissing.

In this calm and relaxation after stress, the ancient church, not to be denied, drew one's attention. Its small space, whispering of the past; its pleasant square brick on the floor, forerunners of quarry tile; the lovely apsidal chancel, all made you thing of and be absorbed in the fragrance of other days, forgetting the recent ritual by ring, veil and buttonhole carnation. The pageantry and personnel of the present had gone to a sunny outdoors. The pageantry of the past closed around you.

I met the rector presently, who said as a preamble that they did not know how old the church really was, but made up for it by asserting that it was definitely known to have been there in 1690—which was rolling back far enough to hold attention.

This church is the old Trinity Church located at the bend of the appealing stream appropriately called Church Creek. Its waters were in earlier days the main, if not actually the only, avenue of approach to divine services.

The locality is that part of Maryland spoken of as the Eastern Shore (sometimes Easten Sho'.) When you drive through this part of the world you have the feeling that the word "shore" may be something of a misnomer, since there seems to be so much more water than shore. When you look at a map of the locality, it has the appearance of a graph of a very animated year in the stock market, with alternating peninsulas and deep fingers of inlet waters.

The most prominent and prized of these inlet fingers is called the Choptank. This mysterious and inexpressive name is usually defended by the native inhabitants with the euphemism that it is an Indian name, a definite conversation-stopper.

The church had come to a state of considerable disrepair during the years. It is being restored under the impetus of an earnest, public-spirited lady of the community, in honor of her mother and father, Mr. and Mrs. Walter P. Chrysler. She is Mrs. Edgar Garbisch, whose husband, now Colonel Garbisch, while at West Point in the late 1920's, kicked a lot of field goals at an Army-Navy game, a feat which, while not concerned with the Great Depression, certainly did create preliminary depression in the minds of much of our sea-going personnel.

The church was probably built about 1680, although the only documentary evidence of its early presence is in a report to London, still preserved, which was made in 1690 and mentions the church

S, SR.

on Church Creek

building as being then in existence. It is small and quite simple in design. An impressive feature is its appealing brickwork, of well-made, nice textured brick—quite apparently of American manufacture, with black headers and laid in Flemish bond. Some of the brick were damaged during reconstruction or had deteriorated due to age; but Colonel and Mrs. Garbisch were able to purchase replacements from other ancient structures in the vicinity.

The church restoration was not at the time fully complete. There remained some of the interior finish and a number of practical functional things. For instance in the ceremony of which I have spoken the organist had to climb aloft to her organ by means of a ladder—a ritual of consecutive genuflection not covered in the rubrics.

One might suggest to architects that, if driving through this Eastern Shore, they made an effort to see old Trinity. An interesting adventure would be to cross over Chesapeake Bay on the new bridge just north of Annapolis, stop after a few miles to see Perry, Shaw and Hepburn's nice restoration of Old Wye Church, and proceed on Route 50 through Easton and Cambridge to old Trinity. Then I should strongly recommend returning to Tidewater Inn at Easton, pleasantly designed in the Georgian manner by Alfred Hopkins Associates, where food and surroundings are more than pleasant. A chaste curving stairway faces the lobby, and I believe it is now established that no wedding in the Easton area is considered solemnized fully until the bride has pitched her bouquet from this bannister.

In Easton also is the ancient Third Haven Meeting, where William Penn often came. As a matter of fact, if one has time to look, the United States is a very nice place to see.

The architect for the restoration of the Trinity Church is Finlay F. Ferguson, Jr., of Norfolk, Virginia, who had much training at this sort of work when with the Williamsburg Restoration. Not the least of his problems, as in all such restorings, was to keep its early aspect and flavor and at the same time make it safe and habitable. To this end the roof became reinforced concrete, the matter of eaves support for this added weight being solved by placing steel columns in the walls.

The building has been made comfortable for summer and winter use. In many of the old churches there was a small vestry house built near the church. Such a type of house in connection with old Trinity has been built or rebuilt to contain mechanical equipment, and therefrom run underground pipes to the church. Hot water goes through in winter to warm the church, and in summer chilled water to cool it.

The sponsors of such a restoration offer a valued contribution to our civilization, architecturally and historically. Affection for country and mode of life is not induced solely by things of our times. We need always to have, in visible and usable form, tangible symbols of earlier hardship, toil and courage; and evidences, like this Trinity, of gratefulness for lesser blessings and comforts.

Regional News

SOUTH ATLANTIC DISTRICT

CECIL ALEXANDER, retiring President of the Georgia Chapter, has been appointed Chairman of the Atlanta Citizens' Advisory Committee on Urban Renewal. It will be Mr. Alexander's responsibility to present urban renewal to the public and to gain acceptance from various groups in the community who will be affected by the changes involved in a major urban renewal project. Members of the Georgia Chapter have voiced enthusiastic approval of Mr. Alexander's appointment. It is felt that this is the type of position which logically should be awarded to an architect, but which many times goes to persons in other fields.

CALIFORNIA-NEVADA-HAWAII DISTRICT

THE FIRST ANNUAL Pan-Pacific Architectural Citation has been presented by the Hawaii Chapter to Kenzo Tange, of Tokyo, Japan, for his design of the Children's Library at Hiroshima.

The Citation was presented by Harry W. Seckel, Chairman of the AIA Past Presidents, and Chairman of the Pan-Pacific Committee, at a dinner in Honolulu.

In making the presentation Mr. Seckel said, "The purpose of the award is to honor outstanding architectural achievement, and for the purpose of making architects in the Pacific area more cognizant of the best efforts of their foreign colleagues. In doing so, we are accepting a responsibility suggested by our unique geographical location. Each year the citation will be awarded by the Hawaii Chapter to some architect in the Pacific area. It can be expected that, over a period of time, the citations will be conferred upon architects of various countries bordering on the Pacific Ocean."

MIDDLE ATLANTIC DISTRICT

THE PRESIDENT of the Potomac Valley Chapter and members of a special study committee have been received by the President of the University of Maryland regarding the establishment of a School of Architecture at the University.

The University is considering an expansion of the School of Fine Arts, and members of the Chapter feel that schools of architecture, administratively, are placed under schools and colleges of fine arts as well as of engineering. It was pointed out that Maryland is one of the few states which does not have a school of architecture within its boundaries.

As in the case of the planned establishment of a number of other schools of architecture now pending, material for the proposal was furnished by Walter A. Taylor, Director of Education and Research of the Institute.

THE PITTSBURGH CHAPTER has conferred an Honorary Membership upon Richard King Mellon at the Chapter's 68th Annual Meeting. Mr. Mellon was cited for his encouragement and aid to scientific, educational, and cultural advancements in Pittsburgh's past history and in city planning, landscape and architecture as well as conservation of wildlife and the preservation of historic shrines. The award was accepted on Mr. Mellon's behalf by Adolph W. Schmidt, Vice-President and Governor of T. Mellon and Sons.

THE NEWLY-FORMED EASTERN PENNSYLVANIA CHAPTER has received its Charter from Regional Director J. Roy Carroll at a meeting in Allentown, Pa. Edmund R. Purves, Executive Director of the Institute, was present to welcome the new Chapter into the AIA. The following officers have been elected: Willard S. Hahn, President and P.S.A. Director; Wayne M. High, Jr., and William D. Miller, Vice-Presidents; Charles R. Haas, Secretary; and Frederick R. Shenk, Treasurer. The new chapter will include the Allentown, Reading, Bethlehem, and Easton areas.

Honors

AUSTIN E. FITCH, professor emeritus of architectural construction at Washington University, St. Louis, Mo., was honored on Founders Day by the Washington University Alumni Federation. Mr. Fitch retired from the faculty in 1954, having served 38 years on the staff of the School of Architecture. The firm of Fitch and Nicholas, of which Mr. Fitch is a member, has designed the engineering laboratory building now under construction on the campus.

EDWARD D. STONE, designer of the American Pavilion at the Brussels World's Fair and co-designer of the Museum of Modern Art, has been elected to life membership in the National Institute of Arts and Letters, the highest ranking honor society of arts in the United States. Mr. Stone's formal induction will take place in May at the Joint Annual Ceremonial of the National Institute and the American Academy of Arts and Letters.

A statement by the National Capital Committee of the American Institute of Architects

A Framework for Planning

A LITTLE MORE THAN 50 years ago The American Institute of Architects spear-headed a movement to revive l'Enfant's plan of Washington. It was an effort that was crowned with success and resulted in saving l'Enfant's noble concept of a Mall.

Today the problem which confronts us is not that of saving a great plan but that of creating a procedure for planning. For present planning methods, within the District of Columbia, are producing so much irritation and so many delays—and such small benefits to compensate for the irritations and delays—that the whole process of city planning in Washington is being discredited. Furthermore, more than half of the population of Washington now lives beyond the boundaries of the District of Columbia and there is no effective procedure with respect to planning for the entire urban area.

There is a fear of creating a Metropolitan Planning Commission which would have authority over the planning commissions of the various political jurisdictions within the metropolitan area. And, within the District of Columbia itself, there is a fear of entrusting real planning authority to the National Capital Planning Commission.

A Planning Commission, to be effective, must have positive authority—not advisory authority which merely incites argument and delay. The authority must be sharply defined and limited in scope to the major aspects of planning. In practice we have done just the reverse: Almost no limit is placed on the scope or extent of the National Capital Planning Commission activities within the District of Columbia, but it has very little real authority except the power to delay and to obstruct major projects and to control completely and in detail many smaller projects.

The result is what might have been expected: The very big projects, such as major bridges and highways, are delayed by seemingly endless controversy—and usually the Planning Commission finally loses to the Highway Department. But less powerfully backed projects, such as housing and urban renewal projects, are controlled completely and in more detail than necessary to meet the legitimate requirements of city planning. More and more time is spent on the trivial details of planning instead of on the creation and realization of a powerful and imaginative city plan.

The problem of metropolitan area planning will not be solved by means of a Regional Commission with purely advisory authority. The end result of this approach is merely to create more red-tape, consultations and delay. The answer to the problem of metropolitan planning may be found, however, as a result of attempting to solve the number one problem of urban growth—transportation. The recommendations of the Mass Transportation Survey for Washington are not yet available but it seems likely that transportation for the nation's capital must be based on either:

1. An all-automobile city with the present type of bus transportation; or,
2. Some form of rapid transit which provides fast and convenient travel as a result of eliminating all grade crossings.

If we prefer a city in which the struggle to get to work becomes less, instead of more, as time goes on; a city in which the prevailing path to work is by means of the most efficient combination of automobiles and rapid transit; a city offering both the concentration which makes a downtown area convenient, attractive and stimulating, and the dispersal

which permits ready access to open country, a city which shows evidence of deliberate planning in advance of growth instead of painful adjustments to unplanned and haphazard growth after it has occurred—then we shall base our plans on the acceptance of rapid mass-transportation as an essential feature of the metropolitan city.

This choice will have still another very great advantage: It will help to preserve the essential character of our present National Capital. For mass-transit can go underground within the central city and leave above-ground unchanged; whereas the all-automobile solution, if it is to reach and serve the central area, will necessitate such vast changes in the form of freeways, underpasses, clover-leafs and automobile parking areas that much of the charm of the present city will be lost. In the last half of the 19th century we nearly spoiled the plan of Washington by the reckless use of railroads; we are now in danger of spoiling the city by an almost equally reckless use of automobiles.

The values which a rapid transit system would create for the city as a whole, for business, for real estate and for the Federal government would be as much as or even greater than the values which it would create for the transit riders as such. It is only fair, therefore, that some of the cost be accepted by the District and Federal governments, and that some of the cost be recouped by wise land purchase and zoning.

THE CONGRESS SHOULD CREATE a Federal City Corporation with the power to plan, construct, finance and control the rapid transit system for the District of Columbia. The Federal City Corporation should be authorized to issue its own bonds and to buy, redevelop and sell or lease a broad strip of land along its right-of-way. That part of the capital cost which is in excess of the amount which can be financed on the basis of income from fares and income from real estate should be met in the form of grants by the Federal government. And, most importantly, the Federal City Corporation should be empowered to negotiate directly with the states of Maryland and Virginia with respect to extending its functions over the entire metropolitan area. If the Federal City Corporation began operations as a well-financed, going concern within the District of Columbia, Virginia could not afford to see the transit lines extend into Maryland only—and vice versa. It would be much easier to negotiate on this basis than to attempt the almost impossible task of three-way negotiations concerning a treaty between the Federal Government and the sovereign States of Maryland and Virginia.

The planning of a mass-transportation syste would be a logical function of a strong Metropolita Planning Commission—if we had one. Until suc time as there is an effective planning commission f the entire urban area, however, the Federal Ci Corporation should be empowered to do the bas planning research required to locate the transit lin and to plan the bridges, tunnels, highways an terminals related to the transit system; but it shou have no other planning authority. Metropolita planning would thus be severely limited in scope b extremely effective within this limited scope. Th Federal City Corporation would, in effect, create framework within which the National Capital Pla ning Commission and the various County Planni Commissions could function more efficiently tha they do at present because the over-all pattern the city would be established on the basis of metr politan area planning.

The operation of a rapid transit system shou be left to private enterprise but its constructio under the conditions which exist today, must be governmental or semi-governmental enterprise. Fo on the one hand, the direct profits from passeng traffic are insufficient to finance new transit constru tion and, on the other hand, the great benefits a cruing to the city can only be obtained in their e tirety if the planning is based on the needs of t city as a whole instead of on profit consideratio exclusively.

THE RESTRICTION OF METROPOLITAN planni to the basic subject of mass transit, although a cepted as a matter of necessity, may be found to ha many advantages. For a great deal of the irritatio indecision, confusion and delay caused by the pre ent planning procedure results from an excessi effort to coordinate and correlate all of the ma facets of the planning process.

Each of the planning commissions, within i own geographic jurisdiction attempts to plan for a to coordinate many separate activities such as stre and highway construction, sewer and water mai school and recreational facilities, zoning and lan use, bridges, redevelopment, sub-divisions, housin etc. But the city planner cannot coordinate witho adequate power to enforce his plans. The result planning by conference and committee—and co promise—instead of creative and imaginative pla ning by individuals.

It may be better to give up the effort to c ordinate all of the many phases of planning on t basis of conference and committees. Coordinati would be secured through the establishment of basic framework of man-transit planning with

hich planning for other functions could proceed ef-cently. Paradoxically, we may find that, far from aving restricted the individual planner, we have berated him. For nothing is more deadening for he creative spirit than to work on the basis of un-ertainty, delay, frustration, impotence—and com-ittees. Within a given framework of established onditions, but with genuine freedom within that amework, the many individual planners within the ntire metropolitan area will have many opportuni-es for creative planning.

The key to this framework for planning is the roposed Federal City Corporation. It will need, addition to the very great powers that have been escribed above, a form of organization that will ermit it to exercise these powers effectively. The oard of the corporation might consist of not more an five members, two appointed by the Dis-ict of Columbia government, one each by the states f Maryland and Virginia and the chairman by the resident of the United States. But these five mem-ers would not meet once a month as does the pres-nt National Capital Planning Commission and they ould not be ex-officio members having, perhaps, nly a casual interest in planning. They would de-ote not less than half of their time to their task and ould be paid accordingly.

