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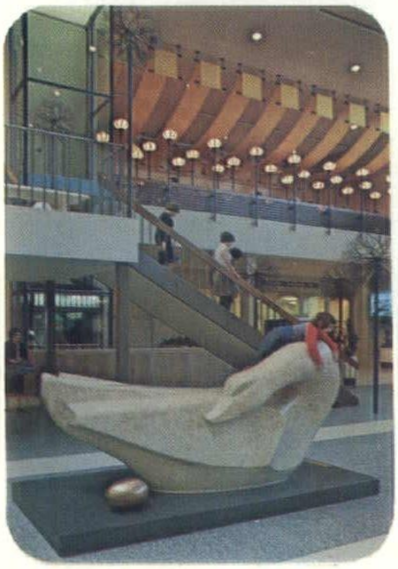
BULLETIN

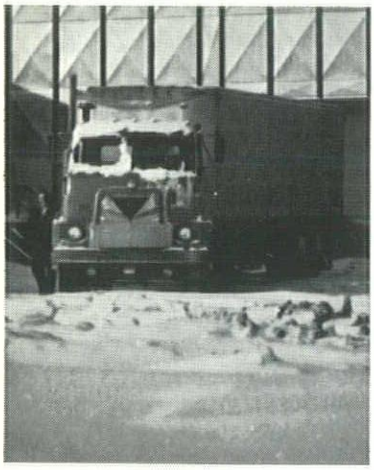
michigan society of architects july 1966 50c



3

Naarco overnight delivery keeps building on schedule

A shining NAARCO "semi" is a welcome early morning sight to architects and contractors on major construction jobs across mid-America and along the East Coast.



NAARCO's company-operated fleet, of course, means no-delay shipment of materials to the job site. But it has many other advantages too.

NAARCO President, Bob Barnard, says, "We're not in the trucking business by accident. Not only do we save valuable time with overnight delivery but we have greatly reduced partial shipments, lost goods, damaged goods and many other problems that cost everyone time and money."

As another aspect of their "single source responsibility" policy, NAARCO's own fleet cuts red tape and helps architects and contractors meet their completion dates.

4

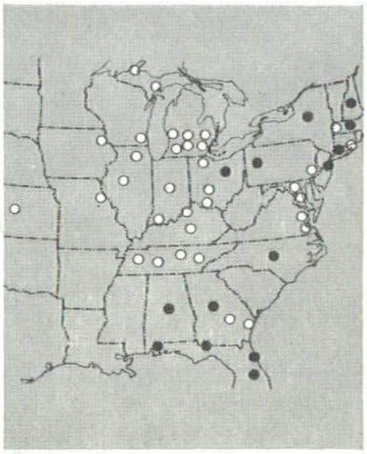
Naarco adds 14 agents for fast, total service

"Faster info to architects when they want it." Better availability of NAARCO products. Total on-the-job assistance when it's required.

These are the reasons NAARCO recently added 14 new agent-organizations to their marketing team, according to Ross T. Griffith, NAARCO Marketing Vice President. The addition gives NAARCO 45 agents across the U.S.

"Timing is the most critical factor in the agent-architect relationship," Griffith added. "If we're there when the architect wants us, fine. If we're unavailable, forget it. We've put men where it will help architects and contractors get what they want."

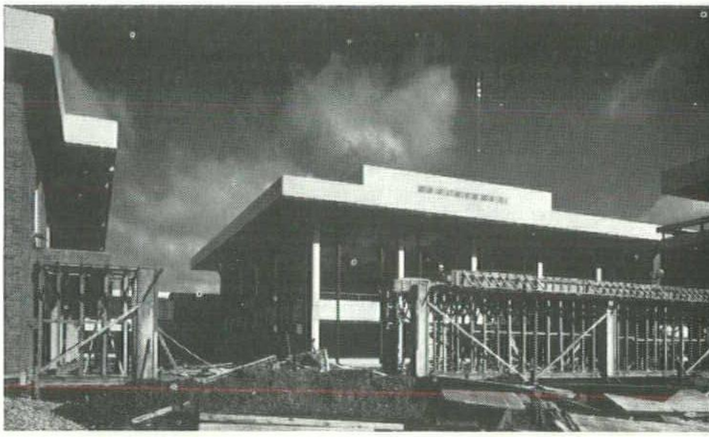
Black dots on the map indicate new agencies. Circles pinpoint where NAARCO agents already serve.



5

Naarco windows grace new office complex

Standard size NAARCO windows have been creatively, and beautifully used in this new, five-office complex designed for the Scott-Forsman & Co. of Chicago. Architect: Perkins & Will, Chicago.



NAARCO

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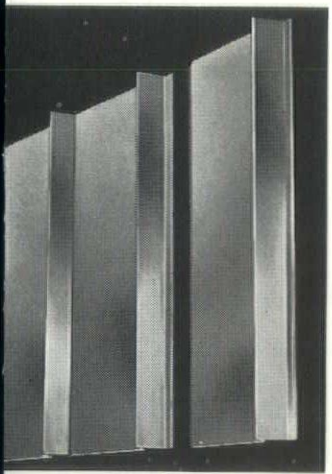
NAARCO NEWS

T.M.

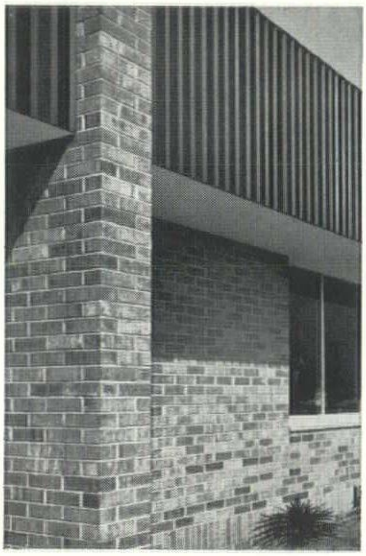
arco Fascia now in ree new colors, ny custom shapes

ARCO Fascia, a multi-rpose aluminum facing-ling material, is now ailable in three durable ARCOLOR hard coat shes, black, dark bronze, d deep bronze.



truded in 5″ width and gths up to 28 feet, ARCO Fascia is stocked several popular standard pes. Plus, to help architects hieve unique effects, ARCO also supplies cus- shapes that fall within above dimensions.

Other outstanding advantages of NAARCO Fascia include easy interlocking, snap-on assembly without screws or nails, no plywood backing required. For additional information including a custom design blueprint, circle Number 1 on our coupon and mail with your letterhead.



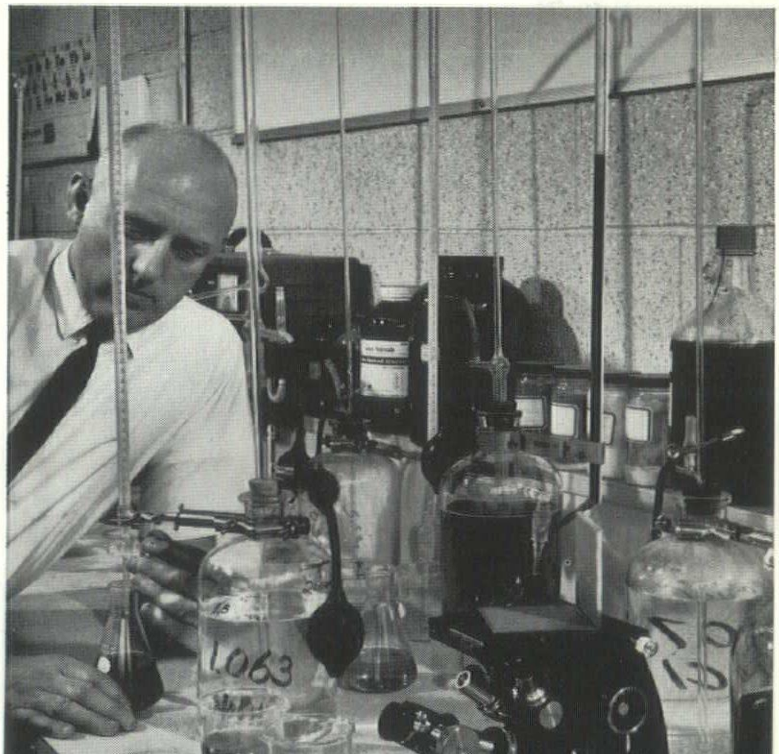
2

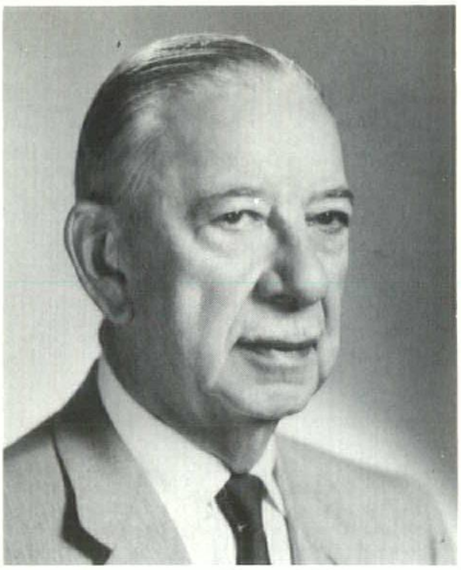
Naarco's chemistry lab... the search for quality

A complete chemistry laboratory for research and testing is one way NAARCO puts teeth into the old cliche "single source responsibility."

Purpose of the lab? NAARCO curtainwall, mullions, windows, and other aluminum products are dependent on many allied products such as caulking compounds, laminated panels, finishes, etc. As a "single source of responsibility" NAARCO wants to be sure all supporting products are of the highest possible quality so the installation is totally satisfactory. And so they test. And test. Result? Only caulking compounds with long life expectancy and good adhesive characteristics are selected thus insuring weather-tight installation. Only laminated panels whose adhesives can endure time or exposure to fluctuating conditions will be used with NAARCO curtainwall sections.

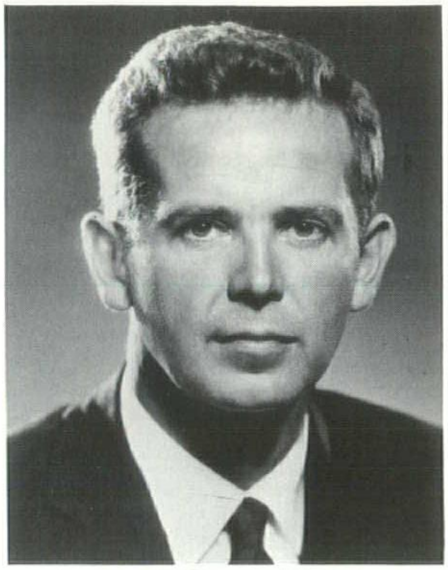
In addition to testing caulking compounds and panels, NAARCO's lab also has continuing analysis on weather strippings, finishes and many other materials that affect the outcome of a job thus fulfilling "single source responsibility."





Roger Allen, FAIA

Irving E. Palmquist



Lt. Gov. William B. Milliken

23rd MID-SUMMER CONFERENCE
Michigan Society of Architects

GRAND HOTEL, MACKINAC ISLAND
AUGUST 4, 5, 6, 1966

THURSDAY — AUGUST 4

9:00 A.M. to 5:00 P.M.	*Registration*—Main Lobby*
12.15 P.M.	*Luncheon—Main Dining Room*
2:00 P.M.	*MSA Board Meeting*
6:00 P.M.	*Reception*
7:00 P.M.	*Dinner—Main Dining Room*

FRIDAY — AUGUST 5

9:00 A.M. to 5:00 P.M.	*Registration*—Main Lobby*
10:00 A.M.	*MSA Business Meeting— Open to ALL Chapter Members*
10:30 A.M.	*Ladies Coffee Hour— Mrs. Donald Humphrey, Chairman*
12:15 P.M.	*Luncheon—Main Dining Room*
2:00 P.M.	*Golf Tournament*
6:00 PM.	*President's Reception— Sponsor: Portland Cement Assoc.*
7:00 P.M.	*Dinner—to be announced*

SATURDAY — AUGUST 6

9:00 A.M. to 12:00 P.M.	*Registration*—Main Lobby*
10:00 A.M.	*Golf tournament continues throughout the day*
12:15 P.M.	*Luncheon—Main Dining Room*
6:00 P.M.	*Reception Sponsor: NAARCO*
7:30 P.M.	*Annual Mid-Summer Conference Banquet Toastmaster: Roger Allen, FAIA Guest Speaker: William B. Milliken, Lieutenant Governor, State of Michigan*
11:00 P.M.	*Afterglow Party—Presidential Suite*

*Registration Fees: Members and Guests $15.00. Wives and Children Free

CONFERENCE COMMITTEE:

Irving E. Palmquist, *AIA, Conference Chairman*
Donald R. Humphrey, *AIA, Conference Vice-Chairman*
Mrs. Donald R. Humphrey, *Women's Activities Chairman*
Marvin Brokaw
Frank E. North
Walter Scott
Ann Stacy, *Executive Secretary MSA*

BULLETIN

michigan society of architects july 1966

THE MONTHLY BULLETIN IS PUBLISHED FOR THE MICHIGAN SOCIETY OF ARCHITECTS TO ADVANCE THE PROFESSION OF ARCHITECTURE IN THE STATE OF MICHIGAN.

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Volume 41 — No. 7

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"The Goose That Laid the Golden Egg"
Baltazor Korab

Mackinac Island Harbor
John D. Freeman

Foam Plastic Structures
Architectural Research Laboratories
University of Michigan

Monthly Bulletin, Michigan Society of Architects, is published monthly at 28 West Adams, Detroit 26, Michigan. Entered as second class matter January 15, 1946 at the Post Office at Detroit, Michigan under Act of March 3, 1879. Subscription price, $4.00 per year (members $2.00). 50 cents per copy.

Next Month—
CLAY PRODUCTS
The fifth in a series of articles on Building Technology.

NEWS

Warren Yee Joins Pierce & Wolf

Pierce & Wolf, Consulting Engineers in Detroit, announces a change in name to Pierce, Wolf, Yee & Associates, Engineers, and the addition of a new partner, Dr. Warren W. Yee, P.E. The present partners, Ralph Pierce, P.E., and Anthony J. Wolf, P.E., feel that Dr. Yee's widely recognized technical knowledge, administrative experience and engineering talents contribute significantly to their growing organization.

Warren W. Yee, P.E.

Dr. Yee, a Registered Professional Engineer in the State of Michigan, received his B.S. degree in Civil Engineering from the Massachusetts Institute of Technology, and his Ph.D. degree in Engineering from the University of Illinois.

He is a member of the National Society of Professional Engineers, American Society of Civil Engineers, American Concrete Institute, and International Association for Bridge and Structural Engineering. He has served as a responsible member of many technical and civic committees.

Prior to joining Pierce, Wolf, Yee & Associates he was with Smith, Hinchman & Grylls Associates, Inc., Detroit Architects and Engineers, where he held the positions of Project Engineer, Chief Structural Engineer, Chief Engineer, and Associate and Special Assistant to the President. He was responsible for the structural engineering design of numerous significant commercial, industrial and institutional projects throughout the country, such as the General Motors Technical Center; J. L. Hudson's Northland Shopping Center; Ford Motor Company's Mercury Plant in California and Lincoln Plant in Wixom; Wayne County General Hospital; Martin's Missile Plant in Colorado; University of Michigan Reactor Building and many others.

The firm will continue practice in their present quarters at 19480 Livernois, Detroit, Michigan 48221.

Yurk Named In Who's Who

Gerald J. Yurk, a senior architectural student at Lawrence Institute of Technology, has been listed in Who's Who Among Students in American Colleges and Universities, which honors the nation's outstanding students. He is the son of Mr. and Mrs. John C. Yurk, of 2117 Brownell Boulevard, Flint.

Active in the student chapter of the American Institute of Architects, Yurk served successively as recording secretary, vice president, and this past year as president. He was also Great Lakes regional director of the Association of Student Chapters of the AIA and a member of the national executive committee.

Yurk was on the dean's honor roll in 1965, made the dean's scholarship list in 1966, and is one of four seniors elected to Lambda Iota Tau, LIT's Honor Society.

