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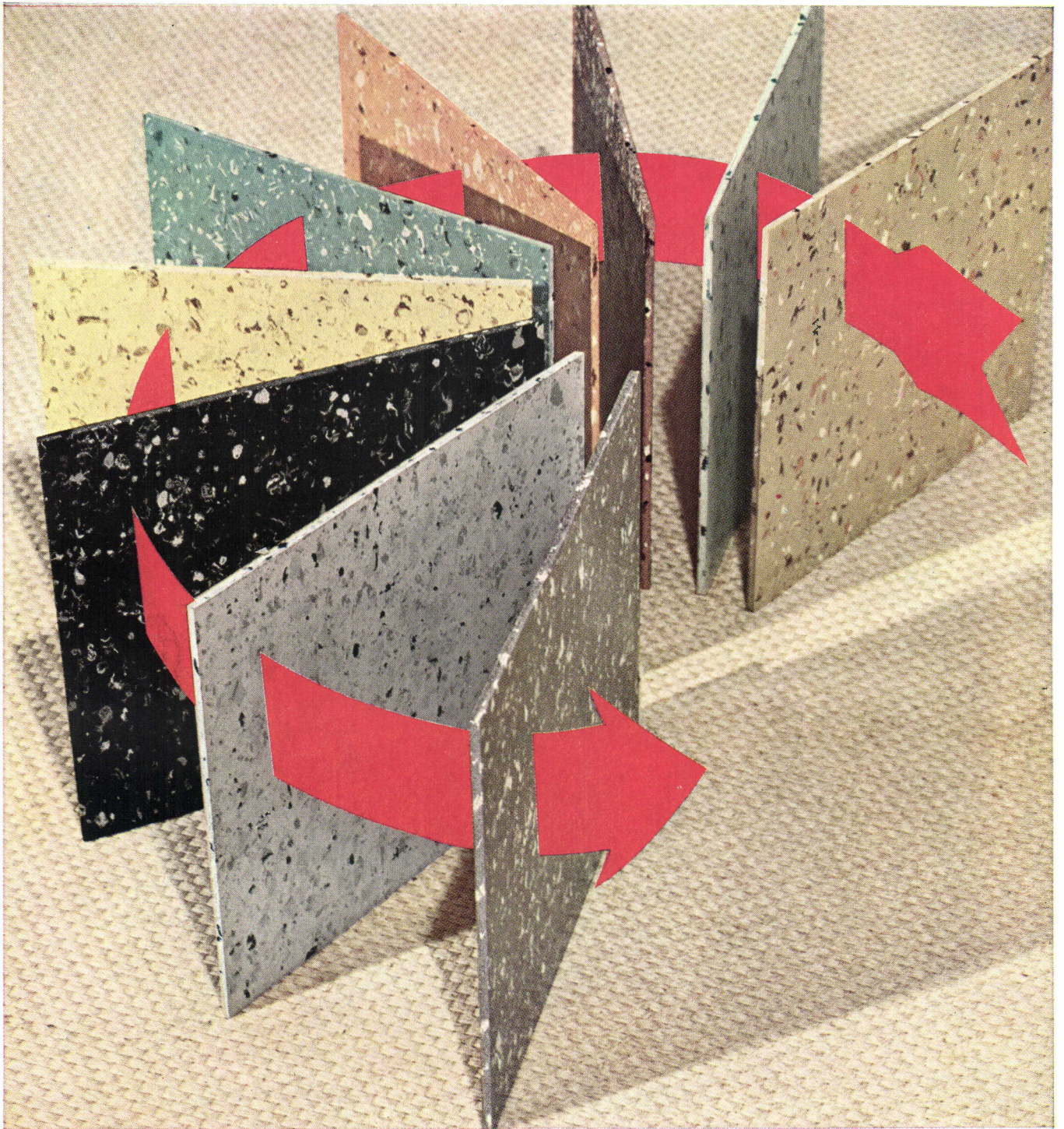
February 1962

Journal

OF THE AMERICAN INSTITUTE OF ARCHITECTS



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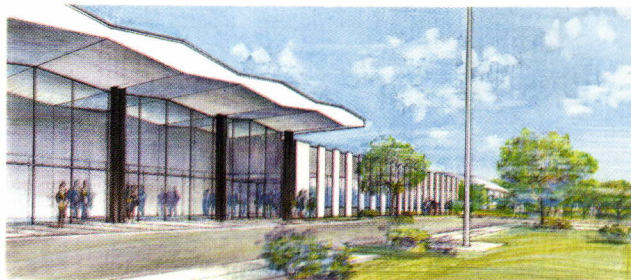
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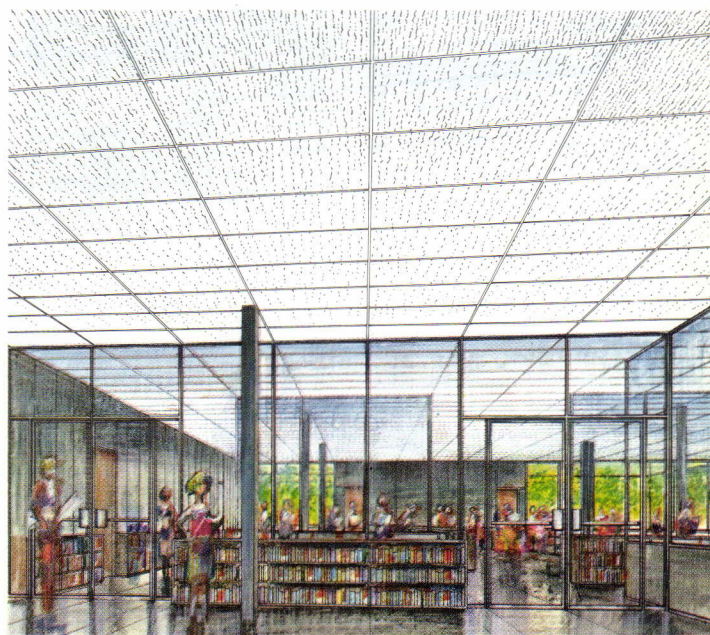
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Indiana school saves \$76,500 with Armstrong Acoustical Fire Guard Lay-In ceilings

Even though rated fire protection wasn't required for this new Indianapolis school, the architects wanted the extra safety of a fire-retardant ceiling—so they built it in with Armstrong Acoustical Fire Guard ceilings. As a result, Fire Guard helped qualify the school for the lowest possible fire insurance rates. Because it's an exceptionally efficient, yet dense, acoustical material, Fire Guard quiets noise and greatly reduces the transmission of sound from area to area through the ceiling. The architects estimate that, to provide similar advantages of fire safety and sound control, a combination of conventional fire-resistive ceilings and acoustical tile would have cost \$76,500 more than Fire Guard.



Lawrence High School, Indianapolis, Ind. Architects: Lennox, Matthews, Simmons and Ford, Indianapolis. General Contractor: F. A. Wilhelm Construction Co., Indianapolis. Acoustical Contractor: Commercial Floor Covering & Acoustics Co., Inc., Indianapolis.



Whether you're in the hallway shown on the opposite page, the library above, or any other area of Lawrence High School, the Fire Guard ceiling, with its handsome fissured design, is a noteworthy decorative asset. And the 24 x 48" lay-in units provide above-ceiling accessibility, no matter what interior arrangements are created with the school's nearly two miles of movable partitions.

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A Search For Information . . .

EDITOR, *Journal of the AIA*:

I received a letter from Mr Arthur Allen, Architect, Regina, Saskatchewan, Canada, inquiring about research or experimental data on the sociological effects of physical structure. He is particularly interested in specific problems and I would like to request that you bring this to the attention of your readers. They should write directly to him at 2724 Victoria Avenue, Regina, Saskatchewan.

JOHN B. FRAZIER
East Lansing, Mich.

. . . And A Quest For Emotion

EDITOR, *Journal of the AIA*:

Mr Lapidus' "Quest" [A Quest for Emotion in Architecture, Morris Lapidus, *AIA Journal*, Nov. 1961] affords us an opportunity to acquaint ourselves with his personal and particular approach to architecture. We do, however, note certain fallacies in his theory.

Mr Lapidus would apparently have us ignore the old adage about not judging the book by its cover, and instead urges us to do exactly the opposite. This line of reasoning may be sound as long as one considers the motives of the book publisher exclusively, namely to sell as many books as possible. Thus, he is not only interested in the content of the book, but also in the way it is presented to the consumer, viz. by means of the dust jacket, or as in the case of the Brahms concerto by means of the slick envelope.

Fortunately these merchandising or packaging devices do not determine the true merits of the content of the book, the true greatness of the music, or the integrity of a particular architectural expression. . . .

The superficial embellishments used to package, say, a Hemingway novel, or a Brahms concerto recording, were not designed by Hemingway or Brahms respectively, and are definitely not part of the content. . . .

I fear that Mr Lapidus, in his "quest for emotion" chooses to cater to that segment of the population who are easily influenced by merchandising and packaging methods and other Madison Avenue devices, be it in the field of everyday utilitarian products or in the field of arts. . . . These are the "men on the street" that Mies Van der Rohe chooses to ignore—and rightfully so—for they are not the "taste makers," rather,

they are merely the followers. It is the erudite writer, composer or architect who should be the "taste maker," or, as Mies says, it is the architect who should think for the man in the street, rather than cater to his whims.

Another fallacy in Mr Lapidus' theory is the equating of ornamentation in classical architecture to ornamentation in contemporary twentieth century architecture. It is quite evident that the industrial revolution has wrought more changes in the *modus vivendi* of civilized society during the past century, than have been wrought due to other sundry causes during the preceding millenium. And particularly so in architecture: where masonry construction prevailed for the past six thousand years, the sudden introduction of steel, reinforced concrete, glass, and mass production methods into architecture by the industrial revolution caused an unprecedented upheaval in that field. Where, in the past, architecture was invariably associated with hand-craftsmanship and thus more closely related to sculpture, contemporary architecture is associated more directly with mass production and new materials and methods of construction, more compatible with the pace and the trends of contemporary living.