Since they should have complete ultimate au-ority for the management of the corporation they ould have the power to hire—and fire—its princi-pal administrative officers. For the key individual in the entire framework for planning in the metropolitan area will be the president or executive director of the Federal City Corporation. He must be chosen on the basis of technical competence, executive ability and managerial skill—plus various intangibles that almost defy analysis. The final measure of his ability can only be determined by his achievement and on this he should stand or fall. This is too important a job to be filled on any other basis than that of results obtained. We can afford only the best men we can get, at the kind of salaries that are necessary to attract such men.

The problem of metropolitan planning for the Nation's Capital is urgent, it is baffling, and it will tax our utmost ingenuity in devising suitable politi-cal, administrative, financial and planning instru-mentalities. Let us not deceive ourselves about it: Our present planning procedures are degenerating into mere obstructionism based on statistical argu-mentation. We must devise a procedure that will permit and encourage effective leadership and pro-duce plans that stir the imagination of the people and thus create a demand for their adoption.

LOUIS JUSTEMENT, FAIA, WASHINGTON, D.C.
CHAIRMAN
JOHN F. HARBESON, FAIA, PHILADELPHIA, PA.
EERO SAARINEN, FAIA, BLOOMFIELD HILLS, MICH.
HENRY R. SHEPLEY, FAIA, BOSTON, MASS.
EDWARD D. STONE, NEW YORK, N. Y.

SHARP FOCUS

IT IS GRATIFYING TO NOTE that interest in a etter procedure for the selection of "or equal" roducts is receiving increasing attention, including s consideration at meetings of the N.Y. Chapter f the Construction Specifications Institute.

It is quite understandable that some contractors ill argue strongly for "or equal." Without it, the pportunity is lost to pit producers against each other nd the specified product, and taking advantage of e lowest proposal, seek to convince the architect f the equality of the substitute.

Difference in cost between the product specified nd the one offered as an alternate goes, of course, the contractor and not to the owner.

With use of "or equal," regardless of a qualify-g clause, "in the opinion of the architect," or, "as approved by the architect," the architect jeopardizes his control of selection. If confronted with a sub-stitute of doubtful quality concerning which the ar-chitect may lack convincing reasons for rejection, he faces the alternative of acceptance or rejection which, at best, presents an unsatisfactory solution.

This may easily be avoided by eliminating "or equal" and specifying that the contractor may submit with his proposal products for similar use to those specifically mentioned, providing the difference in cost, if any, is given in each case.

This gives the architect an opportunity to consider the acceptance of substitutes, free from argument and difference of opinion and the frequently heard plea, "This is what I figured on."

T. I. C.

Library Notes

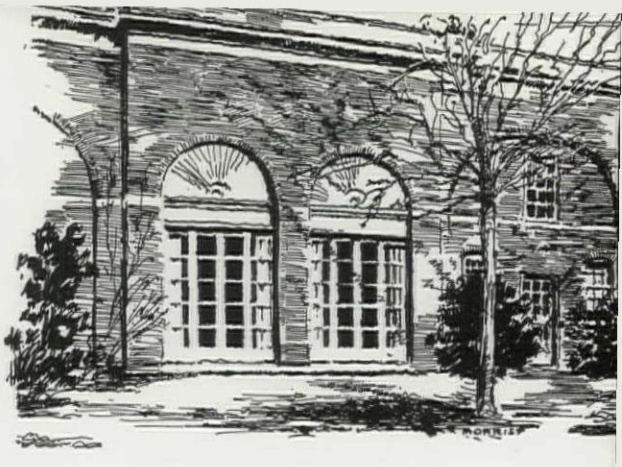
—Architectural Archives

In connection with the annual meeting of the Society of Architectural Historians, the Library collaborated with Mrs. Alice Graeme Korff, Curator of Gallery, in arranging an exhibition on Architectural Archives in the galleries of the Octagon. This was on display from January 30 to March 9, 1958.

The exhibition reflects the interest and concern of The American Institute of Architects in promoting an awareness of the importance of architectural archives. Such records serve many purposes—as source material for the writing of architectural history and as documentary evidence for use and repair or reconstruction of buildings. Often, too, the drawings are in themselves of considerable artistic merit. Because of the need of developing proper methods of care and preservation of such records, the Institute has sponsored the formation of a Joint Committee on Architectural Archives in which eight professional organizations are represented.

The exhibition was arranged in two major parts. One gallery showed examples of various types of archives drawn from the records of the firm of McKim, Mead and White, and the Richard Morris Hunt collection in the Library. Using the former's University Club as a subject, it was possible to show a plan, an elevation, a section, details, plumbing diagram, blueprint, study, a specification and a construction contract. Among the other material from McKim, Mead and White was a competition drawing for the New York Public Library. The Hunt collection supplied other types of material such as a sketchbook, letter, student projects, water color renderings, and preliminary sketches.

The other gallery contained examples from the collections of Washington institutions and from special archival projects. These were of a variety of subjects and well demonstrated the intrinsic interest of these older drawings. From the Library of Congress were borrowed drawings by B. H. Latrobe as well as some by T. U. Walter of the Capitol. The National Gallery of Art lent four studies of its building done by the Office of John Russell Pope. From the Columbia Historical Society were obtained two water color studies for the decoration of its headquarters, the Christian Heurich Memorial Mansion. The General Services Administration lent a drawing of the Boston Custom House by Ammi B. Young. The District of Columbia Public Library provided an elevation of an addition to Arlington Hotel by Harvey L. Page. The variety of materials in the National Archives was shown through four photographs



—Lincoln Memorial by Henry Bacon; lighthouse b Henry Latrobe, and Washington Monument stud by Goldsborough Bruff.

Among the materials from the Library's ow collection were five drawings by William Thornto including two of his competition drawings for th "President's House," and one for Tudor Place. Othe items were a water color rendering by Bertram Gro venor Goodhue of St. Stephen's Church, Cohasse Mass., a drawing by Charles Sumner Greene for th D. L. James house, and a study by E. W. Donn, J for a Washington Family Memorial.

Also shown in this gallery were examples fro several important collections of architectural a chives, which have been gathered as units. On was the Chicago microfilming project. This co tained an original drawing of the Armour Memori Building and the microfilm of the same. There we also a photo enlarged to the drawing's original siz and a glossy print, both made from the microfil This was intended to show that microfilm presents reasonably satisfactory substitute for the origin and enables such space saving that it is highly usef in extensive projects to preserve architectural dra ings. In the 20's and 30's an important project w the White Pine Monograph series gathered by Ru sell Whitehead. This included measured drawin and photographs. The originals of most of this m terial were purchased in 1955 for the Library fro a gift made to the Institute by the Weyerhaeus Timber Company. Examples of photographs an drawings from this collection were shown. Th other major recording project in the field of arch tectural history is the Historic American Buildin Survey. Begun in the 30's primarily as a wo project, it has been continued as an open-end archiv and is currently reactivated by the National Par Service. Originals are on file at the Library of Co gress from where reproductions may be secured at reasonable price.

It is hoped that this exhibition gave some in pression of the variety and importance of archite tural archives, and offered useful suggestions whe such material might be found.

G. E. Pettengill, Librari

BOOK REVIEWS

ARCHITECTS' YEARBOOK. Trevor Dannatt, Editor. 224 pp. 7¼" x 9¾". New York: 1957: Philosophical Library, Inc. $10.00

This profusely illustrated yearbook is a collection of original articles of critical and informational nature. Julius Posner writes on "Style in Architecture"; A. & P. Smithson on "Aesthetics of Change"; Maxwell Fry on "English Architecture from the Thirties"; Edgar Kaufmann on "Victor Horta"; George Dunton on "Museums and Galleries" and "Two Italian Museums"; and many others.

BUILDERS' HOMES FOR BETTER LIVING. By A. Quincy Jones and Frederick E. Emmons. 224 pp. 7¾" x 10¾". Reinhold Publishing Corporation, N. Y. $8.95

The authors, A. Quincy Jones, AIA, graduate of the University of Washington, and Frederick E. Emmons, AIA, graduate of Cornell University, have been in partnership since 1950 and have received 32 national and regional awards of merit. John L. Chapman, formerly associated with Jones and Emmons, is a graduate of the University of Southern California and is a member of that faculty. Mr. Jones is a visiting critic at the same school.

The book is addressed to builders, architects, engineers, site planners, civic leaders, investment agencies and individual buyers of houses.

The broad problem is stated in the concluding section: "Surely it is not expecting too much to believe it possible for a nation with such a large proportion of the world's wealth, physical resources, and technical abilities to provide far better answers to the problem of housing its citizens than the examples to be found in the suburban areas of our metropolitan centers. The real goal is the creation of a truly pleasant way of living geared to the tempo of modern life. This is something which demonstrably has not been approached except in isolated cases."

The book is however not merely a preachment about shortcomings but provides suggestions and answers in an attractive graphic manner which will appeal to the assorted audience. The major chapters are titled; "The Planned Environment, The Individual Lot, The House, The Structure, The Building Business." About half of the total text is in the chapter on "The House." The book is copiously illustrated with plans, diagrams, photographs, sketches. Every other page is completely devoted to illustrations with additional graphic material in the text.

This book should prove a good antidote or preventive to the obvious shortcomings, also guidance and encouragement to architects who have hesitated to enter this important field of practice, from architects of demonstrated competence.

W. A. T.

BUILDING, U.S.A. By the Editors of the *Architectural Forum*. 160 pp. 6" x 8". New York: 1957: McGraw-Hill Book Company, Inc. $3.95.

This book is an attempt to explain to the public just what goes on in the process of getting a building built. In so doing it also introduces the many members of the building industry to each other. It sets forth the duties of everyone concerned, beginning with the real estate operator, the money lender and the various contractors, through to the engineer and the architect.

Chapters were variously written by Frederick Gutheim, James Marston Fitch, Mary Mix Foley and others.

DESIGN IN CIVIL ARCHITECTURE. By Sir Albert E. Richardson, FRIBA, and Hector O. Corfiato, FRIBA. 216 pp. 9⅝" x 12¼". New York: 1956: Philosophical Library. $15.00

The distinguished authors say in their introduction: "With the imminent reconstruction of so many buildings and the absence of available information on the treatment of elevations, it is felt that some sort of comprehensive guide-book will be useful. To this end, bearing in mind the nature of the problems which face architects, a selection of famous elevations has been prepared in the form of exemplars. Progress in architecture has always added to previous knowledge. At all periods there has been neither direct severance from the past nor entire reliance on novelty of form . . . The main object of this work, therefore, is to provide ideas which will refresh the minds of architects, and at the same time will avoid the danger of puerile copyism."

The book consists of 187 plates of freehand line drawings of the elevations, with some details, of outstanding buildings from Renaissance to modern times. It includes for example, the Strozzi Palace, the Petit Trianon, Greenwich Hospital, the Girard Trust Company, the Nebraska State Capitol, the Lenin Library, the Chinese Ministry of Railways, the Stockholm City Hall, and the Ministry of Education and Health Building in Rio de Janeiro. This list is just by way of giving an idea of the wealth of material contained and the wide area it covers.

The fact that it is sub-titled "Volume I: Elevational Treatments" would indicate that another volume is to follow, presumably dealing with the all-basic plan.

J. W.

WINDSOR CASTLE. By Sir Owen Morshead. 184 pp. 8½" x 5½". London: 1957: Phaidon Press. $3.25

At last there has appeared a book on Windsor Castle which is the perfect medium between the ordinary tourist guidebook at one extreme, and the monumental works of William St. John Hope (with 1,040 quotations from the medieval Latin) at the other extreme.

Sir Owen Morshead, the distinguished Librarian to Queen Elizabeth II, has lived within the castle walls for 30 years and is the recognized authority on its history. He sweeps

through nine centuries of the historical and architectural development of the castle from the Normans to George IV, and reveals it not only as a fortress, but also as a well-appointed home.

As he says in the Foreword, "I found that this is not an extinct palace like Hampton Court or Kensington, but a living home with a domestic character and personality of its own, and a human quality investing its stones and mortar."

The final section of the book is devoted to the eighty sumptuous photographs of Harold White, FIBP, FRPS, which were commissioned especially for this volume. The illustrations are not all confined to this section, however, for throughout the book are many fine pictures of architectural details, early drawings and paintings and objects of interest in the castle.

This is a scholarly work, albeit a readable one. It is a book which will appeal to any reader who senses the fascination of the ancient and illustrious seat of the Monarchy.

W. N. L.

THE ACROPOLIS. By Gerhart Rodenwaldt. 61 pp., 43 plates. 7½" x 10". University of Oklahoma Press, Norman. $8.75. Second Edition 1957, printed in West Germany.

The author, Gerhart Rodenwaldt, (1886-1945) was for a quarter of a century a professor in the University of Berlin and during much of that time also served as President of the German Archaeological Institute.

The 104 excellent photographs are by the German archaeological photographer, Walter Hege.

If one is inclined to wonder why a book on this subject is re-published in mid-America in 1958, thirteen years after the death of the author, two possible answers may be found in the text. The inference is that since we have divested ourselves of stylistic classicism we are in a better position to appreciate the originals; "It is true that the idea which made of classical art a model to be copied at all costs, an ideal which was a source of inspiration to our ancestors, but a heavy burden to their immediate successors, has given way to the recognition of it as a perfect expression of European culture, which cannot again be achieved. We can now approach it free from all servility . . ."

Another possible answer is more technical. "The sensation of light is the most penetrating, most lasting sensation one can experience in Greece." "No painter has been able to reproduce the unique atmosphere of the Acropolis . . . yet even photography meets with almost insurmountable difficulties."

The 41 pages of text are concise and comprehensive as to the history and archaeology of the Acropolis generally and the four major structures. The existence of the partially constructed 480 B.C. Old Parthenon is noted but the dramatic fact of the use of the existing column drums in the final Parthenon is not mentioned.

In the case of the Erechtheum the author does not allude to the well-supported theory that the North Porch was originally designed for the West end. The confused composition of the existing structure is rationalized; "the Greek architect would not sacrifice the independence of the three parts."

However the book is not intended to be a complete treatise on archaeology. It is essentially a very fine collection of photographs of a perennially inspiring site and structures which will always be significant in western culture.

W. A. T.

THE PICTURE HISTORY OF PAINTING. By H. W. Janson and Dora Jane Janson. 320 pp. 9¾" x 12¾". New York: 1957: Harry N. Abrams, Inc. $15.00

Nearly every architect thinks he knows painting and the history of art. A few really do. Very few have an art library and good reproductions of paintings in their homes. From now on, every architect can have the whole history of painting in beautiful reproductions right on his living room table.

Here is a gorgeous book, an "art book" turned out as only the house of Harry N. Abrams can turn them out. There are over five hundred reproductions of paintings, all o them large and clear; 103 of ther are in full-page full-color. Th black and whites are beautifull printed in offset. Every museum an private collection in the Weste world has been raided to complet this picture gallery. It is a *must* fo every architect's home—or for an home where art matters at all.

The text is a simply told runnin history of art, from the cave man t modern times. The style is rathe elementary and is certainly no meant for the sophisticated con noisseur (but the pictures are.) I can be read however, with relish b any adult who wants to learn, an with understanding by a child. Ver deftly, the authors weave in the his torical background every time thei scene changes, and in simple term they explain the various technique and materials of painting. The tex is not long—the book must be eight per cent pictures—and it is amazin how neatly the authors can dispos of five hundred years and still leav the reader with the feeling that h has caught the flavor of the perio and the character of its painting But primarily, it is a picture-book o Greek and Roman painting; Byzan tine, Romanesque and Gothic paint ing; Giotto and Masaccio; the va Eycks and Bosch; the great Floren tines; the even greater Romans an Venetians; the Spanish painters seventeenth and eighteenth centur England, France and Holland; an still over a hundred pages left to de vote to the great movements of th nineteenth and early twentieth cen turies. Pictures, pictures, picture Where else could you find such feast? And all for the price of couple of bottles of good Scotch.