Already a success in his chosen field, Yurk captured the $300 first prize in the Adams Design Competition in 1965 and a $200 prize as the local winner in the Reynolds Aluminum Design Competition this year. He was the recipient of the Louis Klei Memorial Gold Watch, the highest award presented an architectural student by LIT.

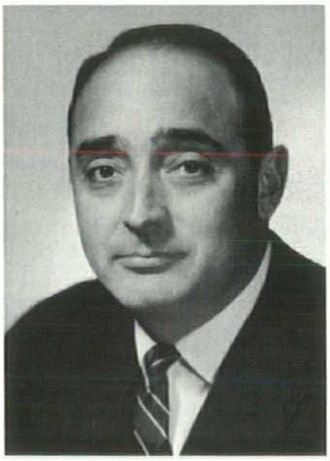
MSPE Elects Officers

The Board of Directors of the Michigan Society of Professional Engineers have elected William L. Kahn and Harry D. Unwin of Albert Kahn Associates as first vice president and secretary respectively for the ensuing year. Prior to this action MSPE members elected Mr. Unwin to the Board for the first time and re-elected Mr. Kahn who served as secretary during the past year.

Both Kahn and Unwin are Associates in the Kahn organization and are graduates of Purdue and Cornell respectively. Kahn is a project manager for AKA and Unwin is chief of the process services division of the firm's mechanical department.

Kurz Joins Paulsen & Associates

Theodore E. Kurz, A.I.A., joins the firm of Glen Paulsen and Associates, Architects, of Bloomfield Hills, Michigan, on July 1, 1966 as a principal. Mr. Kurz will direct the promotional and client relations functions of the firm as well as project direction and design on certain projects.



Theodore E. Kurz, AIA

He assumes his new responsibilities after three years as University Architect at the University of Detroit. Prior to this Mr. Kurz was employed with the Cleveland Federal Building Architects as designer and chief draftsman.

Mr. Kurz was an Assistant Professor in the Department of Architecture at the University of Illinois. He has worked with the firm of Richardson, Severns and Scheeler and Associates of Champaign, Illinois on University Planning and related projects.

Mr. Kurz holds a Bachelor of Science degree in Architecture from the University of Illinois where he received several awards including alternate for the 1953 Paris prize. He received his Master of Architecture degree from the same institution in 1956. He is a registered Architect in Illinois and Michigan.

Fire Dampers Approved

Michigan's Fire Damper Committee reports a successful completion of its first assignment. State Fire Marshal, Captain Walker, has approved material submitted by the committee, which is composed of Detroit and Michigan contractors, architects, engineers and the Fire Marshal's Department.

Approved was the "Clarification of the Rules and Regulations Governing the Use of Fire Dampers as Applied in the State of Michigan," consisting of three pages of written information and eight pages of illustrations.

The "Clarifications" and other material will be printed and distributed to the Profession in the immediate future.

With this package, the Committee expects that a majority of the questions and problems centered on fire dampers will be answered. Further meetings will be called as any additional problems arise.

A Sub-Committee of architects and engineers is working on a means to clearly identify on plans all rated areas and fire damper locations.

Members of the Committee are:

G. M. Walker, State Fire Marshal; Nathan Strickstein, SMACNA†; E. G. Siegel, MSPE & CSI; Elgin L. Clark, MSPE; J. P. Noble, CECMD; F. H. DeShane, AIA; Gordon H. Stow, AIA; L. B. McConnell, SMACNA*; Dee Cramer, SMACNA*; Lt. Tanner.

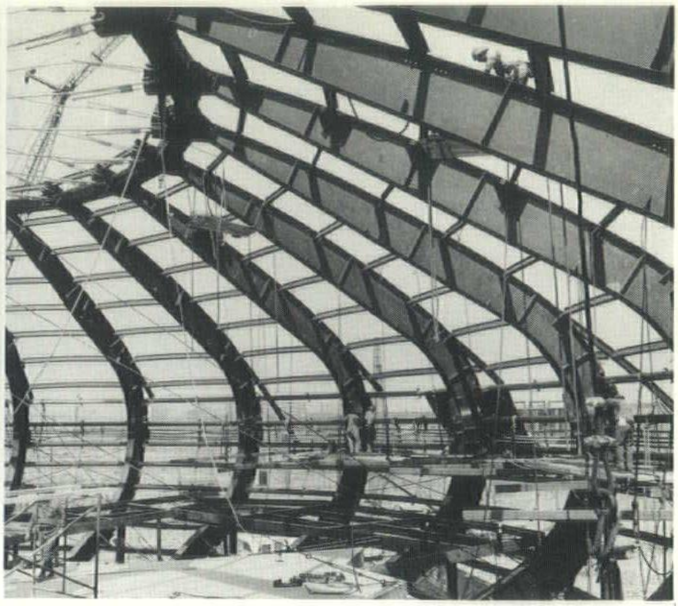
*† Detroit, * Outstate*

Troy Center Under Construction

A unique feature of Somerset Plaza shopping center, now under construction in Troy, Michigan, is the spacious colonnade extending from the supermarket at the western end of the convenience shopping center to the 792-seat movie theater at the eastern end.

Scheduled for completion this summer, the shopping area includes 39,400 square feet of retail space divided among 10 stores and the supermarket. Among the lessees are a drug store, a beauty parlor, a dry-cleaning establishment and a music shop.

Of steel-frame construction, Somerset Plaza has a textured exterior surface of resinous concrete. Standing-



Steel is COMPATIBILITY

Compatibility in construction, whether a large high rise or a simple parking garage, means freedom from the annoyance and time loss of readjustments.

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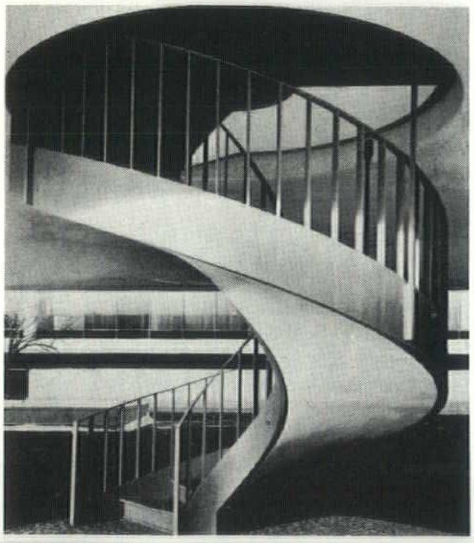
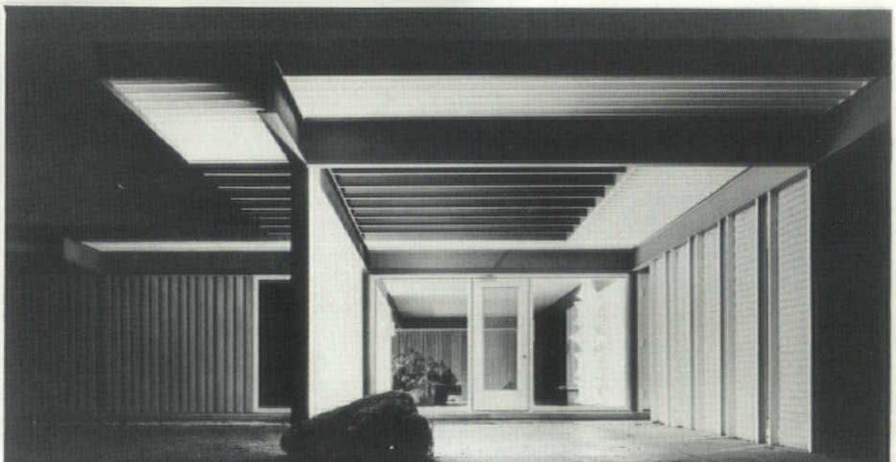
Basic Framing System, Floor Assemblies, Stairs, Doors and Door Frames, Window Sash, Wall Panels and Driving Ramps . . . all are Better, Quicker and More Satisfactory in Steel.

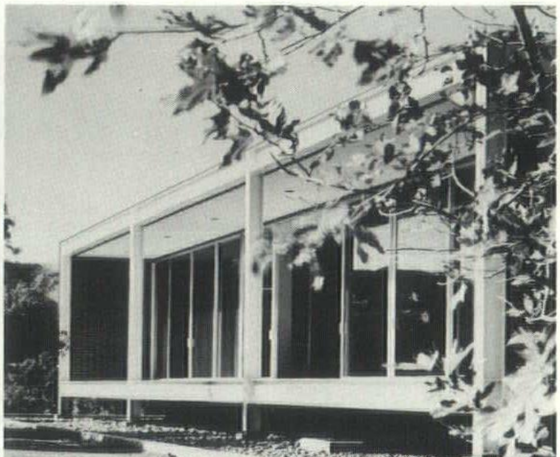
For a Better Building, a tighter construction schedule and freedom from delays, Specify Steel!



For information on the latest concepts in design and engineering with steel, contact:

GREAT LAKES FABRICATORS and ERECTORS ASSOCIATION
809 New Center Building, Detroit, Michigan 48202
(313) 875-4222





seamed roof elements are of copper-colored metal. Sturdy columns of dark-brown brick support the outer edge of the arcade, whose roof is punctuated by open skylights located over massive planters.

Levine Alpern & Associates, Detroit, are the architects.

Both Somerset Plaza and the adjoining Professional Building, also under construction, are segments of Somerset Park, a multi-million-dollar apartment complex under development by the Biltmore Development Company of Oak Park, Michigan.

Honeywell Facility Named One of Top 10

Honeywell Inc.'s new Industrial Division facility in Fort Washington, Pa., largest in the world for the production of automatic controls for industry, has been selected as one of 1966's top plants in the U.S.

The award was made by FACTORY magazine in a competition that drew 1,437 nominations. The publication said of the plant:

"Honeywell takes old-world service and gives it brand new application. This plant expedites its fabrication of control systems with special walkways, customized work booths, functional lighting . . . Service sums up all the elements supporting manufacture and at Honeywell, a conpany steeped in service controls production, it gets special emphasis."

The facility, designed by Giffels & Rossetti, Architects and Engineers, is located in Fort Washington Industrial Park on Philadelphia's northern outskirts, consolidates operations of three area divisions formerly quartered in seven locations. Its 857,000 square feet of floor space makes it the largest single facility ever built by the automation systems company.

The one-story factory, 1,080 feet long and 600 feet wide, is equivalent in size to 12 football fields. It occupies a 67-acre site and contains a number of construction and plant services innovations. One of the latter is a building automation system which the company produces, to detect unauthorized intrusions, fires, and equipment breakdowns.

The facility, costing more than $10 million, was dedicated by Pennsylvania Governor William W. Scranton who desvribed it as "a useful instrument in the fulfillment of a better like for all people."

Architect-Engineer for the plant was Giffels & Rossetti of Detroit. Fort Washington Industrial Park Construction Co. was general contractor.

Ready Power Appoints Charles Berlin

Charles E. Berlin has been named General Sales Manager of Ready Power Air Conditioning and Refrigeration Products Division. He joined the company n 1953 as a Regional Manager based in Pittsburgh serving a 5½ state coast area. In 1965, he became Manager of the newly-formed Food Store Refrigeration Products Division.

As General Sales Manager, Berlin will be responsible for all marketing activities of Econo Coo Air Conditioning Products and Econo Gas Super Market Refrigeration Systems. Formerly operated as separate divisions, the new expanded division under Berlin's direction will be known as the Ready Power Air Conditioning and Refrigeration Products Division.

The Econo Cool Air Conditioning line includes three basic types of natural gas engine driven air conditioning equipment for comfort cooling—compressor and condensing units from 20 to 130 tons and integral chiller packages up to 250 tons. Ready Power Packaged Air Conditioning Systems are in use throughout the world in churches, motels, hospitals, office build-

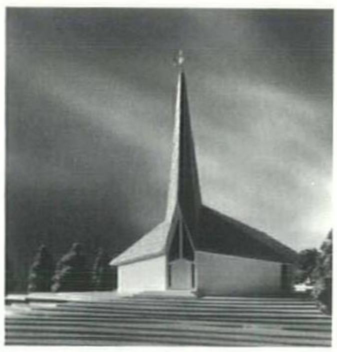
ings, world's fairs and in many other industrial and commercial applications. As part of the sales reorganization the Air Conditioning products previously called Ready Power have been renamed Econo Cool.

In 1965, Ready Power introduced its Econo Gas Systems for supermarket low and medium temperature cooling, air conditioning and heating. Under the direction of Berlin, this division in less than a year has established a coast to coast dstributor organization which in turn has produced an order backlog. National grocery publications have pointed savings of up to $10,000 for the average super market using the natural gas driven the Econo Gas Systems in place of the conventional electrically driven systems.

Birmingham Church Cited

At the recent annual conference of the American Society for Church Architecture in Chicago, the design for the Pilgrim Congregational Church of Birmingham was selected as one of four submissions this year to receive recognition for excellence of design.

This project, now under construction on Adams Road in Bloomfield Township, was designed to fulfill the clients desires for a restatement of the New England Tradition, so important to Congregationalism.



To achieve the spirit of the Old New England Meeting House certain dominant characteristics of the early churches were used, though refined to reflect a more contemporary structure. Important features retained are the tall entrance overlooking the common (in this instance a meadow) the tall narrow windows, steep roof and dominant spire.

The pentagonal floor plan deviates somewhat from the typical rectangular early church in order to provide improved visual contact between minister and congregation and to focus attention of the congregation to the communion table.

Architects for the project are Frank Straub & Associates and Julian Wilson & Sons Company, Inc., are General Contractors.

Ketchum Resigns From Highway Committee

Federal policies on the design of highways within cities are producing "disastrous results" and are in "direct opposition to those of President . . . Johnson," the president of the American Institute of Architects has charged in a letter to Secretary of Commerce John T. Connor.

Morris Ketchum, Jr., FAIA, president of the Institute, resigned from the Secretary's National Advisory Committee on Highway Beautification because such membership, he felt, placed the AIA in a position of "tolerating, or even approving, policies of which it disapproves."

Ketchum's letter to Secretary Connor was dated May 9, but the AIA president withheld public release of his position in order to give the Secretary time for a reply. He has received no reply.

The AIA, Ketchum wrote, "is deeply concerned . . . that although standards for design between cities are well developed and, in general, well utilized, these same standards are blindly applied to highway design within cities with disastrous results."

The Institute leader cited as one case in point the proposed elevated expressway to be located along the waterfront of the French Quarter in New Orleans which has been approved by the Bureau of Public Roads despite local and national opposition.

Ketchum suggested that the Highway Research Board of the National Research Council undertake a broad investigation of urban highway. Citing the "excellent work on design research for interstate systems done by the Board," Ketchum pledged the assistance of the AIA and other allied professional organizations on such a study.

He gave as an additional reason for his resignation the fact that the professional Advisory Board of Urban Consultants of the Bureau of Public Roads and the National Advisory Committee on Highway Beautification have been restricted to advice and counsel on hypothetical, rather than actual projects.

Quoting a message of President Johnson's which included the statement that "roads themselves must reflect, in location and design, increased respect for the natural and social integrity and unity of the landscape and communities through which they pass," Ketchum wrote, "apparently his message has not reached the minds of hearts of those responsible for the design of public highways."


Gas Burner Code
Gas Appliance Codes
Electrical Codes
Codes

"Art as an Architectural Element"

by Paul F. Damaz, AIA

The following address was given by Paul F. Damaz, AIA, noted architect, author and lecturer at the Detroit Chapter AIA Allied Arts Festival. The accompanying photographs are from Westland Center, a regional shopping center in Nankin Township, Michigan, designed by Victor Gruen Associates with Louis G. Redstone, Architects Inc. associated architects.

I know that you are very interested in the allied professions and I wish to convey to you my sincere congratulations for your efforts to bring together architects and practitioners of the allied arts.