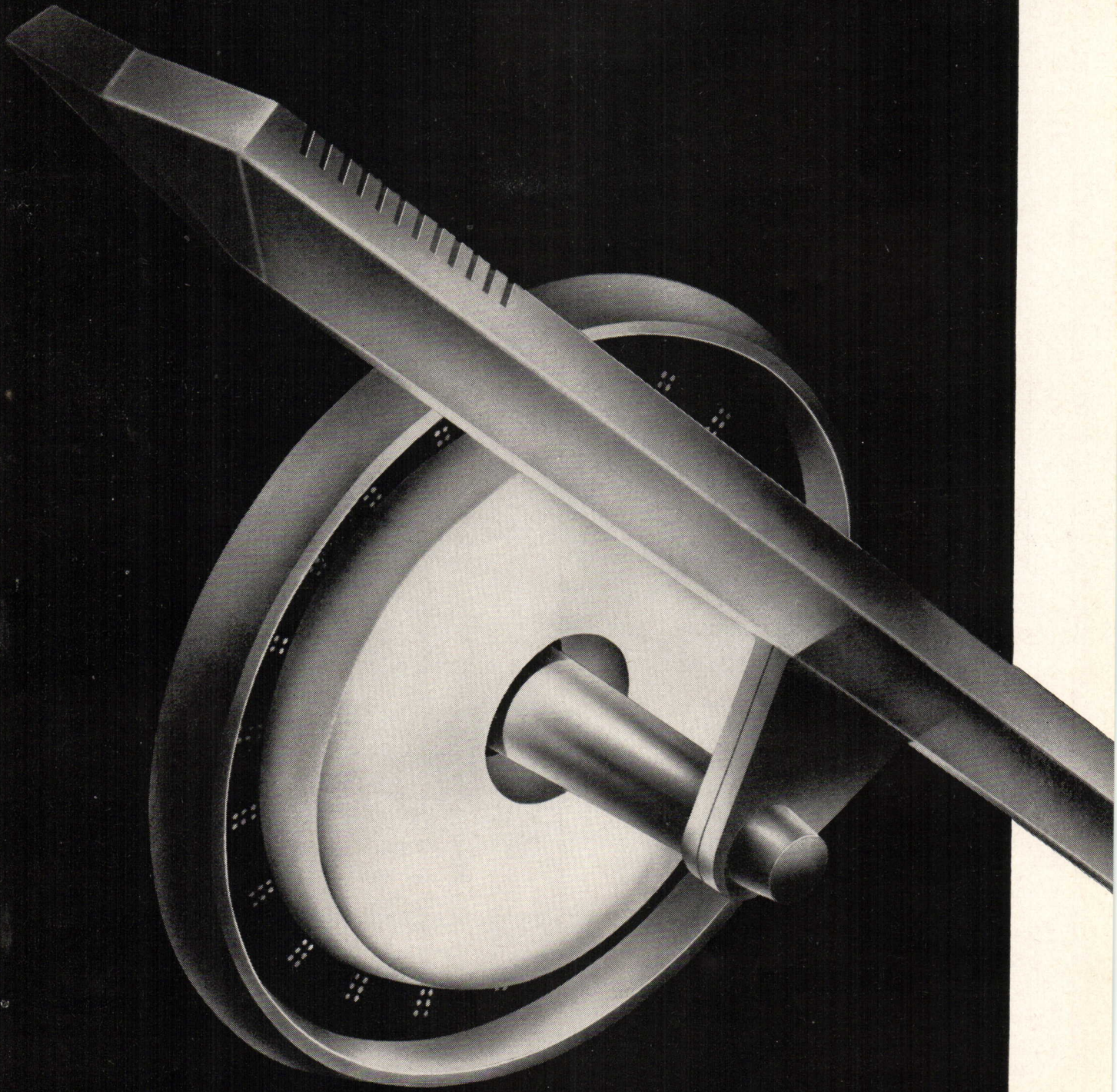
We almost invariably arrive at the inevitable separation of pre- and post-industrial-revolution idiom in architecture. Where many analogies and similarities existed in the various epochs of the "pre" period at least insofar as ornamentation was concerned, none of the examples of those epochs could be readily related to the "post" period. And whenever such an attempt was made, it resulted in neo-classicism or eclecticism.

Thus, we reach the conclusion that the "post" period idiom is unique and unto itself, just as our century is unique in history, and should therefore be regarded not in the light of past centuries but in the light of our present day needs, desires and aspirations.

Indeed, adornment is important in architecture, but it should be part and parcel of the form, or content of the building. It should be compatible with, and be the reflection of the spirit of the time. It should be homogeneous and compatible with the various elements of the building, not a pretentious "book jacket" shrouding an ostensible lack of content.

RUDOLPH HOROWITZ, AIA
New York City

(Continued on p. 10)



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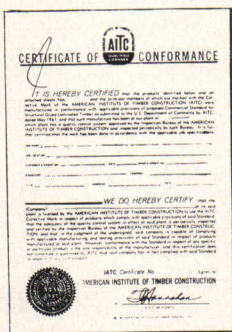
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AIP Cites Eliot

The American Institute of Planners gave its Distinguished Service Award in December to Charles William Eliot II, Professor of City and Region Planning in the Harvard Graduate School of Design.

Mr Eliot was cited as "public official, practicing city and regional planner, landscape architect, and teacher, for his distinguished service to the nation, the federal city, and communities in Massachusetts, Virginia and California."

As city planner and as Director of Planning for the National Capital Park and Planning Commission from 1926 to 1933, Professor Eliot drew up the plans for the federal district's systems of parks, parkways and playgrounds—including the George Washington Memorial Parkway, and the Baltimore-Washington and Suitland Parkways.

Recently he has been responsible for plans for the greater Burlington area in Vermont, for Boxford, Lincoln, and Groton, in Massachusetts; and for a report on the banks of the Charles.

Building Arts Exhibit

The Architectural League of New York recently announced the 62d National Gold Medal Exhibition of the Building Arts, which will be held in New York City from April 6 through 27.

Theme will be the progress that has been made, during the last three years, in the interrelated arts of architecture and interior design, engineering, murals, sculpture, landscape architecture, craftsmanship and industrial design.

Submission of material is open to any practitioner of the allied arts who is a citizens of the US or its territorial possessions, whether or not he is a member of the League. For further information, write Architectural League of New York, 115 East 40th Street, New York City.

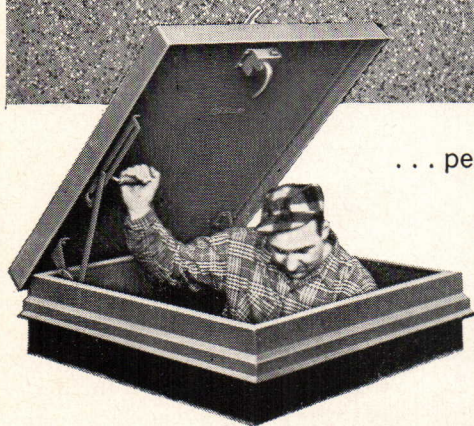
Rotch Scholarship

Exercises preliminary to selection of the seventy-third winner of the Rotch Travelling Scholarship will be held in April.

Applicants must be US citizens, under thirty-one years of age on March 15, 1962, whose architectural record includes study or experience in Massachusetts. Applications are due by March 19. The scholarship stipend for 1962 is \$5000. For further information write: William G. Perry, Secretary, Rotch Travelling Scholarship Committee, 955 Park Square Building, Boston.

(Continued on page 14)

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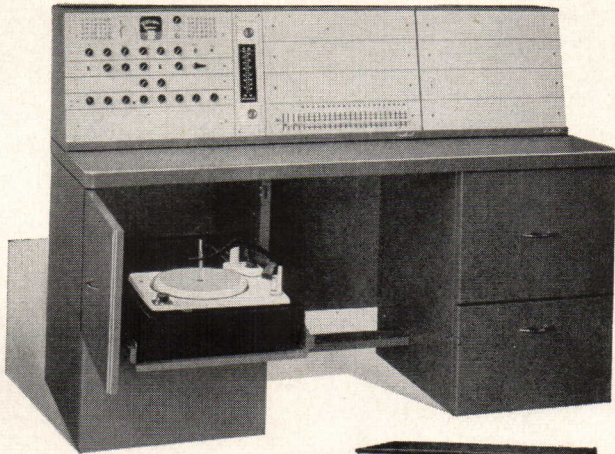
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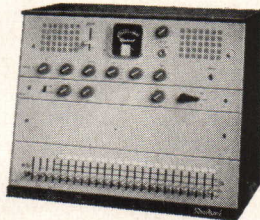
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Gropius Honored

Walter Gropius has been awarded The Kaufmann International Design Award, 1961, for "achievement in design education," based on work done under his leadership at the Bauhaus. The award was made in January in New York City.

The \$20,000 award, the largest offered in the design field, was presented by Sterling A. Callisen, President, Parsons School of Design. Accompanying it was a crystal symbol designed by Finn Juhl.

In November Dr Gropius received the Gold Medal of the Royal Society of Arts (called the "Albert Medal" because it was originally presented by Prince Albert, Queen Victoria's consort.) In line with this tradition, the medal was handed to Dr Gropius by the present consort, the Duke of Edinburgh.

Reynolds Jury

Appointment of a jury for the second annual Reynolds Aluminum Prize for architectural students has been announced by AIA Members are:

Olindo Grossi, FAIA, dean of the School of Architecture, Pratt Institute; Linn Smith, AIA, Birmingham, Michigan, director of AIA's Great Lakes Region; Harold Spitznagel, FAIA, Sioux Falls, South Dakota.

The Reynolds competition offers a national prize of \$5000 for the best original design for a building component in aluminum. The top prize is divided equally between the winning school and the student or student group submitting the design. Design winner from each participating school is awarded \$200, and the collegiate winners are entered in the national competition.

Memphis Festival

The Memphis Chapter, AIA, produced a unique entrance device for the first annual Festival of Arts held in Memphis recently.

The chapter contributed their efforts to design the entrance, which achieved visual excitement through the placement of prestressed cable nets. A spokesman for the chapter described it as "high warped planes, twisting from a circle into a series of vertical surfaces which design a sequence of spaces."

Although some outstanding architects and designers have used canvas stretched in various ways to define space and please the eye, he continued, "as far as the we know," cable netting had never before been used in this manner.



A · I · A

Journal

Some Impractical Ideas for the Improvement of Cities

by Robert L. Zion, ASLA

It is about time the heavy topic of urban design was approached in a lighter vein. Maybe this puckish approach will lead to some of Mr. Zion's not-so-puckish suggestions actually being carried out. The author is a member of the firm of Robert Zion-Harold Breen, site planners and landscape architects, of New York City

► In these days of cholesterol panic, one insidious ailment has spread rapidly and unremedied among planners in high places. Its common name: "Hardening of the Categories"—a sort of total occlusion of the imagination.

Victims of the disease are stricken first in their vocabulary—an increasing recurrence of certain telling words: *extravagant* (in the sense that the grand boulevards of Paris and the parks of London take real estate off the tax rolls), *impractical* (as the canals of Venice), *unfeasible* (as the breath-taking siting of San Gimignano), *uneconomical* (as Tivoli, Copenhagen's in-town amusement center).

No cure is yet known, and though therapy can now restore most coronary cases to normal lives, the insidious combination of flattery and fear which surrounds all political jobs induces sick planners to continue useless and, in many cases, destructive careers.

With the exception of certain sections, perhaps, of Boston, Philadelphia, Savannah, San Francisco and New Orleans, American cities have "designed" pleasure right out of their lives by using efficiency and economy as their sole design criteria. Anyone who lives or works in our cities today will attest that they neither work efficiently nor charm effectively. If they are to survive, we must introduce some of the "impractical" amenities and pleasures of urban life which Europeans have treasured for centuries. Here are a few such conceptions which would add to the pleasure of life in New York or any other city:

Instant Galleria

What American tourist sipping espresso at a cafe in Milan's Galleria or strolling through the GUM Store in Moscow hasn't wished for a similar



Desolate scene in New York's East Fifties after a snowstorm . . .

place at home? Easily done! The recipe: Take one crosstown street (predominantly low brownstones) and close to auto traffic; pin aluminum frames to the walls of buildings on both sides (greenhouse construction); span street and roof with lightweight transparent plastic; install sidewalk cafes. Heat with braziers for winter; air-condition for summer. Cut service alleys from two adjoining streets; season lavishly with potted palms; trail flowers from upper story windows; add pools and fountains to taste. Then, enjoy the mad scramble for leases at astronomic rentals in this in-town all-weather shopping center. Arrivederci Milano!*

Lost Opportunities

Every true New Yorker has at some time looked with nostalgia at a midtown building site newly cleared by demolition crews and imagined it a tree-filled square. How tantalizing was the

*Strangely enough, Cleveland and several other American cities already have arcades, which they have allowed to deteriorate. These facilities can be turned into priceless advantages in the new struggle to revive the Central Business District.

abandoned Astor Plaza site for almost a year—begging to be filled and planted to trees, which New York needs so desperately. Imagine the Seagram Building on a pedestal overlooking “Seagram Park” (a Madison Avenue adman’s dream). Costly? Perhaps too much to expect of private industry—though the advertising possibilities of such a donation are limitless—but not too much to expect of the city. The outright cost of the land and its removal from the tax rolls would be more than repaid by the inevitable increase in the taxable value of surrounding properties overlooking the new park.