To find any faults in such a boo will seem picayune, but this reviewe does feel that, for a book intende for American use, more attentio could have been paid to the Ameri can painters. They may not loo large in the history of painting, bu they do in the American cultura background. Of the colonial perio there are only West and Copely— who were after all, British painters Later, there is Bingham and Raphae Peale, and still later, Homer, Hick

and Eakins. Only one reproduction each for these painters. There are a small half-dozen more from Whistler to Ben Shahn. But this is a small flaw on a vast canvas. It's a great big beautiful book, and a necessary one. Go out and buy it.

J. W.

DESIGNING FOR PEOPLE. By Henry Dreyfuss. 240 pp. 6¾" x 9½" New York: 1955. Simon and Schuster. Paper-bound. $1.95

The distinguished industrial designer sets forth his story and his credo for all to read. Written with vitality and gusto, it breathes a healthy and vigorous optimism as well as a firm belief in the significance of the designer's work. Dreyfuss says "Everything—absolutely everything—I know about industrial design is in these papers."

OSCAR NIEMEYER: WORKS IN PROGRESS. By Stamo Papadaki. 192 pp. 8¾" x 8¾". New York: 1956: Reinhold Publishing Corp. $10.00

This is the author's second book on the work of the distinguished Brazilian architect, presenting many buildings that have never been published before.

Peculiarly South American though his architecture is, Niemeyer's plastic vocabulary offers inspiration to architects everywhere. This book contains thirty examples of fifteen building types, the Quintadinha Apartments and the Museum of Modern Art in Caracas, as well as a number of residences—including the architect's own. Mr. Niemeyer has written a provocative foreword.

EVERGREEN AND FLOWERING SHRUBS FOR YOUR HOME. By Katharine M-P. Cloud. 256 pp. 6⅛" x 9¼". New York: 1957: Greenberg; Publisher. $4.95

An ideal book for the small homeowner who wants to landscape his grounds on a restricted budget. The book is divided into three parts. Part I discusses soil preparation, planting, fertilizing, spraying, etc. Part II is devoted to evergreens, and Part III to flowering shrubs.

FARM HOUSING. By Glenn H. Byer and J. Hugh Rose. 204 pp. 6" x 9". New York: 1957: John Wiley & Sons, Inc.

A study of the shelter aspects of the American farm. The authors have drawn their data from recent census information, and provide a complete compendium of facts and figures on the farm household and its house in 1950. It is divided into twelve geographical regions, illustrating their different characteristics of each.

MONUMENTAL BRASSES. By James Mann. 32 pp. 4¾" x 7". Middlesex, England: 1957: Penguin Books, Ltd. 95¢

The brasses of English tombs are one of the most interesting sources of information on costumes and heraldry of medieval Britain. In thirty pages of text and thirty-two plates, the Director of the Wallace Collection gives the reader a quick and interesting acquaintance with what is to many a fascinating study.

COURSE IN MAKING MOSAICS. By Joseph L. Young. 60 pp. 7¾" x 10¼". New York: 1957: Reinhold Publishing Corp.

A "how-to-do-it" book for those who wish to take up this newly-popular but very ancient art. It gives a brief history of the art, and discusses the tools and equipment needed and how to proceed. Also included are many illustrations of contemporary mosaics.

Recommended Reading

A JAPANESE ARCHITECTURAL magazine which we had not seen before has just come to our desk, and the material illustrated in it is of such great interest that we hasten to inform our readers about it. It is called SINKENTIKU—*The New Architecture of Japan,* $10 a year in the United States; address:

SINKENTIKU—SHA
6, 1-chome, Takara-cho, Chuo-ku
Tokyo, Japan

The text is in both English and Japanese, the quality of the offset printing is excellent, the material is good. The December issue contains the Yamanashi Municipal Auditorium, the Tokyo Hibiya Public Library, a fascinating Corbu-esque little house called Villa Coucou, other residences and shops, a housing project for industrial workers, and a beautifully illustrated article on a traditional temple built in 1052.

BE SURE TO SEE "How Up-to-Date is Your Town's Building Code" by Stuart Chase, in the February *Reader's Digest.* After pointing out the need for good performance codes, Mr. Chase discusses the new New York State Building Code as a model of what a code should be.

THE CHRISTIAN CENTURY issue for February 19th has a special section on church architecture. An editorial, "The Edge of Greatness" makes a strong plea for contemporary design, on theological, historical and architectural grounds. There are two good articles by Stephan Hirzel and Scott Turner Ritenour, and one by Theodore A. Gill which we have asked permission to reprint in the *Journal.* Finally, there is a review by Martin E. Marty of church architecture in the various periodicals during the past year.

All told, it is very stimulating reading for the architect who even thinks about church architecture, and a must for the architect who is practicing it.

TIME for March 3rd has an excellent story on Mies, Johnson and the Seagram building, with a fine photo.

On the same page is the last-minute news on the effort to save the east front of the Capitol, painted as a lost cause—unless there is a genuine public outcry against it.

FAVORITE FEATURES OF NEWLY ELECTED FELLOWS:

FRED L. MARKHAM, FAIA

SUMMER RESIDENCE O
Harold W. Brown, M.D
Brickerhaven, Uta

Letters to the Editor . . .

Archcrostic, Jr.

EDITOR, *Journal of the AIA:*

Adios and Adieu
What now shall I do?
In spite of my noble intention

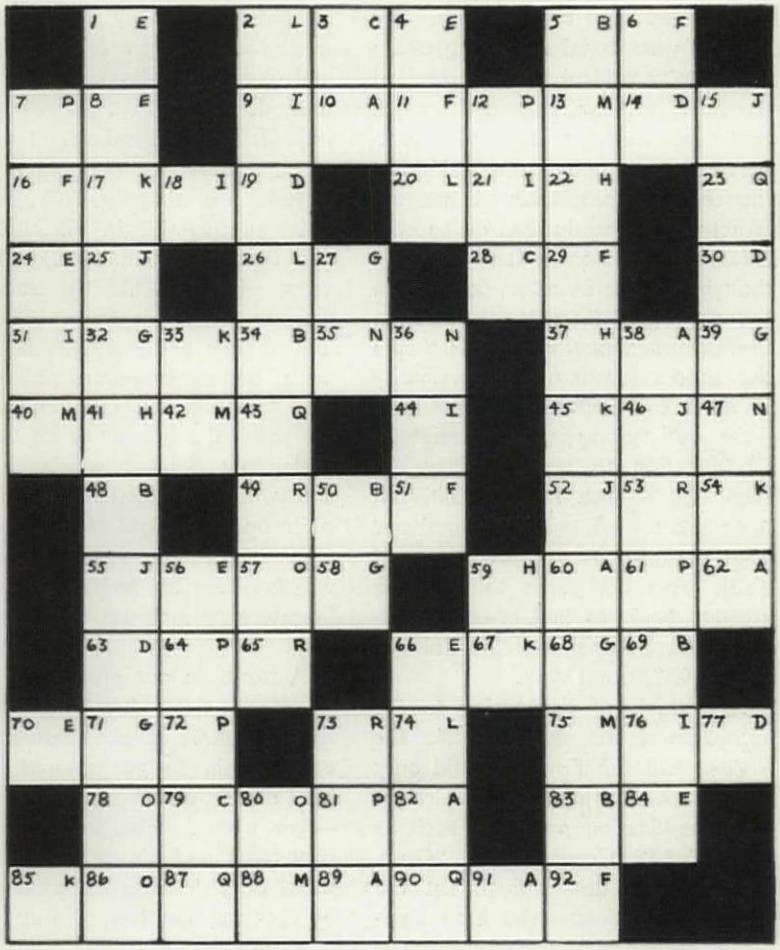
I succumbed to the bait
I worked long and late
On Merrill's latest invention.

Archcrostics still send me.
Won't someone defend me?
My vice I cannot overcome.

Now when people ask,
"What of her past?"
Just say—"She's an Archcrostic Bum."

As further evidence of what these Archcrostics can lead to, I am enclosing Archcrostic, Jr. In the event you are able to solve this, you will understand my plight. If not, you frankly won't have missed a thing. I have sent the original to Mr. Merrill for I feel that it is only fair that he should find out how the other half suffers.

VERA ZWICKER
Naples, Fla.



DEFINITIONS	WORDS
A. Well known Honolulu architect	62 82 60 10 38 91 89
B. Surpass in wisdom	50 34 5 69 48 83
C. Hierarchy of architectural profession	3 28 79
D. Irate Florida architect	30 14 77 19 63
E. To deceive	56 84 8 4 70 1 24 66
F. Habitual practice	11 92 16 51 6 29
G. One who utters a loud shout	71 68 27 39 58 32
H. Opposite of warp	37 41 22 59
I. Home place of A	31 44 21 9 76 18

DEFINITIONS	WORDS
J. Past participle of stand	55 52 46 15 25
K. Creditable	85 33 67 54 45 17
L. Multitude; throng	2 74 26 20
M. To attest; support	75 88 42 13 40
N. Embrace	36 47 35
O. Raccoon	78 86 57 80
P. One who brings bad luck	12 72 64 7 81 61
Q. Uncle's wife	23 90 87 43
R. To spout	49 65 73 53

The Editor's Asides

I ASSUME EVERYONE read Tom Creighton's "P.S." in the February *P/A*—as a matter of fact, everyone should read Tom every month. We decline with thanks his suggestion that the "beautiful new *Journal of the AIA*" publish, once and for all, prototype speeches with file numbers. True, it would greatly simplify the task of speechmakers, and infinitely lessen the burden on speech-listeners. But Tom fails to carry his thought to its ultimate conclusion. Speech *Five B-3* (under the Creighton Classification) has as its theme the deplorable lack of true originality in most contemporary architecture.

So why not apply the Creighton Classification to contemporary *designs* and publish them definitively, once and for all, with file numbers? The beautiful new *Journal* would gladly open its pages to this, the greatest boon to lack-of-originality-haunted architects since the Chicago Fair (1933, not 1893).

And think of the saving to the architectural magazines! *P/A*, the *Record* and the *Forum* would only have to publish headings of Creighton Classification numbers, such as "Res. 7-A," "Comm. 6-C," "Govt. 19-C-2," and under them list the names of architects who have completed buildings of each type. The architects would be applauded for their daring and taste in their selection of the standard types, the magazines would have still more space for advertising, and the readers would be spared looking at the same few designs over and over again.

But most of all, the architect would benefit, for instead of straining to do something different, the designer would simply thumb through the file and select a type number, and then go fishing—while the drafting room turned out the drawings for a perfectly bare and highly efficient building, with or without windows as needed. When completed, the blankness of the building would be beautifully relieved by a big neon sign giving the design type number. It would be just perfect—or would it?

Now, at the risk of being ponderous, let's consider for just a moment the implication behind Tom's bit of nonsense. As every minister knows, the basic truths are few and simple, and the man who can continually find different ways of expressing them is a genius indeed. The basic truisms about contemporary architecture are simple—Tom covered them pretty well in his column—and there aren't many ways to say them. But, just like the truisms of religion and ethics, they need saying and saying and saying. It is the critic, the contemporary philosopher who "views with alarm," that sparks the cultural advances of civilization. Those are fighting words to most artists, except those few who are also philosophers. And it is those few who make the great advances, whether their art be painting, music, literature or architecture. Amen.

A NOTE on our progressive backwardness: Each day bulldozers eat up 3,000 more acres of nature-scape, never again to be restored. This kind of "progress" is akin to erosion—but worse. For erosion can be controlled and checked, and at its worst only destroys the productivity of the soil, the beauty and usefulness of the countryside, and upsets the balance of nature. But man-made erosion brings all those evils, plus human congestion, crawling traffic and ultimately, improper living conditions for more and more people. Of course, this kind of erosion *can* be controlled and checked too, but it so often faces stiff opposition from what Harry Truman calls "special interests," those who are profiting out of it. With all the talk about it, the public is still not aroused to the point of giving real support to the planners and conservationists.

LET'S STOP PLANTING buildings in a sea of automobiles—a beautiful new architectural creation standing in a barren waste of glistening car-tops. Palaces in parking lots! Put the parked automobile underground and landscape the building's surroun ings, or put them under the buil ing, or inside the dark heart of th building. Why not a "parking core" As a matter of fact, an office buil ing is being built on that princip here in Washington right now. Th executive can drive his car into th building, up ramps to his own floo and park across the corridor fro his office. It makes sense.

THE FORECASTERS are vying wit each other predicting a glorious f ture for the building industry. have here two such forecasts, on by the *Architectural Forum* and th other by Johns-Manville. *Forum* se a $49 billion volume for '58; J-M sees $66.75 billion. They almo agree on housing units: *Forum* seers predict 1,050,000; J-M's even 1,000,000. You can pick yo own prophet, it all looks rosy. *Foru* extends its estimate for a decad ahead and sees a $600 billion volum for the period, and is troubled by th question of whether or not the eco omy can supply the men and m terials needed. Well, I don't thin we need worry about the men—th birth rate is taking care of that. B the materials may be a problem- unless of course the plastics indust is ready to take over and manufa ture everything out of air, sea wat and autumn leaves—if there are an trees left to furnish the autum leaves!

THE FIRST ANNIVERSARY of th "new" *Journal* is coming up ne month, and it's time for a stock-ta ing. We've got to know how we' doin', so we can plan the future the *Journal*. I know architects a sick of questionnaires—I usual tossed them in the circular file too- so we'll make this as painless as po sible. If you find a return post ca in the *Journal* in the next month two, with some questions on please tick off the answers and dr it in the mail. A good response w be of great help to the Editor.

Reflections on the Teacher Seminar

at Aspen, Colorado

June, 1957

by **Harold Bush-Brown, FAIA,** Chairman of the ACSA-AIA Joint Committee on the Teaching of Architecture

In an expanding economy the teacher, along with some other fixed-salary professionals, is feeling the effect of a squeeze play of rising cost of living and a lag in salary increase. In architecture, the teacher often has the opportunity to supplement his income by limited practice or part-time employment. This is good up to a point; but not when the situation demands the necessity of increasing income by any considerable amount in order to support a family. The pressure is on; the teacher becomes weary and frustrated; and even those most dedicated to the idea of teaching as a life work frequently give up for the more tranquil and lucrative and regular-hour job situation of the office.

At the other end of the scale is the problem of recruitment. Very few graduates are going into teaching; salary and job conditions of the office are too alluring. Most schools are having difficulty finding good men to fill vacancies. Thus our schools are confronted by an increasingly difficult problem.

What is the answer? One answer is to try to make the teaching profession more attractive. And one suggestion made in the AIA survey report on education (The Architect at Mid-Century) is Recommendation No. 17 for establishing a teacher-training institute, and arranging programs to stimulate, refresh, and help to improve teaching. That it is an answer to the problem, if only a limited and partial answer, is proved by experimental programs already undertaken.

