APRIL, 1963

The FLORIDA ARCHITECT

FFICIAL JOURNAL of the FLORIDA ASSOCIATION OF ARCHITECTS of the AMERICAN INSTITUTE OF ARCHITECTS, INC

Current Highlights...

- **INDUSTRY IS LIFTING ITS CAPITAL SPENDING PLANS** for 1963. This could be the best news in months as far as the business outlook is concerned — if the planned increases turn out to be large enough. That's because investment in new plant and equipment is one of the most powerful of all the forces for expansion. Indeed, the **lack** of bounce in such spending is widely considered to be one of the chief causes of today's sluggishness in business activity.

  ... But the latest spending plans reported in government surveys leave a lot to be desired. The companies questioned plan to lift outlays over last year by at least twice as much as they were projecting a few months ago. This reduces chances of a recession. But it isn't enough to quicken the business pace.

  ... There's still a chance that capital spending programs — and business activity — may be beefed up by more than the surveys show. The record shows that once investment starts to rise, businessmen tend to keep revising plans upward and usually exceed early estimates. The new tax credit and depreciation rules will be helping. The key question is—how much?

- **THERE ARE SOME QUITE OPTIMISTIC VIEWS ABOUT BUSINESS** in Washington these days — views worth knowing about. They are only a minority opinion. But those who feel this way—few as they are—deserve a respectful hearing. They include some fairly high-placed officials with fine forecast records. Of course, most economists expect 1963 to be merely another year like 1962 — showing neither a slowdown nor a spurt. They see little new lift from business, consumer, or government spending. But the optimists don't agree.

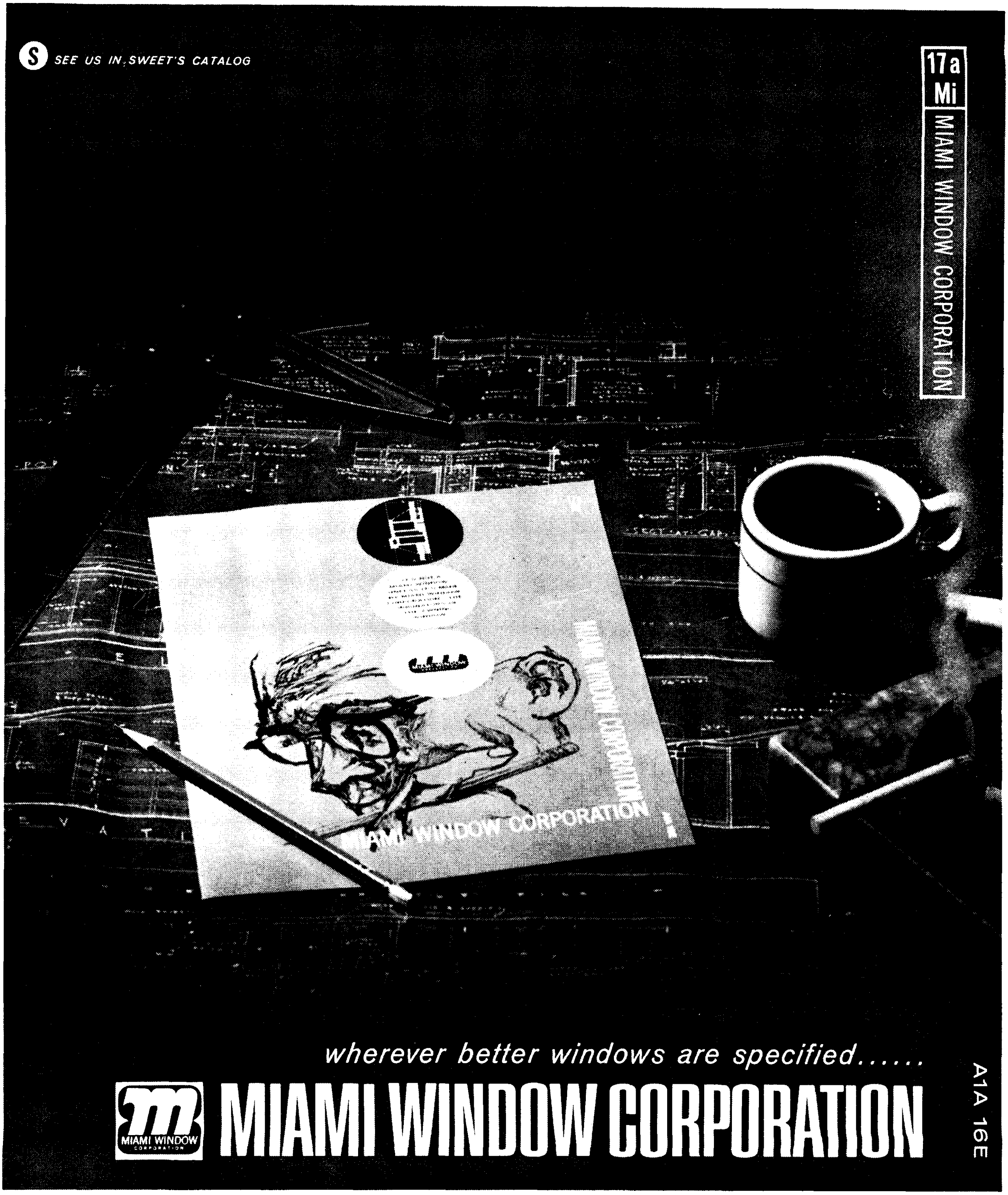
  ... They are counting on improved psychology to get business really moving again. They believe that the Cuban showdown in October gave confidence a large boost — witness the stock market and auto sales. They're guessing that consumers and businessmen will be stepping up spending; and, as they see it, only a bit more outlay is needed to get things rolling.

- **SUBSTANTIAL INVENTORY-BUILDING WOULD RESULT** before long from this stepped-up buying; present stocks are low and would soon become inadequate. New orders would increase and production—which has been riding along on a plateau since last summer—would begin to climb. Then the work-week would be lengthened ... workers would be rehired ... and long-idle plants reopened. The last step would be building new capacity — that potentially big force for expansion which has been largely lying dormant for the past several years.

  ... As a result, the economy could expand by 6% or 7% or more during 1963. (The President has forecast only 4¼%.) And business activity would finally be on its way toward full employment — something the U.S. hasn't experienced since 1956.

  ... Note, again, that all this is still only a minority view. So far, the business indicators show no quickening of pace. The gains are still being offset by declines. Inventories, however, have begun to rise a bit, and that's how the turn would come. They should be watched closely in weeks ahead for evidence that this bullish minority is right — or wrong.

(Continued on 3rd Cover)



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The Florida Architect

OFFICIAL JOURNAL OF THE FLORIDA ASSOCIATION OF ARCHITECTS

In This Issue ---

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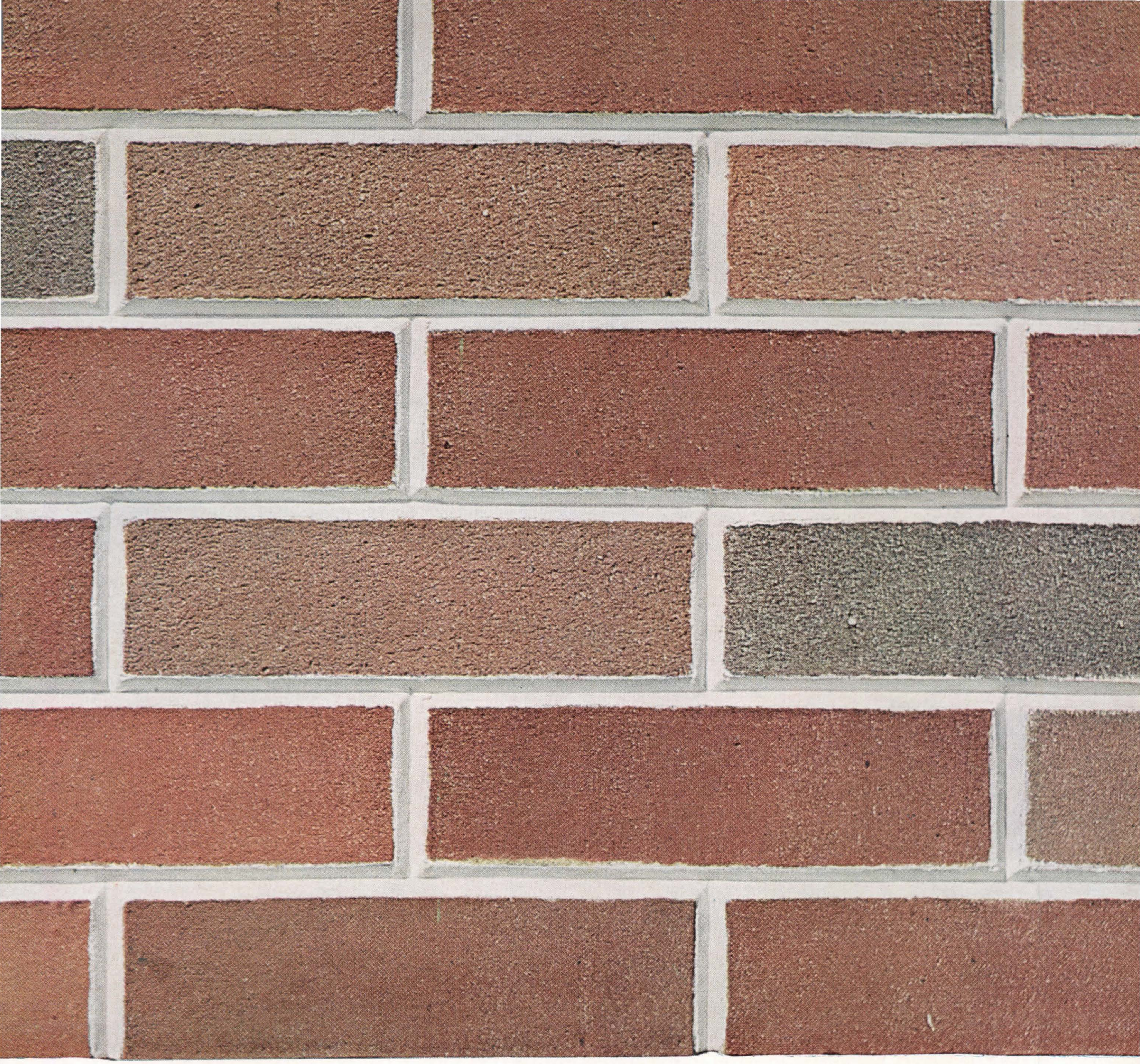

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Letters

Mr. Roger W. Sherman, AIA
Editor-Publisher
The Florida Architect
7225 S. W. 82nd Court
Miami 43, Florida

Dear Roger:

The December issue of *The Florida Architect* has just recently come to my attention. Permit me this opportunity to thank you for publishing my speech presented to your 48th Annual Convention. Also, I would like to thank you for your open letter, "Dear Mr. Secretary."