Parklets (The Kinney System)

It is a certainty that New York City can never acquire too much park land. We desperately need every parcel we can get, but not every acquisition need be a Central Park or a Bryant Park—not every park must have a meadow or lake or ramble—or even grass. Webster defines a park as “a piece of ground, in or near a town or city, kept for ornament and recreation and usually

enclosed." Central Park fits this definition. But, so does the 50' x 100' site of a deteriorating brownstone, leveled, paved and planted solidly to trees and enlivened perhaps by the splash of a wall fountain. Fifty or one hundred such parklets scattered throughout town would add immeasurably to the pleasure of life in the city.

If the Kinney Parking Systems were converted into the Kinney Park System—each parking lot made into a "parklet" as described above—New York City would be the greenest city in the world with adequate space for Mr Hartford's "Memorial" well outside Central Park and, perhaps, even a new home for evicted folk singers. Our choice for the next park commissioner: A. H. Kinney, for the keen sensitivity with which he has unwittingly assembled a perfect urban park system for New York City.

Zoolets

Any New Yorker who has ever dined on the terrace overlooking the seal pool in Central Park will assure you that this is one of the most delightful experiences in our city. It isn't the food, certainly, so it must be the animals. And anyone who has worked on lower Broadway for a time will recall with a sigh the pleasant lunch-hours spent in the aquarium (seals again!)

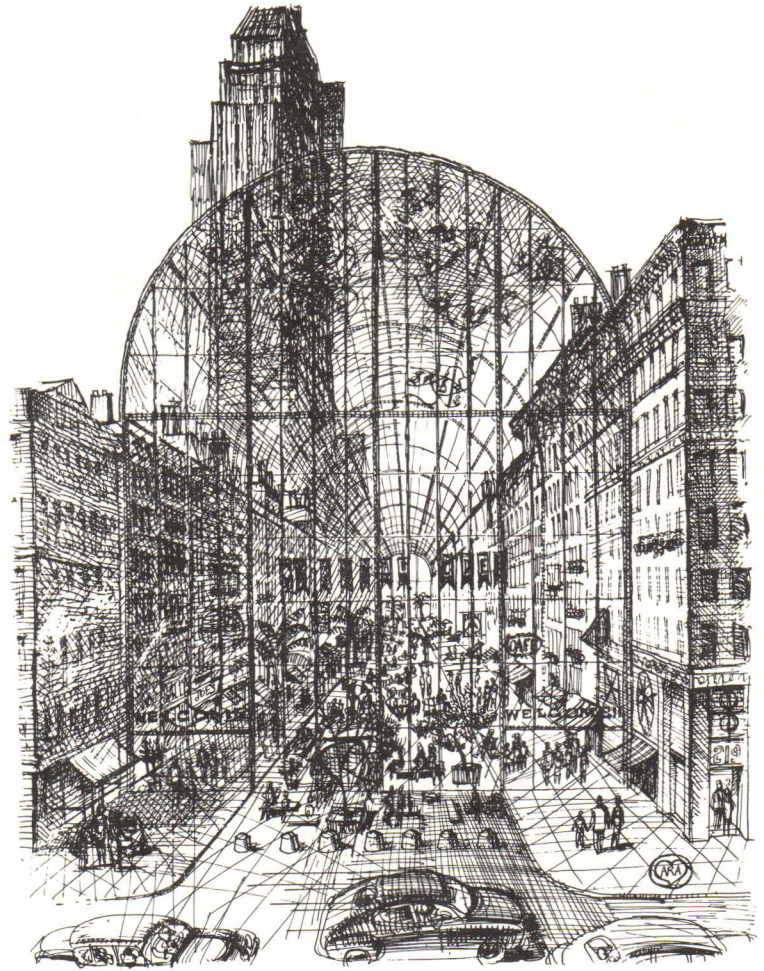
If animals bring such pleasure, why not scatter them throughout the city in little "zoolets" or one-ring zoos. A seal pool at one location, a monkey cage or aviary of brightly colored birds at another.

The "parklet" which houses a "zoolet" will be fenced to protect the animals and a subway token or more charged for admission to defray maintenance costs (an attendant). Perhaps a municipal band made up of golden-aged musicians might oom-pah-pah during the lunch-hour.

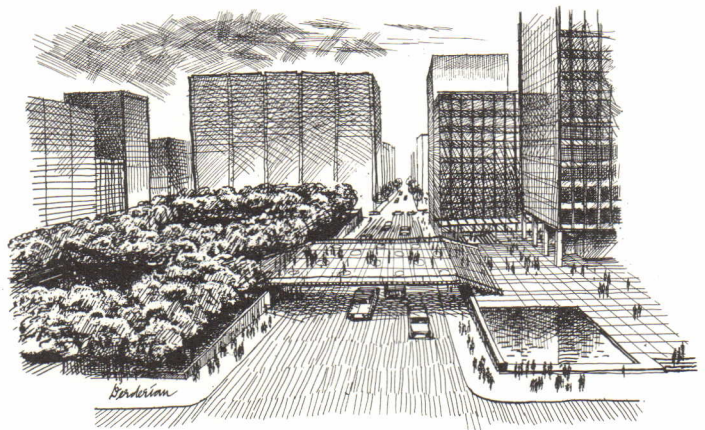
Down to the Sea Again

New York City is an island, yet how seldom in our daily living are we aware of or able to enjoy this delightful fact? We have turned our backs to the water, ignoring the excitement, the color, the sound, and the romance of the busiest harbor in the world. Strange, when we all know of the delights which the Seine brings to Paris, the canals to Venice and the Thames to London. What traveler to Naples can forget dinner at a harbor restaurant set to the music of strolling mandolinas?

Except for a narrow linear park along Riverside Drive and a very grand bland bore at the Battery, we enjoy no social use of our waterfront; we have handed it over to commerce without a whimper. Let's take it back and treat ourselves



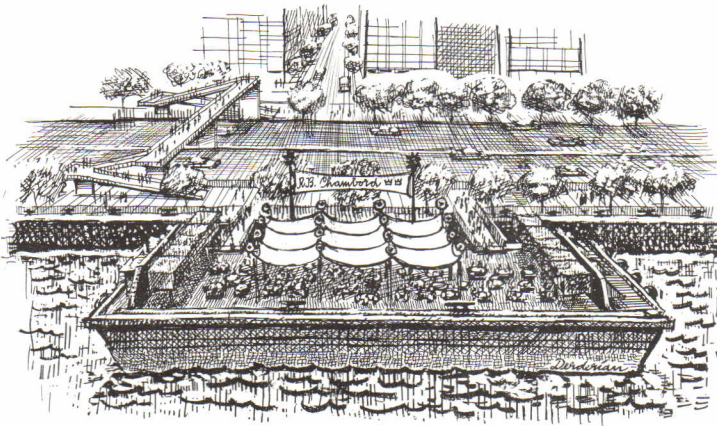
... could be replaced by "Instant Galleria" sketched above. Pedestrians stroll and dine in protected arcade



Sketch above shows an adman's dream—Seagram Building on pedestal overlooking tree-shaded "Seagram Plaza"



System of parking-lots could be converted to park-lets to provide a patch of green for city-dwellers



How about using barges as floating restaurants like "USS Chambord" for luxury dining with a river-view?



Visitors to New York would enjoy their stay as guests in waterfront hotels like this one in Geneva

to some hotels and restaurants (municipally owned concessions, perhaps) on those abandoned piers. Or flatten the roofs of some of the active piers to accommodate glass-walled restaurants with ceilings open to the sky in the summer. Perhaps the steamship companies can be induced to supply the cuisine so that atop the French Line pier one could dine and dance as aboard the *Liberté* while watching the great liner being loaded under floodlight. This ought to give ocean travel a boost. And while they're at it, why not revive the midnight sailing with band music and color streamers?

Why not river barges (reconditioned sand and gravel scows) equipped as restaurants or dance pavillions moored during the spring and summer along the East and West Side Drives? It's done in Rome and even in Moscow.

Water Squares

Let's allow the river to come back into the city as it used to and recreate the old water squares or "slips" as waterfront parks where downtown workers can dine alfresco at the water's edge.

Many of these old slips are surrounded by blocks of early nineteenth-century buildings intact but deteriorating rapidly. Too little of our past is allowed to remain, as housing projects and commerce centers require that entire sections be destroyed to make room for characterless immensities. That we miss the past can be seen from the annual tourist trek to the old cities of Europe. Museums don't help. It's the living, *working* past that charms. Let the city recondition some of the old buildings that cluster around the east-side slips. One slip could become a gourmet square where the ground floors would be equipped and rented to the finest seafood restaurants in town. And during the spring and summer, there could be dining at the sidewalk under trees (autos would be excluded). Another slip could become the antique center of the city, the ground floors being rented exclusively to antique dealers. How much more suitable to use these buildings of the past than to scatter antique shops haphazardly along Second and Third Avenues. And how much better for business and tourist trade this picturesque concentration could be—an elegant "Flea Market" to vie with Paris, Rome and Madrid. And the upper stories could be restored to apartments. A delightful place to live!

The City After Dark

Such a plan would bring life to a section of the city which few New Yorkers ever visit—a dead city after dark. The city of Philadelphia is sponsoring a large restoration program, but we can

learn from the Philadelphia story that the restoration of isolated buildings as opposed to clusters or entire districts takes on the lifeless character of a museum.

The Compleat Transportation Center

History nowhere records an attempt of the Doges to suspend bocce courts or bowling alleys from the ceiling of San Marco. But New Yorkers have recently been told that this is the only means of saving Grand Central Station.

If a town square must produce income to survive (Grand Central is, after all, a town square) then let's eliminate the cheap shops that clutter the interior, and those giant cigarette ads. Rip the automobile chassis from the walls, and in their place—along the grand balconies—accommodate ticket offices of all the airlines, steamship companies, travel agencies, etc.—everything to do with travel. It will perhaps be possible to utilize the abandoned train tunnel on Park Avenue south of the terminal to bring in airline buses, thus eliminating any need for the East and West Side Terminals. Rentals now accruing to these inconveniently located (and ugly) facilities would certainly keep Grand Central afloat without hanging anything from the ceiling unless it's a ticket agency for trips to the moon.

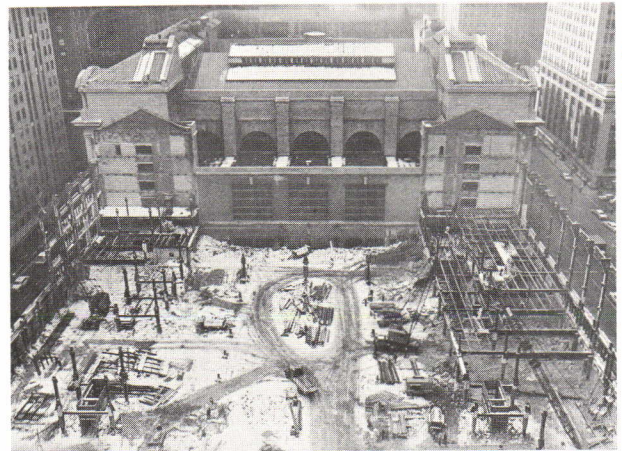


We're all for a grand equestrian statue of St Jane Jacobs in Washington Square Park—with lots of pigeons on it—for her lonely crusade to preserve neighborhoods for the underprivileged! But, Jane, let's not abandon the privileged and the overprivileged who are always with us. Along with Mrs Jacobs' corner candy store let's have some waterfront hotels and restaurants, gallerias, sidewalk cafes, parklets, zoolets, etc.—“impractical concepts” only if the word *pleasure* is no longer a part of the planner's vocabulary.