When I received your program I saw that I was expected to speak about "Art in Urban Architecture." This title was given by the A.I.A. in Washington to the exhibition I prepared for the Pan American Convention. But I see no reason to single out urban architecture. The problems of applying art to architecture are the same regardless of the kind of architecture. The problems are related to many factors, including budget, clients, art appreciation and, most of all, the evolution of our profession.

Our profession has become tremendously complex. Our services reach into many fields and are expanding every day. We must realize that, more and more, we need associated help. We are presently working on a project which includes, already, seven different types of consultants, without counting painters and sculptors which I hope to bring in at a later date.

As a rule, architects do not object to consultants. We realize that we do not have enough knowledge of structure, mechanics, acoustics, landscape design, food service and other special functions of our projects. We do not argue about the size and shape of an air conditioning duct. We do not say "I want that duct in a kidney shape" just because we happen to like kidneys. But we do question the need for the artist capable of giving us the benefit of his knowledge and talent.

Must our buildings be purely functional? And, if so, what is their function? Is it purely utilitarian or is it also human and spritual? Is the function of the theater merely to provide a podium and a few chairs? Is the function of an office building merely to provide 100 square feet of floor area per employee without regard to the physical surroundings in which he will spend 8 hours a day during his life? Are our cities merely a mass of concrete, glass and asphalt, or are they also the environment in which man develops, evolves and becomes saint or criminal?

The separation between technique and art is a consequence of the principle of specialization which has made us lose sight of the harmony which should exist between man and the world . . . a harmony which must exist if we wish to reduce the number of misfits and maladjusted members of our society. Technique and art are both the expression of a single man, intelligent and sensitive at the same time, and both these aspects of man must be considered together.

Architecture is the most human of all the arts in as much as it is an integral part of human life. Even with the most utilitarian buildings the fact cannot be ignored that they will be used or lived in by men whose spiritual needs at any given time are just as actual as their material needs. No matter how technically perfect a building may be, it will not be really functional unless it is conceived in such a way as to satisfy both the sensitive and the rational man.

The use of art in architecture or landscape architecture is by no means the only way to humanize our environment. But even the least sensitive observer will react to a work of art with which he is brought in constant and close contact. Even he will perceive the interrelationship which exists between a mural or a piece of sculpture and its architectural setting. The result of such mutual influence depends not only on the qualities of the architecture and of the art work but also on their respective and reciprocal qualities and on the way those qualities have been brought into play. We are not speaking of decoration. We are actually speaking of a functional use of art.

In whatever way painting and sculpture are used, they can have a profound influence on the architecture. Color itself can have a strong dynamic power on the physical elements of architecture, and its psychological value is well recognized in medicine and is used in therapy.

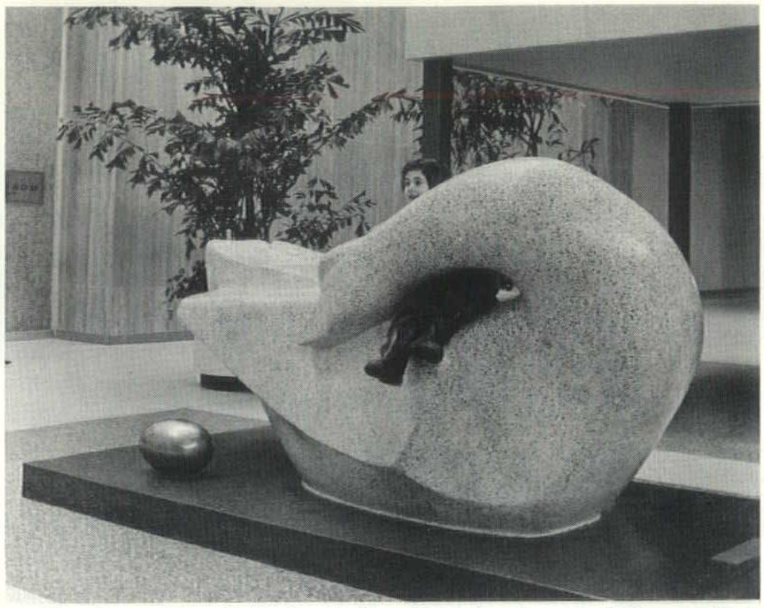
The artist possesses a great power of illusion. He can lengthen or shorten a distance, raise or lower a ceiling, open or enclose a space, light up or darken a room. He can render an architectural space alive and sensitive by giving it human proportions. Employed as an active element in architecture, the work of art can play a most important functional part. For the architect, art can be a tool which can help him answer some of the questions raised by the building program. Thus, the artist can become the architect's associate, like the engineer or any other specialist.

This is not to say that art is indispensible in every occasion and every building. Considering the situation of contemporary architecture and the diversity of its plastic conceptions, it is as wrong to refuse art its place in architecture as a matter of principle as it is to say that art should be part of the budget of every building. Some buildings in their purity and austerity can come close to esthetic perfection without the help of any art work. Others have such a strong plasticity of form that they are works of sculpture by themselves and quite self-sufficient. Furthermore, considering some recent examples of art applied to architecture, let's admit that for some of our colleagues it would be wise to leave blank walls and empty spaces alone.

There is no question that the use of art in architecture has greatly increased in the last decade. Lately it has even been officially accepted by Federal Agencies and Municipalities. After several other cities, New York has just passed a ruling to the effect that works of art of a value between ½ and 1 per cent of the construction cost of municipal buildings must be allocated to works of art. Like all movements or fashions, this one will spread rapidly across the country.

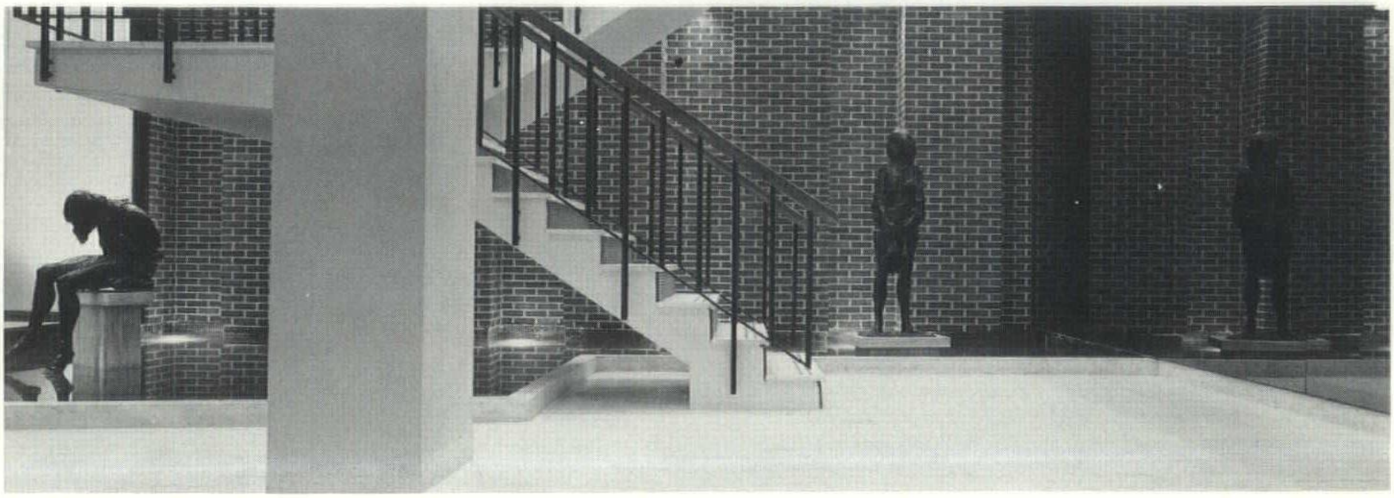
The problem, therefore, is not whether art should be used or not, but how it should be used. The problem is: Are architects and artists ready for such a collaboration? A few may be, but as a rule we must admit that the architects and artists live in different worlds and have great difficulty understanding each other. A very few artists, even among the best, have some understanding of basic architectural problems such as light, space and scale—most of all, scale. If artists are young and eager they make mistakes due to their lack of architectural experience. If they have experience and are well known, they are likely to have be-

"Column" a 38 ft. Mobile by George Rickey.



"The Goose That Laid the Golden Egg" by Samuel Cashwan, 10 ft. Play Sculpture cast in Terrazzo.

"The Acrobats" by Earl Krentzin, 10 ft. Sculpture fabricated in bronze with oxidized silver finish.



"Fountain Figures" Bronzes by Paul Suttman.

come expensive prima donnas for whom architecture is nothing but an eventual background for their masterpieces.

But it is too easy to criticize artists. If we architects pretend to be the leaders of the team—and I think we should be—then we must also bear the responsibility of the success or failure of the project. A great number of paintings, mosaics, wall reliefs and sculptures have been placed in schools, lobbies and public buildings against all common sense; sometimes in locations where they cannot be seen except at a sharp angle, sometimes against too strong an architectural background, sometimes too close to overwhelming building materials and forms, and, many times, without relation to the architectural elements or to the scale of the architectural space. These shortcomings are certainly the responsibility of the architect. And even if they are due, in part, to the inaptitude of the artist, it is still the fault of the architect because he chose the wrong artist. And here lies the great difficulty: choosing an artist—finding the right talent appropriate to a certain problem and judging whether the work of an artist is alive and not based on pastiche or dead conceptions of the past. There are no written specifications for art work. There is no Sweet's Catalogue for artists. There is only one way to choose and that is to use our knowledge, sensitivity and art appreciate. The question is, do we have them?

There has never been so much confusion between talent and success as there is in our time. In past centuries the words architects and artist, or art connoisseur, were synonymous. Today one can become a very successful architect, financially speaking, and yet have not the slightest sense of plasticity or any artistic education whatsoever. The architects who are at the same time technicians, sensitive creators and art connoisseurs have become rare. One meets a few architects, always the same small sophisticated group, in museums and, more seldom, in art galleries, but the vast majority of them are disinterested and almost totally ignorant of the activities of the contemporary art world.

It is therefore not surprising that, not withstanding the great number of good artists we have in this country, most important commissions are given to a small group of well known, well tested artists, always the same. These artists are the only one whom architects seem to know, and when they need somebody else, they don't know where to turn.

As an aid to architects, a new profession has appeared on the architectural scene: the agent, specializing in artists for architecture. If we consider a city like New York, which has become the greatest art center in the world, it is rather sad that architects are so unaware of the artists living in their midst that they require help from these agencies, which furnish artists for architects, just as a caterer delivers ready-made meals to the housewife who cannot cook.

As for methods of application of art to architecture, there can be no rules since every case represents a special problem. However, we may state that if the union of the arts is as desirable today as it was in the past, it can no longer take place on the old basis of integration, if by integration one means fusion. Although the recent evolution of architecture shows a tendency to move away from Miesian concepts to come closer to sculpture, it is difficult to see how art and architecture can be fused to the point of becoming some kind of a new art form unless we are speaking of an art brought down to the level of a mass produced building material or of an irrational architecture transformed into an abstract sculpture. With the exception of a few reliefs cast in the forms of concrete walls, modern attempts to fuse art and architecture have resulted in confusion detrimental both to the architecture and to the art work.

The best attempts at an integration of the arts are those in which architecture and art have been brought together by association or confrontation. In this case, art can be a valuable complement to architecture for it can create an extension and an intensification of its esthetic and emotional impact without interferring with the logical expression of the various architectural elements. We must achieve a communion of the arts in order that the dynamic colors of the painter and the plastic forms of the sculptor may become an integral part of the architectural composition while retaining their independent and intrinsic values.

But, placing a sculpture in front of a building does not necessarily create a relationship between the two. Apart from the question of forms, colors and materials, there is the very important question of scale and space. A sculpture commands only so much space around it, depending on its form and scale. Therefore, its impact on the neighboring architecture depends not only on a relationship of forms but also on whether or not the building is located within its field of influence.

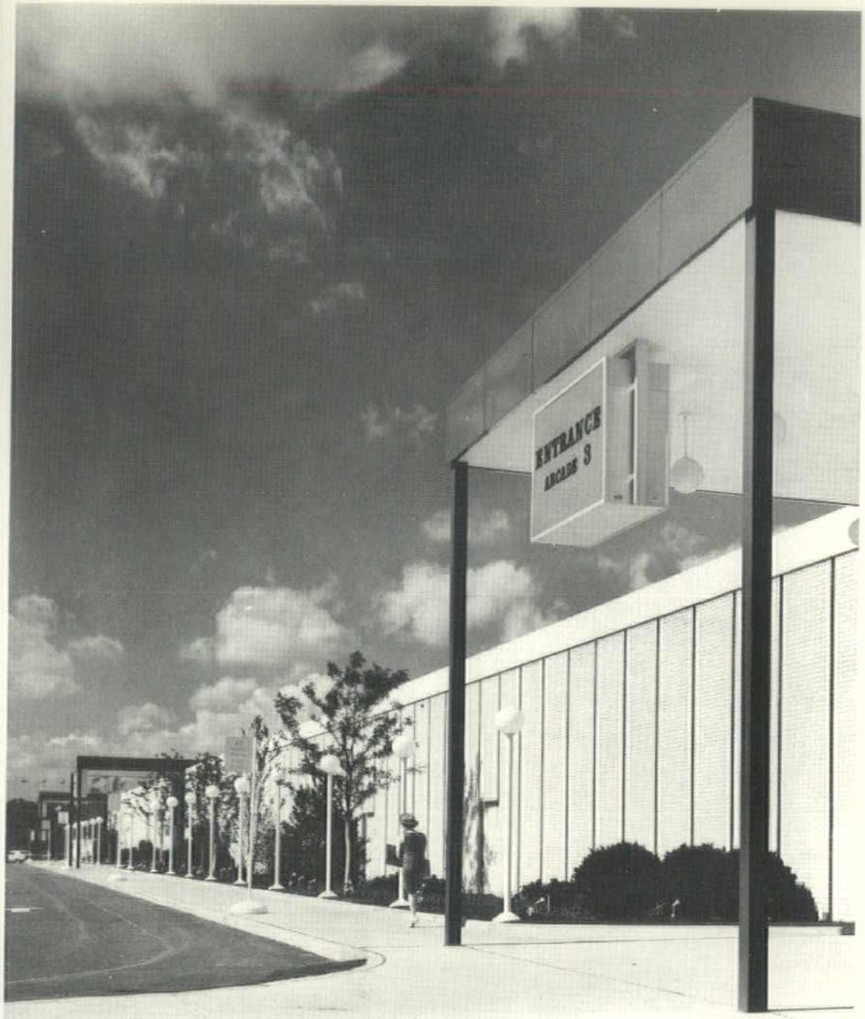
In conclusion, it is obvious that in whatever form it may take, the work of the artist can play an important part in shaping our environment.

The collaboration between architects and artists is possible, but only if both show a certain amount of knowledge, discernment and modesty. It can be successful if architect and artist know each other and respect each other; in other words, if art and architecture complete each other while retaining their integrity. It will be a failure if the architect lacks basic artistic preparation, if either architect or artist is more concerned with his own ego than with the final result and, generally speaking, if there is no understanding between the two.

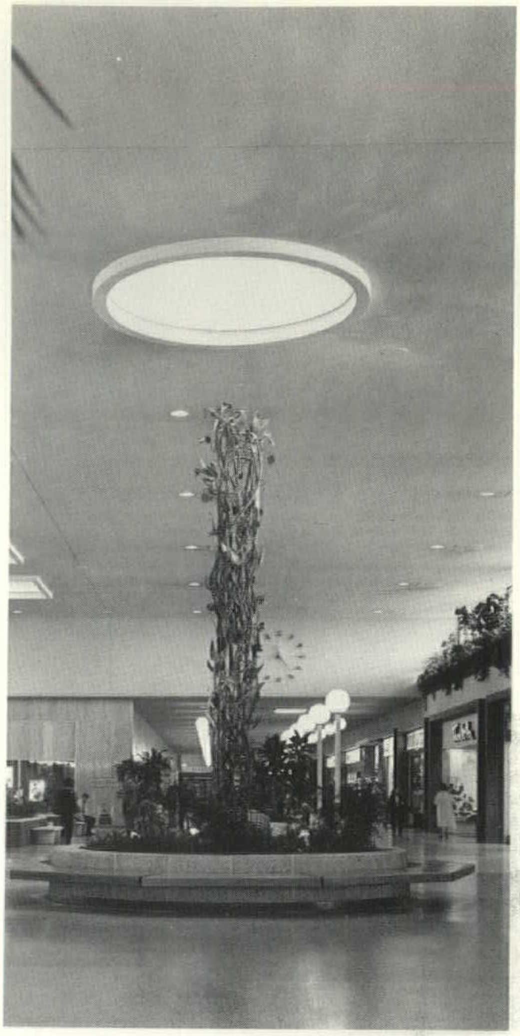
A few days after Le Corbusier's death, I was browsing through a pile of hand written notes which he had left with Costantino Nivola in his country house in Long Island. I came upon these optimistic words written in his usual, poetic style and with which I will conclude:

"Some day,
Unity,
By the unaminous effort,
Will prevail
Once more
Over the major arts
Urbanism and Architecture
Sculpture
Painting."