A year ago, in October, the first trial run was held in Cambridge, Massachusetts, under the auspices of the Association of Collegiate Schools of Architecture. Directed by Walter Bogner and Lawrence Anderson, twenty young teachers from nineteen schools of architecture attended meetings for eight days at M.I.T. and Harvard, and were given an opportunity to see the inside workings of those two schools of architecture and hear from leaders in practice and education.

In June a second program of a different kind was held in Aspen, Colorado. Here there were thirty-one teachers and four prospective teachers enrolled for a period of two weeks. The committee had been enlarged to become a joint ACSA-AIA committee and the AIA Committee on Awards and the Board of Directors helped out by allocating $4,000 for scholarships. Costs of bringing in prominent educators, architects and other professionals was met by a donation from the Fund for the Advancement of Education (Ford).

If we may judge by the expressions of gratitude and enthusiasm which have come from those enrolled, the conclusion must be that these two pilot studies have proved the need for this kind of project and its value as a stimulus and benefit to the profession of the teaching of architecture.

One young man writes that after six years of teaching, the Aspen experience gave him a sorely needed stimulus to go on. Another man who had been out of school ten years and had just gone into teaching this last year stated, "I have gotten as much out of this two-week seminar as I would in a semester of a Master's course." This is the kind of testimonial (and there have been many such) which makes those of us who have worked on this venture feel that it has been worth-while and should be continued. We need to provide programs not only for those now in teaching, but also for prospective teachers. But to continue, even on the scale of the trial-runs, requires the support of the profession. We have had good initial support from the AIA Department of Education and Research and from the Committee on Awards, and the AIA Board of Directors has endorsed our efforts in laudatory terms. What we now need is contributions to put this project on a firm foundation and enable a well-ordered continuing program to be set up. So far the project has been fraught with uncertainty because we have not known in advance where the money was coming from or whether "the best laid plans" would materialize.

Practicing architects or AIA chapters can assist in a direct and personal way by providing half of the scholarship and expenses for the teacher nominated by alma mater or the local school of architecture.

Why did these young teachers want to attend a meeting such as the one which was held at Aspen? What do they get out of two weeks of listening and talking? Why do the school heads recommend and help to furnish financial aid to send some appointee to such a meeting? (The scholarships paid one-half expenses; the school or the individual, or a combination of both, had to take care of the other half).

Was it just a vacation, a getting away from all after the long pull of teaching routine at the en of the academic year? Was it the attraction of totally new and uplifting environment, the restore mining town in a beautiful valley in the hig Rockies? Was it the recreational facilities whic were there in abundance? All of this was provide in our mountain retreat and it would be difficult t describe the beauty of our surroundings and th effect on one's spirit of this colossal and overpowe ing statement of nature. But the real motive, th raison d'être, was, I am sure, for almost everyon over and above all this, something quite differen

No two comments on the Aspen seminar b those who attended would be the same. One ma said he thought Joseph Hudnut's exposé on esthetic alone was worth the trip from Alabama to Colorad Many were inspired by Richard Neutra's dissert tions on the need for the understanding of man reactions to environment, and were further edifie by his description of how he handles clients in th process of achieving good design. One man felt tha the most important thing he got out of the confe ence was hearing from and talking with a professo of psychology (Hastorf, of Dartmouth)—lesson which would help him to become a better teache All agreed that much of the value of the semina was the informal discussion with confrères, men fro other schools in different parts of the country. A they lived together in the same building and ate to gether in constantly changing small groups, the was plenty of opportunity to exchange ideas on th many problems of teaching.

The seminar dealt with courses in the architec tural curriculum which affect design—not the teacl ing of design itself, but those subjects of study whic contribute to the design process; in other words, a examination of the determinants of design and ho these areas of study and knowledge should be taugh

Certain phases of science give us knowledge c human reactions to environment and other scientif knowledge is needed to determine use of materia and methods of application affecting design. All c this entered into and became a part of the progra in its earlier stages.

It is impossible here to cover the whole rang of the seminar program or to give due credit to th many ideas and helpful suggestions brought forth b the thirty-three leaders and speakers who contribute to various parts of the program, and the almo equally important contributions of the participant

I will mention only a few of the highlights whic seem to me may be of general interest.

In connection with esthetics, there was time a lotted to a consideration of "basic design," a labora

tory or drafting room course incorporated into the curriculum of many schools in recent years, usually as an introduction or preliminary to architectural design in place of the old "analytiques." On this and in the courses in communication there were different points of view and some hot argument.

Dean Hudnut outlined what he thought should be given as a parallel lecture course dealing with the history and the philosophy of esthetics. According to him, some of the confusion which exists arises from a lack of understanding of the four or five basic philosophies which are current today and of which every designer should be cognizant, both as to historical background and as to developing application. No such course as he envisages is now given in any of the schools.

Except for this, our concern was with courses which are common to most schools.

Thus under history an array of speakers, including Hudnut, Acland, Shelley, Heck and Walter Taylor gave their ideas on what should be the approach to history, what it should include, what should be emphasized and how presented to be of maximum value to the student.

Courses in building materials and structure constitute another subject area. There has been a tendency lately to discount the importance of structure as a determinant of design. In Paul Rudolf's article in the October 1956 issue of the *Architectural Record* on design determinants structure is scarcely mentioned. At Aspen it received prominent space on the program and the discussions were among the most lively and thought-provoking of the entire conference. The fact that speakers included an engineer in an architects' organization (Contini); an engineer teacher in a school of architecture (Polychrone); an architectural engineer teacher, author and administrator (Harold Hauf); and a consulting engineer (Milo Ketcham), made for different points of view. Opinions advanced may perhaps help towards more satisfactory presentation of this important part of architectural education.

Of other phases of engineering which have their obvious effect upon design, the mechanical plant was presented by a consulting mechanical engineer, Donald Kroeker of Portland, Oregon, and a teacher of professional practice, Henry Burge of Southern California.

At the request of the Fund for Advancement of Education, one day was devoted to the problems of buildings for education. This was ably handled by Larry Perkins, FAIA, of Chicago and by John Cahall who described the remarkable use of closed-circuit TV in the schools of Hagerstown, Maryland.

The last topic on the program, Professional Practice, turned out to be the most provocative subject of the conference in terms of violent reaction. It afforded an opportunity for two practicing architects to pass judgment on the product of the schools of architecture. The two architects were James M. Hunter, FAIA, of Boulder, Colorado, the dynamic Chairman of the AIA Committee on Education, and Karel Yasko, architect, of Wausau, Wisconsin, a member of the committee. Mr. Hunter in his prepared speech left no doubt that, in his opinion, little can be accomplished towards good design with the crop of young graduates until and unless the schools can prepare them for the disciplines of practice, teach them greater skill on the boards and inculcate some humility in their attitude; from which it may be gathered that the main purpose of a course in professional practice should be to drum into the young hopeful about to receive his degree the realization that his five years of college are of little value in terms of immediate service or earning capacity. This part of the program was moderated by Elliot Whitaker, past president of the ACSA. Walter Bogner of Harvard was also on the panel, so the schools were ably represented, but because of special events which unavoidably crowded into the second week, there was little opportunity for general discussion.

It is evident that the schools and the practicing architects need closer contacts with one another. No matter how unfair and unwarranted the estimate of the products of the schools by the profession appears in the eyes of the school men, as long as the criticism exists, there is a challenge to be met and something to be done about it. Either steps should be taken to overcome the criticism by change, or satisfactory explanations offered and the profession made aware of the problems confronting the schools and what they are striving for and actually accomplishing, or, what is probably more to the point, a combination of the two.

It seems appropriate to end with a word from a landscape architect, Robert Royston of Eckbo, Royston & Williams, who was at Aspen, and supplied not only words of wisdom, but pictures of beauty and significance. In a letter of appreciation, he made the following statement:

"As I look back on it, I feel very strongly that what you are doing is a real beginning toward integrating the professions, helping them to understand one another, and thereby their relationship to our society.

"I like the idea in these conferences of going as far as possible toward projecting the future. The non-competitive spirit that should be present amongst teachers should be conducive to a very comprehensive statement on architecture."

Solar Energy *Today* and Tomorrow

BY JOHN I. YELLOTT, *Executive Director, The Association for Applied Solar Energy, Phoenix, Ariz.*

CONSTANTLY INCREASING DEMANDS for energy and rapid technological changes are two of the most significant characteristics of the age in which we live. Our demands for fuel are so great that, in spite of the tremendous reserves which this nation possesses, we have become importers rather than exporters of energy.

Our present energy situation may be examined to see:

- pattern of supply and demand likely to exist during next 20 years
- progress made in utilizing earth's only source of *income* energy—solar radiation
- impact of this development upon American industry

Energy Situation Today

The energy situation in the United States today may be summarized by three statements. A high standard of living requires abundant use of energy. Our annual demand for energy is increasing at an unprecedented rate. Two-thirds of our energy supply comes from the fluid fuels and only one-third comes from coal.

Prior to 1900, our annual energy demand kept pace with population, and the per capita use remained at about 120 million btu per year. Wood was the principal fuel during the childhood of our grandparents, and most of it was used to keep them warm. As our standard of living rose, our per capita demand for energy also increased.

The transition from the use of *income* energy (wood, wind, and water) to *capital* energy was tremendously accelerated by the advent of the automobile. By 1925, our per capita energy demand had grown to 200 million btu per year. The great depression sharply reduced the use of energy, primarily at the expense of the coal industry. The fluid fuels continued their upward trend until, in 1945, our oil and gas wells supplied as much energy as our coal mines. Today, they now constitute two-thirds of our energy supply.

More than half of our annual energy supply is now used for work of various kinds, while comfort heat accounts for only one-third of the total. However, our per capita use of energy for space heating has remained nearly constant at about 75 million btu per year. With the rising demand for summer comfort, this figure is beginning to increase. The shifting of utility peak loads from winter to summer is adequate evidence of the growing importance of air-conditioning. It is in the field of comfort energy that solar radiation will find its first major application.

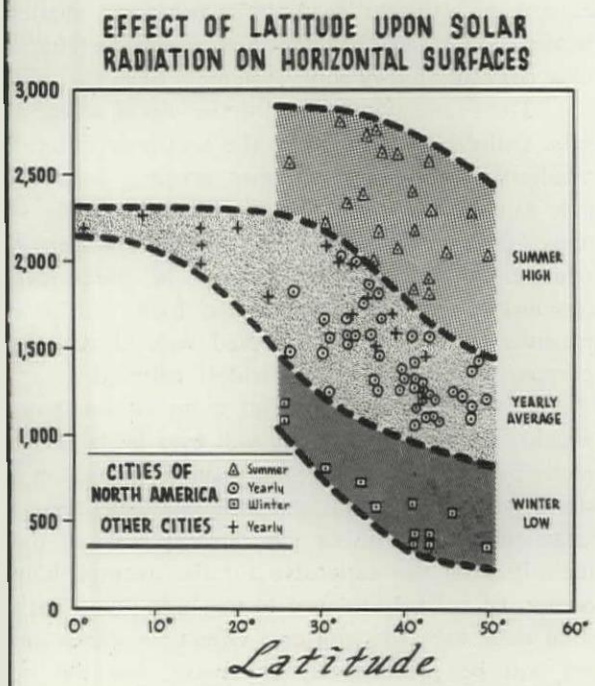
Future Energy Demands & Resources

Looking ahead only as far as 1975, we can foresee that the total energy demand in the United States will increase by at least 100%. This demand will be met in nearly equal proportions by coal, oil, and natural gas. Hydro and nuclear power stations will supply significant amounts of electricity. Expansion of existing coal mines and oil refineries will meet the needs of 1975 without major difficulties other than in the raising of the necessary capital. Major imports of petroleum will be needed, and substantial quantities of oil shale will be converted into gasoline to meet west coast requirements.

By the year 2000, the fossil fuels will be in ort supply and their prices will be far above today's latively low figures. Atomic energy will have to rry a major share of the new electric generating ad, while solar energy will be used in rapidly in- easing amounts for space heating and cooling.

These statements are based upon a comparison our fuel reserves with the demands which will be ade by a rapidly expanding population. In all obability, we will never run short of electricity cause atomic fission and fusion will enable great ntral stations to produce as much as we can afford buy. We will face increasing demands for fluid els for our homes and our automobiles, and we ill find that the rest of the world will be bidding ainst us for the oil reserves which are known to- y and will be discovered in the future. Coal will stain our economy for many generations to come, t the oil which we now use so freely will have to be ared with the billions of people who will inhabit e remaining nations of the world.

The one energy resource which we and most the densely populated sections of the world possess abundance is solar radiation. In the past, virtu- y no use has been made of this source of income ergy in the United States because we have had such rge quantities of cheap fuels at our disposal. This a is now drawing to a close, and we might well ke a look at the nature of solar energy and see how are likely to use it. Equipment to use solar diation will take time to develop and perfect, and should get started on that task without delay if are to be able to have it when we need it.



. 1.

Heating & Cooling With Solar Energy

The first large-scale use of solar energy is likely to be in the field of space heating. The relatively diffuse solar radiation which comes from the earth's atmosphere (from 100 to 300 btu sf/hr) can easily heat air or water to the temperatures which are needed to keep us warm in winter. With a little ingenuity, it will also keep us cool in summer.

The total amount of solar energy reaching the earth's surface varies according to season and latitude, as shown in Fig. 1. Average annual sunshine distribution in the United States is shown in Fig. 2. Obviously, automobiles and airplanes are not going to be powered by sunshine because they do not possess enough area to absorb solar energy in sufficient quantities. Space heating does not require any such concentration of energy, however, and most one-story homes in the United States receive enough solar radiation on their roofs to keep their occupants warm on an average winter day. When this energy

FIG. 2. AVERAGE ANNUAL SUNSHINE IN THE UNITED STATES.

can be collected and used at reasonable cost, the sun can replace a very substantial part of the fuel which will be needed in the future. There will be plenty of other uses for the fuel which is saved!

The energy required in a modern residence is used at relatively low temperatures. Aside from the kitchen range, temperatures for all of the major requirements are below 150° F. Sunshine, falling through a glass or plastic cover, can readily heat a blackened surface to temperatures well above 200° F. If the surface is well insulated, as shown in Fig. 3 from 50% to 80% of the solar energy reaching it can be collected and carried away by water, air, or some other fluid. This is the simple but effective principle of the flat-plate solar collector.