If a piece such as this must have a conclusion, it is this: American city life is clearly not the delight it should be. Yet, we can't place all of the blame on the “constricting regimentation” of the gridiron plan. Some goes to the designers who are thinking “too big”; they are redesigning huge areas but ignoring eye-level details and the pleasures of the pedestrian. But largely responsible for the plight of our cities are the all-too-practical planners. If our urban designs are to revive our ailing cities, we must first revive or replace our ailing planners and city officials. When “imaginative” and “impractical” are used synonymously around City Hall it's time to open the windows and air the rooms. ◀

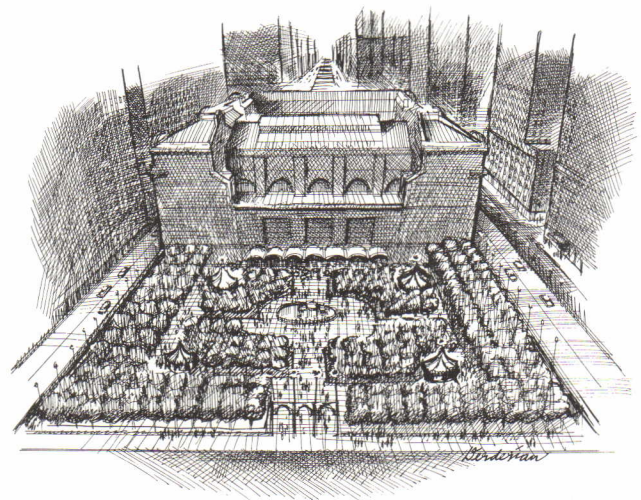


We lag far behind foreign cities like Naples (shown above) in the use and enjoyment of our waterfront areas



NY Times

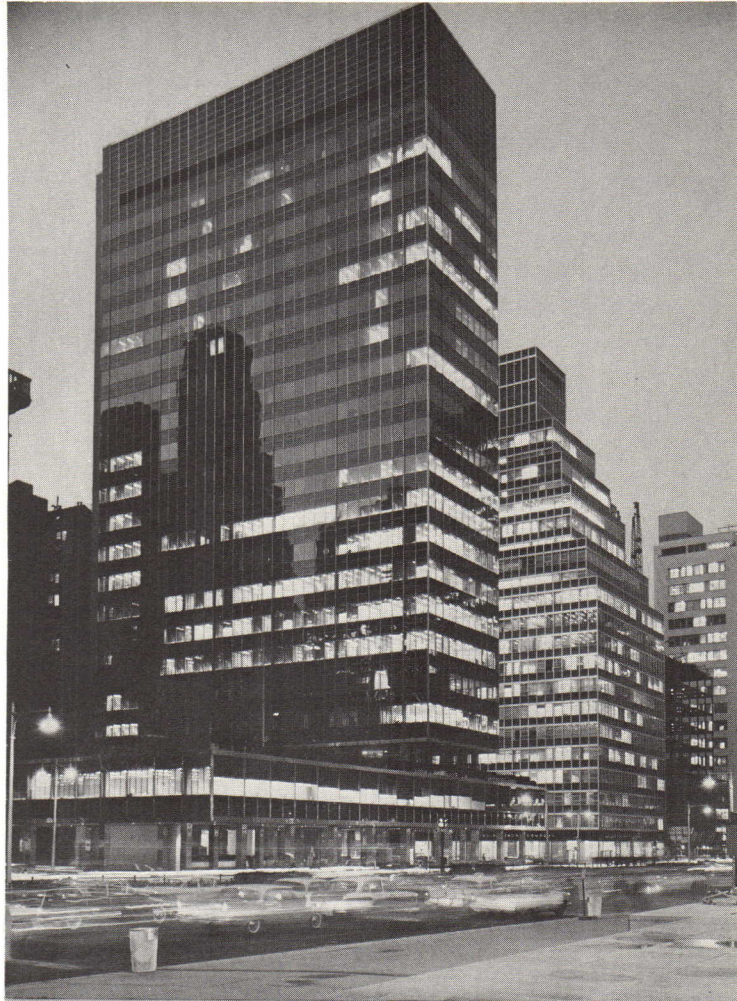
Grand Central Station—an eyesore for New York visitors



Grand Central, showing proposed “zoolet,” dining terrace

H. Armstrong Roberts

Glassiest and
glossiest of the new,
typified by
SOM's Lever House,
stands almost cheek-by-jowl
with its elderly
Park Avenue neighbor
the Racquet Club



Standard Flashlight

1 **The Hon Stewart L. Udall, Secretary of the Interior**

“Our country is fortunate to have, in Stewart Udall, a Secretary . . . who has keen perception concerning preservation . . . before we finally lose everything and become a barren and faceless land.” So ran a letter to the editor of the St Louis Post-Dispatch recently. Here are some of Mr Udall’s views, condensed from an address to the Downtown Lower Manhattan Association

► “The National Park Service, in analyzing the various freeway plans, wishes to emphasize that there are historical values in Old Sacramento important to the community, the state, and in a degree the nation, and it therefore urges the preservation and restoration of Old Sacramento as far as possible.”

Those words, from a report issued recently by the National Park Service—the Interior Department agency responsible for preserving historic sites and values of national significance—sound a note which has become all too familiar, all too close, to all of us.

The report was the outcome of studies of the various proposed routes of the North-South Freeway in Sacramento, California. In jeopardy, it pointed out, were more than thirty structures in Old Sacramento importantly associated with broad aspects of Western history and with notable men and events.

Involved, for example, are two buildings considered to be of particular historic value. They are the Big Four House and the Pony Express Terminal.

(Continued on p. 35)

Two Looks at Preservation

2 **Nathaniel A. Owings, FAIA, Partner, Skidmore, Owings and Merrill**

Mr Owings, a partner in Skidmore, Owings and Merrill, here refutes the charge that the contemporary architect looks with a jaundiced eye at preservation. Let us save the best of what is old, he says, and design the new in such a way as to be compatible with what we are preserving. The article is condensed from the author’s remarks to the National Trust for Historic Preservation

► How does preservation look to the contemporary architect? With what sort of eyes does he view our historic inheritance?

Are they the eyes of a vulture seeking out the dead past to pounce upon? Are they the eyes of a vandal, destroyer, annihilator? Does the owner of these eyes have for his coat of arms the bulldozer rampant on a field of national shrines?

Isn’t there a natural cat-and-dog relationship apparent between those dedicated to the preservation of the past and those charged with the building for the future?

Doesn’t the contemporary architect tend to accuse the preservationist of extending the dead hand of the past, and to arrogate to himself the sanctions of progress and enlightened growth?

Confidentially, I can tell you as a contemporary architect, that if you could get a good look into those eyes, you might detect a note of doubt—even of confusion.

Of course, the word “contemporary” itself has, in effect, been leading a double life. It has become a generic term meaning a style of architecture, while in actuality, its true definition relates to time.

(Continued on p. 32)



Monument Circle, Indianapolis

Every architect in every age is a contemporary architect of that age, providing he works in the idiom of the period. The contemporary architect actually has no choice—he is always standing at the crossroads of history, where the present time is a mere flitting point in space and the determination of the historic significance of what we have done, are doing, or will do, must remain something of an enigma, until sufficient time has elapsed to give us a perspective. When that time arrives, it is usually too late to do much about it.

The interplay between our past and our future is highlighted in a tragicomic way by the entanglements developing in New York City in connection with the nobly-conceived, culturally-oriented, contemporaneously-designed Lincoln Center, where innocently enough, the possible fate of the tradition-steeped old Metropolitan Opera House and austere Carnegie Hall have developed protagonists and antagonists, where everyone is sincere, well-intentioned, and in conflict.

I have no formed opinion as to which is right or wrong. This schizophrenic approach seems to be shared generally across our own land, due perhaps to our relative national youth. We have been able, as a nation, to show a genius for creating agencies of destruction of extraordinary power in the name of the false prophet "Progress," with our bulldozers, our subdivisions and our freeways.

It is my belief that we can no longer afford the luxury of this laissez-faire policy towards the plundering of our land as a whole. Perhaps the relatively mild conflict between the preservationist and the contemporary architect can be put aside while we jointly fight the common enemy—the real threat to us both—namely, the general despoliation with our metropolitan explosions and our urban sprawl.

However, I do not want to mislead you with all this into thinking that we can plan our towns and cities, or that we can build our structures in any other medium or in any other frame of mind than that of our present day. To imitate, to pretend, is false and therefore unsound.

But there are basic laws of planning and construction applicable to any age. How to recapture or revive these laws is our problem, and I suspect that a more careful study of the past and the lessons it teaches will prove it to be a crucial element in our successful planning and designing for the future.

It is apparent that in every age the contemporary architect caused problems.

My own first bout with the matter of preservation of an architectural gem occurred a long time ago in Indianapolis, where I was born. I was to speak at the ground-breaking ceremonies for a giant veterans' national headquarters. In this monster's path stood a lovely Greek Revival nineteenth century wooden structure—delicate and graceful with its white porticoes—the quintessence of the serene genius of our native artisans.

Here I was—a young upstart working on a modern World's Fair in Chicago—questioning the wisdom of my elders, of progress, even of patriotism. But, I had to ask the question—to make one cry of anguish: "Why, oh why destroy this thing of beauty, irreplaceable because the period that produced it is gone?"

Progress prevailed and the handsome structure was extinguished.

At that point, architecture in the modern idiom took me on its wings, and I have been near the eye of the contemporary storm ever since—with some refreshing and welcome respites in the form of living in a 200-year old adobe in Pojoaque, New Mexico, and a more or less continuous private building program for my wife involving old wood and Victorian railings.

To me, the most endearing characteristic of my brother contemporary architect is his predilection towards settling down in old, worn, leather chairs, tucked away in dark, badly-lit corners of ancient clubrooms after a hard day at the office—the modern idiom happily discarded in favor of the tall, comfortable rooms of the University, the Racquet, or the Century.

Within this inextinguishable trait may lie the secret of a harmonious coalescence between the necessities and disciplines of our day and the luxuries and comforts of our heritage.

The hourglass is being turned and we are taking more and more a strong, direct step toward leadership in the preservation of the beautiful things of the past, and are profiting by the lessons inherent in them—and are introducing into our contemporary work their essence.

This is far different from copying or imitating. Innocently enough, our architectural taste and judgment received a brutal setback on the occasion of the 1893 World's Fair.

Which again brings into focus my own experience with Louis Skidmore.

In 1936, we were commissioned to remodel and convert the Fine Arts Building in Jackson Park—the only temporary building remaining from the original World's Fair in '93—into a permanent Museum of Fine Arts and Industry.

This huge structure encompassed an imitation of practically every known motive of the Greek and Roman periods. Doric, Ionic and Corinthian columns were there by the dozens. The Parthenon was represented, the Erechtheion Porch of the Caryatides, intact sections of the dome of the Pantheon—a selection too varied and too comprehensive to list.

This compost of choice selections from the past stands in permanent form as a monument to the 1893 Fair for all to see, converted into a useful, if incongruous, shell, for an exhibition of our contemporary prowess in science and industry: a mechanized coal mine in operation in a Roman temple; the table of elements proudly displayed in a copy of the Sacred Cella of Athena, and so on ad infinitum—acres and acres of it.

As a by-product, can it be wondered that we have developed a certain eclecticism in our national taste—or a sense of confusion in our thinking and judgment as to what to preserve and what to destroy of the past? And, even more important, what to create for the future?

You and I, for thirty years or more, have watched the plundering of our continent proceed. The real question to me is, visually speaking, just what is our native land? Just what do the words "native land" bring to the mind's eye?