New York, 1946

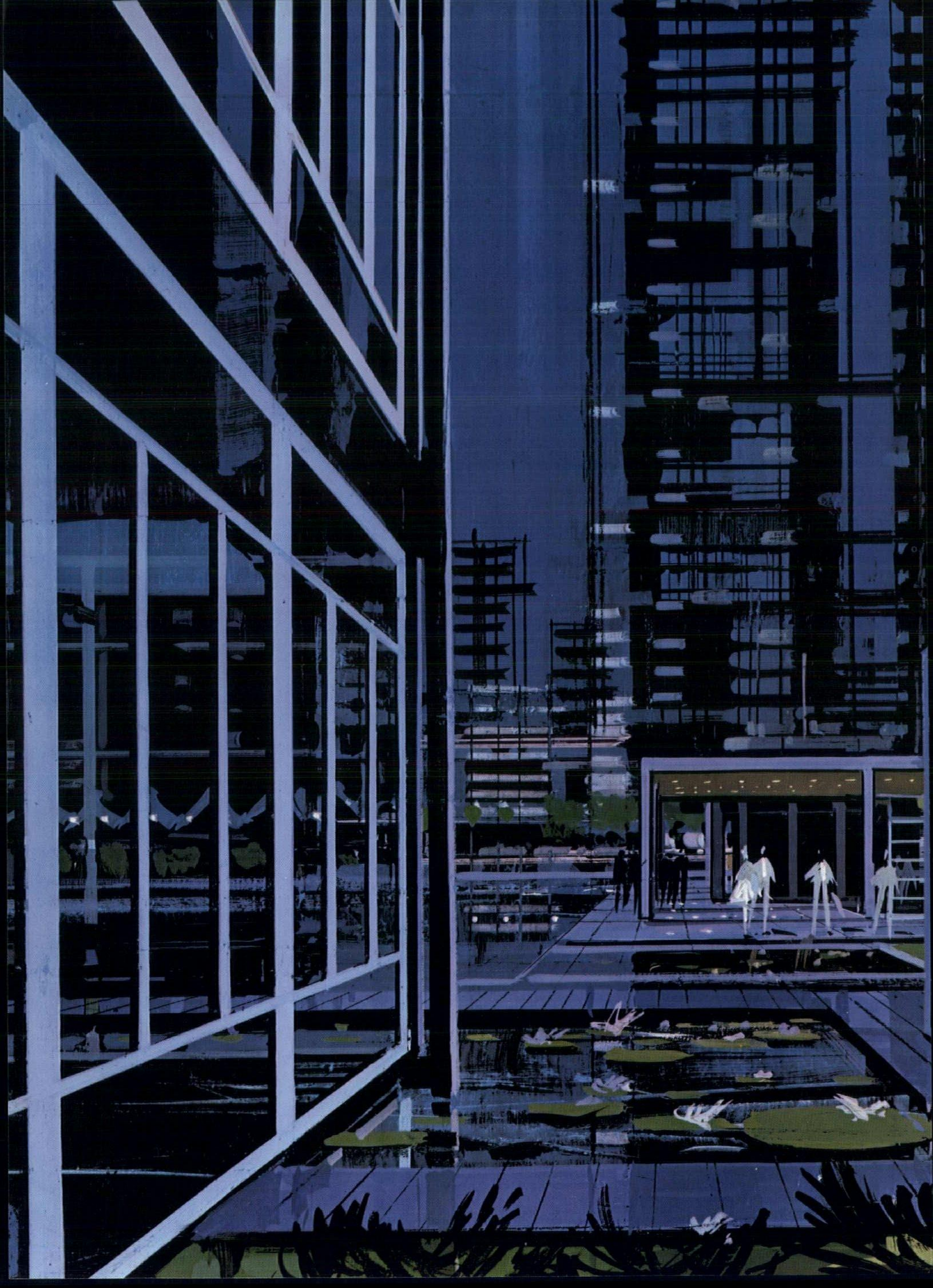


View of Westland Center.



"Jack in the Beanstalk" by Samuel Cashwan.

View of Westland Center.



MSA Members Elected to College of Fellows

Seven Michigan architects were elected to the College of Fellows of the American Institute of Architects on Friday, July 1. The investiture was part of the final banquet and grand ball of the 98th annual AIA Convention held in Denver.

The seven new Fellows are part of the total number of 60 new fellowships awarded this year to AIA members across the country. The College of Fellows now has 698 members representing 3.8 per cent of the total AIA membership. There are now 31 Fellows in Michigan.

Aside from the Gold Medal, which may be presented to a single architect in any part of the world, Fellowship is the highest honor the Institute can bestow on its members.

Peter Tarapata, FAIA
For Design

Peter Tarapata is principal in charge of design, Tarapata - MacMahon Associates, Inc. of Bloomfield Hills. He is a graduate of University of Michigan with a bachelor's degree in architectural engineering and a master's degree in architectural design (city planning).

A winner of many awards for design, including national AIA honors for the Canton (Ohio) Plaza, Tarapata has distinguished himself in the field of educational and civic building design. Several of his school designs have been included in USIA overseas presentations of advanced architectural design. Among his best known are the Booth and Conant Elementary Schools in Bloomfield Hills, the East Hills and Bloomfield Hills Junior High Schools, Pelham Junior High School in Detroit and Derby Junior High School in Birmingham. He also designed the Carl Sandburg Branch Library at Livonia.

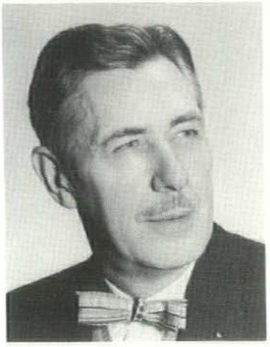
Tarapata has been an officer of the Detroit Chapter AIA and member of the national Committee on Aesthetics. He was also on the Institute jury to select the 1965 honor award winners.

Suren Pilafian, FAIA
For Service to the Profession

Suren Pilafian, principal of his own architectural office in Detroit, has designed several buildings on the campus of Wayne State University including the Community Arts Center, General Library and Kresge Science Library. He has also designed schools in Detroit and Holland.

The architect was the winner of several scholarships and design medals while taking this architectural training at Columbia University, Pratt Institute and New York University. He later won a presidential citation from New York University for his accomplishments in architecture and in public service. A former president and a director of the Detroit Chapter AIA, Pilafian has served on many of its committees as well as on those of the Michigan Society of Architects.

As chariman of the chapter's Civic Design Committee, he created a forceful board of review which offered its services to public agencies and played a significant role in expanding the planning for the local Convention Hall. He was responsible for the publication of "A Visitor's Guide to Detroit Architecture" and for initiating a series of weekly radio programs in which architects participated.



Clarence H. Rosa, FAIA
For Public Service

Clarence H. Rosa has been since 1944 deputy director of the Michigan State Building Division, which administers state institutional building programs for some 50 state agencies totaling in excess of $400 million. He has worked with the architectural profession and with legislative and executive committees to effect building programs that have come to be recognized for their excellence, efficiency and economy.

He has served as president of the Lansing Board of Education, and guided the city's $23 million school building program. In this context, his colleagues have cited his "fostering excellence in school building design and the inclusion of compatible art, site improvements and landscaping in each project." Rosa has also been president of the Civitan Club of Lansing, a service group which promotes activity in civic affairs, and he was a member of the Lansing Urban Redevelopment Committee promoting the feasibility of an urban redevelopment program for Lansing.

Rosa has been an active member of the Western Michigan Chapter AIA and the Mid-Michigan Chapter AIA, having served as president of the former and board member of the latter group. He is a college of architecture graduate of the University of Michigan.

Paul B. Brown, FAIA
For Public Service and Service to the Profession

Paul B. Brown is vice president and director of the Detroit firm of Harley, Ellington, Cowan and Stirton, Inc., with which he became associated in 1939 as designer and later chief designer. Exemplary of projects under his direction are the Union Central Life Insurance Company in Cincinnati, the Maccabees Mutual Life Insurance Company in Southfield, the Cohn Memorial Building in Detroit and the recent Bio-chemistry Building at Michigan State University.

He has served on the jury of the college of architecture and design at the University of Michigan, the college that conferred his architecture degree in 1936. He had earned his bachelor of arts from Oberlin College three years earlier.

Brown has served in every major office of the Detroit Chapter AIA, and at national level he is a member of the Committee on Building Materials and Systems of the Institute. He developed the Metropolitan Detroit Bid Registry and was a member of the first board of governors. He is on the Civic Affairs Committee of the Engineering Society of Detroit, the Detroit Metropolitan Area Regional Planning Commission and president of the Forum for Detroit Area Metropolitan Goals.

Sol King, FAIA
For Significant Contribution to the Profession
through Science of Construction

Sol King is director of architecture and president of Albert Kahn Associated Architects and Engineers, Inc. A native of Poland, he attended University of Detroit, then earned his bachelor's degree in architecture at University of Michigan in 1934. He is presently licensed to practice in 23 states.

The only one of the nation's 60 new Fellows to have the honor conferred for science of construction, King has through the years won many awards for his successful exploration into use of new materials and new construction methods. His advanced procedural methods in constructing the National Bank of Detroit, allowed construction to go on unhampered by weather; his use of precast concrete panels for the parking structure for Ford Hospital brought new economies and speed to this type of construction.

King has been commended for the "esthetic use of precast concrete" on the exterior of the Wayne State University Life Sciences Building, and for the comprehensive analysis of methods that brought the Ford Motor Company's Woodhaven Stamping Plant from design sketches to effective automotive production in a period of ten months.

Gerald G. Diehl, FAIA
For Service to the Profession

Gerald G. Diehl is a principal in the firm of Diehl & Diehl Architects, Inc., of Detroit, designer of St. Columba Cathedral at Youngstown, Ohio, Colombiere College at Clarkston and St. Clements Church at Centerline. He attended Lawrence Institute of Technology.

On the executive board of the Detroit Chapter AIA since the middle 1950's, Diehl initiated and was first chairman of the Detroit Public School Advisory Committee. He has also served on the advisory committee to the University of Michigan school of architecture and to the architecture school at the University of Detroit.

In 1961 his years of service to the architectural profession and to the public were recognized by his receiving the Detroit Chapter Gold Medal. Among the activities for which he has been cited are his work for the United Foundation of Detroit for the past 16 years and the chairmanship of the Properties Committee of United Community Services of Detroit. He was a charter member and president of the Ecclesiastical Arts Guild of Detroit, and he has been speaker, panelist and juror for school and church conferences and competitions.

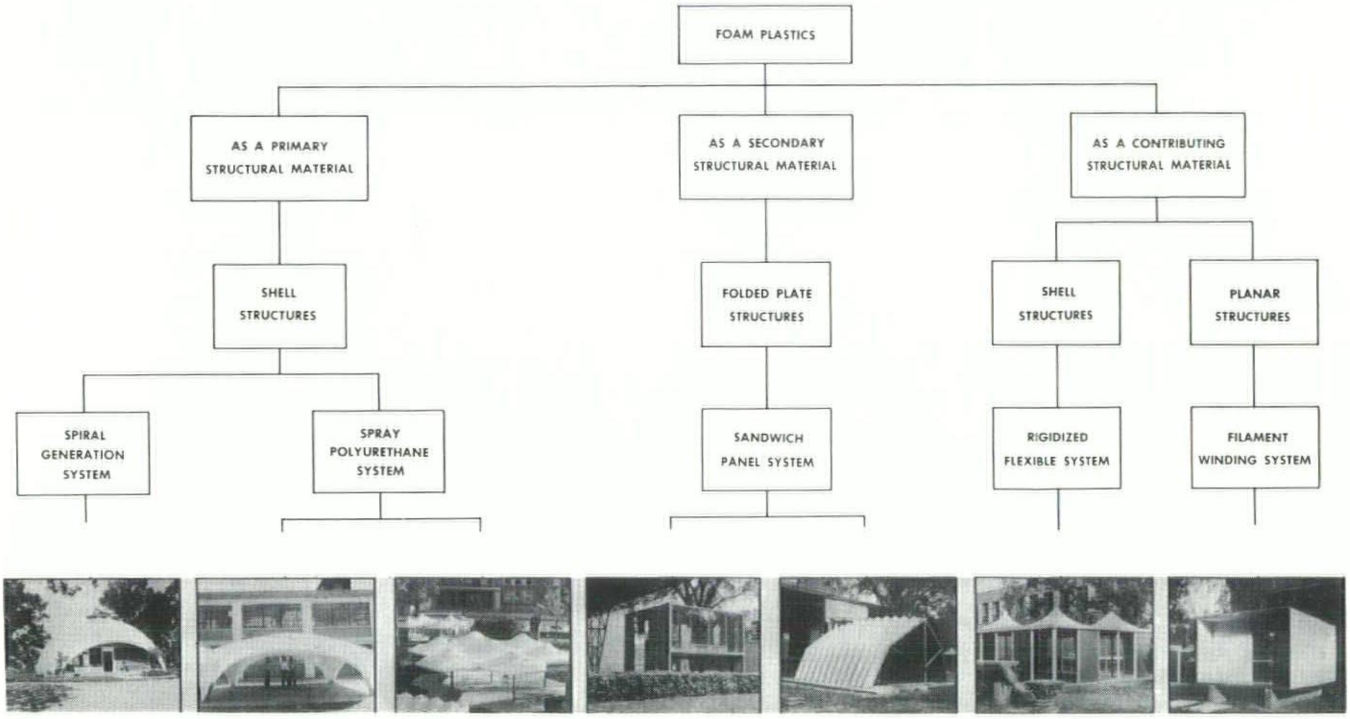
Bernard J. DeVries, FAIA
For Public Service

Bernard J. DeVries has been in private practice in Muskegon since 1940. Prior to that he had been employed by the city of Ann Arbor as assistant city engineer following his graduation from University of Michigan in 1934. Among his recent projects have been the Nelson Junior High School and Drive-In Branch Bank in Muskegon, both of which won design awards. He also designed the Muskegon Area Child Guidance Clinic and Camp Easter Seal at Blue Lake.

An active member of the Western Michigan Chapter AIA and the Grand Valley Chapter AIA, he served as president of the latter in 1964. A member of the Muskegon City Planning Commission since 1945, he led its adoption of a comprehensive master plan. He is presently chairman of the commission. DeVries has also served on the Muskegon Zoning Board of Appeals since 1952, and he was instrumental in rewriting the zone ordinance.

He was founder of the Michigan Society of Planning Officials and the Lake Michigan Region Planning Council. His chairmanship of the Muskegon Building Code Committee resulted in development of a complete new building code.

STRUCTURAL POTENTIAL OF FOAM PLASTICS



This month's article on Building Technology has been abstracted from a report entitled "STRUCTURAL POTENTIAL OF FOAM PLASTICS FOR HOUSING IN UNDERDEVELOPED AREAS" published by the *Architectural Research Laboratory at the University of Michigan. The recently published 322 page report is the result of more than three years of research sponsored by the Agency for International Development.*

This article reviews only briefly the demonstration projects developed or encouraged by the research staff which serve to illustrate in some measure the structural potential of foam plastics. So that these investigations may be seen in their proper context the introductory remarks from the report are included as a preface.