After reading your editorial comment, it seemed to me that there is a misunderstanding concerning the points I attempted to convey in the speech. This is especially obvious since I find myself in agreement with your editorial.

When I stated that buildings in the Capitol Center should be designed consistent with those already built, I did not mean to infer that each and every building should be something of a replica of the Capitol or the Supreme Court Building. Rather, I was attempting to develop the concept that it would not be proper to destroy the tradition that already is here. What I hoped to convey was that there should be a "transitional" zone separating the Capitol and the Supreme Court building from buildings of contemporary design. Thus any new building immediately adjacent to "traditional" buildings would not offend tradition. However, new buildings on the present perimeter should be of contemporary design. By doing this, we could show clearly the evolution from the original—the traditional—to the contemporary, which tomorrow will be the traditional. It is my hope that new buildings on sites not immediately adjacent to the old, will reflect the finest of modern design that our architects can create.

Let me hasten to add that I am but one member of the Board of Commissioners of State Institutions, and am speaking only as such.

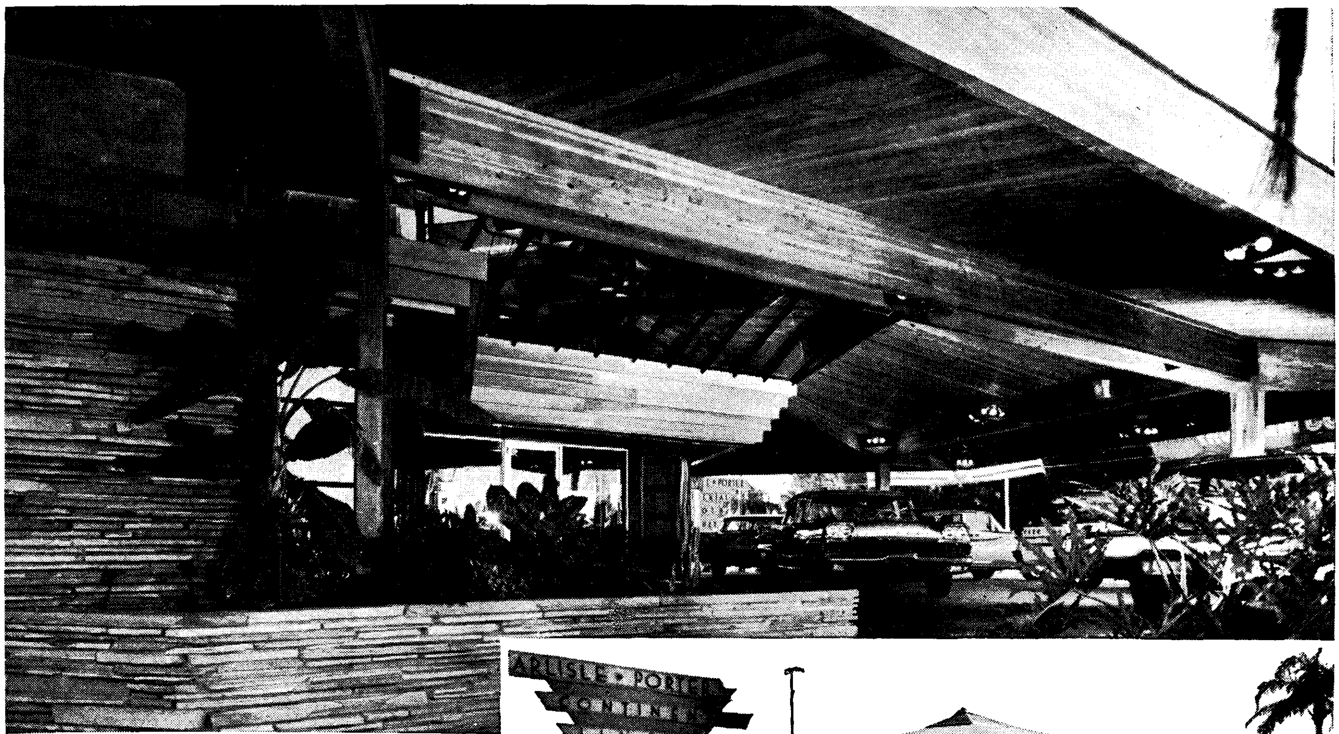
Naturally, I regret that the obvious limitations of a short speech made it virtually impossible to go into detail relative to the concepts that I had wanted to develop.

Trusting that this letter will clarify my position, and with kindest personal regards, I remain

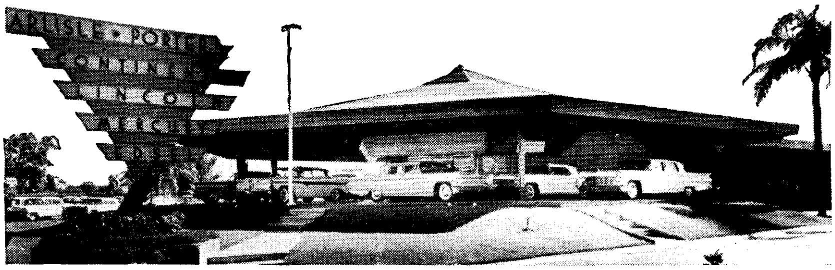
Sincerely,

Tom
Secretary of State

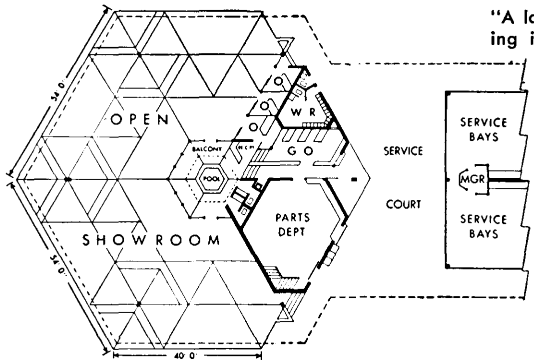
TA/gvh



Wood says welcome. An interior view of Carlisle-Porter's new showroom and service building. Construction features Rilco laminated wood hip beams, 5¼" x 26' x 39'1" to 52'8" long, plus columns, purlins, fasciae and Rilco Western Red Cedar deck.



"A landmark in this area," says H. H. Carlisle of his firm's recently constructed Rilco building in Clearwater, Fla. Architect: John Randall McDonald, AIA, Indian Rocks Beach, Fla.



"The Showplace of Clearwater"

"And the most dramatic business building on the West Coast of Florida," adds H. H. Carlisle, of Carlisle-Porter, progressive Continental, Lincoln and Mercury dealer in Clearwater, Fla.

"We are more than pleased," he continues, "with the Rilco laminated wood construction. It has greater beauty than we could visualize . . . the utility is tops . . . and as a setting for our fine cars it permits us to show them off to the very best advantage. We have visitors every day who express amazement at the beauty and utility of this building."

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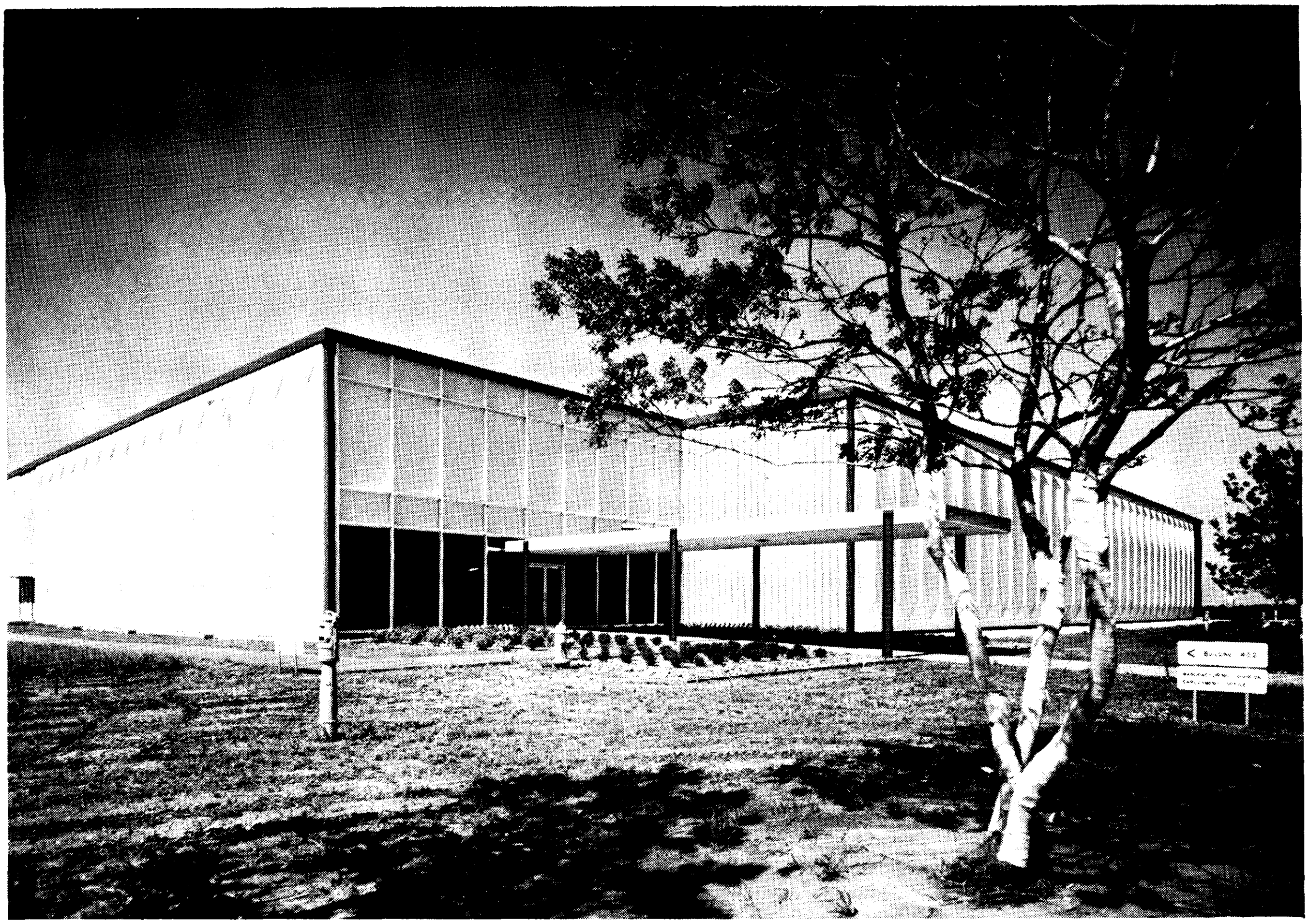