To me, it has meant the cultural roots which are epitomized by the living, three-dimensional trade marks of our successive cultural developments.

I have tried to imagine what our sons consider the key significant identification mark—the unique qualities of their native land. Their impressions must be salted down with a substantial amount of utter junk—juke boxes, neon-tubes, and custom-

ized second-hand cars. As surely as the buffalo disappeared from our prairies, so the quality inherent in the term "native land" is disappearing from this earth.

But to get back to the Fine Arts Building at the Columbia Exposition of 1893. A great tragedy occurred with the death in 1890 of John Wellborn Root at the inception of the planning of the 1893 World's Fair—which resulted in the isolation of Louis Sullivan, who had to stand alone and unsuccessful against the inferiority complexes of the Midwesterners and the resolve of the Easterners to give Chicago a dazzling spectacle—their goal being much like that of a missionary to a savage land.

We all know the result. Every post office, every courthouse, every library in our land had to be an imitation of a Roman temple. As Sullivan wrote in his "Autobiography of an Idea," "The damage wrought by the World's Fair of '93 will last a half-century from this date, if not longer. It has penetrated deep into the constitution of the American mind, effecting there lesions of significant dementia."

Whether he was right or wrong is not for us to judge. But creative architecture except by Sul-

Library of Congress



Fine Arts Building, Chicago World's Fair

livan and Wright was dead for well-nigh fifty years.

This adoption of the so-called "Classic" as a national style had two effects: first, to obscure the genuine work of our earlier periods from Monticello to the Greek Revival State Capitol at Columbus, Ohio; and, second, to develop in us who were trained thirty years ago, a real fear of imitation of any kind at all, and a dread of imita-

tion as the worst sin of all—for with false Greek, Roman, Gothic, Romanesque and Renaissance all around us, it was not unnatural that we should all react violently, and even unreasonably, against historical style.

But thirty years have gone by, the so-called “modern” movement has gained unbridled sway, and some of us who had a hand in its early development look with dismay upon our present-day America, and begin to question just where all this is taking us. There is no sense in crying doom, although I am tempted to. There is a lot of sense in spreading the doctrine of the preservation of the good things in the past, which includes the not so very long ago, too.

When our firm designed Lever House some eight years ago, we assumed it would be one of the very few buildings to be built on Park Avenue in our lifetime. Look at the place now! It has reached the point where we have gone so far as to have a partner whose principal job is to stay on the board of the Racquet Club to make sure that the Racquet Club is not destroyed.

Specifically, it is time for an old-fashioned revival of the fine things of the past as an adjunct to our modern, present-day needs.

Of course, we must have high buildings in our great cities. Certainly, the new Chase Manhattan headquarters building down in Wall Street is an economic necessity—and certainly we couldn’t build a sixty-story building of Renaissance materials. But we can profit from the piazzas of the Renaissance and locate its shaft on a great central plaza—and, viewed from the sixtieth floor, we can enjoy the lovely French chateau lead-covered roof of 40 Wall Street. The bowsprit sculpture from a valiant Yankee frigate can become a major feature in the lobby, and the charming subtreasury building at One Wall Street can stand at its feet forever as a reminder of our colonial past.

There is an old saying, which I like, which refers to history as time’s negative. Looking at it, it is the mirror of the past: looking through it, it is the lens to the future.

The necessity for the preservation of the documents of the past—whether they are printed records, handicrafts or buildings, gardens or whole towns—is mandatory if we are to maintain a clear perspective in our evaluation of the things that we create today in terms of the future.

Sigfried Giedion expresses it succinctly when he says “For planning of any sort, our knowledge must be beyond the state of affairs which in history prevails. To plan, we must know what has gone on in the past and feel what is to come in the future. Living from day to day and hour to hour lacks dignity, is not natural, and leads to a perception of events as isolated points, rather

than a part of a historical process. Present-day happenings are simply the most conspicuous happenings in a continuum.”

History is not static. History is dynamic, and often we are unaware of the part we are playing today in history.

In the 1880’s, when European architecture seemed at a dead end, and Louis Sullivan, John Root, William Jenny and Wright were creating a new architecture on the prairies of the Midwest, the Chicago loop was the vital core of the world’s creative architectural designs.

This was not generally recognized until all of those great souls, except Wright, had gone.

Perhaps the Marshall Field wholesale store in Chicago—equal, if not superior, to some of the most venerated palazzos of Florence and Rome—*had to be destroyed*.

It may be that Adler’s and Sullivan’s auditorium, and Root’s magnificent Monadnock Tower must inevitably be destroyed. But it is indeed sad that the wreckers do not even “know what they do.”

Generally speaking, we Americans are much too modest in the evaluation of our own historical development, probably due to an inferiority complex inherent in our English ancestry.

But why should we have an inferiority complex? The chaste simplicity of the neat white church on the village square in New England, and the Greek Revival architecture scattered sparingly from the northern reaches of New York State, through Pennsylvania and Ohio, to the lovely buildings on the banks of the St Charles in Illinois, or the honest old adobes in New Mexico and California, are as rare and beautiful as anything to be found anywhere. May my grandchildren enjoy them as I have.

But a contemporary architect has to create out of existing conditions an environment, a plan, a building. He has to study existing conditions and to evaluate them in order to determine the causes and probable effect of present-day trends, and thus to project all this into a three-dimensional prognostication of the future, a workable blueprint for housing our modern activities.

This is quite an order—so complex that we often feel we don’t even get off the ground. As professionals, we must look at the problem of planning as a totality. One of the greatest challenges lies in areas already blighted, where redevelopment is planned or underway—where today, with the excellent laws providing aid at Federal, state and community levels, we have an opportunity to re-do an area. Often this is the last opportunity, and one which will permit no second guess.

We love old things. We want to keep as much

of the past as possible—but we still have to face the fact of the automobile and one-stop shopping practices, both of which require large, unobstructed areas in which to do the basic planning.

Referring to Indianapolis again—there stands in the center of our town the Monument Circle. The monument in the center of that circle is one of the curiosities of the world. Such a combination of incongruous forms, shapes, sculptures, fountains and central shaft I have never seen. Dedicated after the Civil War to its war dead, it epitomizes the extremes in all that is bad in art, sculpture and composition. And yet, so lovingly and sincerely and confidently is it put together, and so consistently bad is it as to become, in a peculiar way, a work of art. It will, I pray, always remain.

I have another reason for a great interest in a strong, national program of preservation of our national monuments. This is because I am worried about the future cultural content of our architectural curricula.

There is an extraordinary gap in the schools

today in the teaching of the history of architecture. I even discovered, to my horror, that some of Skidmore, Owings & Merrill's earlier buildings are now being studied in the schools, and considered a part of architectural history.

We need to renew the emphasis on the classic periods of architecture throughout the ages and a healthy national sympathy toward our own historic monuments. I believe there is already a marked swing in this direction. The need is being recognized for going back to first principles—to study originals instead of derivatives.

We are beginning to recognize that the age of science leaves much to be desired—that the humanities, the homely handicrafts of the real, rather than ersatz, are becoming more in demand.

Architecture is the printing press of all ages, and gives us a history of its society. Architecture is the expression of national life and character, and is produced by a prevalent and eager national taste. Architecture has been and will continue to be a record of man's aspirations. ◀

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Two Looks at Preservation

by **The Hon Stuart L. Udall** (*Continued from p. 31*)

Here the "Big Four"—Huntington, Stanford, Hopkins, and Charles Crocker, assisted by the engineer Theodore Judah, planned, financed, and built the western end of the first transcontinental railway. Here the Pony Express built its original western terminal and began writing another colorful chapter in the history of the Old West.

These buildings, and the score or more others remaining in Old Sacramento, offer an opportunity to recreate and preserve a significant segment of the pioneer Western scene for the inspiration, education, and enjoyment of future generations. If the choice has to be made, as the National Park Service report observed, removal of historic buildings to new sites is to be preferred over demolition.

This one case is merely symptomatic of the fact that, from one border to another, America's irreplaceable historic places and buildings are being

threatened with impairment and destruction on an unprecedented scale—and of the additional fact that more and more Americans are awakening to this threat and taking effective action to preserve all that we still can of our significant historical heritage.

The greatest threat, of course, results from our rapid population growth and the almost awesome mushrooming of urban development.

Everywhere across the land this swelling tide of people is demanding more living space—more subdivisions, more freeways, more supermarkets, more reservoirs, pipelines, parking lots.

The public officials and private entrepreneurs who must meet these demands are understandably impatient with anything which stands in their way—particularly if those things happen to be old buildings or "worthless" historic sites.

The result—for those who feel that some of

St. Louis Post-Dispatch



"Miss America of War" and "Miss America at Peace,"
D. C. French sculpture on old Post Office, St. Louis

Metropolitan Museum of Art



Harral-Wheeler mansion in Bridgeport, Connecticut, was
an outstanding example of Greek Revival architecture

Mathewson, Bridgeport Post



Despite efforts of preservationists,
Bridgeport lost the mansion, a beloved
local landmark, to the bulldozers

the old values of our Nation deserve consideration with the new—is little short of appalling.

At Gettysburg, for instance, artillery pieces placed in the positions of original batteries now point into the kitchen doors of subdivision homes.

Despite angry public protests, the city of Bridgeport, Conn., recently ordered wreckers to demolish the Harral-Wheeler mansion, a 115-year-old landmark and example of the Gothic Revival in America.

A few years ago, it was decided to expand a parking lot in Charleston, S. C., and in the process the beautiful 152-year-old Orphan's Chapel was torn down.

Today, a determined fight is being waged by citizens of St. Louis, Missouri, to save one of that city's most impressive landmarks—the Old Post Office building, designed by the noted government architect, A. B. Mullett, and erected in the tumultuous aftermath of the Civil War. The Federal agencies presently occupying this wonderful old structure soon will be moving to a newly completed office building and the familiar powerful forces of modern progress sorely threaten its existence.

New York's Staten Island provides a striking example of the accelerating rate of obliteration of the historic past. Before the year 1809, records show that a total of 477 structures were erected there. In 1919—110 years later—one out of four of these buildings was still standing. But in the next thirty years all but some fifty or so of the original 477 had disappeared. At the present rate of demolition, all will be gone in less than ten years.

Of course, no one maintains that every old house or building should be saved. Possibly many of the 100,000 or more historic places in this country are not as important as the new schools, new shopping centers, and new highways which will replace them. But many thousands of these sites and buildings do have something to say to the present and the future. They do throw light upon our history and the development of our culture. They do bring history to life by presenting the only possible authentic environment.

New York is not alone in suffering from the ills of the supermetropolis. In varying degrees megapolis poisoning has become a national syndrome. The cure does not lie merely in prescribing more operations on the face of America. Let us be content to look our age.

This Nation simply cannot afford to lose its buildings, sites, objects or environments of *substantial* historical or cultural importance.

It was with full understanding of this fact that another conservation-minded Administration sponsored and won approval for the Historic

Sites Act of 1935, which declared it to be a "national policy to preserve for public use, historic sites, buildings and objects of national significance for the inspiration and benefit of the people of the United States."

Obviously, however, the task of saving as much as possible of our national historical heritage is a tremendous undertaking, requiring skillful direction, imaginative planning, determination—and money.

In recent years the American people—with their growing realization and appreciation of the value of their historical and cultural background—have called on the Federal government to take a larger part in the preservation of historic sites and buildings. Since 1950, an average of some seventy sites each year has been recommended by cities and states and private historical societies for establishment as new units of the National Park system.

Clearly, the Federal government cannot undertake historic preservation on such a scale. To hold any hope of success, this enormous undertaking must be a joint venture in which Federal, state, and local agencies—as well as patriotic private individuals and organizations—work as partners.