The function of the cover is to serve as a heat-trap by admitting the sun's radiation, but preventing the heated surface from being cooled by the surrounding air. Glass and certain plastics are transparent to solar radiation, but opaque to the lower

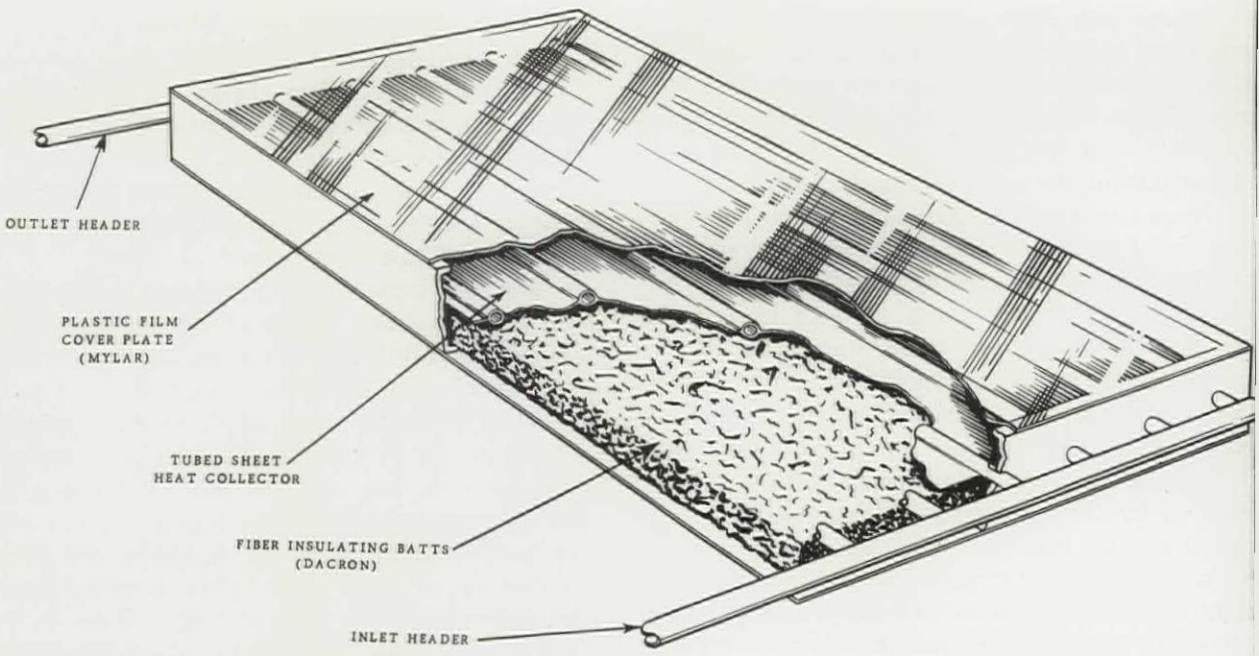


FIG. 3. MODERN FLAT PLATE SOLAR ENERGY COLLECTOR.

temperature radiation from the heated surface. The florist's greenhouse remains warm in the winter because of this fact, and south-facing windows which see the sun during the winter keep many a room warm despite sub-zero outdoor temperatures.

The solar water heaters which are used by the thousand in Florida are good examples of the flat-plate collector. A more modern version is used in the solar-heated office building which was erected during 1956 in Albuquerque. This building uses its south wall (Fig. 4) to carry 840 sq. ft. of solar collectors which are covered with ordinary window glass. The collector plates are made of Olin-Mathieson roll-bonded aluminum, in which the tubes are integral with the sheet. Glass wool is used as the insulating material. Water is pumped through the tubing to carry away the collected solar energy which is then used in a radiant panel heating system. Normal use of the system is shown in Fig. 5.

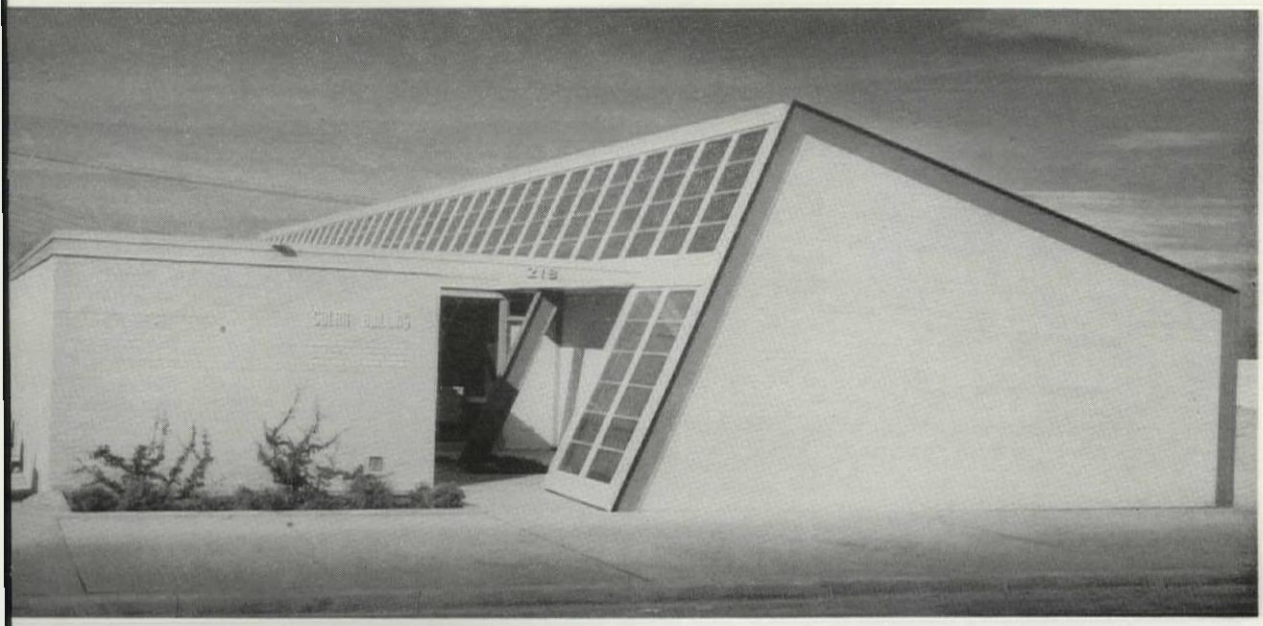
A means of storing heat and an auxiliary source are needed in a solar heating system to maintain comfort at night and during periods of cloudy weather. In the Albuquerque building, a 5000-gallon tank, buried near the building, is the heat reservoir. The auxiliary source is an electric *heat pump,* (Fig. 6), which warms the water stored in the tank to the 110° F needed to make the heating system function satisfactorily. The same equipment is used to keep the building cool in the summer. (Fig. 7)

Other systems have been employed to solve the problems of solar energy collection and storage, but the general principles remain the same. The importance of such heating systems lies in the fact that they provide a practical means by which solar ener can be used in place of fuels. The heat pump now available at reasonable cost and, during the pa year, several plastic materials have become availab which can serve as heat traps without deteriorati from the ultraviolet light in solar radiation. The cost is much lower than that of glass, and they c be installed with a minimum of labor. In additio they are almost unbreakable.

The economics of the problem may be summ up as follows: Will the fixed charges for the sol equipment, plus the cost of the necessary auxilia heating, be lower than the cost of the fuel burn in a conventional heating system?

There are many parts of the world where t solar collection system, with the heat pump used f auxiliary heating and summer cooling, is alrea able to compete with conventional fuel burning sy tems. Where fuels are expensive and winters a relatively mild, solar heating can be used adva tageously. For the future, when fuels will be e pensive, solar heating combined with electric he pumps is likely to be very widely adopted.

It is highly unlikely that many of the hous which are being built today will ever be heated d rectly by coal. Most of them have no provision f storing or burning coal, and their chimneys are on large enough for oil or gas burners. When the fuels become too expensive for the average hom owner, he is likely to turn to the heat pump with solar collector as its source. Direct resistance hea ing will be prohibitively expensive, but the he pump will enable a single kilowatt hour to produ



. 4. SOLAR-HEATED OFFICE BUILDING IN ALBUQUERQUE.

ee or four kilowatts of heating, and, by a relatively nple change, it can also produce the refrigeration eded for summer comfort.

The solar collectors which will be used will re- ire large quantities of materials which are not in mmon use today, and they will probably replace ch of the roofing with which we are familiar. The vering materials will probably be plastics like the atherable Mylar (Dupont); the heat absorbers l be low-cost metal sheets with integral tubes of type developed by Revere Copper and Brass, ynolds Metals, and Olin-Mathieson; the insula- n will be similar to today's glass wool, but it too y well be a synthetic fiber such as Dacron.

Two years ago solar heat collectors cost nearly /sq. ft. for most applications, and their fixed rges usually exceeded the value of the fuel which y could save. Today, thanks to the materials ntioned above, their cost is well below $1/sq. ft., d further reductions are on their way.

The two major developments which are still eded to make solar energy economical throughout ch of the United States are improved heat storage vices and a simple heat-operated refrigeration sys- n. The water tanks or rock piles which have been d successfully in the pioneering buildings in Al- querque and Denver are too expensive and space- suming to be the final answer to the heat storage blem. They will ultimately be replaced with ne other means which will store much more energy far less space and at lower cost.

Refrigeration by means of heat is no novelty, ce ice was produced in Paris in 1870 by a solar- erated ammonia absorption refrigeration. Thousands of gas-fired refrigerators are in use throughout the country and kerosene is used to produce ice cubes in many an isolated tropical dwelling. Such cold-producers require fairly high temperatures for satisfactory operation, and these temperatures cannot be attained efficiently by the simple flat-plate collectors which are satisfactory for winter heating. When systems are developed which can produce water chilled to 50° F by the use of refrigerants heated only to 160° F, in the same solar devices which are used in the winter, then we will see them rapidly and widely adopted.

Throughout the southern tier of states, winter heating today is a relatively inexpensive matter, but summer air-conditioning is costly. When both of these needs can be met by the same solar installation, at reasonable first cost, we will see the first really significant use of energy from the sun.

The Association for Applied Solar Energy made a start in this direction by holding an international architectural competition for the design of a residence particularly adapted to "living with the sun." More than 1500 architects from 32 nations entered the competition and the winning design was picked by a jury of five distinguished architects.

The problem of heating outdoor swimming pools may seem academic, but it is far from unimportant in the rapidly growing southwestern states. During 1957, more than 45,000 swimming pools were built throughout the United States (total investment $400 million). Plastic covers and solar heaters for only 10% of these pools, and the additional thousands which will be built in the next few years, will constitute a business in themselves.

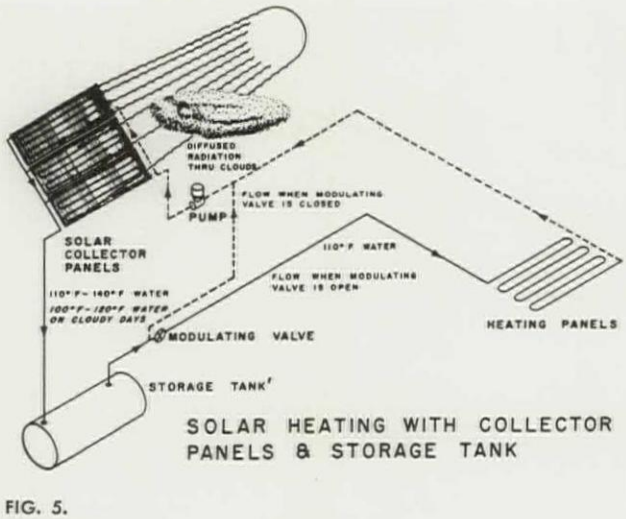


FIG. 5.

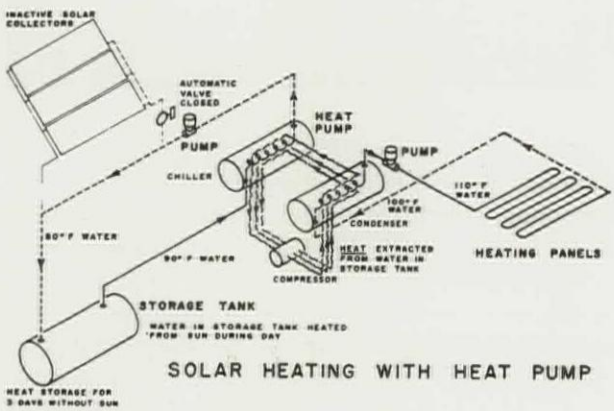


FIG. 6.

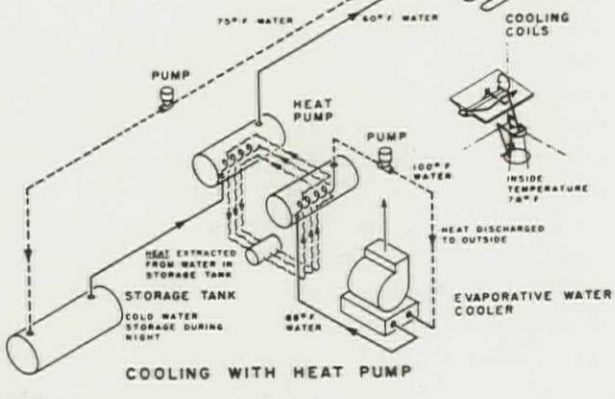


FIG. 7.

Solar space heaters and coolers will need electricity to operate their pumps and fans. They are important to electric utilities because of their possibilities in transforming peak loads into off-peak firm loads. In summer cooling, for example, a one-ton cooler running continuously to chill the water in a storage system, will make a much more profitable load than a three-tone unit running only during peak-load periods.

The realization of the full potentialities of sol energy for both heating and cooling requires only t same kind of development with which American i dustry is very familiar. The major inventions ha been made in the form of weatherable plastics, tub in-strip heat collectors, and low cost insulation m terials. The principal incentive will be provided rising fuel costs and the spreading demand for yea round comfort which will mean summer cooling well as winter heating.

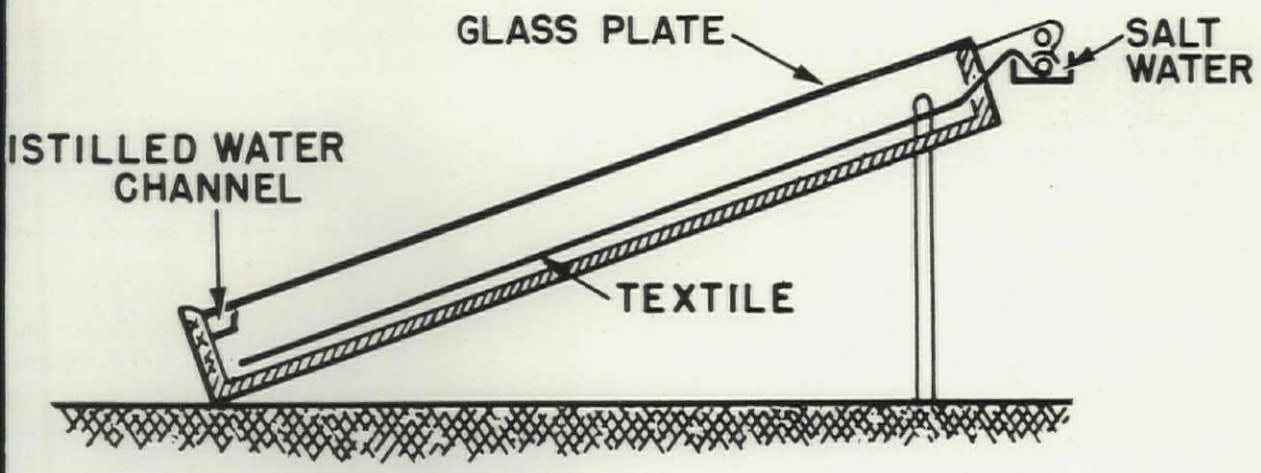
It is important to realize that the great bulk the world's population lives in the sunny regions the earth. There will never be enough fuel to supp the billions of people in Asia, Africa, and Indone with comfort cooling and heating, but there is more than enough solar energy. It can be used the type of apparatus described above. The fi major market for solar equipment is likely to be foreign lands where living standards must be rais despite permanent fuel shortages. We in the Unit States will follow as our fuel prices rise.