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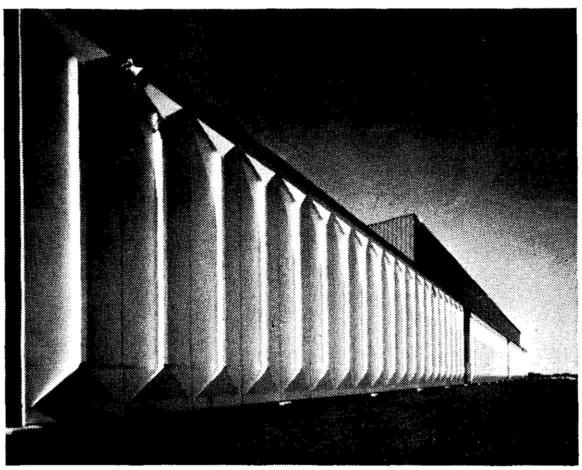
Precast White Concrete Curtain Walls...



During construction of a new Collins Radio manufacturing plant in Richardson, Texas, the builders put up 162 square feet of exterior and interior walls with every swing of the crane. How? By using pre-cast, contoured white concrete curtain wall panels. Each panel was 6 feet wide by 27 feet high and was made of Trinity White and white marble aggregate.

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Building Techniques

in total perspective

By WILLIAM H. SCHEICK
Executive Director, The American Institute of Architects

The A.I.A.'s Executive Director summarized the final symposium in a series of three conducted by the Department of Architecture, University of Florida on March fourteen. His address to architects, engineers, artists, scientists, students and the Faculty is presented here.

The concepts of the design of a building, an airplane, and a spacecraft are compared and translated into the research process necessary to modern design. The major fields of environmental research are defined and the deficiences of building research are noted in order to give perspective to the subject of building techniques.

An example of research in warm air heating is described to show the chain reaction effect upon structure, planning and service systems.

The building is shown to be an integration of structural and service systems which have changed architecture from its classical concern with the shell of the building to the design of a complex mechanism for environment. Investigation of recent developments in the structure touches upon the frame and components of the building skin.

The goals for environmental design include the creation of ideal psychophysical surroundings for the human being, provisions for the most effective performance of human tasks and conveniences for an affluent society.

At this point, the problems of economics are introduced. These problems are divided into those of in-place cost and the life of the building. On this basis, recent developments in the techniques of the building shell are examined in some detail in respect to the search for assembling line production, the reduction of the number of parts, increase in the size of parts, time of assembly. Attention is given to the problems related to assembly on specific sites.

This leads into an examination of the principle of components and especially complete wall components. The handicaps to satisfactory solutions are described.

There is not time to examine service systems in as much detail, but the major technical and economic principles are noted as well as the difference in the owners attitude toward service systems.

Then the entire building is related to economics—economic life of the building, the effects of taxation on building finance, and the general economic formula which confronts the architect and motivates technical research. A suggestion is made for two different approaches to the design of buildings for predetermined life and for permanence.

Finally, the effects of techniques and economics upon the architect's education and practice are identified.

We will compare three problems:

1. to design a building
2. to design an airplane
3. to design a space craft with a bomb

The Spacecraft is a concept so recent that the problem was approached with full understanding of the complexity of the end result, and the scientific teamwork necessary to accomplish the result. The approach is a crash program, cost no object.

The airplane is an evolutionary development within a span of 60 years. Except for military aircraft, economics is of great importance. It had to pay its way.

The Building has been an evolutionary development through centuries. Concepts and purposes which remained virtually unchanged for centuries were suddenly replaced with completely new concepts in the 20th Century.

What if mankind could have stopped for a decade, disassociated himself with all previous concepts and attacked building problems with a comprehensive crash research program? Then we might have understood building research and might have defined its problems. As it is, disassociation with the past is impossible.

The building industry is so complex and fragmented that even the rate of evolution in its thinking is a handicap. Some parts of the building industry *don't want* building to change much.

The building is by far the most complicated of our three examples, though each is the summation of a maze of systems and techniques of assembly. The difference between them lie in their purposes and functions, and in economics.

The purpose of the plane is to carry a pay load as fast and cheaply as possible and its function is flying.

It may sound equally simple to say that the purpose of the building is to provide human environment to the optimum of human needs at a cost people can afford. But the building's functions may be as many and varied as the range of human activities.

In addition, some humans are not satisfied with their buildings unless they make an esthetic contribution to society (fortunately for architects).

Now return to the phrase "provide human environment" and consider its complexities. Once upon a time this meant merely protection from the elements, and in some buildings the creation of an atmosphere of worship, or grandeur or permanence.

(Continued on Page 10)

It Is Well To Know . . .

By **ARCHIE G. PARISH, FAIA**

President, Florida State Board of Architecture

The second in a series of articles dealing with the problems facing the State Board of Architecture. It is hoped that through the series planned for presentation to you some of the present trouble spots of enforcement will be eliminated.

From time to time projects are brought to the attention of the Florida State Board of Architecture, in which the complaint is made, that an architect has permitted himself to be identified with a project not handled by him in full compliance with Chapter 467, Florida Statutes.

In such instances, copies of plans, drawings or other pertinent material, are furnished showing notations such as the following:

REVIEWED AND APPROVED by John Doe, Architect.

DETAILED by Richard Roe, Architect.

REVIEWED AND MEETS LOCAL CODES AND ORDINANCES by Jane Doe, Architect.

In the majority of instances when such notations are shown on plans and/or drawings, it is found that it is necessary that such plans or drawings must bear the signature and seal of an architect, so that a permit may be secured.

Attention is invited to Section 467.15 of the Law, regarding the use of the Architect's Seal—specific reference being made to the second paragraph thereof, wherein the following is stated:

*"No Architect shall affix or permit to be affixed his seal or his name to any plan, specification, drawing or other related document which was not prepared by him or under his responsible supervising control********."*

Every architect must be continually alert to insure that he does not permit himself and/or the Seal of his profession, to be utilized as a matter of convenience to approve plans, specifications, drawings or other related documents for others, who, under the law, are not legally qualified to prepare them. NO ARCHITECT SHOULD PLACE OR PERMIT TO BE PLACED HIS SEAL and/or HIS SIGNATURE ON ANY PLAN, SPECIFICATION, DRAWING OR OTHER RELATED DOCUMENT WHICH WAS NOT PREPARED BY HIM OR UNDER HIS RESPONSIBLE SUPERVISING CONTROL.

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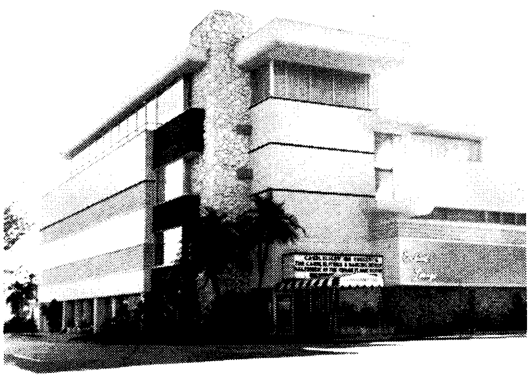

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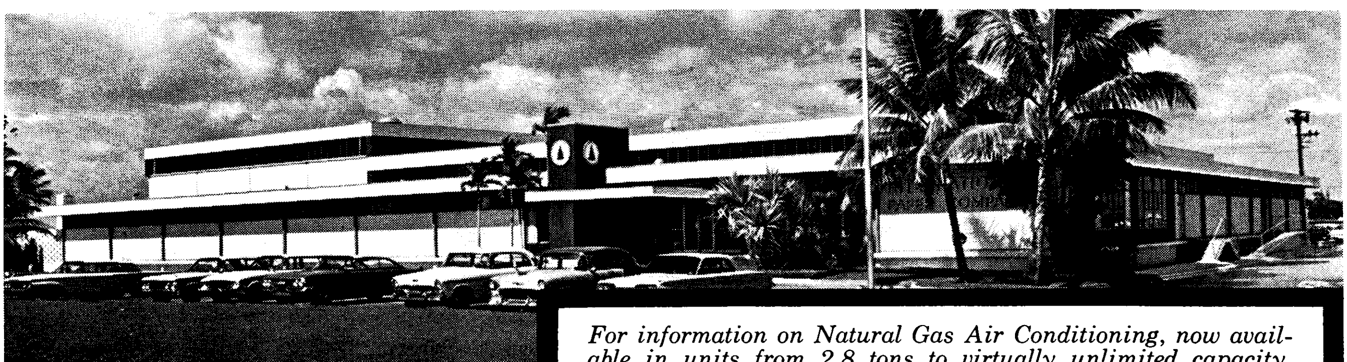

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Building Techniques...

(Continued from Page 7)

Now our concept of man's relationship to his environment comprehends the relationship between his well-being and heat, humidity, light, sound, sanitation and security. We examine these relationships not only with regard to his physical senses, but to his psychology as well. We must understand what he wants to do in a given environment and arrange spaces, facilities and communications to enable him to do it as well as possible.

As complicated as this may be, the achievement of the desired results would be much simpler if cost were no object. Buildings are tied to land and real estate is the base for an extremely complex economy in the USA and elsewhere. Real estate is also tied up with taxation which leads into the area of political science. When you become mature in your knowledge of building economics you will realize that technology alone cannot solve the problems of reducing building costs to a point where even less-than-optimum environment can be built without subsidy for certain building types like low-cost housing.

No such complications exist with the airplane with which we have been comparing the building. Economics are indeed a factor in airplane design, but they are the economics of operating a machine detached from land.