This basic fact was recognized by still another Congress when, in 1949, it chartered the National Trust for Historic Preservation. The National Trust is an independent, non-government organization created for the specific purpose of encouraging public participation in the conservation of America's historical resources.

Supported entirely by the bequests and donations of individuals, groups, and organizations with a sympathetic interest in the preservation of the American way of life, this voluntary agency has already been given several properties and is encouraging and aiding numerous other historical conservation projects throughout the nation.

The truth is that the value, the contribution, of the private citizen in preserving and perpetuating our links with the past simply cannot be overestimated.

The history of the preservationist movement has been enriched by the actions of aroused citizens.

Thoreau's Walden Pond would be a public swimming resort today were it not for an embattled group of Concord patriots that fought this misuse to the Massachusetts Supreme Court and won. The Chalmette National Historical Park—the battlefield where Jackson stood off the British at New Orleans—would be a sewage treatment plant save for the efforts of a citizens' group.

Roosevelt Island, that charming bit of river woodland in the Potomac, was slated to be the site of a sprawling warehouse until the Theodore

Roosevelt Association preserved it as a memorial to one of America's great conservationists. The determination of a woman member of Congress, Frances Bolton, led to formation of the Accokeek Foundation that saved the unspoiled Potomac River bank across from Mount Vernon from becoming another development.

The rolls are open for the enlistment of thousands of others similarly dedicated and aroused.

There are other heartening signs. State governments have enacted progressive legislation. An example is the Bard Act, passed by the New York State Legislature in 1956, permitting cities to adopt special zoning or use of places, buildings, structures, or works of art having special historic or esthetic value. A short time ago, Mayor Wagner of New York City had the foresight to appoint a committee headed by the noted architect Geoffrey Platt to investigate legal ways and means of implementing this important piece of legislation.

It is my opinion—and one in which I have very strong convictions—that the time has come to provide machinery in our law for the automatic preservation of such historic sites when they fall into the "surplus" or "unneeded" category; that provision be made, not for their sale, but for their addition to our great system of national parks and memorials, or their transfer to independent groups or patriotic organizations which have an interest in their preservation for time and generations to come.

An example of the essential role that the private citizen can play in preserving our wellsprings of national character may be seen in the recent donation to the Federal government by the Theodore Roosevelt Association of Sagamore Hill, the historic Long Island home and summer White House of our great pioneer conservationist.

In addition to the 22-room Sagamore Hill estate, left as it was at the time of Theodore Roosevelt's death, the Association also has donated the Theodore Roosevelt birthplace in New York City, and a sum for their upkeep.

Some of course may ask, why is it important to save these old places, these ancient buildings?

Part of the answer must be found in the value of history itself.

History is the cumulative memory of mankind, and without it we can neither fully understand the present or wisely plan for the future.

History shows us how much we owe to the past sacrifices of others. It kindles in us a quiet pride in the accomplishments of our forebears, and makes us determine to put the future in debt to us.

This resolve is that true patriotism without which no nation or people can survive. ◀

(Our thanks to the National Trust for Historic Preservation, the Commission on Chicago Landmarks, and others who helped in the collection of material to illustrate these articles.)

Prefabrication Revisited

by W. Lawrence Garvin

Professor Garvin, currently an Associate Professor and lecturer on building technology at Clemson College, South Carolina, takes a new look at prefabrication in the light of today's building problems and techniques

► The long heralded advance of "industrialization" upon the building industry appears to be moving with discomfoting slowness. Too, for all that factory methods offer, many have considered prefabrication the most advantageous form of utilization. To the present time, however, neither industrialization in general nor prefabrication in particular has influenced architecture as expected. The inherent advantages of both are well known and warrant our continued efforts to find the means for their full exploitation. Toward this end prefabrication invites re-examination.

The virtues of an architect in the role of "master builder" continue to be applauded by some, while others display increasing concern regarding the complexity of contemporary buildings and express the need for collaboration. The first pleads for a more comprehensive role for the architect, while the latter seems to accept an increasingly limited sphere of architectural influence. The latter view might be construed as an abdication of the very realm to which the former lays claim.

Within the discussion of roles, no clear value is assigned to architectural knowledge. Rather, the distinction between knowledge and creative intuition is sufficiently ill-defined as to permit intuition to be considered an adequate substitute in the absence of knowledge. The urgent necessity of distinguishing between the two is underscored by building's own pressing need for the utilization of the great wealth of professional and industrial knowledge presently at our disposal which is accurate and impersonal.

Let us recognize that our world is at once made richer and more complex by the rapidly expanding accumulation of knowledge. What one may consider overwhelming, another views as only a threshold. This contrast is certainly not unique to our own age. We may benefit, however, by observing how complexity is surmounted by other professions. The mathematician is a particularly hopeful example. When the complexity of problems threatened to absorb whole lifetimes of effort, he developed machines to do the calculations and utilized his talents to conceive the programs to manipulate the machines rapidly through the problem's many steps. This is not to suggest that draftsmen will be supplanted by machines, but rather that the architect must find a means of arriving at solutions which integrate the complexities of his building by their very nature; to free himself from solving one joint, one corner, or one trade at a time. A more comprehensive knowledge is implicit in such solutions; those architects who ignore the need may well relegate themselves to being the "buggy makers" of the next generation.

While the professional differences continue, national attention is directed toward the rapid growth of new, and the rehabilitation of older, core cities. The scale of such projects involves the corporate client and larger architectural organizations. Thus, the magnitude of architectural projects seems to be growing as rapidly as their complexity. The prospects for the architect who complains about this complexity seem dismal.

An Integrated Package

For projects both large and small, increasing emphasis is placed upon integration of efforts and of components. Particularly as an integrated package, the idea of prefabrication is enticing. It continues to be so, notwithstanding its lack of complete success. While few good examples persist on the market, the idea seems valid, and the question thus arises as to whether or not it is the specific application which has been fruitless, rather than the general idea.

Prefabrication appeals to the architect in two quite different ways. The sociological appeal is the benevolent contribution, of which the profession is capable, in providing physically and emotionally satisfying shelter. For that segment of our population which cannot afford their services, some architects have sought to satisfy these needs through the economics of prefabrication. The system of carefully designed parts at once provides order, quality and sufficient variety for individual expression.

The technological attraction is the challenge of solving the joint problems for interior, exterior, horizontal, vertical joints, and where the three mutually perpendicular joint lines intersect. The best solutions to these problems, by virtue of their apparent simplicity would be unappreciated by the layman, while in fact the simultaneous resolutions of universality, strength and sealing problems is one of the most demanding of tasks.

Admirably complete prefabricated dwellings have been offered to the public from time to time. None has enjoyed continued success. There are on the market, dwelling and other building packages with varying proportions of prefabrication which are commercially successful. None of these incorporate conspicuous solutions to the joint problem and all provide only limited flexibility. In fact, it appears that the more technically complete the prefabricated package, the less appeal it has to the buying public. Speed of erection, flexibility and mobility do not seem to provide adequate appeal in spite of the facts; that the average duration of residence at one address has shortened from four to two years in the last decade, that mobile home sales now comprise one-tenth of the dwelling market and that the single-family "manufactured" houses comprise another 13%.

What's the Problem?

One immediate explanation is that local building codes preclude wide marketing of most fully prefabricated units; while a large market is one of the essentials for the success of such units. But even in the most populated areas, prefabrica-

tion ventures have not sustained themselves and the interested segment of the profession and industry have experienced continued frustration.

Prefabrication in this country has been oriented to a patented-private-enterprise type of operation. The plant itself is inflexible, being able to manufacture only a limited number of predetermined parts. Re-design is restricted to more minor modifications. Transportation and marketing are also in the category of special solutions. The basic shortsightedness was in one case illustrated by a very large parking lot filled with the rusting vehicles especially modified to transport the Lustron House.

The effective application of the general idea of prefabrication has been questioned. It is now suggested that prefabrication in the United States has been in fact a special case application; the limitations of the prefabricated parts manufacturing plant seem to contradict its own intent.

Limited or not, factory manufacture has universally accepted advantages over handcraft methods. Assembly lines facilitate the most efficient use of materials and labor. Optimum working conditions are created by a controlled environment. By virtue of their intense utilization, specialized tools and equipment can be provided, the cost of which under any other circumstances would be prohibitive. These considerations are at the very core of industrialization.

It is true that the building industry remains a stronghold of the handcrafts in spite of the seeming advantages of industrialized methods. The wealth of our society and the abundance of labor and natural resources allow the persistence of the situation. The hobbling influence of building codes provides additional resistance to change. Particularly in non-residential buildings the architectural structural and mechanical requirements are provided in distinctly separate ways. As a matter of convenience for both planning and erection, the areas of relatedness are carefully limited. Thus the many trades involved work over the same areas or surfaces, in a regular, hopefully non-repetitive, order to assemble the building at the site. Here, too, joints seek solutions, though these joints re-

late to the different trades and the different materials. More emphasis is upon the "vocabulary" than the joint. Generalized solutions are virtually nonexistent. The evidence of study of every surface and intersection is characteristic of the most admired buildings.

New Techniques

However, a different variety of prefabrication has now been ushered into the building industry by the introduction of prestressing. The factory system has proven efficient even for one-of-a-kind items which have in common the requisite skills, tools and equipment. Post-tensioning has improved the precision of results while broadening the application of prestressing by virtue of its ability to create two-way and multi-story structures.

Contemporary beliefs about the logical use of materials have encouraged the development of structures which in themselves have architectural merit. With varying degrees of success, structures have managed to accommodate the functions and incorporate the facilities of the mechanical trades. In contrast to the curtain wall, we are again seeing buildings with exposed structural members which provide a frame for fenestration and which, with the fenestration, compose the entire building envelope. In some recently-erected and other currently-proposed buildings, the structures incorporate the exterior enclosure, interior mechanical core and distribution systems of the building—an integrated architectural expression.

To be sure, these prefabricated buildings assume a regularity which may appear to limit expression. However, the limited facilities of the industry undoubtedly contribute to this situation. Broader application of similar methods will certainly enlarge the plants and the flexibility of their utilization.

Assembly is as central to the prefabricated part as it was to the prefabricated joint. That assembly requirements for equipment, time and talent be kept to a minimum is critical. The needs for connection simplicity and for convenient transportation without damage are, presumably, obvious. The entire system must allow accomplishment within contemporary technology if there is to be a general acceptance. This has not imposed noticeable restrictions upon industrially knowledgeable practitioners. Limitations seem to be more appropriately attributed to the profession than to industry.

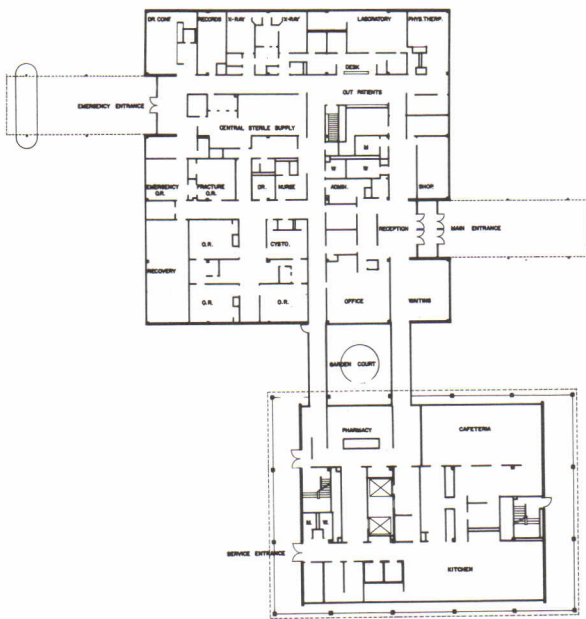
Conspicuous for its absence in these buildings is the "universal" joint and its restrictions. Flexibility of manufacture has already progressed to a point of being able to economically furnish many

individual pieces from the generalized part. The generalized part has come to supplant the universal joint, though the task for the architect is no less demanding.