PROJECT SCOPE AND PROCEDURE

PROJECT GOALS

In July 1962 the University of Michigan received a research grant from the Agency for International Development, U. S. Department of State, to explore the potentials offered by the foam plastics, alone or in combination with other materials, for the resolution of housing problems abroad. AID had come to the conclusion that the use of traditional building materials and techniques alone could not resolve the housing problem which confronts the emerging nations.

It was evident from the outset that the project could not be conducted with any reasonable chance of success unless it could elicit active response from the plastics industry. Industry has the specialized knowhow for resolving through chemistry and technology many of the problems involved in the application of foam plastics to building, and its active participation will be required to introduce and apply the findings of research in countries abroad. It has been a primary objective of this research program to demonstrate to industry what can be done with these new materials structurally and to present the potentials of an overseas housing market in the hope that industry will contribute its *resources towards international development in its own enlightened self-interest.*

Government likewise is a necessary resource in conducting this program of research and development. The program itself could not have originated from any individual company or even from the plastics industry as a whole. By keeping a proper balance between the interests of our foreign aid program and that of the plastics industry, government can open up a new area for the use of foam plastics and greatly assist in the successful introduction and establishment of a new building technology abroad.

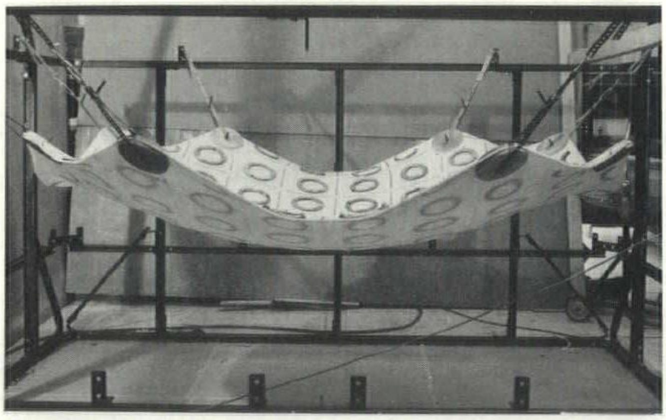
Industry has to be presented with the performance specifications that can serve as guidelines in furthering the development of foam plastics in a direction that will better serve the needs of building. In many instances the industry also needs to broaden its concept of the building market, and to be shown how materials should be approached for their own intrinsic merit in building construction.

It is in these areas that the current research project has offered its own resources to industry and this has resulted in a close collaboration between the project staff and a number of plastics producers.

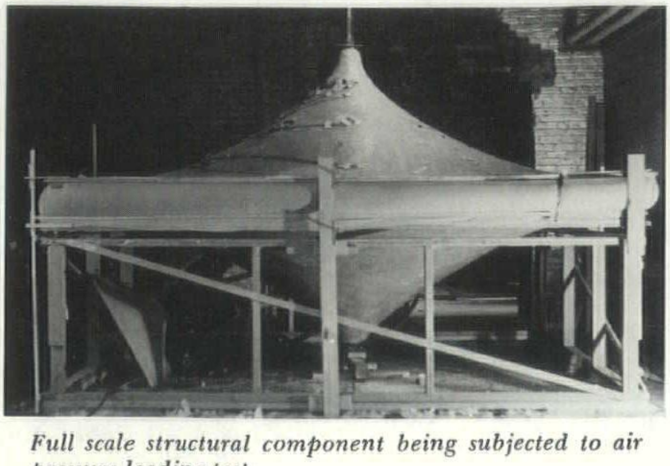
In a sense the project has acted as a catalyst between government and industry in trying to advance the kind of technology that hopefully will be of value to the emerging countries and to our own national development as well as that of the plastics industry.

Although several prototype structures have been erected, the main effort of the project staff has been to conduct broad research in structures, not to design a specific kind of dwelling unit or a universal type of structure. Consideration has been given to the quantitative and qualitative aspects of the spaces created and to certain problems of total enclosure, but these are being treated on a fairly abstract basis until such time as a specific case-study can be set up in a specific location to meet specific living conditions.

The main research goal can therefore be considered to be the development of total systems involving the design, production and marketing of foam plastic structures in which adjustments can be readily made to cover the widest possible range of housing requirements in each developing country.



Synclastic structural membrane subjected to surface load.



Full scale structural component being subjected to air pressure loading test.

Approach To Housing

Although techniques have played a major role in the research program, this report is intended to be primarily a discussion of ideas rather than techniques. The illustrated techniques, intriguing as they may be, do not constitute an end in themselves.

Throughout the research program, plastics have been viewed as means for resolving housing needs within a framework of international industrial development. It is believed that a new type of building industry in the developing countries, based on foam plastics, should accelerate the production of new dwellings, introduce new skills, and advance industrialization generally. For the people living in these countries this would mean better housing, new jobs and more buying power. Thus any efforts to alleviate the existing housing shortage in any country would not constitute a drain on the national economy but a boost.

Approaches To Structure

In the earlier feasibility study, an approach to structural development was formulated which has served as a basic guide for the continuing research. It was postulated that there are three distinct but interdependent routes to the conception of reasonable foam plastics structures: (1) consideration of the implications of the mechanical properties of cellular plastics on structural form; (2) consideration of the implications of the production methods required for plastics on structural form; (3) considerations of the implications of new site erection techniques made possible through the use of new materials and structural form.

Throughout this research the selected foam plastics have been explored for what they can do in their own right as structural materials, rather than as substitutes for other materials. They have been investigated as primary, secondary and contributing structural materials, but in each case the aim has been to discover what new or better solutions to structural problems can be realized through their use.

The aim has been to investigate as many different structural possibilities as were permissible within the limitations of time and resources. Thus the structures presented in this report have been conceived not as independent or isolated entities but as exemplary parts of various basic systems; each case represents only one of many different possibilities.

There are many possible combinations of structural concepts, production methods and erection techniques which will lead to logical and economical cellular plastics structures. Within the framework of this approach, the project staff has developed a variety of structural systems—the folded plate system, the spray-polyurethane system, the rigidized flexible system, and the filament wound system. It has also encouraged the development of other structural systems like the Dow "spiral generation" system and the Plydom folded plate system. Furthermore, it has conducted research on appropriate structural shapes and testing methods which should prove valuable in the development of new structural systems, either by the project staff or by others.

From our analysis of these structures, we find that there are three ways in which cellular plastics can be used as a structural material: (1) as a primary structural material which carries the principle loads and stresses of the structure; (2) as a secondary structural material which takes secondary stresses while allowing another material to carry the principle stresses; (3) as a contributing structural material, either as a form-giving device which allows a production technique to be utilized, or as a tertiary structural material which braces another material acting as a secondary element.

PRIMARY STRUCTURAL APPLICATIONS

In primary structural applications, the foam plastics constitute the building element or elements necessary for the overall stability of a structure. In addition to possessing sufficient strength, primary structural components should be able to demonstrate limited time-related deflections and to maintain their properties under adverse conditions of exposure to use and elements. The parameters of structural shape are determined by the mechanical properties of the materials. Thus, the applications discussed pertain to doubly curved shells whose shapes in themselves provide a reasonable basis for such primary structural use of foam plastics. The specific structural shapes have also been determined to a large extent by the production methods and erection techniques which are an integral part of foam plastics technology.

Determinants

Mechanical properties. The compressive, tensile and bending strengths of foam plastics are comparable to those of common structural materials. As an example, 6 pcf polyurethane foam has a compressive strength per pound approximately equal to that of concrete. However, a comparison of the moduli of elasticity of the two materials is quite unfavorable: the polyurethane foam would have a strain 60 times that of concrete, if both were stressed to 50 percent of their respective ultimate capacities. In addition, cellular plastics are subject to substantial continued deformation under sustained stress.

A major controlling factor in primary structural applications of the foam plastics is unit deformation, both elastic and creep. Two approaches are possible: (1) structural applications involving minimum uniform stress; (2) the use of structural forms in which relatively moderate deflections can be accepted. The solution lies in the use of doubly curved shells, in which minimum stresses will occur as a result of sustained load, and where larger movements than those normally associated with building structures can be safely accepted.

Magnitude of stresses and resulting strains will be important considerations in obtaining significant structural applications of minimum strength materials. It can be theorized that in optimum primary structural applications of foam plastics to shells the resulting shells must meet the following conditions: 1) the shell curvature and form must be such as to result in acceptable stresses and corresponding deformations without distortion; (2) the shell boundary should be supported so as to maintain membrane stresses in the shell; (3) the resulting shell structures should be of constant strength.

Minimum structure. The conditions noted for an optimum structural application of cellular plastics to shells—namely, full support at the boundary and surfaces of constant strength—are difficult to obtain in actuality. Ideal solutions have not been required in reinforced concrete, since the material has a significant reserve capacity in most applications with moderate spans.

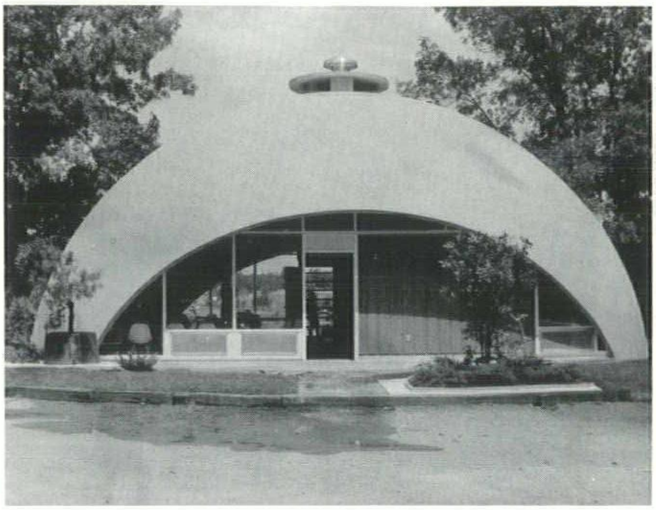
For two-dimensional structural components the concept of optimal structural form has been used in arch and cable structures. The simplest case is that of cable structures which take optimum structural form, involving simple tension. Similarly, the shape of an arch is generally determined to eliminate bending under the predominant load. The extension of these concepts to three-dimensional surface structures (shells) can be characterized as the concept of the structural memberane or minimum structure.

Costs and Production of Shells

The method of construction is the crucial cost determinant. Forming a doubly curved dome in reinforced concrete is difficult and expensive. It is also not easy to achieve an economical reuse of formwork.

In contrast, the simplicity of the "spiral generation" process results in a minimization of the cost of constructing a dome out of polystyrene. It can be concluded that not only is it possible to use cellular plastics in the form of doubly curved shells, but the cost of such shells compares favorably with standard wood flat roof construction on a square foot basis.

If doubly curved shells are to provide the basis for using foam plastics in primary structural applications, then the method of production and/or construction becomes particularly important in obtaining overall economy. Two rigid foam plastics—namely polystyrene and polyurethane—were selected for detailed exploration by the project staff. Selection was not only on the basis of their physical properties, but also on a consideration of the systems available for the production and construction of plastic shells. These systems were (1) the "spiral generation" system for polystyrene and (2) the sprayed system for polyurethane.



Demonstration structure utilizing the "spiral generation" system developed by the Dow Chemical Co.

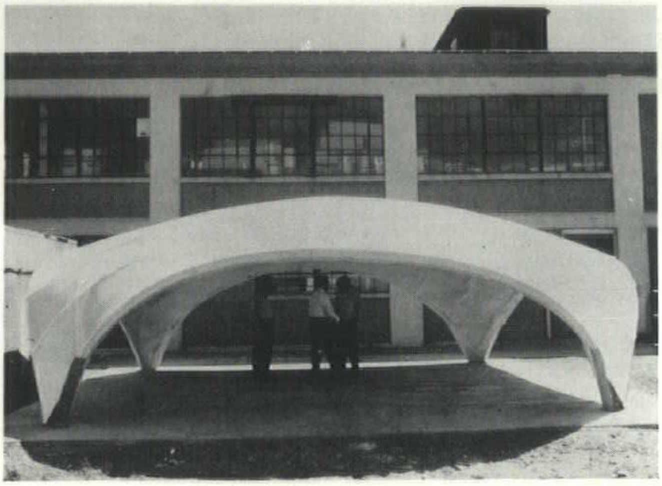
Polystyrene "Spirally Generated" Dome

"Spiral generation" system. This process was first demonstrated to the project staff by the Dow Chemical Company in the spring of 1963. It involves the use of a specially designed machine which bends, places, and fastens together boards of plastic foam into a predetermined structural shape. A variety of shapes can be produced by programming the machine. The machine head is mounted on a boom which revolves on a pivot mechanism. Foam board material is fed into the machine head which then forms and seals it, layer upon layer, into a rising structural spiral.

The demonstration dome constructed by this process utilized a fixed position of the pivot mechanism. The spherical polystyrene surface obtained by heat-sealing the separate planks is completely monolithic, capable of resisting both circumferential and radial tension and compression.

Although the present method of construction imposes some limitations as to structural form, it is anticipated that mechanical innovations will permit the construction of other types of doubly curved shells.

It is apparent that the "spiral generation" process is a unique method of constructing polystyrene foam shells. It derives its principal advantage from a well integrated use of relatively simple equipment and an economic use of materials. It affords a continuous system for the rapid erection of primary roof structures.



"Folding armature" system erected in collaboration with the Wyandotte Chemical Corp.

Spray Application For A "Folding Armature" Dome

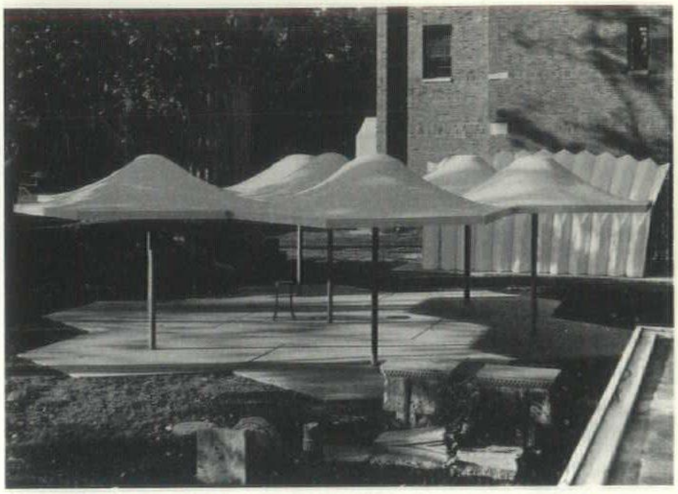
"Folding armature" system. Spray application of polyurethane is one of the significant methods for obtaining rigid foam plastics components. Transportability of equipment and the ease of creating structural shells in varying thicknesses offer definite advantages.

An essential element in any spray application is the "background," i.e., the form-giving surface against which the foam components are to be sprayed. A lightweight wood lattice was therefore devised as an armature to obtain doubly curved shell forms.

The armature is composed of wood slats bolted together as a uniform grid and is capable of being folded. As such, it can be prefabricated and transported to the site. Erection of the armature consists of pulling it into a doubly curved form and manipulating it to obtain predetermined dimensions.

The shell form determined by the wood armature may be classified as an eliptical sinusoid. This is based on the assumption that the elastic curve of a linear member loaded as a column will be approximately a sine curve. In the total form the individual members of the grid are loaded and/or supported in a variety of ways and cannot be precisely defined geometrically. Observations of the erected wood armature indicate that for arcs substantially less than a semicricle, the curves can be approximated as arcs of a circle. Based on this assmuption, approximate relationships can be established between the size of the armature grid and the desired form for the shell.

Early model studies of the armature had indicated that the armature would not be capable of supporting the total weight of the structure. Therefore, the sequence of spraying operations became an important consideration in its construction. First, the buttress portion and then the peripheral section were sprayed. Thus the foam began working structurally, as the armature was being sprayed. The density of the foam was 2½ pounds a cubic foot; 750 pounds of liquid components were used to produce a structure with an average thickness of approximately 4 inches.