The modern approach to solving all sorts of difficult problems is through research. We are witnessing this process in its most dramatic and potential form to solve the problems of the space age. This is a crash program with billions of dollars available. No one doubts that interplanetary travel will ultimately be a possibility.

Even prior to this effort research had become a household word, though only vaguely understood by the layman. Research in medicine, agriculture and chemically based consumer products had demonstrated the effectiveness of rubbing this modern Alladin's lamp.

One may ask then why building research is not being pursued as diligently, especially when the building economy (all types of construction) runs nearly 80 billion a year. The answer lies in the fragmentation of the mammoth building industry and the primary concern of most of it with technology only.

Earlier the thought was expressed that building research might be comprehended in its entirety and implemented in its entirety if a new approach could be undertaken, completely disassociated with the past. A super-team of researchers might then operate like the space-age researchers who were blessed with the necessity of starting from scratch. Under these circumstances a total concept of a research field is possible and necessary.

Building research is not the prime subject—only one of its fields and by-products — technics and techniques. With a superficial look at the broad generalities of building research, we may better locate our subject with reference to other disciplines which influence it extensively. An architect (or any other building expert) should think of *environmental* research rather than "building" research in order to identify the major subject headings. These will be in broadest terms:

Human Studies—research into the physical, psychological and social requirements of man which establish the basic problems and goals for all other building research.

Design Studies—research (which is predominantly architectural but involves the disciplines of human studies) into the size, use and arrangement of building spaces for optimum performance as human environment.

Studies of Interior Physical Environment—research (inextricably related to design studies) into the problems of light, heat, humidity, sound, color and other factors integrated with space itself in the fulfillment of human requirements.

Structures Studies—research which develops the engineering science and technology of building structures and their component parts.

Service Systems Studies—research which develops all of the service systems required to create the environmental climate and environmental functions.

Studies of the Economics and Processes of Building Construction and Operation.

Socio-economic Studies — research into the overall social, economic and political problems of buildings as real estate.

Urban Design Studies—research into the total concept or summation of environmental science as expressed in the urban complex.

Within this great scheme we are concerned here primarily with Structures Studies, Service Systems Studies and Economics of Construction. As a matter of fact, only Structures and Service Systems have seen much research activity because (a) they are most rewarding and best understood by the manufacturers of building products who have the money to spend on research, and (b) there is no adequate support for any research in any other fields.

The Building Research Advisory Board, in its report "A Program of Building Research for the United States" has presented an outline for environmental research similar to the preceding. It proposes that research in fields other than structures and service systems can be made significant by a National Institute of Building Research, founded and operated by the Government and operated with the collaboration of research institutions. At least this Report recognizes the magnitude of the task.

All of the foregoing is not intended to depreciate building research by private enterprise, but rather to put it in perspective. In addition to manufacturers research on structures, materials, and service systems, the architectural and engineering professions have been a party to significant studies which have advanced building technology.

The trail was blazed in heating systems research with one of the most significant beginnings taking place at the University of Illinois about 1930. Warm air heating was then a system originating in an octopus-like gravity furnace in the basement of a house, and even the most compact house was likely to have a "room that would not heat," usually on the northwest side. The incentive for the sponsoring industry was to get some of the house heating market belonging to the radiator industry.

Let's run quickly through the series of developments which followed as an example of the chain reactions set off by a simple beginning of this kind.

Forced warm air systems were developed which distributed heated air more evenly and effectively. Ductwork was smaller, horizontal, and longer. A house of the "rambler" type plan could be heated.

Coal was eliminated as a fuel together with its storage and dust problems. Gas and oil fired heaters were

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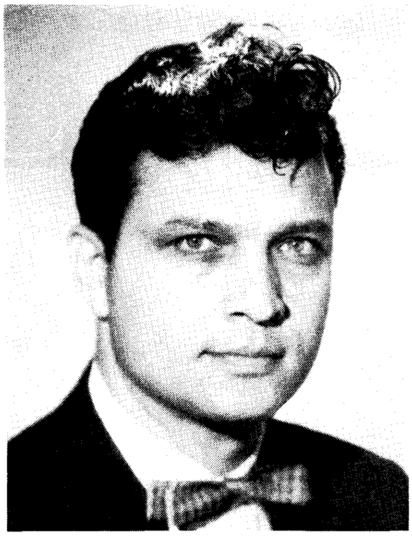


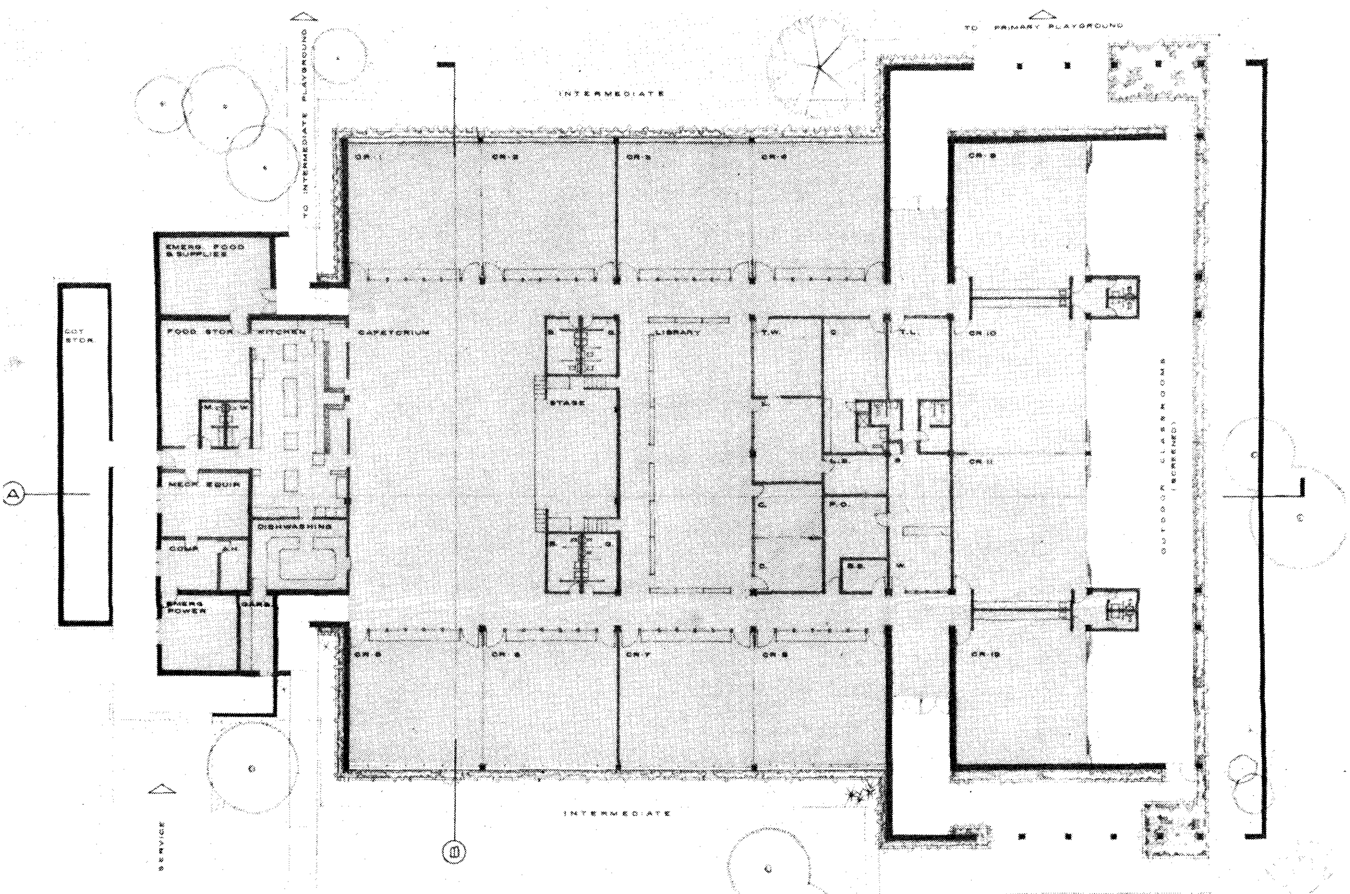
FRANCIS E. TELESCA, AIA

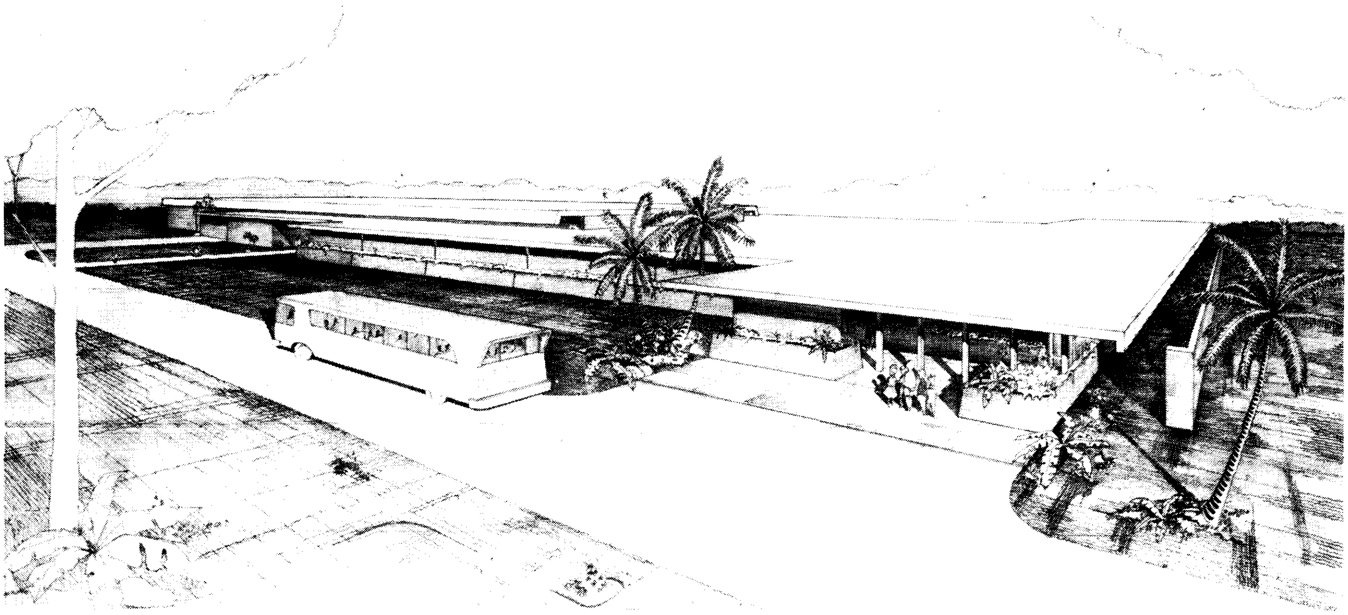
National School Fallout Shelter Design Competition

The first award in Region three which included Tennessee, North Carolina, South Carolina, Georgia, Alabama, Mississippi and Florida; was made to Francis E. Telesca, a member of The Florida South Chapter since 1954.