Sea Water Conversion

Fresh water is as necessary to our economy is an abundant supply of cheap energy. Our dema for water is increasing almost as fast as our ener consumption. One of the oldest uses of solar ener is the evaporation of sea water to secure its salt, a today we are turning again to this idea, but with different objective. In many parts of the world, t available sources of fresh water are already bei fully utilized, and new supplies are urgently need Ultimately, the only *permanent* new supply is t sea itself, but the cost of de-salting ocean water h always been excessively high.

Solar energy can be used for distilling sea wa in much the same way that it is used for space he ing, by trapping it at moderate temperatures. typical solar still, (Fig. 8) functions by allowing su light to enter through a transparent cover to wa a shallow layer of sea water held in a blackened pa Some of the water evaporates and the vapor, risi to the cooler underside of the cover, condenses pure water. The water flows down to a troug which leads it to the point of use. A still of th type was built in the 1870's to supply drinking wat for burros and men working in a copper mine hi in the Andes. Modern versions were used in tho sands of air-sea rescue kits during World War II.

The principal problem with solar distillati has always been the fact that an extremely large c lection area is required to secure water in sufficie quantities to be useful, and large areas of glass a wood structures are necessarily expensive. As in t case of solar space heaters, the fixed charges



. 8. SOLAR STILL (DESIGNED BY DR. MARIA TELKES).

installation were higher than the cost of the fuel ich they replaced. Today's most promising de- opments are the multi-effect still, which multiplies amount of fresh water which can be produced m a given amount of heat, and the plastic still ig. 9).

This still uses a weatherable plastic film as its ver, which must be sufficiently thin and flexible to rmit it to be inflated with air at very low pressure. e plastic must admit the short wave radiation m the sun, but retain the long waves emitted by warmed water retained in the bottom tray. Fortu- ely, several of the new duPont films have this perty, and hailstones bounce off quite harmlessly. e bottom troughs can be made of the cheapest ck plastic, and an equally cheap synthetic insulat- material can be used to minimize heat loss to earth. They give promise of producing water domestic use at prices within the range now being id in many parts of the world, and of using very ge amounts of plastic materials.

neration of Power From Solar Energy

Nearly one hundred years ago, when the steam gine was the only available source of power, in- nious inventors began to devise solar power plants. ey soon found that steam could be generated by ncentrating sunlight from parabolic collectors upon ckened pipes. The American pioneer in this field s John Ericsson, famed for building the *Monitor* ich saved the Union fleet at Newport News in 62. He also made a fortune by devising a hot-air gine which New Yorkers of a century ago used in ge numbers to pump their newly acquired Croton ter from low pressure mains to storage tanks in ir attics. His first solar engine was built and ted in 1872. His last and largest engine was obably the most efficient solar engine built in this untry until Dr. Charles Abbot produced a better e in 1936.

Ericsson found, as every subsequent inventor has learned to his sorrow, that nearly 100 sq. ft. of collection area are needed to produce a single horse-power. When electric generation was in its infancy but the demand for irrigation water was rapidly increasing, many other solar power plants were built, such as the great inverted cone devised by A. G. Eneas in 1903 and financed "by a party of Boston inventors." This plant pumped water quite effectively in southern Arizona for several years until it was destroyed by a hailstorm and a windmill replaced it.

Today, in many of the arid regions of the world, the same need for water exists. The only commercially available unit in the world today is the Somor pump, manufactured in Lecco, Italy (Fig. 10). An entirely different type of pump is now under development by a New Jersey firm.

The principal problem with solar operated pumps is their cost. The market for them is in the non-industrialized regions of the world, where the potential customers are unable to pay the dollars which American manufacturers prefer. The search goes on for a cheap solar pump which can be sold for about the price which we pay for power lawn-mowers or outboard motors, but these prices exist because of mass production, which is not yet in sight for solar devices.

Electricity From Sunshine

Various types of solar-electric devices have been in use for many years, the best known being the photographer's exposure meter, which uses a low-efficiency selenium cell. About three years ago, an important break-through was announced by three scientists from the Bell Telephone Laboratories. Using a highly purified variety of silicon, they succeeded in creating an entirely new cell which was nearly ten times more efficient than any previous photo-electric device. In electrical units, about 1000

watts of solar energy fall on a square yard at sea level on a bright, sunny day. The silicon solar cell can convert from 110 to 160 watts of this energy into direct current. This represents the most efficient method of converting radiation directly into electricity.

Since the silicon cell must be made from a slice of a single crystal, it is limited in size, and the commercially available units are about as big as a twenty-five cent piece. Three years ago, their cost was about $25 per unit; today they can be bought for about $2.50 apiece. Since the output of each unit is small, a number of them must be used in parallel to produce enough power for a radio or a highway flasher. The Hoffman portable radio can collect and store enough solar energy to play during 100 evening hours.

The principal use of silicon solar cells is as a replacement for small dry batteries of the flashlight variety, and the annual cost runs in the same order of magnitude. Dry batteries are cheap, but they are soon exhausted; silicon cells are expensive but they have apparently no limit to their life. In applications such as isolated radio beacons, where the cost of replacing batteries is much greater than the price of the battery itself, silicon cells are already finding a place for themselves.

Silicon solar cells will certainly be used as power sources in the later earth satellites. The U.S. Army Signal Engineering Laboratories recently tested groups of solar cells by firing them on an Aerobee-Hi rocket to an altitude of 190 miles. The thin silicon wafers functioned perfectly and supplied power continuously from take-off until the descending rocket re-entered the earth's atmosphere.

Combined with the new dry storage batteries, silicon cells form a power source which, though limited in output, will continue to operate just as

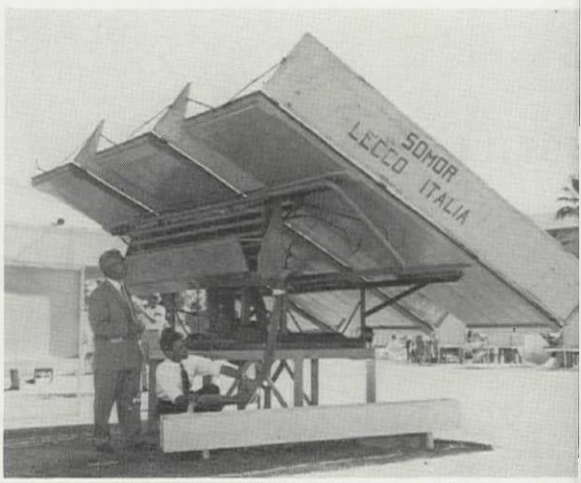


FIG. 10. SOLAR PUMP MANUFACTURED BY SOMOR COMPA OF LECCO, ITALY.

long as it receives a daily quota of sunshine. T next major development in photo-electricity v probably be the development of a large-area sc cell which will not have to be made of a sin crystal. When this occurs, generation of respecta blocks of power from the sun's radiation will be tirely feasible. Combined with a suitable stora system, we would have a means of supplying el tricity for residential needs in isolated areas wh there are long hours of sunshine.

The Solar Furnace

When it is sufficiently concentrated, solar rad tion can produce the highest sustained temperatu which man has been able to generate. The appara which accomplishes this is the solar furnace. A mirror, called a "heliostat," is used to follow sun and reflect its radiation into a parabolic reflect which focusses the energy into a small spot. E a crude furnace can easily reach temperatures as h as 4,000° F, and a precision concentrator, such a searchlight mirror, can attain 7,000° F.

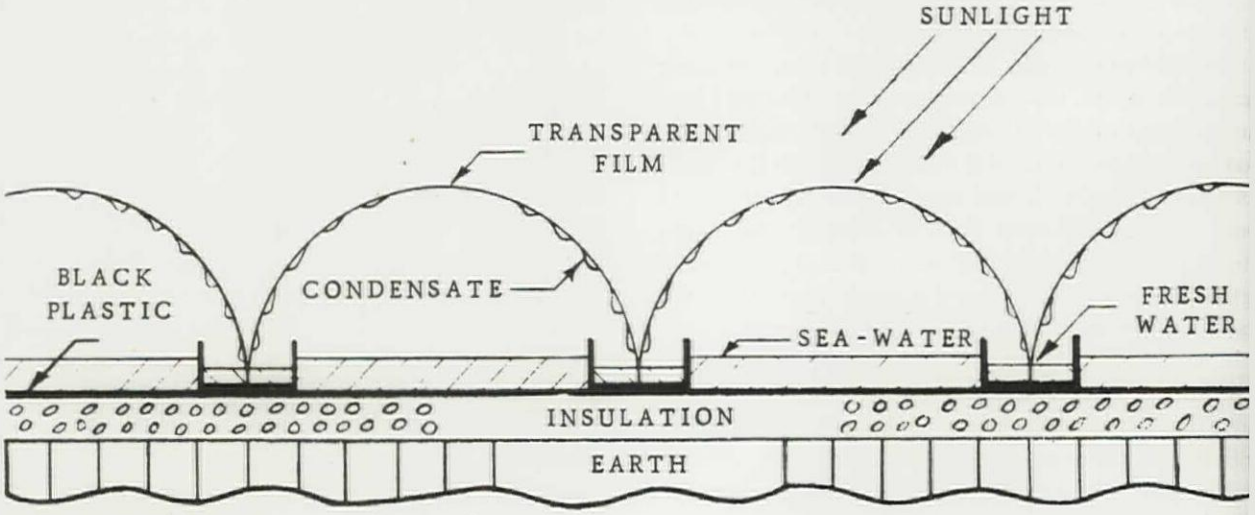


FIG. 9. PLASTIC SOLAR STILL

AVERAGE ANNUAL HOURS OF SUNSHINE
100% = 4,000 HOURS PER YEAR

g. 11.

The principal use for solar furnaces is for re-arch in high temperature metallurgy. A large rnace such as the Quartermaster Corps is building Natick, Massachusetts, can simulate the effects of atomic blast, with no danger from radiation. The ir Force is planning to build the world's largest rnace on a New Mexico mountain-top to study the oblems which the guided missiles will encounter hen they re-enter the earth's atmosphere.

The Association for Applied Solar Energy has oposed a large furnace of the highest attainable ecision, to be built in Arizona as a research facility. carried out, American industry would have a tre-endous advantage in the search for materials which n stand ever-increasing temperatures.

The temperatures which today's solar furnace n reach are well above those attainable in con-ntional electric furnaces, and there is the added vantage of freedom from contaminating influences, agnetic fields, etc. The furnace at Mont Louis in e French Pyrenees is already being used to produce rconium oxide for the high temperature refractories hich are needed in atomic reactors.

To be of practical use, a commercial solar rnace must be available for at least 2000 hours r year, in a clear location. The map (Fig. 11) ows the distribution of hours of sunshine through-t the United States. Research furnaces are being erated in many sections of the country, but the uthwest is the logical location for furnaces which e intended to be run on anything like a regular hedule.

ture Uses of Solar Radiation

Fortunately, solar radiation can do much more an produce heat and electricity. Certain of the ve-lengths which come from the sun also cause the emical reactions which are vitally important to our existence. The most significant of these is photo-synthesis, the process by which plants are created from water, carbon dioxide, and sunlight. This is one phase of solar energy which has been studied intensively in large, well-equipped laboratories such as those of the Yellow Springs Foundation which Dr. Charles F. Kettering established thirty years ago "to find out why grass is green."

By ingenious use of radioactive tracer techniques, the steps in the photo-synthesis process have been established, but we have not yet discovered any way by which it can be speeded up or made more efficient. Only a small percentage of the solar energy which falls on a corn field, for example, is recovered in the full-grown plant. The efficiency of energy use by other types of vegetation, notably the single-celled organisms known as algae, is much higher than by the corn, rice, and wheat which feed most of the world's population.

The future will bring a far better understanding of the process by which light is used by growing plants, and that knowledge will enable us to produce more and better food. We may well find that greatly accelerated growth rates will enable crops to be produced for conversion into the liquid fuels which will be so badly needed in the future.

One way to increase growth rates of plants of all kinds is to increase the amount of carbon dioxide which is available to them during daylight hours. The thin plastic films now being used for solar stills might well serve as vastly larger enclosures, which would be inflated by low-pressure air enriched with carbon dioxide. The sun would supply the necessary photons of energy and the temperature level could be raised to extend the growing season. The end result might well be both more and better products, since weeds and birds would be excluded, and irrigation would supply both water and minerals without the heavy evaporation loss which is now experienced.

The production of hydrogen and oxygen by photochemical decomposition of sea-water is another possibility which is now being studied in several laboratories. Thus far the yields are far too low for commercial utilization, but the search for better catalysts goes on. A successful outcome for these fundamental studies would go far towards providing fuels for the future, for chemists already know how to synthesize almost any hydro-carbon, from gasoline to butter, if only they have low-cost hydrogen and oxygen with which to start.

Summary

Solar energy will have far-reaching effects in many directions which we cannot now foresee. We can anticipate with reasonable certainty that the de-

mands which will be made upon the world's fuel resources during the next two generations will be so great that the use of both nuclear and solar energy will be imperative. Atomic power will undoubtedly supply an increasing proportion of the electricity which will be used in such tremendous quantities while solar energy is likely to find its first important application in space heating and cooling.

Extensive applications of solar energy in any field will require large areas of some variety of radiation-absorbing surface. As we see the picture today, the first large demand will be for heat-absorbers, which will be metallic, rather than plastic. At present, copper is the preferred metal because it is relatively non-corrosive when water is used to carry away the collected metals. Aluminum is so much lighter than other metals that it will also be used in large amounts because of its lower cost.

For most applications, transparent covers are needed to trap the heat, and these will require large amounts of glass or plastic. The new weatherable films have great assets in their high strength and low cost, and very large areas will be used in ingenious combination with metal collector plates.

Insulation is needed to retain the heat which has passed through the covering glass or plastic and been absorbed on the collector. In general, the lowest price will be the criterion, so reflective paper or light-weight batts of glass wool or synthetic fibers will be used. We can envision roofs made of prefabricated panels of Mylar, tubed sheets of aluminum or copper, and Dacron, which will replace conventional materials and collect enough energy for both winter heating and summer cooling. A million homes would require nearly a billion square feet of solar collectors, and costing some $500 million!

For the utility industry, the combination of th heat pump with solar collectors and heat storage sy tems will provide a feasible means of doing th house-heating job throughout most of the Unite States. The electric system of the country will on day inherit the domestic load entirely, includin water heating and comfort heating and cooling a well as cooking and lighting. To keep the distribu tion system within the capabilities of the world supply of both copper and capital, it will be essenti to use solar energy as widely as possible so that on kilowatt hour of electricity will be able to do fou or five kilowatts worth of heating.

For the instrument industry, the controlling year-round solar comfortizing systems will provid first a development job to come up with low co devices and then a large market for simple therm stats, photo-sensitive switches and valves, etc.

For the oil companies which will derive their p troleum from the arid deserts of the middle eas solar coolers will allow the population to live comfort while their output is exported, like whisk from Scotland, to provide the essential income.

Solar energy today is in the same stage th atomic energy went through prior to 1940, exce that there are no foreseeable military application and hence no multi-billion dollar research project There is no secrecy or government supervision eithe and private capital has done virtually all of the r search which has been accomplished up to this tim

Far more development is needed to produ solar devices as cheaply as they must be in order be widely adopted, but we must remember that, the final analysis, solar radiation is the earth's on *inexhaustible* source of energy. We must learn ho to use it most effectively.