The pieces which compose such buildings are prefabricated only in the sense a steel wide flange beam can be considered prefabricated. Certainly the rolling mill is industrialized. It is also extremely inflexible; and here lies the heart of the matter. A material, however well it serves a singular purpose, but which cannot be an instrument of integration in the building process, is at a disadvantage to those which can be so used. (The steel industry evidences recognition of this criterion by their present research into new shapes and finishes.) The buildings which incorporate the integrated element idea do not have in common their varied use of the same manufactured parts. Rather, they are compositions of unique parts manufactured by the same skills and equipment in a controlled environment. It is the technique rather than the pieces which are identical and these techniques are products of our industrialization.

This thesis does not accept as a corollary that the manufacture of building components might be reduced by the realization of its implications. The universality of such components, directed toward the widest market, knowingly fails to satisfy the desires for expression and the versatility necessary for solutions to unique problems. It is the emergence of these considerations that prompt unequivocally the inclusion of the architect's contribution. The architect may very well make a contribution to the conception of the manufactured components and to their utilization at the erection site. It is also at this level that industrial technology appropriately supplants mass production although both have considerable merit as purposeful applications of industrialization to the building industry. And while the transition would appear to be consistent with conditions, the architect generally has not felt called upon to shape his contribution within the framework of this logic.

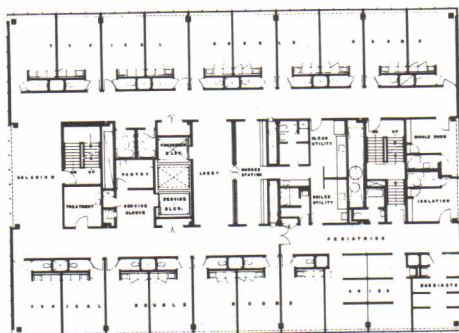
Contemporary architecture attributes to itself the new use of logic and the new use of materials. Use can be called new in the sense of being diverse but this is not what is meant by the expression. Rather, "new" is meant to be a genuinely higher order development of use. Prefabrication logically has a broader application than its present detached-dwelling and warehouse accomplishments. It is thus suggested that the integration of building complexity be a key to new use of materials and that this generalized part approach to prefabrication be a key to the integration of complexity for our industry. ◀



First floor



Second floor

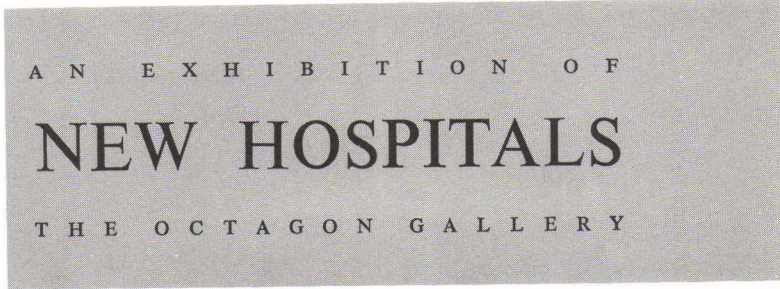


Third floor

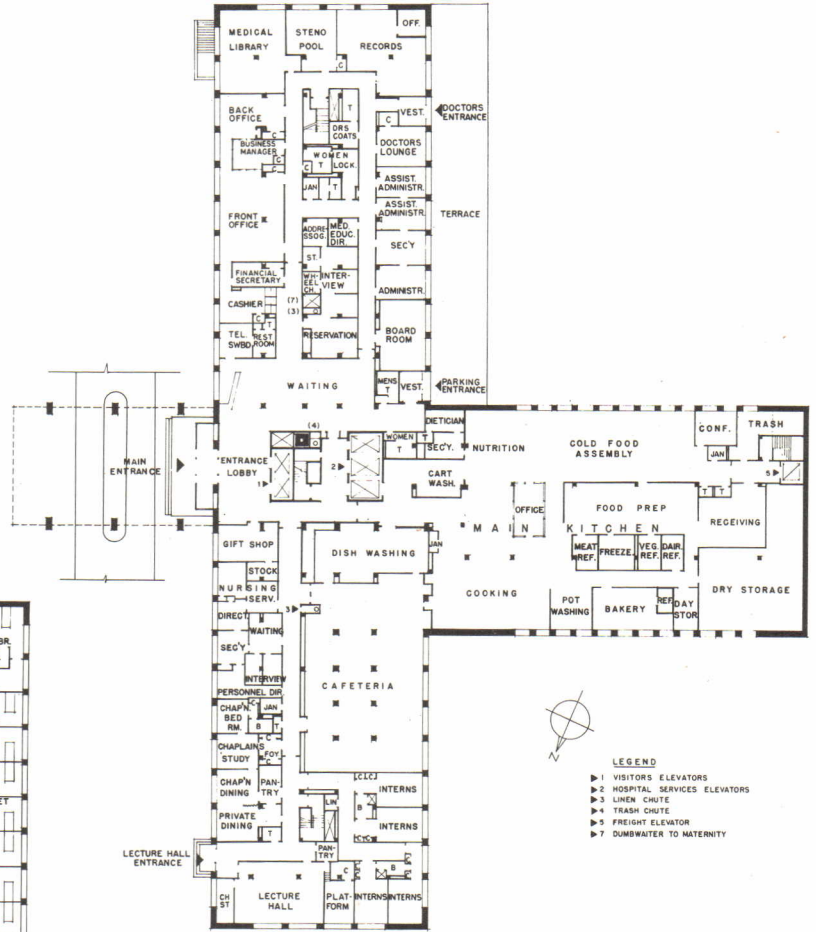
Northwest Community Hospital

Arlington Heights, Illinois; Skidmore,
Owings & Merrill, Architects

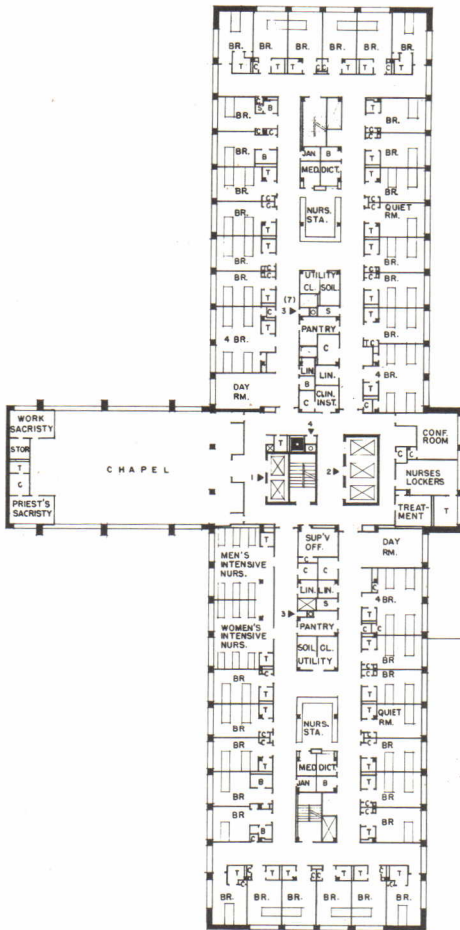
A selection of hospital designs from the meeting of the American Hospital Association in Atlantic City last fall is on display in the Octagon Gallery until February 25th. From these exhibit panels a further selection was made for reproduction in



the AIA Journal—primarily on the basis of “reproduceability.” We are proud to present what we believe to be a broad sampling of outstanding new designs in this specialized field. This is the sixth in a series of such exhibits at the Octagon, and they have attracted wide attention from both the profession and the hospital-oriented public.



First floor



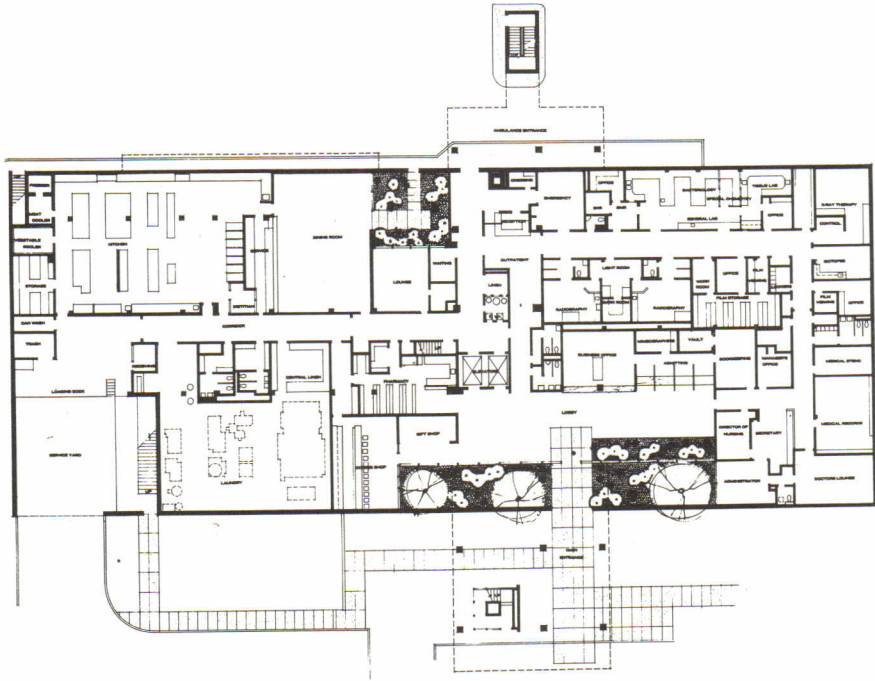
Second floor

St Agnes Hospital

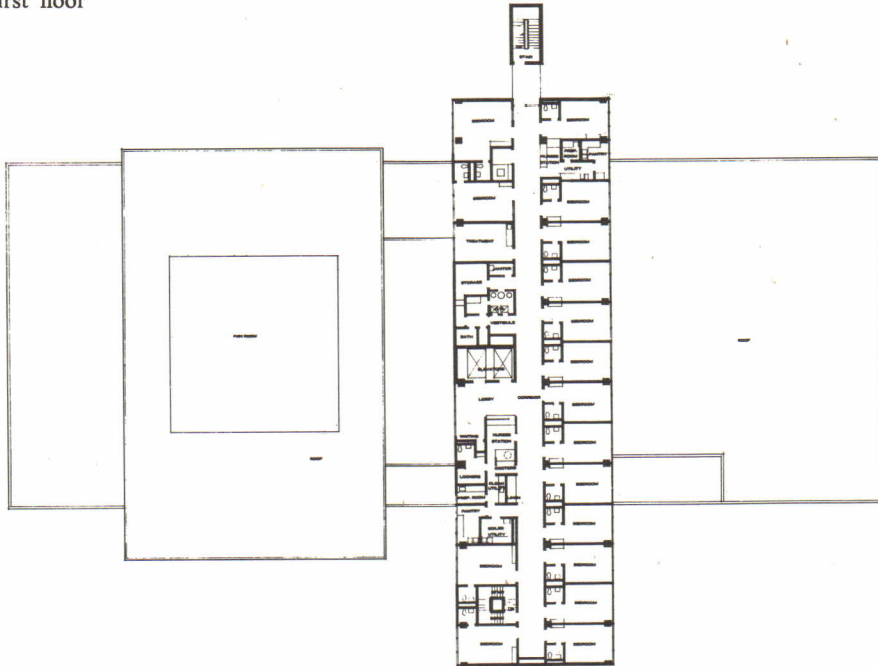
Baltimore, Maryland; Faulner, Kingsbury & Stenhouse, Architects