Objectives of a competition conducted by the American Institute of Architects for the Department of Defense were to serve the national interest by encouraging the creation of shelter designs which would: conserve materials, manpower and money; create fallout protection in the maximum area of the school; incorporate attractive features; and produce structures of aesthetic appeal.

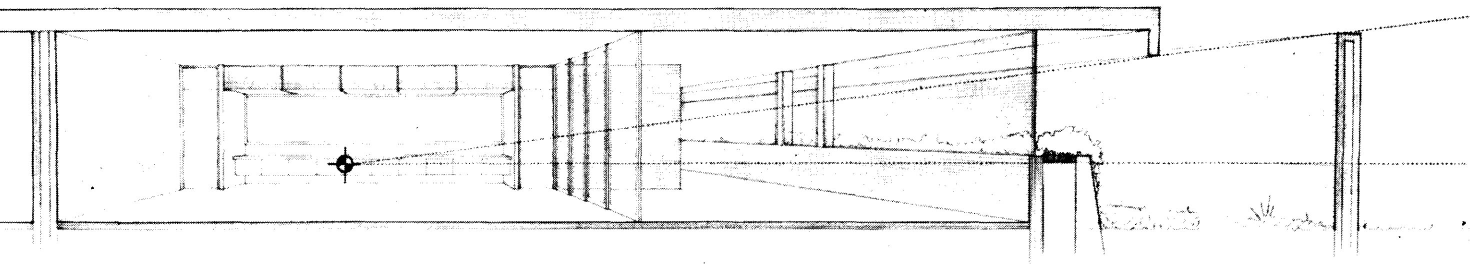
Awards were offered in each of the eight regions of the Office of Civil Defense to develop and promote ingenuity, originality, economy and advancement in the field of dual purpose fallout shelter design for elementary school shelters. The plans developed will serve as general suggestive guidance to school planners and designers throughout the Country.



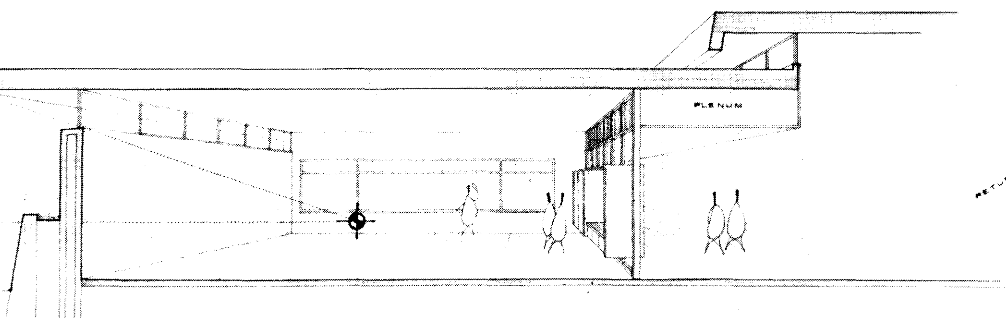


The Findings of the Jury . . .

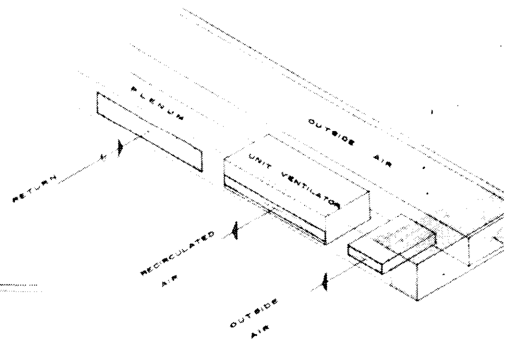
The fallout protection concept developed in this school is possibly the most intriguing of the competition. The entire building, which uses glass extensively, becomes shelter area. The intermediate classroom area combines high window sills with an exterior planter box and deep overhang, thus screen out both "ground direct" radiation and skyshine. The primary classooms are similarly shielded by an exterior screen wall, a planter wall and a covered play area. Cleastory windows, lighting the central area of the building, are shielded by a deep overhang. The building is a very light, airy, open structure which always has a view to the outdoors. In addition to making an efficient, high capacity shelter, this scheme is not heavily dependent on mechanical ventilation and could serve well even if power were not available.



SECTION & INTERIOR PERSPECTIVE 1/4" = 1'-0" · PRIMARY CLASSROOM



SECTION & INTERIOR PERSPECTIVE 1/4" = 1'-0" · INTERMEDIATE CLASSROOM



TYPICAL CLASSROOM A/C & VENTILA

⌖ DENOTES DETECTOR POSITION 5' ABOVE FLOOR IN CENTER OF ROOM

Building Techniques...

(Continued from Page 10)

much more compact, and together with the new duct systems, could be placed on the first floor rather than in the basement.

Gas was a more expensive fuel, but, because it provided a completely automatic heat, the public wanted it for a convenience. To reduce cost insulation for house structure was developed.

The first uses of insulation and a general "tightening up" of the house resulted in condensation problems. Research produced vapor barriers.

Heating controls were refined, the distribution of air was "engineered" more scientifically, and warm air heating was greatly improved.

Basementless houses were introduced after the war bringing problems of cold floors and ground water problems. These were solved by research and in the process underground perimeter warm air distribution was developed.

The market became ready for air-conditioning. All of the foregoing research made it comparatively easy to combine air-conditioning and heating systems the public could afford.

In review we see that an original incentive to improve a heating system affected the structure, the plan (and concurrently the design) of the house, and led the public to expect a completely different standard of indoor climate and convenience provided by a mechanical system. The gravity warm-air system and the house design required to make it work were both rendered obsolete within two decades. One might follow other paths of development in building research and discover similar chains of results.

Developments in the structure of the building itself (rather than its service systems) have not been as clearly tied to planned or organized research. Actually many of the most significant developments were not industry sponsored, but were born in the imagination of architects and engineers seeking new solutions to the enclosure of space. Chicago architects who wanted to build higher buildings originated the steel frame and completely revolutionized the concepts of building structure. The search for means to enclose space free of columns has produced new methods of construction such as thin shell concrete and new building forms like the hyperbolic paraboloid.

The design professions are quick to copy and adapt. When a new structural system like the steel frame appears, the design professions use it thousands and thousands of times. Inevitably there are some designers who improve, refine and invent modifications—seeking either economies or new design expressions — and the structural system evolves toward its maximum potential. In this respect we may not be so different from the ancient Greeks who modified their temples through subtle refinements of proportions toward esthetic perfection. Except that the modern refining process is not basically esthetic.

The most recent example of this process is the metal curtain wall. When this form of construction first began to achieve popularity—as late as the 1950 decade—one might think that designers had forgotten everything they knew. The new building skins leaked, some of the components buckled or otherwise performed badly. Designers had not forgotten how much buildings move. Or they had neglected their laws of physics to the point of ignoring the thermal movement of metals and other lightweight materials. Perhaps this might have been expected of a profession used to designing with more massive materials. In any event, the curtain wall has been subjected to a tremendous amount of trial and error, deliberate research and exchange of knowledge. The technical bugs are being ironed out, and the remaining problems are primarily esthetic.

In retrospect we find ourselves talking about techniques of building. We have not been discussing the better design of hospitals for remedial environment or the design of schools for educational environment. Either of these subjects in itself has received a great deal of study by architects and others and could be the basis for a long design conference. If we were engaged in such a conference on remedial environment we would find that a great part of it would be devoted to techniques rather than architectural design. Why?

The answer lies in what is required in a building to make it perform an environmental function by today's standards. What was called a "building" fifty years ago we now call the "shell." "Architecture" was once little more than the design of the shell.

The complete building has become a most complex integration of structural systems and service systems. The intended environmental function cannot be performed without the successful design of the complex. Architecture has become this kind of design, much of which requires engineering skills. Later we must examine why the architect must not abdicate his responsibility for the total design.

Some building types are most easily recognized as a complex system of systems. The hospital is one in which less than 40 per cent of the cost may be attributed to the shell. Laboratories and industrial buildings represent an even greater preponderance of service systems. By comparison, office buildings are simpler: churches, schools and houses even more so. But any one of these is complex by standards of fifty years ago.

What caused this revolutionary change in such a brief span of building history? In general there are two major causes (a) improvement of environment and (b) economy. Both important to the architect.

The improvement of man-made interior environment stems from several objectives. One is the goal to create the *ideal psycho-physiological surroundings* for the human being. In the hospital the first consideration is the patient; in the school it is the pupil.

Another goal is to provide for the *most effective performance of human tasks.* In the hospital this considers the tasks of hospital staff and the doctors. In a factory most attention may be given to the flow of production and the use of machines, but the human equation is present in the worker who becomes a useful part in the production process to the extent that his psycho-physiological requirements are solved by design.

Frequently in this affluent society of ours, a goal in design is *convenience.* This is nowhere more apparent than in a residence as witnessed by the numerous gadgets which are on display at a homebuilders convention.