TECHNICAL BIBLIOGRAPHY

Following are available from Superintendent of Documents, Government Printing Office, Washington 25, D.C. (stamps not accepted)

Glass-Fiber Reinforced Polyester Corrugated Structural Plastic Panels.
Commercial Standard CS214-57. 5¾" x 9", 13p, 10¢

Covers dimensional tolerances, intrinsic quality requirements, and methods of tests for 2 types of corrugated plastic panels of one geometrical configuration. Dimensional tolerances include sizes, weight, corrugations, thickness, and squareness. Intrinsic quality requirements include materials, appearance, color uniformity, tolerances on light transmission, transverse load, bearing load, and flammability.

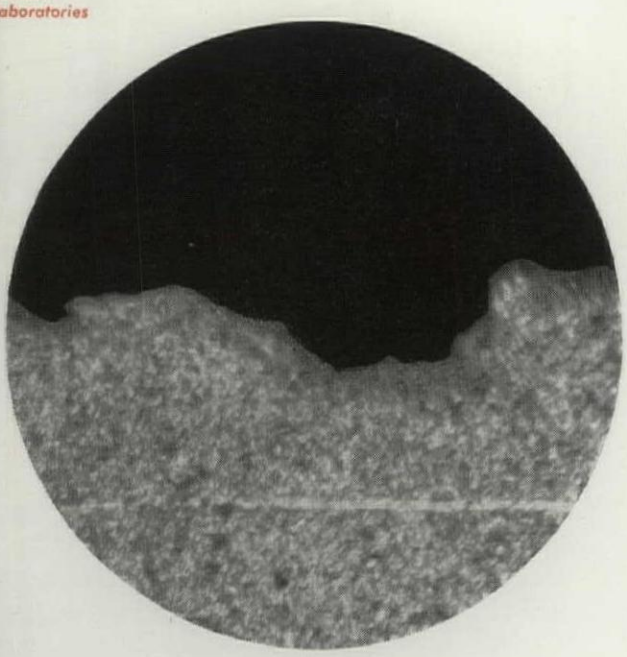
Thermal Resistance of Airspaces and Fibrous Insulations Bounded by Reflective Surfaces. Building Materials & Structures Report 151.
US Dept. of Commerce, National Bureau of Standards, November 14, 1957, 7¾" x 10¼", 22p, 20¢

Insulating values are given for 28 test panels, of which 23 were insulated with reflective membranes used alone or in combination with fibrous insulations. Panels were tested at five orientations corresponding to use as walls, ceilings, or floors.

Symposium on Full-Scale Tests on House Structures (STP210)
American Society for Testing M terials, 1916 Race St., Philadelph 3, Pa. 1957. 6" x 9", 64p, $2.50 (ASTM Members, $1.85)

The five papers presented pro ably constitute the first publish collection of papers descriptive full-scale structural tests of co pleted house structures. In a su prising and unpremeditated wa they complement one another to remarkable degree. Study of t papers will show both advanta and disadvantages of this type full-scale testing and will sugg further lines calling clearly for tensified research, directed towa further economy in the structural sign of such buildings.

These photomicrographs, magnified approximately 580 times, were made under an electron microscope at Georgia Tech research laboratories



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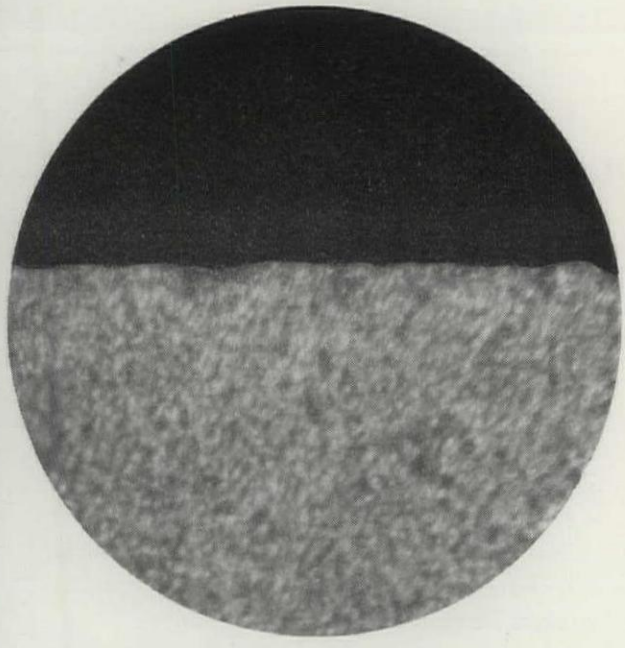

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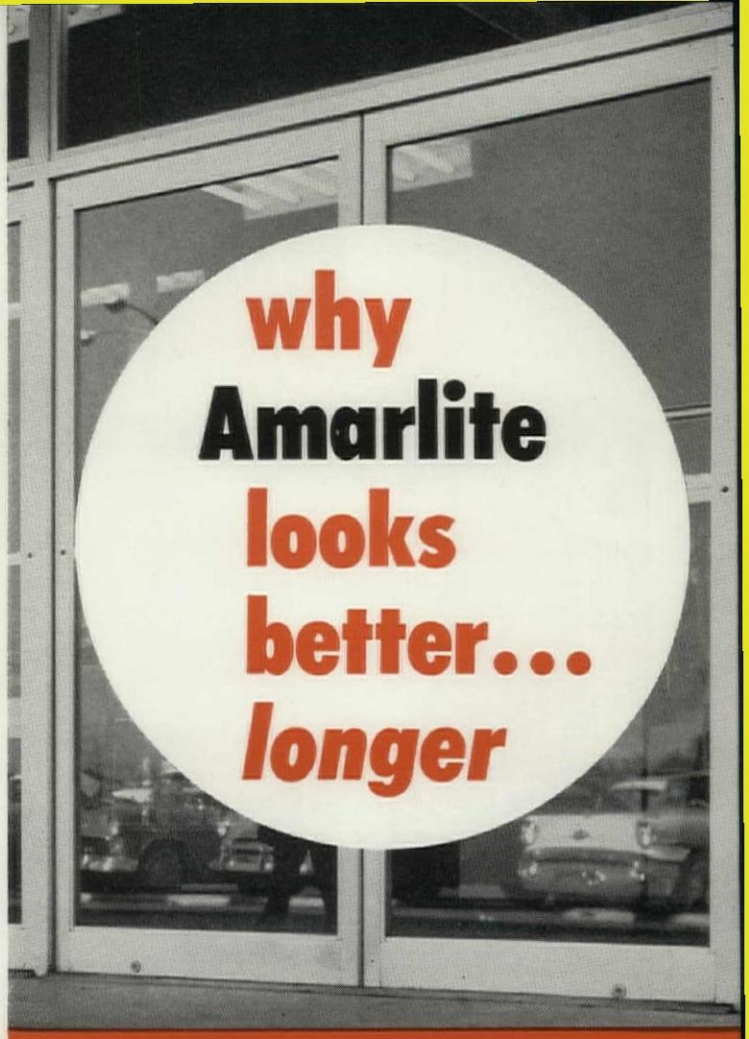

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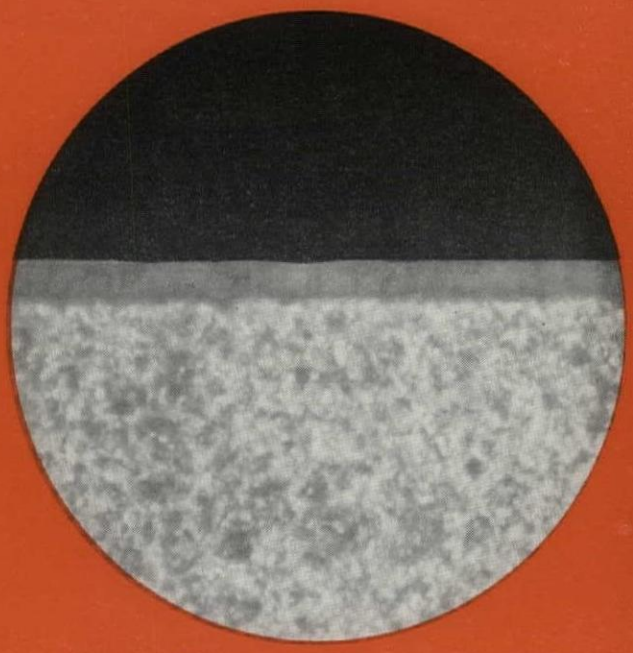

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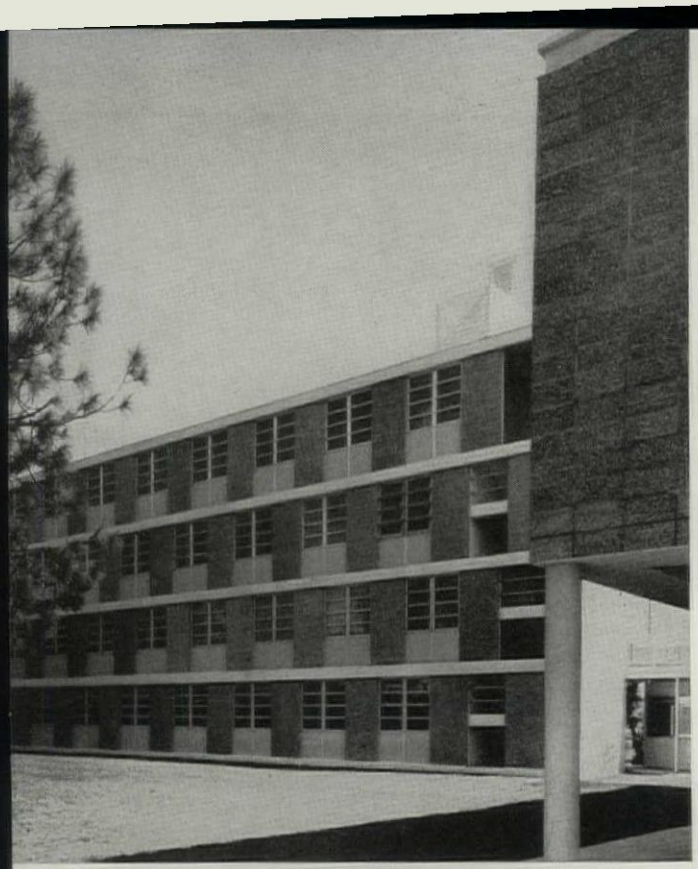

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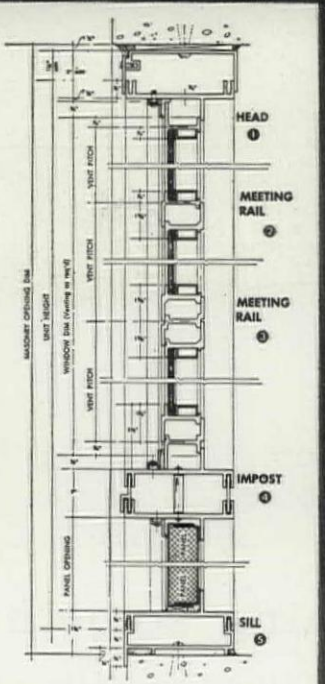
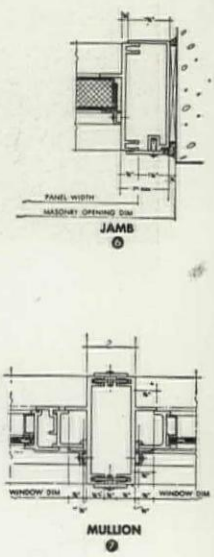


Typical example of one of many Ludman Curtain Wall Units.



Detail showing one of many choices available of Ludman Curtain Wall Systems.

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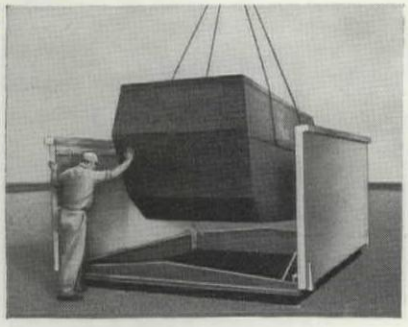

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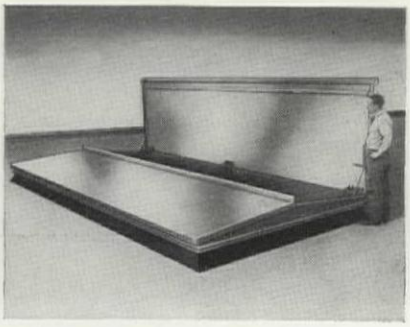

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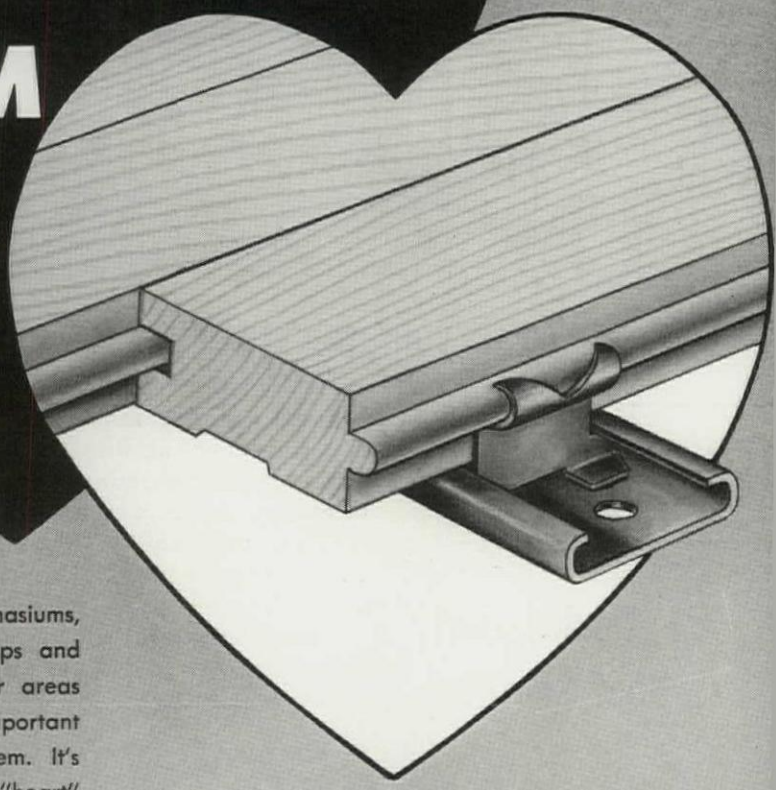

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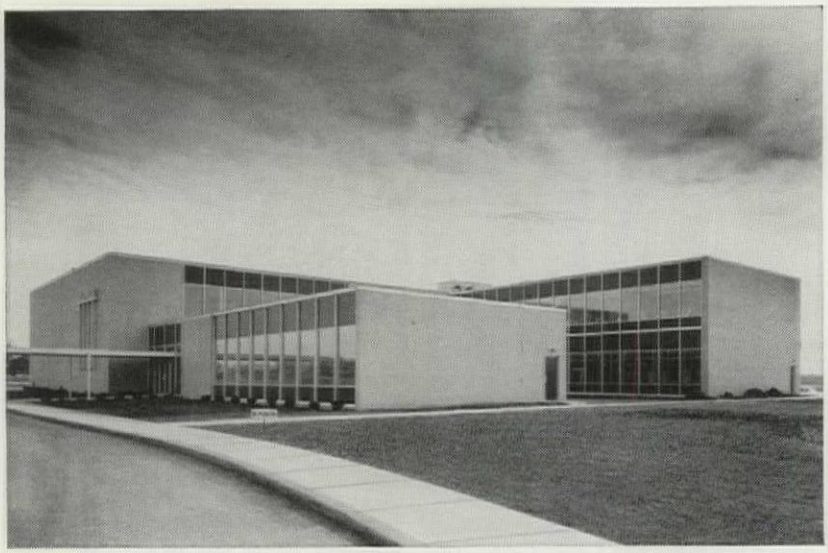