Completed pavilion structure constructed of anticlastic membrane umbrella shell components.

Anticlastic Membrane Umbrella Shells

Geometry and the structural membrane. Earlier development by the project staff with rigidizable membranes and further study of the concept of minimum structure or structural memberane suggested the use of the flexible membrane as a form-giving device for the spray application of polyurethane foam. Further, the hexagonal type of umbrella was considered reasonably close to a surface of revolution to indicate a method of mechanization that could lead to possible improvement in material quality.

In an earlier study on minimum structures, a semi-graphical analysis was found to be satisfactory in predicting the profile for an anticlastic structural membrane of flexible foam. Two significant points of structural behavior were noted in this study: (1) the magnitude of hoop stresses resulting from superimposed loads are dependent on the Poisson's ratio of the material: (2) the edge member provides the reaction for the radial surface forces at that point. These principles have been explored by the project staff in the development of a rigid foam anticlastic hexagonal umbrella shell. Although the concept of minimum structure or structural membrane has given good performance in each test and structure, the exact importance or relationship to rigid cellular plastics is not fully known. A fundamental study is required to establish the parameters. Despite these reservations, the research evidence fully supports the thesis that certain rigid cellular plastics can be used as doubly curved shells in primary structural applications.

SECONDARY STRUCTURAL APPLICATIONS

In the examples following, the function of the foam plastics is to provide bracing or stiffening for other materials (metals, woods, or synthetics), which act in a primary structural capacity but are not proportioned to resist buckling on their own. The contribution of the strain in the foam plastic to the overall performance of the structure is assumed to be small, if not negligible, provided that: (1) the primary structural material resist most or all of the direct stress from the loads of the structure, and (2) the stress in the foam resulting from the tendency of the primary material to buckle is neither large nor of long duration. Linear and composite folded plate structures in which the foam plastics become the core material of laminated boards appear to offer most promise as secondary structural applications.

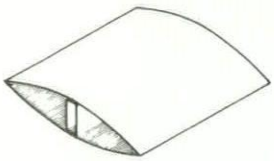
Range of Applications and Choice of Material

Materials and structural forms. In contrast to primary structural applications, where forces in the foam plastics must be restricted to low levels of direct stress, the presence of a stronger primary structural material in secondary applications permits the consideration of higher stress concentrations and bending in the plane of the structure. Thus, with certain restrictions, the range of possible applications of foam plastics is extended to include singly curved shells, folded plate structures, and slab and panel structures, which may be constructed with sandwich panels.

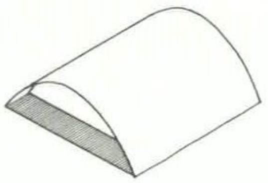
The use of foam plastics as a core material for sandwich panels in slab and panel structures is limited by the presence of permanent high shear stresses in the foam. In general, an additional material must be introduced between the skins to resist this shear; otherwise, shear creep of the core material will produce intolerable deflections. The foam plastics serve then only to restrain buckling of the skins and to provide additional capacity for transient loads.

To prevent buckling, the bond between the foam core material and the skins must be strong and continuous. Furthermore, it must resist delamination under design stresses and changes in temperature and humidity. The cellular structure of foam plastics provides uniform support and bracing to the primary structural elements. Foam plastics can be bonded with adhesives to a variety of skin materials, or as in the case of polyurethane and epoxy which can be foamed in place, the bond can be achieved as the core material is produced between the skins.

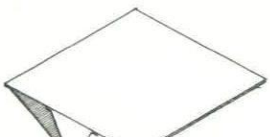
Alternate structural possibilities using paper-laminated polyurethane foam board.



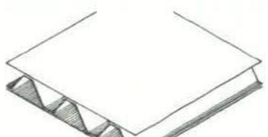
a.
Depth: 12″
Width: 48″
Moment of inertia: 90″⁴
Ultimate span: 13′-6″



b.
Depth: 15″
Width: 36″
Moment of inertia: 134″⁴
Ultimate span: 14′-3″



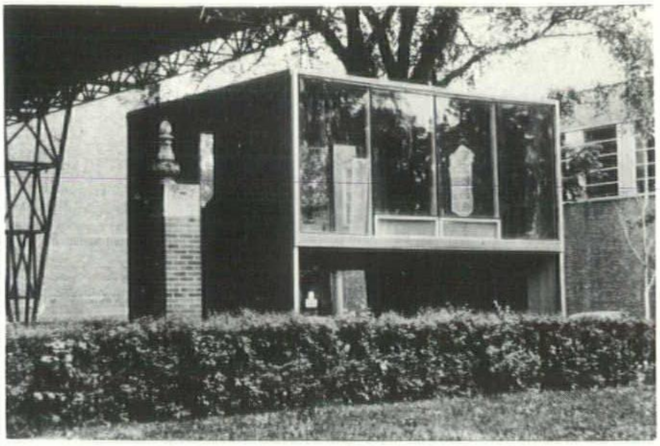
c.
Depth: 12″
Width: 48″
Moment of inertia: 112″⁴
Ultimate span: 13′-6″



d.
Depth: 7″
Width: Variable
Moment of inertia: 16″⁴/ft
Ultimate span: 15′-0″

Evolution and behavior of structural components. The structural systems considered by the project staff have been based on the unique properties of the material and its method of production. After initial investigation of the material's mechanical properties, it was decided to develop singly curved and folded plate components which would utilize the ease with which the material can be scored and bent in production, thereby determining the ultimate shape of the structure. Also it was thought desirable from a production standpoint that structural systems should be devloped which can be produced by simply adding equipment to the end of the line which produces the board itself.

Accordingly, the research activity has been directed at systems of construction designed to exploit these properties.



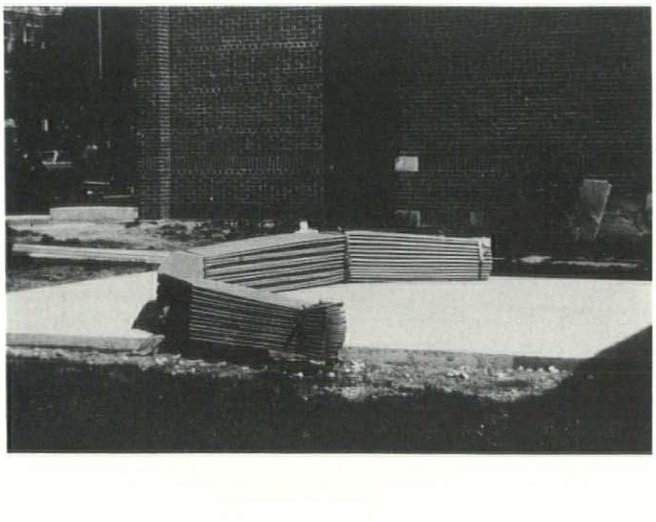
Completed two-story linear folded plate structure utilizing paper-laminated foam board.

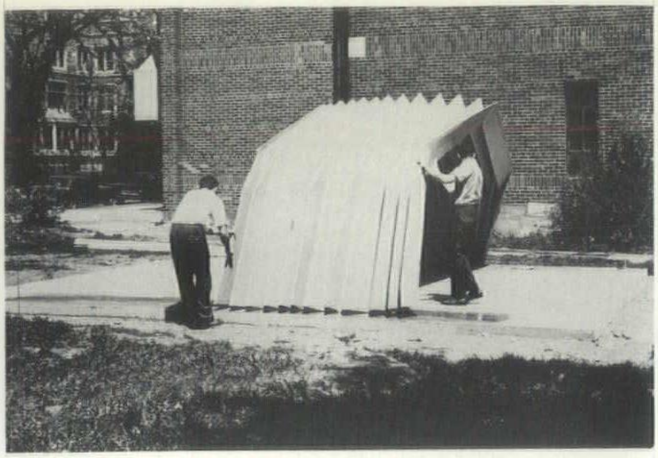
Erection of a Two-Story Linear Folded Plate Structure

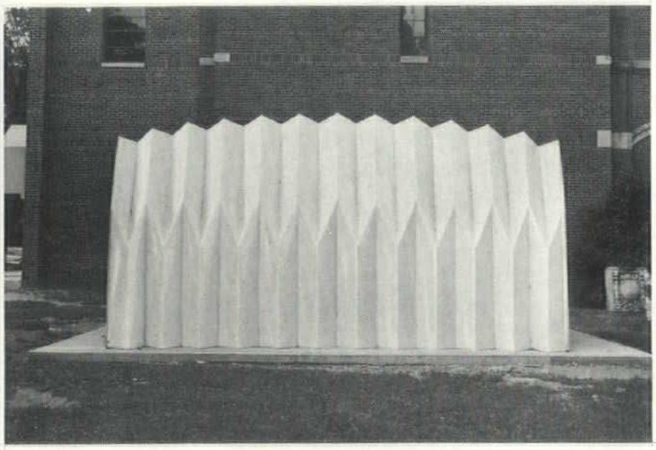
Description and structural behavior. It was felt essential the prototype unit should clearly demonstrate (1) the constraint imposed by the use of paper-laminated foam and (2) the advantages of the particular structural section chosen. To the first end, the structure was conceived as a series of simple folded plate bents with vertical and horizontal members of uniform cross-section and similar construction. The basic element was to be produced within the limits of the widest board available and with a minimum of trimming and cutting. Fabrication of the components was to be confined to scoring, folding, coating, bonding and clamping—in short, any operation which could be maintained as a continuous process and would not require in-place work in the assembly sequence.

Since the prototype unit was to demonstrate the advantages of the triangular section, use of the system to carry floor loads was considered utmost in importance. The inherent stiffness of the section and the possibility of rigid joints between components also had to be exploited to eliminate the need for lateral bracing of the structure. Finally, the simplicity of creating opening through the structural components had to be shown. With these goals in mind, a 2-story structure was designed.

The structural system as developed for the prototype structure, is a seris of rigid 2-story bents which do not require additional bracing or shear walls to resist horizontal loading.







Three stages in the erection of the composite folded plate structure manufactured by Plydom.

A Composite Folded Plate Structure

At the time the preliminary investigation of the paper-laminated foam board began, the project staff contemplated the development of a composite folded plate structure like one which had been presented in tentative sketch form in the earlier feasibility study report, "The Potential Use of Foam Plastics for Housing in Underdeveloped Areas." When it became known that a private Canadian concern, Dimensions UYA, was interested in developing a similar structure designed by Herbert Yates, a Canadian designer, it was decided to proceed instead with the investigation of linear folded plate structures and to encourage the development of the composite folded plate structure by the Canadian concern as a parallel line of research.

Yates' original design has since been changed substantially and the resulting structure is presently being produced and marketed by Plydom, a United States corporation formed for this purpose. An early example of the Plydom structure was delivered to the project in the spring of 1965 and was erected during the summer in the Architectural Research Laboratory courtyard.

It took less than an hour to erect the shell and attach it to a concrete floor slab. Depending on use, other materials such as wood, soil and canvas can be used to provide a floor having different anchorage details. The basic material used in this structure is the same paper-laminated foam board as in the two-story linear folded plate structure, except that the board is $\frac{1}{4}$-inch instead of $\frac{3}{8}$-inch in thickness.

The folded plate shell weighs 105 pounds and is delivered to the site in two components that are folded in accordion fashion to form 12-inch thick packages. The two components are joined, while still in this folded condition, with tape which becomes the ridge of the assembled structure. The joined components are then lifted, unfolded, and anchored to the floor by means of tabs provided in the components. The end wall partitions are then installed. The paper skins are precoated in the factory or, if preferred, this work can be done on the site. The structure erected by the project was coated on the site with pigmented polyester resin.

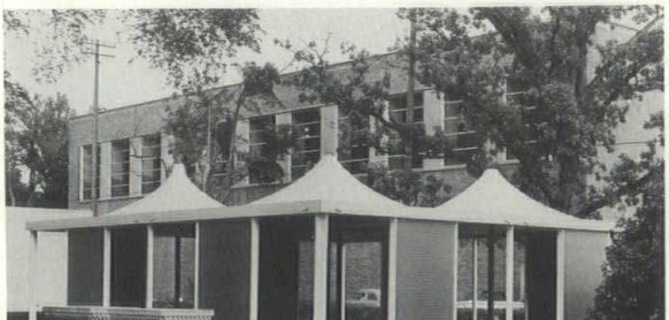
The unit measures approximately 17 by 19 feet in floor plan (323 square feet) and encloses a volume of 2500 cubic feet. The introductory retail price for the unit is around \$450. With volume production this price is expected to be reduced substantially. The structure represents the lowest shell cost of any system investigated by the project staff.

The low mass and the shape of the structure impose certain use limitations. However, it offers an adequate type of temporary shelter. A testing program is underway by the manufacturer, but test data are not yet available. The structure erected outside the project laboratory easily took the weight of a person sitting on the ridge to weatherproof the joint. It has also held up well through high winds and rain storms, and shows no evidence of failure despite repeated saturation of the paper near the ground.

This structure has been recommended by the project staff for the housing of migrant farm workers in California as well as to AID housing officials for certain community development programs, including classroom use in the developing countries.

CONTRIBUTING STRUCTURAL APPLICATIONS

Besides the primary and secondary structural applications, a number of construction uses have been made of foam plastics which do not depend on the capacity of these materials to resist the structural loads. Such applications include the forming of structures which have been designed to be constructed from other materials such as concrete and reinforced plastics. In this case the mechanical properties of foam plastics have to be considered only to the extent that the form-giving system will have to be self-supporting until the structural materials take their final set. In the contributing applications explored by the project staff the method of producing the primary structural material and the process of construction have been the major design determinants.



Anticlastic shells of rigidized polyurethane foam constructed at the University of Michigan.

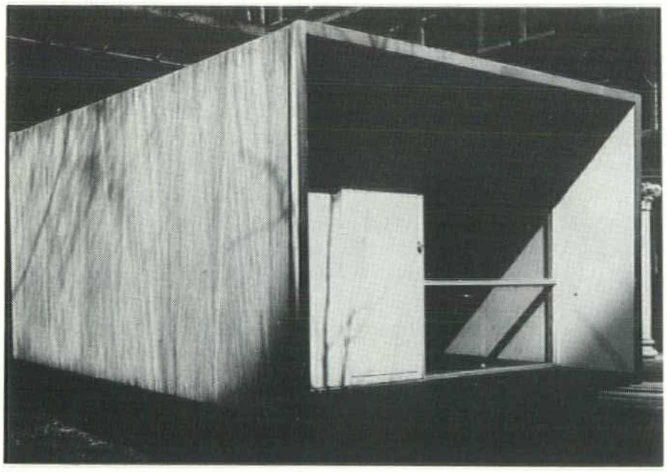
Flexible Polyurethane Foam to Form Anticlastic Shells

Initial concept and testing. The application of flexible membranes to the solution of structural problems has a long history. The earliest beginnings occur in natural and man-made tent forms. The possibility of rigidizing such tension structures for permanent use has occurred to many designers. Translation and inversion of such forms in rigid materials and their use as minimum compression structures has been discussed in the preceding section of this article on primary structural applications of foam plastics.

One factor causing difficulty in the development of this concept was the forming of the complex surfaces required. Initial model studies of this technique by the project staff used materials like nylon jersey or glass cloth in combination with various liquid resins.

Michigan demonstration structure. Four shells, were erected at the University's Architectural Research Laboratory to demonstrate their potential for use as a roof structure. Although each shell was somewhat different in quality and in method of production, the building they form demonstrates some of the potentials of this system.

Use of the flexible foam membrane as a forming device or as a rigid core material for doubly curved structures like the ones described is considerd a promising application. Its main contribution is to make practical the structural systems that have heretofore been considered uneconomical because of the high labor costs involved in forming. The flexible foam membrane can be stretched, supported, and loaded in various ways to achieve a close approximation to the ideal surface.



Prototype filament wound room-size component.

Foam Board in Mandrel Construction For Filament Winding

Filament winding technique. This method of fabricating reinforced plastics is similar, in principle, to the spinning of a cocoon. Single, continuous filaments of the reinforcing fiber are coated with a binding resin, and deposited on a forming surface called a mandrel. The mandrel is made to rotate at a programmed angular speed, and at the same time, a delivery system for the coated reinforcing fibers moves back and forth along the mandrel according to a preset pattern.