Such goals as these might be relatively simple for the design professions if cost were no object. But building cost may be a downright obstacle in today's economy. How many times must the architect settle for something less than the best he can do because there is not enough money? How many drawings go into the file

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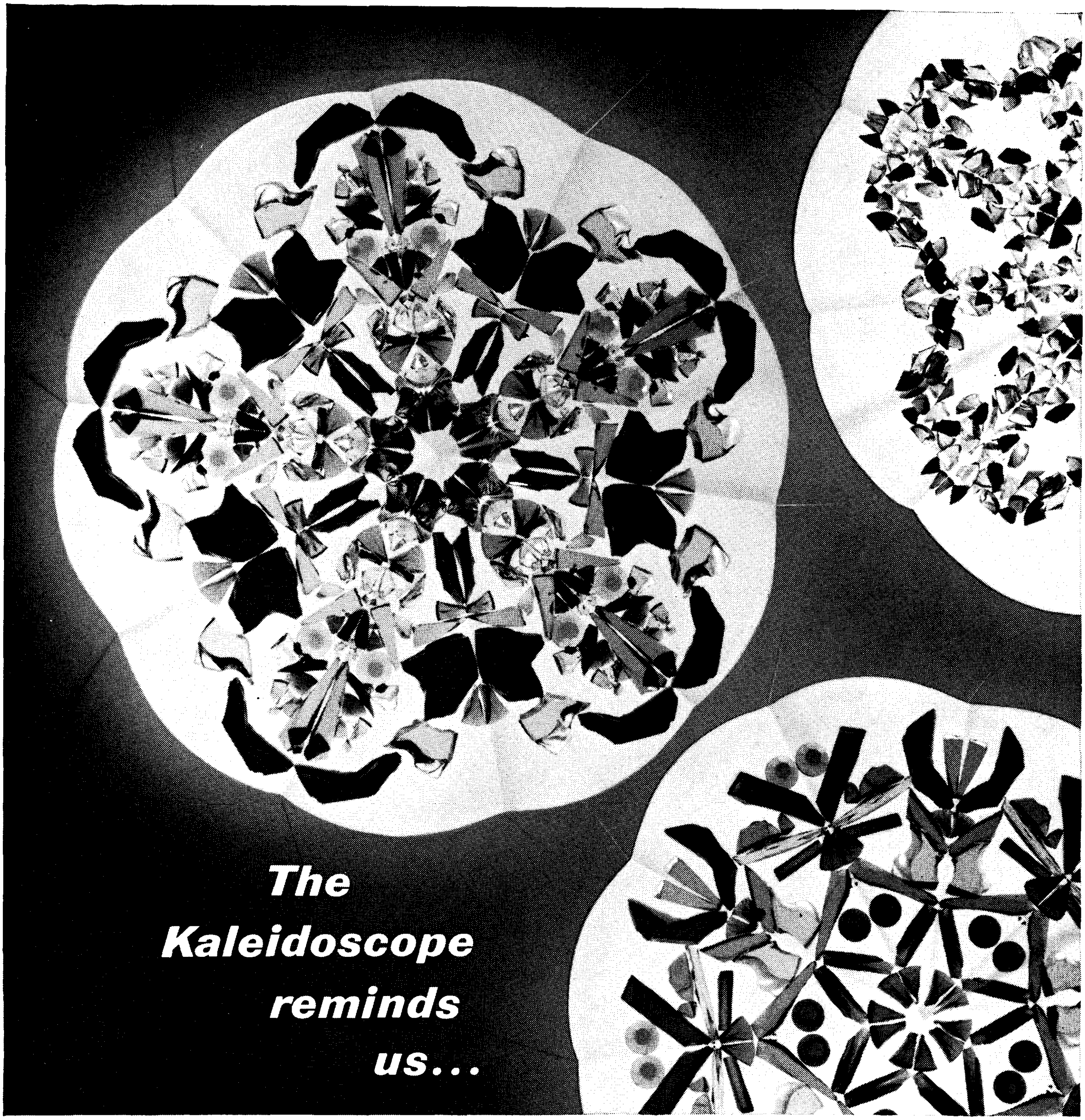

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Building Techniques...

(Continued from Page 14)

because a building cannot be erected at all? Because of the importance of economy, a great deal of the ingenuity that goes into building design and technology is stimulated by the hard facts of economics.

With these generalizations in mind, let us examine structural systems and service systems in more detail.

The structural systems of a building are entirely the responsibility of the architect who combines them into the shells for various building types. He may use an extensive vocabulary of materials and building components to achieve and create the desired environmental objectives. The sizes and shapes of enclosed spaces determine his selection of structural principles. The thermal value of the wall is a factor in producing physical comfort. The size and placement of glass areas relates to physical comfort and psychological and esthetic satisfaction. The physical characteristics of finishing materials may be a factor in convenience for the user.

But economics assumes major importance in this area of design. There is a constant search for savings in the shell. A more expensive but lightweight skin may produce savings in the frame and the foundations which more than offsets the extra cost of the skin. This is an example of economy in original cost. Many choices may be made by comparing the cost of one material with aonther.

Most decisions are not this simple, however. As a rule, two other considerations enter into the picture: (a) the *in-place* cost of the material or component, and (b) its cost for the *life of the building.*

The simple phrase *"in-place cost"* is packed with meaning for the architect and contractor. Obviously it always involves labor, usually skilled labor, and, in this century, continually higher priced skilled labor. The erection of the building is an assembly process with many different stages involving a wide variety of skills. As the building trades became unionized they began to jealously guard their rights to handle certain phases of the construction process and greeted a new material or method with jurisdictional disputes over who should do the work.

In the last two decades probably more study has been given to in-place cost and hence to building techniques than to any other aspect of building. The motivation has been to reduce the cost of the shell.

An important factor in this problem is the locale of the assembly (erection process). Because the building is located on a piece of land it seemed impossible to develop the mass-production techniques that have reduced the cost of most consumer goods.

Since 1945 the large merchant homebuilders have done a good job of creating something resembling an assembly line on the site. An overall view of a large residential subdivision reveals what has happened. At various points, foundations are being staked out and dug, footings and slabs laid, frames going up, exterior walls and roofs going on, interior work underway. The work force is divided into special teams which move along a stationary assembly line. The builder has also organized his logistics of materials supply from an efficiently operating warehouse and materials yard. Factory prefabrication of houses was once thought to be the answer for putting the house on an assembly line. But costs, shipping problems and the large amount of work still to be done at the site prevented the idea from being any more successful than the on-site assembly line technique for large subdivisions.

Unfortunately, no other building type is subject to the same treatment, simply because most building types are built one by one. The location presenting the toughest problems of assembly is the central city site where the construction process must proceed with no surrounding land and in the midst of the city's daily life.

The nature of all the problems of assembly is leading to a great search for larger building units—now generally called components. This search began more because of labor cost than because of site problems, now embraces all problems of erection.

Consider the state of frame and masonry house construction about 1940. A frame wall comprised fifteen different assembly operations: three coats of exterior paint, wood siding, building paper, sheathing, stud frame, insulation, vapor barrier, two coats of plaster wood trim, three coats of interior paint. *Just too many parts, too many operations, too much time to do*

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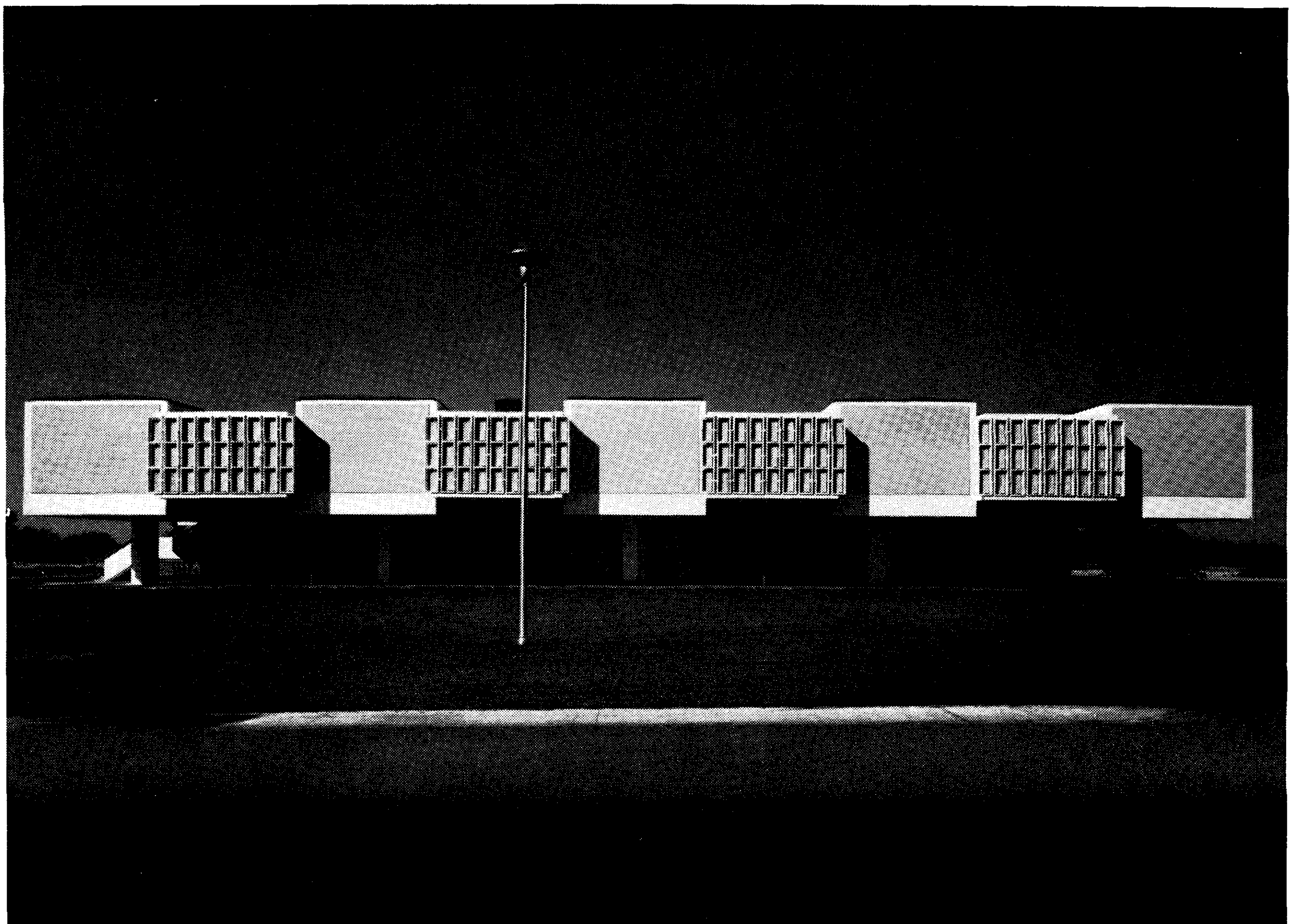

Photo: Black-Baker

Outstanding design and fire safety in one concrete package—that's the Life Science Building at the University of South Florida, Tampa, designed by Architect Mark Hampton with structural engineering by Joseph C. Russello.