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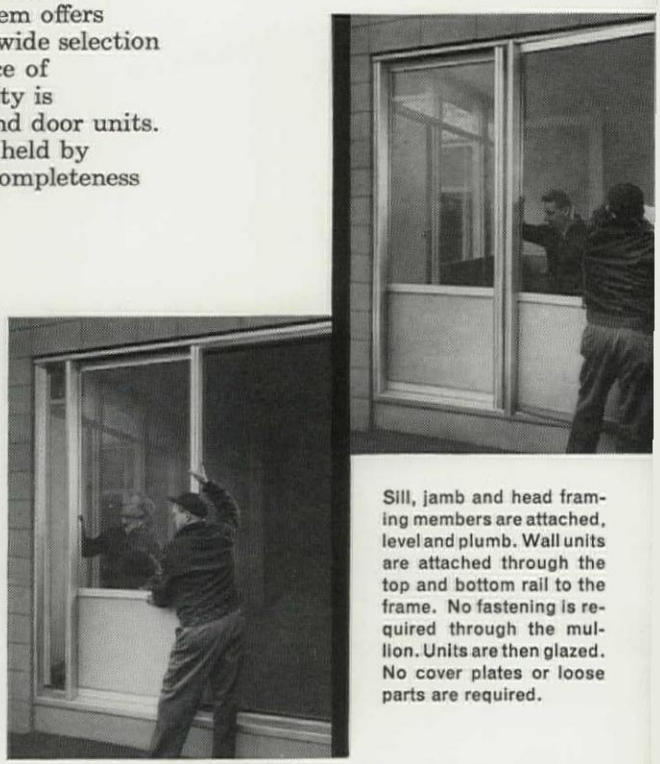

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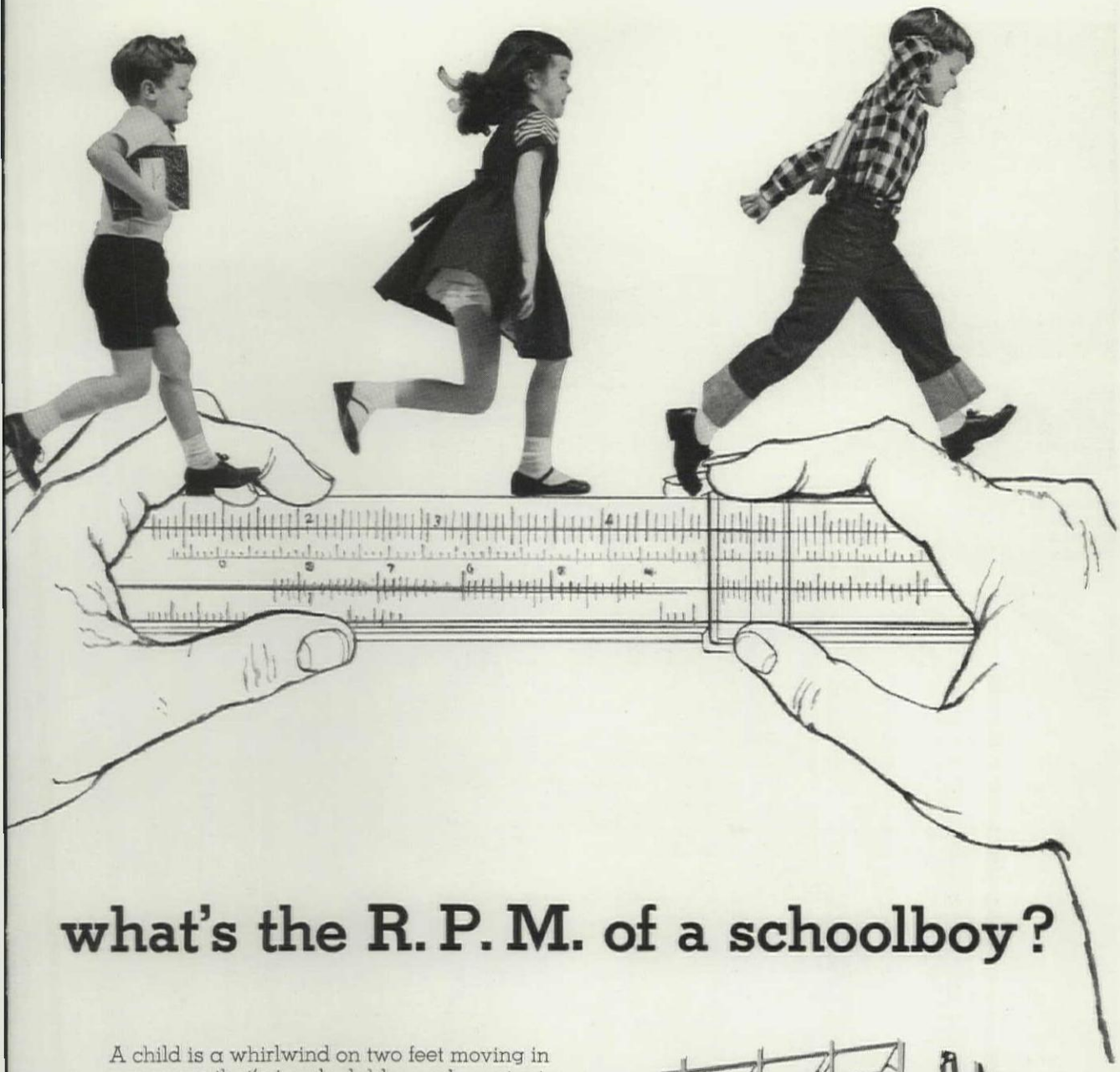

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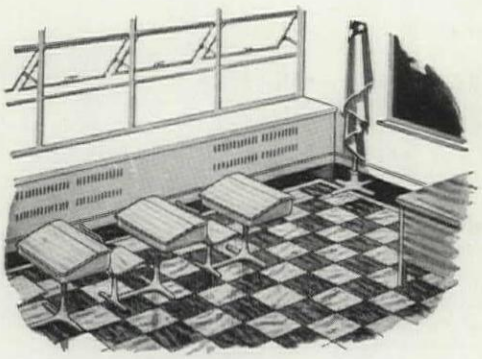

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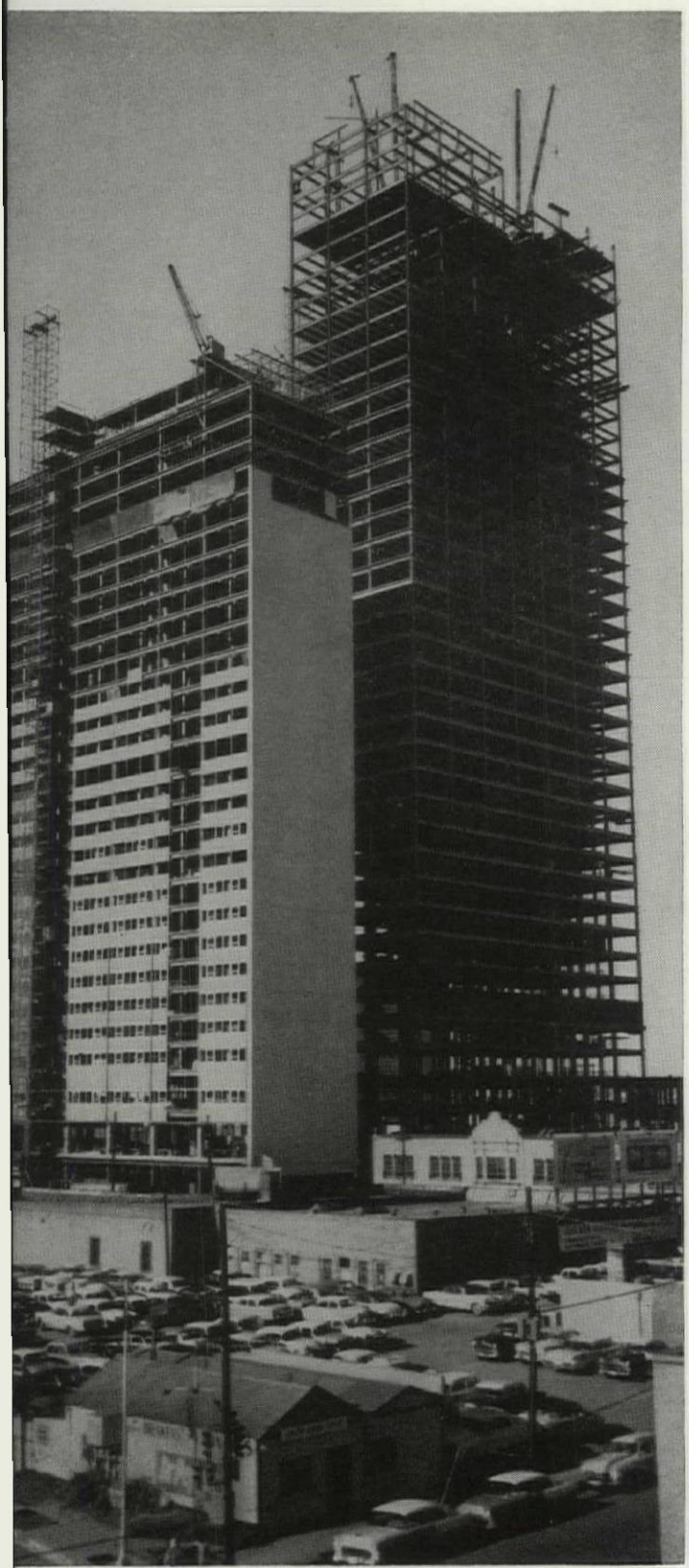

The Texas reputation for size is proved again in the Southland Life Insurance Company Home Office, in Dallas, Texas—"Southland Center." This project covers an entire city block and, as integral parts of a single structure, has: a three-story base structure (above ground); the Southland Life office tower, 42 stories high; and a 28-story luxury hotel. When finished, Southland Center will include a third tower of which the first three floors are already under construction.

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Owner: Southland Life Insurance Company, Dallas, Texas • **Designer:** Welton Becket, F.A.I.A., and Associates, Architects-Engineers, Los Angeles, California • **Structural Engineer:** Murray Erick Associates, Consulting Engineers, Los Angeles, Calif. **General Contractor:** J. W. Bateson Company, Inc., Dallas, Texas **Superstructure Contractor:** American Bridge Division, U. S. Steel Corporation • **Substructure Contractor:** R. P. Farnsworth & Company, Inc., Dallas, Texas.

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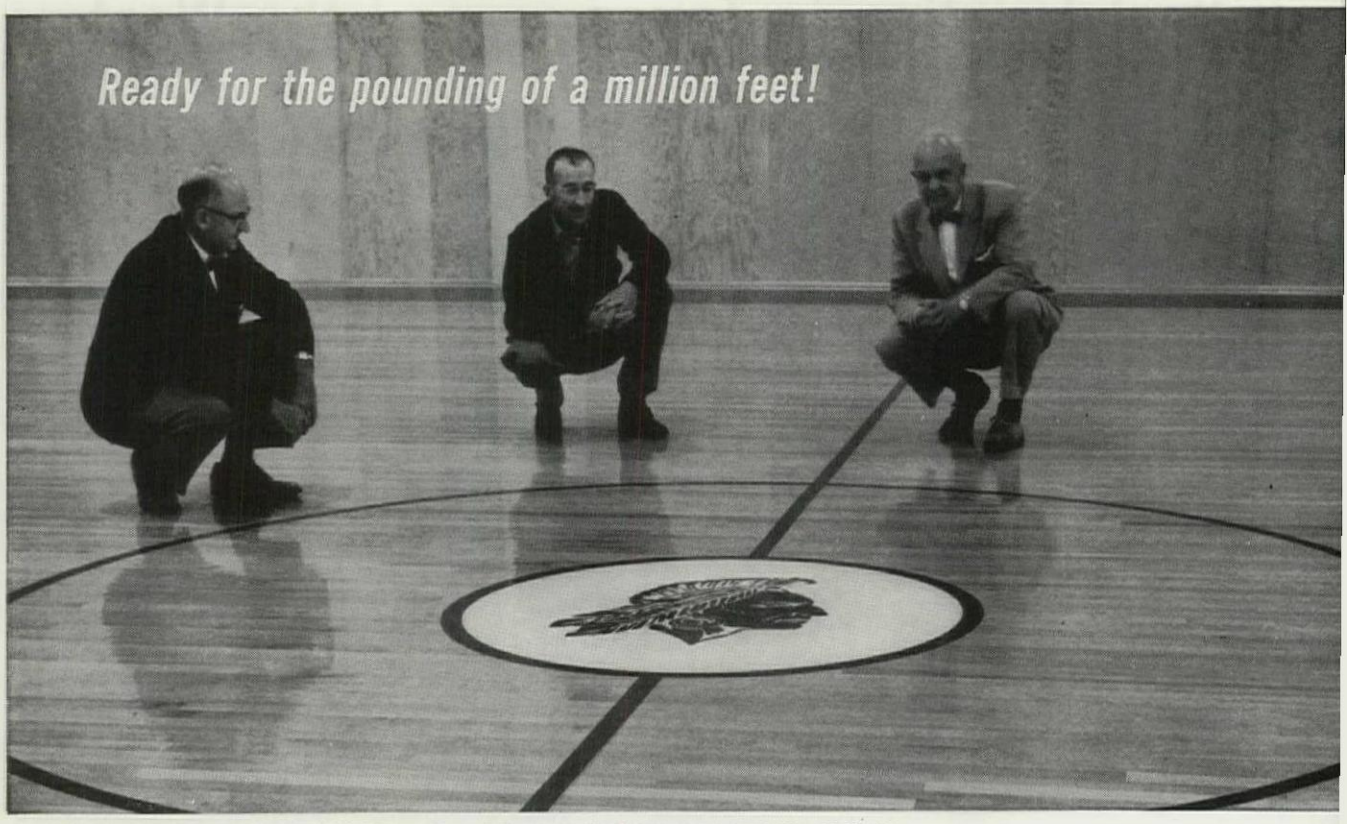

Left to right: Mr. Huff; Mr. Cliff Gates, Superintendent of Maintenance; and Mr. Goff, the Huntington representative, inspecting the newly lined and finished gym floor at the Siletz school.

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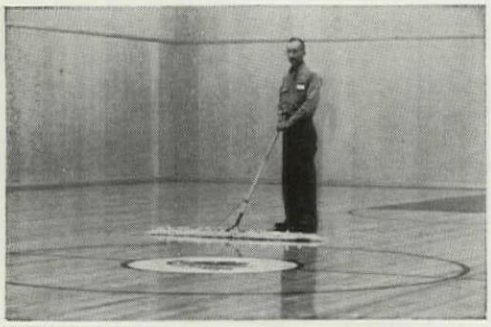

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