The resulting forms are not limited to cylindrical surfaces of revolution. Since both the speed of the delivery system and the rotation of the mandrel can be varied within a complete cycle, and since the filament tension can be controlled to a degree, the system is capable of handling a variety of forms, from circular cylinders to closed spheres, and including rectangular tubes.

Initial concept. The first notion explored was use of foam board to create long hollow tubes which could be filament wound with a reinforced plastic structural skin. Such structural components might be relatively wide and flat, and have long span capabilities, alowing them to serve as panel components or beams and columns of a field-erected structure. On the other hand, it was possible to prefabricate components with as large as 14-foot diameters, which led to the concept of completely finished room-size modular units as the basis for a system of construction adapted to housing use.

As the early discussions proceeded, the concept of the room-size module was chosen for further development. This is not to say that long span structural components do not have a potential equally as great, but a number of factors favored the modular unit at this stage.

One of these factors was potential market diversity. A room-size module has many applications outside the housing realm; for example, its use as a refrigerated shipping container or as a van body is possible. Such a unit is equally applicable to housing use, and could also be used as a "plug in" module for high rise structures, school buildings and hospitals.

From this point, development centered on the feasibility of constructing a prototype unit of a modular filament wound system of construction.

Development of prototype structure. After extensive testing of the 'sandwich" panel concept and system using ribs of reinforced plastic it was determined the most economical structure would be a continuous steel tube frame which would not only provide resistance for the winding force, but would become a permanent integral part of the modular unit. Hardboard and rigid foam board were to be used to provide a closed mandrel surface, but only the exterior skin was to be filament wound. Preliminary economic analysis of the prototype unit had indicated that the most economical operation for filament winding was this finished exterior skin. In fact, this method of finishing the exterior surface is competitive with many alternative siding materials and could be justified on that basis alone apart from the development of an integrated structural system based on filament winding.

In general, the prototype filament wound structure demonstrates another promising and practical application of plastics to construction. The contribution of foam plastics to this system depends on which of the original approaches is used. In combination with the steel frame, foam plastics insulate the structure, provide a surface on which the skin may be wound, and have sufficient rigidity to support exceptionally thin wall and floor-finish materials.

In the case of the sandwich panel system, the foam plastics would be required to perform a primary structural role to resist the shear from the structure's own weight and its furnishings. Its performance in this role might well raise some questions; however, modifications in the form of the unit could resolve this problem.

Filament wound modular structures are felt to be a reasonable area for further research and development. Potential applications range from detached housing to "plug-in" units for classrooms and hospital care.

This article was prepared with the cooperation of the Architectural Research Laboratory of the University of Michigan and Prof. Stephen C. A. Paraskevopoulos, project director of ORA Project 06553 architectural research on STRUCTURAL POTENTIAL OF FOAM PLASTICS FOR HOUSING IN UNDERDEVELOPED COUNTRIES. The project report has been published by the Architectural Research Laboratory, U. of M. and is available at $5 per copy from the University of Michigan, Publication Distribution Service.

Pargo Elected President

William V. Pargo, President of Inter-State Caulking Company, was recently elected President of the Michigan Building Restoration, Caulking and Waterproofing Contractors Association. An Asociation formed to advance the aims and purposes of Tuck Pointers, Brick Cleaners, Caulking and Waterproofing Contractors and to negotiate a contract with the Bricklayers Union.

William V. Pargo

Mr. Pargo, a native of Chicago, includes in his educational history, studies at St. Leo's and Wayne State University. He has been honored with and holds the coveted Scouter Key. He is also chairman of Troop Committee 572.

Olds Home Given 'Historic' Status

The City of Lansing received official notification today that the Ransom E. Olds mansion, 720 W. Washington Avenue, has been recorded in the Archives of the Library of Congress as an historic American building.

A certificate from the Historic American Buildings Survey of the National Park Service was presented to Mayor Max Murningham. He accepted it on behalf of the City of Lansing, new owner of the residence where the pioneer automobile maker lived for nearly a half century.

Presentation was made by Richard C. Frank, AIA, Lansing, representing the American Institute of Architects, which collaborates with the federal agency in the nation-wide historic buildings survey program.

The Olds mansion and State Capitol were the only Lansing structures that were included in the Central Michigan survey conducted last summer by a team of architects, headed by Professor Harley J. McKee of Syracuse University.

Ten pages of achitectural and historical data, three exterior and three interior photographs of the Olds mansion have been placed in the Archives of Congress for a permanent record.

At the time the survey was made, it was feared that the Olds mansion would be torn down to clear the right-of-way for the I-496 connector route. The Michigan Department of State Highways scheduled August 15 as the deadline for its demolition.

However, it appears now that the historic building will be saved, thanks to the efforts of the Historical Society of Michigan, Lansing City Council and the newly-organized Committee for the Preservation of the Olds Mansion.

The latter group has undertaken to raise $65,000 to finance the moving of the Olds residence across Main Street to a city park at the end of Capitol Avenue. Incidentally, this was once the site of a large mansion owned by Alonzo Barnes, pioneer Lansing capitalist and railroad builder.

This committee is composed of Joseph C. Coleman, chairman; Hubert B. Bates, Mark A. Battaglia, Mrs. Mervin F. Cotes, Howard C. Grimes, Mrs. Harry E. Guyselman, Edward G. Hacker, Howard J. Stoddard and Louis A. Weil, Jr.

Building of a foundation on the new site, installation of utility services and other work will cost an additional $50,000, a sum that has been pledged by the Oldsmobile Division of General Motors and Alvin M. Bentley of Owosso.

Mrs. Gladys Olds Anderson, who has lived in the home since her parents, Mr. and Mrs. Olds, died in 1950, has given a deed to the building to the City of Lansing. She will also provide funds for maintenance for a minimum of three years. Landscaping of the grounds will be done by the city. The new site adjoins the scenic Cooley Gardens.

After the residence is moved, it is planned to undertake a five year program to restore the structure to its original design.

Back in 1952, the building was altered considerably. Changes included removal of the picturesque peaked towers, reminiscent of the Victorian era. A large front porch was also taken off to make way for a landscaped terrace. Extensive remodeling was done to the interior.

Under an agreement with the city, the Historical Society of Michigan will have the use of the building for its headquarters and will supervise the cultural program planned there.

A board of control, representing the Lansing City Council, Historical Society and Ransom Fidelity Corporation will be named soon to decide matters of policy.

William K. Alderfer, director of the Historical Society of Michigan, said that eventually there will be exhibits showing the role played by Ransom E. Olds and Lansing in the development of the automobile industry.

Space will be provided for meetings of cultural groups, and there will be educational programs for school children, Alderfer added.

"The Ransom E. Olds House in Lansing is interesting both architecturally and for its long association with the man who started two automobile companies in the early days of that industry," writes Prof. McKee in the March issue of Michigan History Magazine.

The residence, designed by Architect D. B. Moon, was built in 1904, just at the time the Olds $650 curved dash runabout was achieving phenomenal success.

Fire had destroyed the Olds Motor Works plant in Detroit in 1901 when only 425 cars were produced. Lansing business men bought the old 52-acre fairgrounds and induced Olds to relocate in this city. On a progressive assembly line which Olds is credited with devising, 3,750 cars were produced in 1902. Production zoomed to 5,000 in 1903 and 5,508 in 1904.

It is believed that Ransom E. Olds also built the first dwelling with a garage attached. However, he insisted on calling it the automobile room.

So he wouldn't have to back his car

out of the automobile room, Olds had a turntable installed in the floor.

Although he couldn't read a note, Olds was intensely interested in singing and instrumental music. A large music room is located on the second floor. It has a pipe organ, which can be played either manually or mechanically with perforated paper rolls.

One of his favorite songs, of course, was Gus Edwards' 1905 song hit, "In My Merry Oldsmobile." When he built the 25-story Olds Tower, now Michigan National, the auto pioneer had an electronic carillon installed to play this tune.

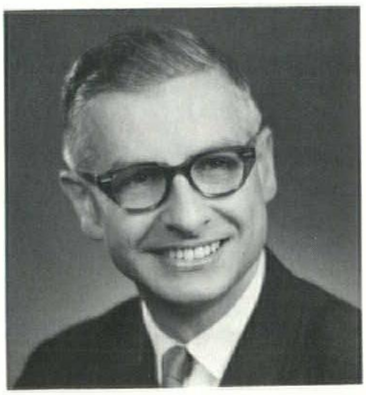
The two and a half story spacious brick mansion, with standstone trim, is regarded as an important example of our architectural heritage.

"Because a house was built at the turn of the century, some people might think it's not important historically and architecturally," said Architect Frank, who is a trustee of the Historical Society of Michigan. "It might be just as important, in fact, as those built from 1800 to 1810."

Frank explained that the Historic American Buildings Survey and the American Institute of Architects consider several factors beyond the age of buildings to determine whether they should be preserved.

"The determination is based on the importance of the person who built it and lived there," the Lansing architect added. "It must be an adequate and good representative example of the period in which it was built, and it must be well conceived and adhere to the style intended."

This article is reprinted from The Lansing State Journal, as written by William J. Duchaine.



Carter B. Strong, member of the firm of Strong, Drury and Cunningham has been elected mayor of Traverse City for one year by the City Commission. Strong is serving his fourth year on the Commission.

Architects to Work With Governors and Mayors

A proposal that the American Institute of Architects work with governors and mayors to establish a Mayor's Urban Design Advisory Committee in every city and a Governor's Urban Design and Regional Design Advisory Committee in every state is made by Paul Spreiregen in *Urban Design: The Architecture of Towns and Cities*, published today by McGraw-Hill.

Spreiregen says, "these committees could explain the importance of urban design at all levels of public undertakings; make suggestions to improve public policies of action; be a vehicle for transmitting ideas; act as ambassadors between the planning commissions of the cities, counties, and states, and private developers." Special urban design problems—the question of design controls; sign designs; urban design education in nearby universities; urban design consideration in all public works; preservation of historic buildings and areas; contact with the local press—can well be handled by AIA chapters, he asserts.

In the book, replete with practical ideas for achieving civic improvement, Spreiregen notes one of the many old lessons of urban design we are beginning to relearn: A handsome enclosed space can give more distinction to buildings that the best possible mass or facade design alone. He says, "we must remember that the eye delights in probing objects which do not reveal themselves in their entirety at first glance. The eye needs the enticement to look more, to discover more, to be surprised by the unexpected, and held by the sublime."

Spreiregen thoroughly explains, explores, and discusses the design of towns, cities, and regions in clear, nontechnical language and suggests that American landscape and cityscape should be an esthetic reflection of man's interaction with nature. Charles A. Blessing too, in his Foreword, notes "In the building of the cities of America there has been a long and sad record of failure to understand, respect, and respond to nature, with consequent destruction of essential qualities in the landscape of cities.

Spreiregen traces the history of urban design from ancient times, pointing out the achievements of city builders of the past, through the industrial-technical era, up to the present and logically develops an outline of basic principles and techniques of urban design. He shows how many of the problems of the past are parallel to those we face today. "Indeed, many American contributions to urban design in the past deserve greater recognition," he says. Spreiregen also offers a method of making a visual survey of a city. The author takes the view that everyone who aspires to be a true designer of tomorrow's environment must effectively combine a deep appreciation of nature in all its aspects; a sophisticated use of today's complex and fast-expanding technology; and a creative design talent rooted in an appreciation of the rich history of cities and design.

Urban Design is richly illustrated with sketchbook examples and plans of good design. The esthetics of urban form; the design of specific parts of a city; the design of residential areas; circulation and design; and techniques of design controls are also presented.

In the closing chapters, Spreiregen examines the role of government in urban design and the future possibilities of urban design. "Our urban design outlook will add as much to the improvement of individual works of architecture as to the city as a whole. The question posed when we design a single building or an entire region is how we want to live on this land of ours, and whether we wish to care for it as our dearest asset or exploit it carelessly," he concludes.

Paul Spreiregen, a graduate of M.I.T., School of Architecture, was a Fulbright Scholar in Italy, and he has worked in Italy, Sweden, Boston, New York, San Francisco, and Washington, D. C. on various urban designing projects. He was a member of the Federal Commission for the Reconstruction and Redevelopment of Alaska and has given many lectures on urban design in the United States.

"Thermal Stress and Low Cycle Fatigue" Publication Available

Thermal Stress and Low Cycle Fatigue *by S. S. Manson, Chief, Materials and Structures Division, NASA—Lewis Research Center, Cleveland, Ohio. 395 pages plus index; 188 illustrations; 6 x 9; McGraw-Hill; $16.50. Publication date: July, 1966.*

Thermal Stress and Low Cycle Fatigue combines the fundamental and applied aspects of the two subjects so they are directly applicable in construction, research, and design. S. S. Manson presents the theory of thermal stress analysis in the elastic range, using a number of simple, original approaches toward the solution of complex problems. Recognizing the limitations of elastic solutions, he proceeds to introduce plasticity corrections, taking into account the effect of cyclic application of the load on these plasticity corrections.

Manson gives simplified procedures for estimating fatigue properties, to compute the fatigue life of a structure.

Going beyond the usual analytical treatment of thermal stress, the author considers such practical aspects as experimental performance, thermal shock, and brittle and ductile materials. Complete discussions of available experimental data on thermal fatigue and thermal shock of various materials, and descriptions of design features and configurations which contribute to good performance in cases involving thermal stress are included. A comprehensive description of the behavior of materials under mechanical and thermal cycling conditions is presented for the first time.

Following an introductory chapter, topics of *Thermal Stress and Low-Cycle Fatigue* are: Elastic Stresses; Plastic Flow and Creep; Behavior of Materials Under Stress and Strain Cycling; Cyclic Plasticity; Thermal Stress Fatigue of Ductile Materials; Thermal Shock; Choice of Materials; and Mitigation of Thermal Stress by Design Configuration.

S. S. Manson is a graduate of the Cooper Union Institute of Technology and the University of Michigan. Since 1942 he has been engaged in research on materials at NASA, where he is currently chief of the Materials and Structures Division, an interdisciplinary group of scientists, engineers, and technicians devoted to research on materials and their applications to aerospace structures. Manson has contributed technical articles to numerous professional journals and chapters to several books. He has made research contributions in analyses of structures, in the plastic flow and creep range, time-temperature parameters for creep and plastic flow, thermal-shock parameters, relations governing fatigue in the low and intermediate-life range, cumulative fatigue damage, and many others.

Further information on Manson's *Thermal Stress and Low-Cycle Fatigue* may be obtained from the McGraw-Hill Book Information Service, 327 West 41st Street, New York, New York 10036.

Ceramic Tile Installations Set Record

Top installation figures were announced in the report given to Fund Participants by Jack Bruny, Trustee of the Detroit Area Ceramic Tile Contractors' Promotion Fund at a recent general contributors' meeting. Almost 8,400,000 square feet of glazed and unglazed ceramic tile was installed by Detroit-area ceramic tile contrctors in 1965.

Up 8% over the previous year, 1965 was the best year since Ceramic Tile Promotion Fund began keeping records. Sixty-eight per cent of the total (5,647,299 sq. ft.) was installed glazed tile; thirty-two per cent (2,720,499 sq. ft.) was installed unglazed tile.

Installations of ceramic tile have been increased by over one and one-half million square feet since 1962. Previous years' figures are: 1962—6,813,000 sq. ft., 1963—7,374,000 sq. ft., 1964—7,742,000 sq. ft.

These statistics were compiled with the cooperation of all major manufacturers and most local warehouses and representatives and were gathered by Market Research Department of Roy Clark, Inc., the Funds public relations and advertising council.

**Herman Miller Inc.
Appoints Chief Engineer**

Norman Poel, R.E., has joined Herman Miller Inc., Zeeland, Michigan, where he is serving as Chief Engineer in charge of product and production engineering. Mr. Poel, 41, received his Bachelor of Science degree from M.I.T. in 1950 and for the past 16 years has been involved as a professional engineer with a Grand Rapids firm.