Building Techniques...

(Continued from Page 16)

them all. Of course time is a factor in this cost picture: labor time, construction mortgage time, time that capital is tied up.

The masonry wall could be simple. A course of brick, a course of cement, blocks, plastered and painted. But this wall is poor thermally and had to have wood furring and insulation. A good masonry wall required about as many assembly operations as the frame wall, except for exterior paint. Designers began to look at the masonry unit itself in terms of its size. Why build with such small units — especially when labor wanted to limit the number to be laid in one day? A noted architect, speaking at a research conference in 1953, called for a "big brick" for multistoried buildings. What he meant was a wall unit equal to the height of one story, about 8 feet wide, including a built-in window.

Since that time we have seen a great surge of developmental work in components of all kinds: exterior and interior wall panels for houses, factories, office buildings, schools and other building types. The ultimate objective is to produce a wall component that is as complete as possible including the exterior skin or finishing material, a core with structural strength and insulating quality, and an interior finish service. These so-called "sandwich panels" have been tried with all kinds of materials—metal, glass, ceramic, and plastic skins, foamed plastic, etc.

The problems preventing complete success have been vexing indeed.

For house construction the old-fashioned stud frame and its applied skins are very hard to beat from a cost standpoint—even in place with all labor costs.

For other types of buildings the requirements of codes for fire-resistance may require back-up materials behind the sandwich panel which defeat its purpose.

Some of the sandwiches prove to have unexpected deficiencies such as warping or deflection due to humidity variations, or excessive dimensional instability due to thermal variations. Adhesives are often an important element of the design and there may be doubts about adhesive life. A lightweight sandwich may test out well for thermal conductivity but transmits too much radiant heat or needs more mass to absorb thermal units. A lightweight panel may be poor acoustically.

The researchers are learning a great deal about the laws of physics and their effect upon building materials —effects which were not noticeable with the old methods of heavy-weight construction.

Still another kind of problem confronts the designer who wants to make finished components. What will happen to a good factory—applied exterior or interior finish during construction? The traditional construction processes have been rough, dirty and careless, to say the least. Materials are handled by workers with dirty hands. Before a wall is finished other trades cut it, bump into it, drop mortar or other building process litter onto it from above.

The handling on finished building components will have to be like handling prefinished cabinets or appliances. Obviously it can be done, but the construction industry's work force would have to be retained to do it.

Another bugaboo for prefinishing is how to satisfy the owners' desire for choice of a wide range of colors or textures. This is more psychological than real. The owner who selects a specific granite sample should be able to make a similar selection from a similar range of finishes available in metal or plastic. But he may be harder to please when he looks at a new and unfamiliar finishing material.

In spite of all these handicaps we can be certain that the drive to create large building units will continue and that architects will use them more and more extensively.

The development service systems in the building is not receiving the same kind of publicity as the shell, but much is being done. The systems include the indoor-climate system, lighting, vertical transportation, communications, and sanitation system for every type of building. Certain building types require still others, often highly specialized, such as the food service system for a hospital, the disposal of radio-active wastes for a laboratory, the production line for a factory, or the arena changes for a sports palace.

The attitude of the owner towards a service system is different than toward the shell. It represents a service he *must* have either to rent the building he owns or conduct his business in it. He may see a more direct relationship between cost of the system and real value of its benefits than he can recognize in the structure. He understands from the start that service systems using machinery, motors and moving parts will wear out and need replacement. The housewife expects her washing machine to wear out but she can't comprehend why this should happen to a roof. All of which is to say that the economics problems of service systems may be simpler than those of the shell.

The tough design problems have to do with integrating the service systems with the structure and the shell. The ducts, wires, pipes, conduits and tubes of modern service systems require fantastic flexibility which demand horizontal layers or vertical shafts of building space at the cubic foot cost of the shell. The installation work must take place on the job before and after building components are in place.

Students of this area of technology keep seeking ways to integrate the components of the structure and parts of the service systems in the hope of cutting down on-site labor and saving space. Radiant heated floor and ceiling panels and luminous ceilings are examples. We are hardly far enough along in these fields to see where we are going.

The whole building structure, shell and service systems combined, is subject to overall economic problems. What is the economic life of a building? Its frame might last 1,000 years or more, its shell anywhere from 1,000 to 50 years for the exterior skin to 20 years for the roof. Parts of service systems may last 100 years, wear out in 30 years or be obsolete in 10 years.

Today the financing of an office building or apartment house may be feasible or not depending upon the tax-laws. The allowable write-off on taxes for depreciation may be the difference between a profitable venture and one that is not. The more conservative approach to building finance is 100% depreciation in 20 years. The intricacies of building financing include land cost, original building cost, appraised value, operating cost, depreciation and taxes balanced out against rental income. If the architects design results in a building cost of $22.00 per sq. ft., this one figure introduced into the

(Continued on Page 20)

YOUR BIG BUY FOR A BETTER BUILDING...

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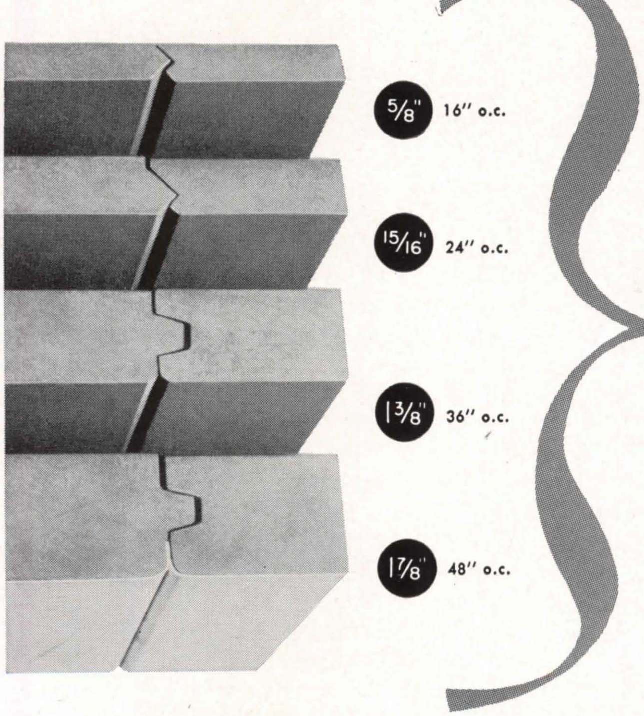
Easy-ply roof deckings



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Building Techniques...

(Continued from Page 18)

formula may require a rental income of $6.50 per sq. ft. when the going market price for rental is $5.50. Result — no building.

In the process of solving this formula the arcihtect must examine every aspect of his design, every detail of the structure, the materials and the service systems with respect to their in-place cost, expected life, operating and replacement costs in order to find what combination can be built.

Our concepts of complete buildings may begin to fall into two categories: (a) *a building of predetermined limited life* and (b) a building called *permanent.* The first will be designed with the expectancy that it will be torn down and replaced in say 50 years. For simpler types of structures such as houses, or one story small schools, they may be designed to be demountable and removable from a site of appreciated value and sold on a used-building market like used cars. The more complex structures would simply be removed, their economic life having been completed and their profit realized.

A *permanent* building might be actually only a permanent frame designed to produce permanently desirable space. Its skins might be changed from time to time to keep up to date. Its service systems would be "get-at-able" so that obsolete air-conditioning systems could be easily replaced. The economics of the structure would favor this kind of "renewal" rather than complete replacement. We might visualize the application of this principle to a shopping center. Being commercial and being involved with sales appeal, such a structure might well get new skins and new interior fittings every ten years or so.

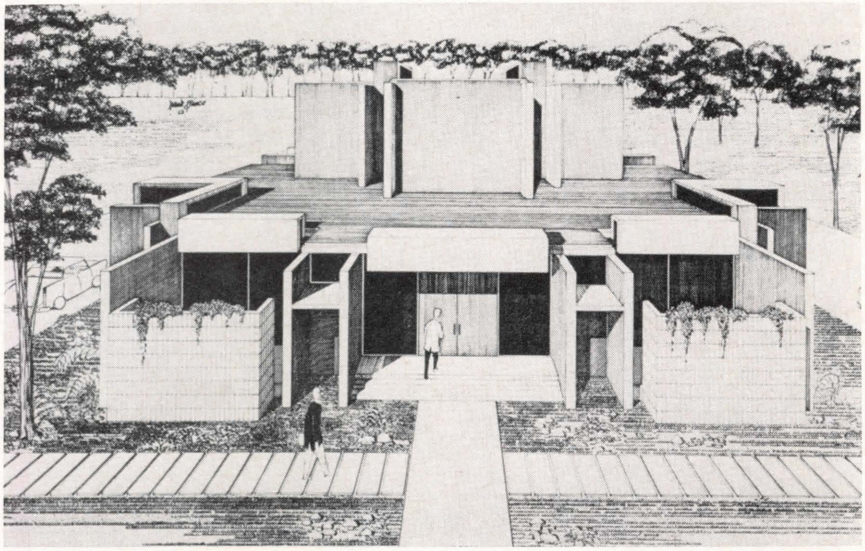
We have dealt with a subject of extreme depth and breadth in relatively broad generalities which I believe are reasonably sound in principle. My last observation is the significance of this subject matter to the modern architect. *Architecture is no longer the building shell, nor is the practice of architecture the design of the shell. The architect must be able to conceive, design and execute the complete building as a system of systems.* Though many parts of these systems are primarily problems of engineering design, the architect must not dele-

(Continued on Page 24)

News & Notes

Design Award...

Tampa Medical Clinic Building wins National Architectural Award . . .



The design of *Hibbs Medical Clinic Building*, Tampa won the Health Citation Award in the tenth Annual Design Awards Program sponsored by Progressive Architecture. *Robert Weilage*, AIA, of the *Florida Central Chapter* is the award winning architect.

A total of twenty two awards were made, selected from more than five hundred entries.

The Medical Clinic Building will house an organization of ten doctors and psychologists engaged in neuropsychiatric practice. Individual outpatients will visit the building for clinical analysis, neurological examination, and group therapy. All of the medical and therapeutic functions are confined to the first floor. Offices, mechanical room, and doctors' lounge are on the second floor.

Construction will be of a simple two-way concrete slab deck supported on masonry bearing walls.

40th Annual Golf Tournament . . .

The F. GRAHAM WILLIAMS COMPANY of Atlanta, Georgia will again play hosts for the Annual Golf Tournament and Dinner to be held on June 7th at the East Lake Country Club, Atlanta.

Members of the Association and Profession who have in the past participated in the Tournament will not want to miss it this year—and for those able to accept this year's invitation for the first time it will prove to be a long remembered day. We urge you to mark your calendar now.

News & Notes

New Registrations

Seventy-two more persons have been registered to practice architecture in Florida. Of the total, 47 registrations were granted by examination to residents of Florida. The remaining 25 were granted on the basis of the applicants having been already registered and practicing in other states.

Those passing the examinations for registration are:

Bradenton—Paul A. Donofro, Harley P. Kinney.

Coconut Grove — Thomas Frank Eden.

Coral Gables — Roberto T. Pintado, Socrates S. Sabater.

Deland—James L. Mitchell.

Eau Gallie—Raymond Russell Poynter, Jr.

Fort Lauderdale—Otto E. Haack, Herman Hostettler, Donald Ivan Singer.

Gainesville — William Kendall Hunter, Jr.

Gulf Breeze — Richard Luther MacNeil.

Hialeah—Reuben S. Schneider.

Jacksonville—Robert Cloud Seals, Corneil Edward Torbert, Trent Stanford Wakeling.

Keystone Heights—Donald Richard Morgan.

Leesburg—Louis Charles George.

Maitland—Mark Schweizer, Jr.

Miami—Philip R. Braden, Leonard Di Silvestro, Raul Antonio Fumagali, Lemuel Ramos, Jon A. Renner, Jaime C. Salles, Richard Joseph Skrip, Vidal Alfredo Vila, Robert Law Weed, Robert C. West, Eugene Alex Yaros.

Miami Beach — Richard Allen Rose.

North Miami Beach — Donald J. Frederick, Richard S. Pollack.

North Miami—Henry A. Riccio.

Orlando—Paul Gerard Zelones.

North Orlando — Robert Bruce Kelly.

Ponte Vedra Beach — Robert D. Woolverton.

St. Petersburg—Richard McClain Jones, John Warren White.

South Miami—Michael Simonhoff.

Tampa—Carlos E. Alfonso, Joseph R. Bernardo, Enrique Miguel Marcet, J. Priede-Rodriguez, Servando J. Sanchez.

Winter Park—Lowell L. Lotspeich, Charles Brandon Wald.

The fololwing were registered to practice in Florida from other states:

Robert Z. T. Anthony, Memphis, Tenn.; S. Corman Blumenthal, Chicago, Inn.; Charles Francis Brennan, Rochester, N.Y.; Harry Rudolph De Polo, New York, N.Y.; Charles DuBose, Hartford, Conn.; James Walter Fitzgibbon, Raleigh, North Carolina; Robert John Hall, Rochester, N.Y.; Edwin Harris, Jr.; New York, N.Y.; H. James Hestrup, Oak Brook, Ill.; Henry Lloyd Hill, Atlanta, Ga.; Joe William Hiller, Greenville, S.C.; William J. Janusey, Pittsburgh, Pa.; Charles James Koulbanis, New York, N.Y.; Robert A. Lund, Frewsburg, N.Y.; Leonard John Lundgren, Austin, Tex.; Edward Joseph Maurer, Jr., Austin, Tex.; Thomas Oscar Morin, Rochester, N.Y.; Ralph H. Parks, Rochester, N.Y.; Charles Robert Ralston, Tuscaloosa, Ala.; Edward John Ryan, St. Louis, Missouri; John K. Van Scheltema, Dalton, Ill.; Frederic A. Schick, Bowie, Md.; Harry E. Shoemaker, El Monte, Calif.; Whitney Rowland Smith, Pasadena, Calif.; James Aaon Whitt, Gadsden, Ala.

News & Notes

Student Awards . . .

Henry N. Wright, adjunct associate professor of architecture at Columbia University was Guest Speaker at a luncheon held in conjunction with the Symposium (to be reported in a later issue) at the University of Florida. He addressed the students and guests present on *Environmental Factors and Architectural Design.*

Presentation was made of four student awards. The A.I.A. Silver Medal was presented by the Institutes' Executive Director, William H. Scheick to DAVID BOUBELICK; the recipiant of the Silver Medal Runner-up Award was JOEL CHANNING and presentation was made by Henry N. Wright; The Alpha Rho Chi Medal, presented by James T. Lendrum to LEON MEYER and the F.A.A. Medal recipiant DAVID BOUBELICK received it from the FAA's Immediate Past President, Robert H. Levison.

A.I.A. Convention . . .

The reservation deadline for the AIA Convention to be held in Miami is April 5th and in all probability the majority of FAA Members will receive this issue just about then. If the Americana cannot take your late reservation there are many other hotels close by which will be able to accommodate you. Tickets for Institute and Host Chapter functions will be available at that time, so plan to attend.

F.A.A. Committees . . .

Complete Membership of all FAA Committees will not be published in *The Florida Architect* as it has been in previous years. However, all FAA Directors and Chapter Presidents will be furnished a complete roster of all Committees. They will be available to any FAA Member specifically requesting it from the Executive Secretary without charge.

President Addresses FAA Chapters . . .

President Pooley spoke before three FAA Chapters on matters pertaining to the Legislative program of the Association. On March 20th he was with members of the Mid Florida Chapter in Orlando and on March 21st at Delray for a joint meeting with the Broward County and Palm Beach Chapters. At the later meeting the FAA's Secretary, First Vice President and Executive Secretary also attended.

Building Techniques...

(*Continued from Page 20*)

gate to engineers the full responsibility for these fields of design.

The architect must always control the total concept or it will fail as architecture. He must therefore be the leader and coordinator of all design disciplines.

Furthermore, the architect cannot escape the economics of building. In the AIA we are developing an extensive program to educate the profession to what we now call COMPREHENSIVE ARCHITECTURAL SERVICES. This deals *with* new services expected by today's clients prior to the traditional design services in such areas as feasibility studies, finance and land assembly. The complexity of the modern building affects the architect not only with its demands for extensive technical knowledge but also with demands for skill in building economics. Remember all this is supplementary to his basic education and talents for satisfying human and esthetic requirements which are the soul of architecture.

ADVERTISERS' INDEX

Current Highlights . . .

- **CORPORATE PROFITS WILL REACH $53 OR $54 BILLION** in 1963 — up 4% or 5% over last year — even if business doesn't spurt as some analysts expect. This represents an upward revision from what was predicted a few months ago. The record earnings registered in the fourth quarter of 1962 have prompted many forecasters to lift their sights. And the gain may actually be even better than it looks because the faster depreciation now allowed under the Treasury's new rules will tend to depress the reported net of many firms.

  ... Main reason for the improvement will be the higher sales due this year, even if business merely meanders upward. But big gains in productivity will help cut costs. Steel, chemical, drug, and oil companies will show above-average increases. But competition will head off any really big profits surge.

- **INDUSTRY WILL MAKE FURTHER LARGE GAINS IN PRODUCTIVITY** during 1963, say labor economists. They are looking for increases in output per manhour that will at least match last year's 4.1% — perhaps even exceed it a bit. (This would top 1961's 3.4% . . . and would certainly top the postwar average.)

  ... Here's why output per manhour is expected to stay high:

  ... **Sales will keep on edging up** . . . spreading overhead further.

  ... **Industry is automating steadily** . . . continuing to cut costs.

  ... **Firms are paring costs** by cutting sales and office forces.

- **THE BIGGEST LABOR ORGANIZING DRIVE IN YEARS** has been launched by the industrial unions of the AFL-CIO. The effort is expected to last 18 months. The drive's aim is to halt the erosion of union membership of recent years. The industries the organizers will be concentrating on include furniture . . . textiles . . . professional personnel . . . and public employment — especially teachers.

  ... The special areas that the unions will attack will include such cities as Chicago, Greater Boston, Dallas, Fort Worth, Houston, Philadelphia and the textile towns of South Carolina.

- **CONGRESS REALLY MEANS TO CUT SPENDING THIS SESSION** and may have a little more luck than usual. Lawmakers have an especially strong incentive this time. They want to cut taxes but, with the deficit growing, they fear being tagged "fiscally irresponsible." If they can point to reductions in federal spending, however, they can justify a tax vote. This is one reason why even some liberal Democrats are talking of trimming Kennedy's Budget.

  ... But cutting is hard. Some 75% of the Budget goes for such normally "uncuttable" items as defense, debt interest, and veterans' benefits. But now there's talk of paring several billions from defense and more from foreign aid and other programs. Observers think that this time Congress may just manage to cut $2 or $3 billion . . . a lot as such cutting goes.

- **CORPORATIONS SEEM SURE TO GET MUCH OF THE TAX CUTS** Kennedy requests. So far, this part of the program has raised surprisingly little hostility. The unions don't like it, of course. But most Congressmen are sympathetic; and if they can cut spending, they will feel free to vote such reductions. The normal tax — on the first $25,000 — is a good bet to decline — 30% to 22%. The top rate . . . now 52% . . . is very likely to be reduced to a maximum of 47%. And the savings to corporations will ultimately reach $2.5 billion a year.

  ... Individual taxpayers will also get tax relief this year—that is still the word from Capitol Hill. Opposition is strong, but at least some of it is just oratory for the record — not a real threat. Conflicting reports make this worth repeating.

This year . . . It's Grand Bahama

Just 20 minutes by air from Palm Beach, 30 from Miami, lies the sun-drenched Bahamian paradise that's the site of the FAA's 1963 Convention . . . The Grand Bahama Club at West End will be headquarters — and the convention program is now being planned on the basis of a long and luxurious weekend filled with wonderful scenery, super-fine food and service, and more kinds of off-beat tropical entertainment than you've ever dreamed of . . .

At Grand Bahama you'll find fishing, golf, swimming, water skiing, boating, skin-diving, tennis, bowling, trap-shooting—or just plain loafing. And at the international shopping mart you can pick up bargains, duty free, from a host of varied imports . . .

49th ANNUAL FAA CONVENTION

NOVEMBER 7, 8, 9, 10, 1963 — GRAND BAHAMA CLUB — WEST END, B. W. I.