His appointment, according to Max De Pree, Executive Vice President, is indicative of the increasing importance of the engineering function at Herman Miler, which is moving more and more into the area of systems products.

Rich Joins Duwe

Allen J. Rich, formerly of Mitchell, S. D., has joined Duwe Precast Concrete Products, Inc., as chief engineer according to E. C. Duwe, president.

In his new capacity, Rich will be responsible for the development of an extended engineering program to include quality control, and new designs for expanding the Duwe System.

Rich was with Vittetoe Construction Co., Mitchell, as superintendent engineer of the State Highway Corps of Engineers, municipal and private construction projects. Projects include two reconstructions of urban state highways and five construction projects for the U. S. Army Corps of Engineers.

Prior to this, he was with Wisconsin's State Highway Commission, Superior, as project, resident and design engineer. Here, Rich was project engineer on the construction of three interstate bridges, assistant to the resident engineer on the construction of an urban area interstate highway and resident engineer on a 10-mile state highway reconstruction project. He also was the design engineer of future highway construction projects.

Rich served from June 1955 to February 1959 with the Air Force as an instructor in nuclear weapons fusing systems.

**Hartley Joins
Levy Staff**

Lawrence C. Hartley, recently with Ford Motor Company's Central Staff Plant Engineering Department has joined the technical staff of Edward C. Levy Company.

Lawrence C. Hartley

In his new post, Hartley will serve as Product Engineer, working with applications of materials supplied by the Levy Company. Additionaly, he is expected to be actively involved in research and development programs for the Company. Another important responsibility will be to maintain close contact with engineers and professional groups throughout the state.

Hartley, a native of Iron River, Michigan, attended Michigan Tech and the University of Colorado and holds Bachelor of Science degrees in Civil Engineering and Business Administration. He is a licensed Professional Engineer in the states of Michigan, Ohio and Colorado.

His work background, besides Ford, includes several years with Price Brothers Company of Dayton, Ohio in quality control of prestressed concrete pipe, and as Materials Engineer with engineering and prestressed concrete firms in Denver, Colorado.

Sert Elected to Honor Society

Jose Luis Sert, Dean of the Harvard Graduate School of Design, was elected to membership in the National Institute of Arts and Letters recently. Dean of the school since 1953, he has designed the United States Embassy in Bagdad, Law and Education Schools and Library of Boston University, planned housing communities in Brazil, Cuba, Columbia, Peru and Venezuela and has been active in the designing of prefabricated structures. He was awarded the Gold Medal of the Architectural League in 1965.

Officers elected to serve the National Institute of Arts and Letters for 1966 were George F. Kennan, President; Leon Edel, Secretary; Quincy Porter, Treasurer; and Catherine Dinker Bowen, Norman Dello Joio, Ralph Ellison and Philip Johnson were reelected Vice Presidents, Leonard Baskin and Abraham Rattner were elected Vice Presidents for the first time. The Institute is the nation's highest honor society of the arts.

Mahon to Re-Locate

The R.C. Mahon Company has announced it will re-locate its manufacturing facilities within six miles of its present location in Warren, Mich. Robert C. Palmer, President, stated that the 55 year-old multi-division company has selected a 40-acre site on 14 Mile Road west of Van Dyke Road.

The re-location is part of the company's re-vitalization program, Mr. Palmer said. The new site provides excellent transportation facilities, including access to the New York Central Railroad.

An architect and general contractor will be selected at a future date, the company said. As fabricators of structural steel, the company will complete the structural frame for the new facilities.

Lipchitz to Receive AAAL Medal

Jacques Lipchitz, a major figure for over fifty years in the art of the 20th Century, will receive the Gold Medal for Sculpture of the National Institute of Arts and Letters for 1966. The announcement of the award was made by George F. Kennan, President of the Institute. The award will be conferred at the Joint Annual Ceremonies of the Institute and its affiliate, the American Academy of Arts and Letters on May 25th.

Jacques Lipchitz was born in Lithuania in 1891. At eighteen he went to Paris where he studied at the Ecole des Beaux Arts and the Académie Julian. He became part of the Cubist movement during the period 1915–1919 and through his friendship with Juan Gris became one of the inner circle. In the twenties he developed his personal concept of form and the emergence of his monumental sculpture began. The great theme of Prometheus, which inspired his work in the thirties, had a symbolic reference to contemporary events. Lipchitz came to the United States in 1941, to reside permanently.

Producers Council

The Perimiflor Installation System, a dramatic new development in sheet vinyl flooring installation, which eliminates considerable subfloor preparation and makes possible the installation of Montina and Tessera Vinyl Corlon over many structurally sound subfloors including old resilient floors, has been announced by Armstrong Cork Company.

Described as the most important development in resilient flooring installation in nearly 50 years, the Perimiflor Installation System involves a "perimeter bonding technique," using a new two-part adhesive developed by Armstrong research.

The Perimiflor Installation System may offer definite savings in time and labor costs for consumers since it is expected it will cut down on the amount of time and effort spent in subfloor preparation for remodeling projects. The system is equally suitable for commercial or residential interiors since the two sheet vinyl materials—Montina and Tessera Vinyl Corlon—that may be used in the system are .090-inch gauge.

For remodeling projects the fact that the system will allow installation over an old resilient floor provides additional opportunities for savings in subfloor preparation work. Not only does the method eliminate the need for subcontracting old floor removal, but it also offers the customer a remodeling project free of the extra dirt and inconvenience associated with removing an old floor.

Perimiflor installations will be guaranteed by Armstrong provided that the work is done by Certified Perimiflor Installation System Retailers, who will begin a qualification program by Company instructors from the Armstrong Installation School during a series of instruction meetings to be held throughout the country.

The Perimiflor Installation System may be used over any of the following types of subfloors: (1) old resilient floors including sheet goods or tile that are bonded tightly to approved subfloors; (2) new and old concrete at any grade level, except where excessive alkaline moisture prevents the use of any resilient floor; (3) suspended wood floors with a Temboard type underlayment; (4) suspended wood floors covered with plywood; and (5) structurally sound ceramic tile, marble or terrazzo floors.

To install a new floor over an existing resilient floor using the Perimiflor system, the old floor is repaired as required. Damaged areas are replaced and loose materials are re-cemented in place. The flooring craftsman then sands a strip six inches wide around the perimeter of the room and at any offsets or projections, and a strip eight inches wide where the new seams will fall. The remaining area of the subfloor must be clean, smooth and level.

Once the subfloor is prepared, the same procedure is followed for all types of subfloors, old and new. A two-part adhesive, called Perimiflor S-200 Cement, is applied in a 4-inch band around the perimeter of the room and at all seams. Where seams fall, this band will cover a 2-inch strip on each side of the new seam line.

The new adhesive, which is specifically designed for the Perimiflor system, is packaged in two containers. The contents of the smaller can are mixed into the larger container, where a chemical reaction occurs. The resulting adhesive requires no set-up time and has up to four hours of open time, depending on job conditions.

After the adhesive has been applied, the new flooring material is installed in the conventional manner. Each piece of material is then handrolled toward the seams and towards wall line and excess adhesive is wiped off. Finally, a 100-pound roller is used along seams and around the perimeter of the room and again, any excess adhesive is removed.

The guarantee for the Perimifloor Installation System will be supplied to the customer by the certified retailer installing the material. In addition to guaranteeing that the Montina or Tessera Vinyl Corlon will be free from defects in material or factory workmanship, Armstrong will warrant the installation itself, under normal use, providing that such materials are installed in accordance with Perimiflor specifications. The guarantee is not transferable and is void if not registered with the Company within 30 days after the date of installation, using a form provided to the customer by a certified retailer.

OBITUARY

John P. Baker

John P. Baker, 63, of 4063 Chippewa Drive, Okemos, chief architect of the building and construction division of the state administrative board, died Monday June 13 in a local hospital.

He was a native of Grand Rapids and a graduate of the University of Michigan. During World War II he was the chief of architectural operations at the Pine Bluff Arsenal, Pine Bluff, Arkansas.

He became a state employee in 1945. He was a member of the American Institute of Architects and was president and director of the Mid-West chapter of AIA.

He was a member of the Quapaw Lodge of the Lafayette Chapter, No. 7, Royal Arch Masons of Pine Bluff, a life member of the Michigan Council of Thrice Illustrious Masters and a member of Lansing Commandery, No. 25, Knights Templar of Lansing. He also was a member of the Lansing Orpheus Club.

Surviving are his wife, Helen, and a sister, Mrs. Maude Johnson of Grand Rapids.

Funeral services were held at 1 p.m. Wednesday in the Okemos Community Church. The Gorsline-Runciman, East Chapel, is handling the arrangements. Burial was in the Greenwood Cemetery, Grand Rapids.

ANNOUNCEMENTS

Gilbert W. Savage, Architect and Associates have announced the opening of new offices at 20000 West Twelve Mile Road at Evergreen in Southfield, Michigan 48705. Telephone EL 6-1705-06.

Linn Smith Associates Incorporated have announced a change in the firm name to Linn Smith, Demiene, Kasprzak, Adams, Inc. The address will remain the same at 894 South Adams Road, Birmingham, Michigan 48011. Telephone 313-646-3700

The firm of Wyeth, Harman and Associates has been changed to Harry J. Harman and Associates, Incorporated with offices at 407 Fort Street, Port Huron, Michigan. Telephone YU 2-9523.

NATCO Corporation, Detroit Office, announces the removal of their offices to 24123 Southfield Road, Southfield, Michigan 48075, telephone 323-3810.

Tivadar Balogh, AIA, announces the address of his office is now 992 West Ann Arbor Trail, Plymouth, Michigan 48170. Telephone GL 3-2400.

The firm of Strong, Drury and Cunningham, AIA, announces the recent relocation of its offices to its new building at 400 East Eighth Street, Traverse City. Telephone WI 6-7331.

CLASSIFIED

Senior Architectural Designer with department head potential. Ten years minimum design experience required. Permanent position with complete company-paid benefits. Submit resume in strict confidence to: Box 90, M.S.A., 28 West Adams, Detroit, Michigan 48226.

Will Share Office. Opportunity for younger architect who prefers to work alone to share office of older architect and engineer with more work than he can handle. KE 5-5085.

Wanted: Two full time instructors for Architectural Department, Schoolcraft Community College. Call Jon Adams, 591-6400, Ext. 330.

Wanted: Architectural draftsmen; senior and junior electrical draftsmen; specification writer. Call or write, Louis G. Redstone & Associates, 10811 Puritan Avenue, Detroit, telephone area 313-341-0710.

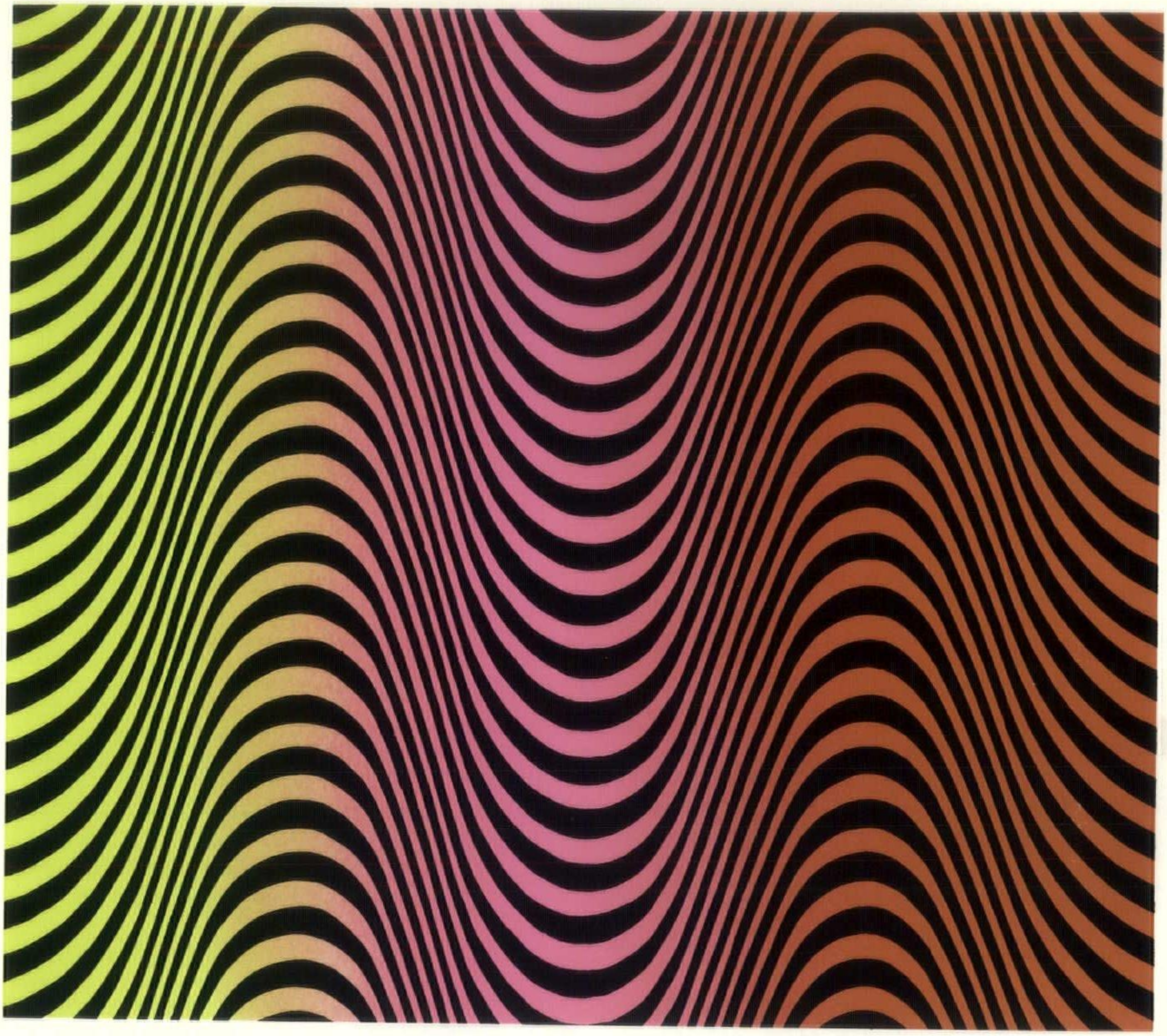
Wanted

Architectural Chief Draftsman-Office Manager: Experienced Architectural trained man for permanent position to manage a growing Architectural office with a staff of six men and two principals. Salary is open with normal fringe benefits. Opportunity to become an Associate. Excellent working conditions in own, new office building. Wigen, Tincknell & Associates, Inc., 3444 Davenport Street, Saginaw, Michigan. Phone 793-3581.

Wanted

Architect or Engineer interested in working for a General Contractor. Expediting, estimating, checking shop drawings, scheduling work, and coordinating trades. Excellent opportunity for a man with executive potential. Telephone 366-4450.

Wanted: Architects and Experienced Job Captains. Good working conditions and opportunity for advancements. Apply Wold and Bowers, Architects, Incorporated. 345 State Street, S.E., Grand Rapids, Telephone 451-0785.



CALENDAR

1966

August	*4*	*thru 6* MSA Mid-Summer Conference, Grand Hotel, Mackinac Island.
August	*14*	*thru 18* AIP Conference, Hilton Hotel, Portland, Oregon.
Sept.	*14*	Detroit Chapter Dinner Meeting – Walter Ford, guest speaker.
October	*6*	Annual Meeting Detroit Chapter.
October	*25*	Dr. Constantinos Doxiadis speaks at Engineering Society of Detroit.
November	*19*	Allied Arts Festival—Detroit.

1967

April 12 & 13		MSA 53rd Annual Convention—Civic Center, Lansing.
April	*13-15*	Gulf States Regional Convention, Hot Springs Arkansas.
May	*10-12*	Wisconsin Chapter, Lake Lawn Lodge, Delavan, Wisconsin.
Sept.	*8-10*	New Jersey Society of Architects, Essex and Sussex Hotel, Spring Lake, New Jersey.

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