Davis Studio



First floor

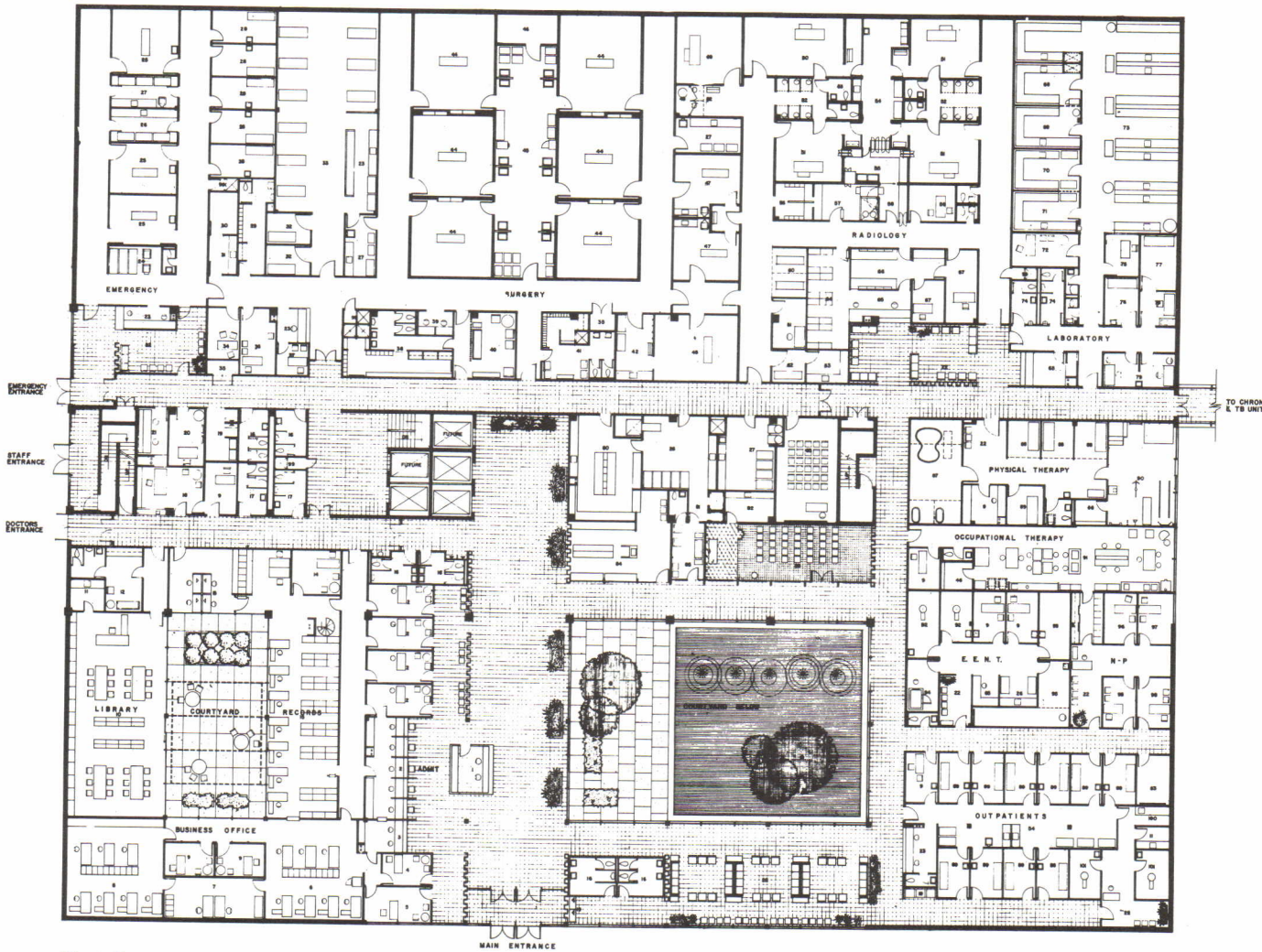


Third floor

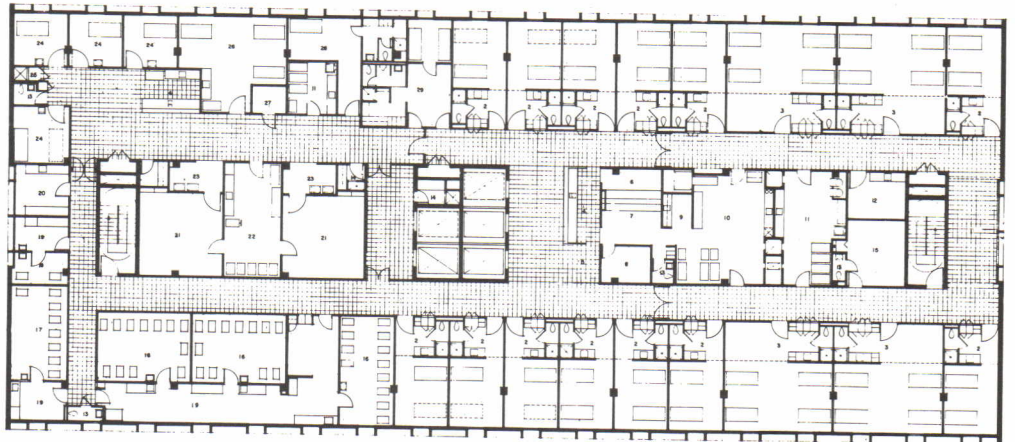
San Pedro Community Hospital
 San Pedro, California; Associated Project Architects



Marvin Rand



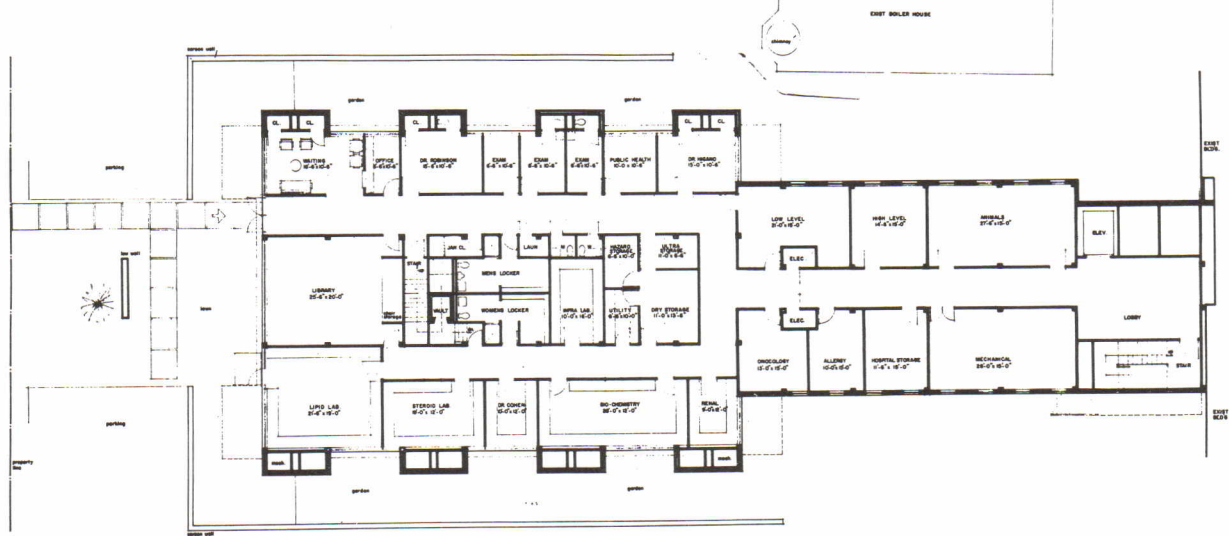
First floor



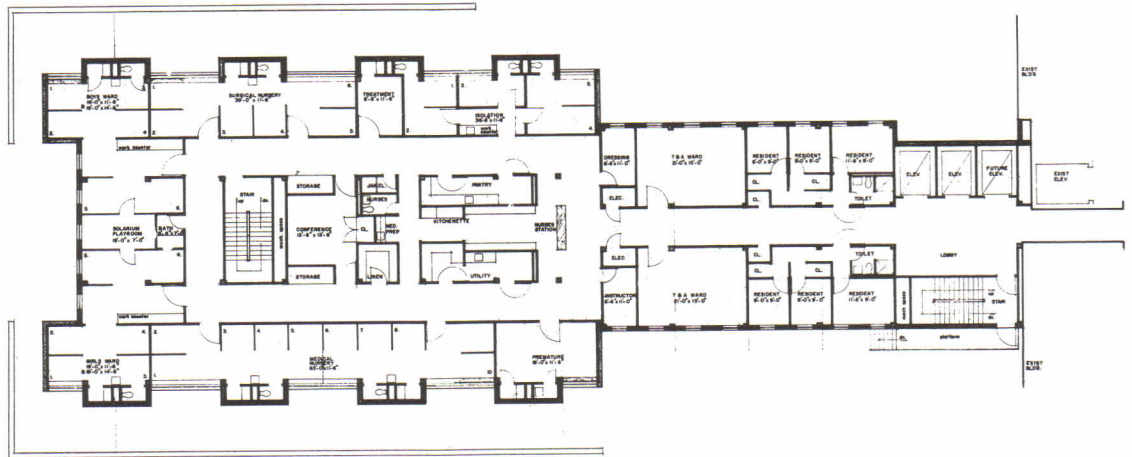
Third floor

Thomason General Hospital
 El Paso, Texas; Garland & Hilles, Architects;
 William H. Metcalf, Jr, Consulting Architect



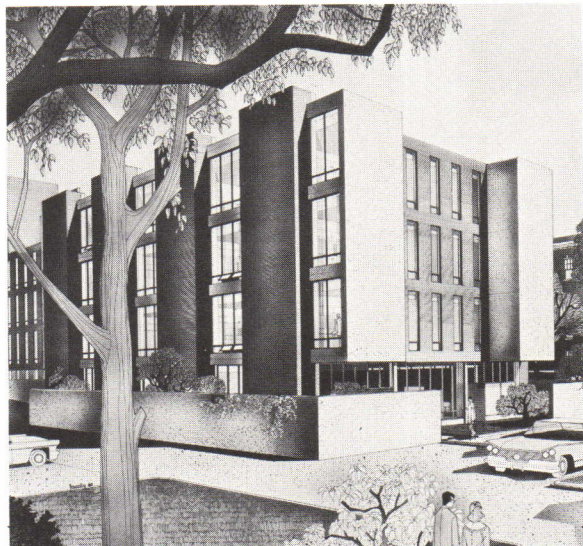


Research floor



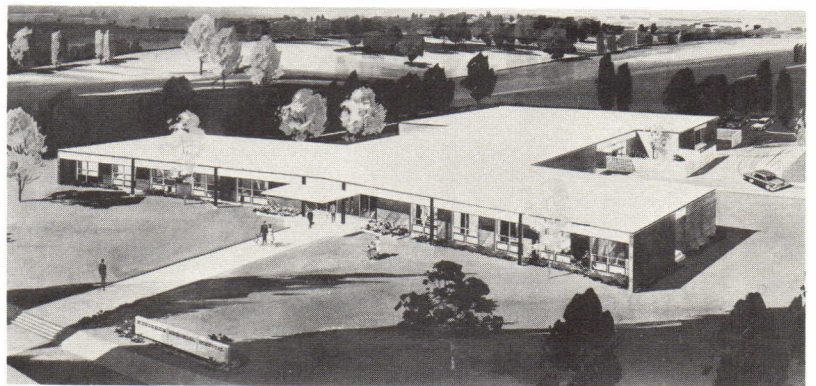
Pediatric floor

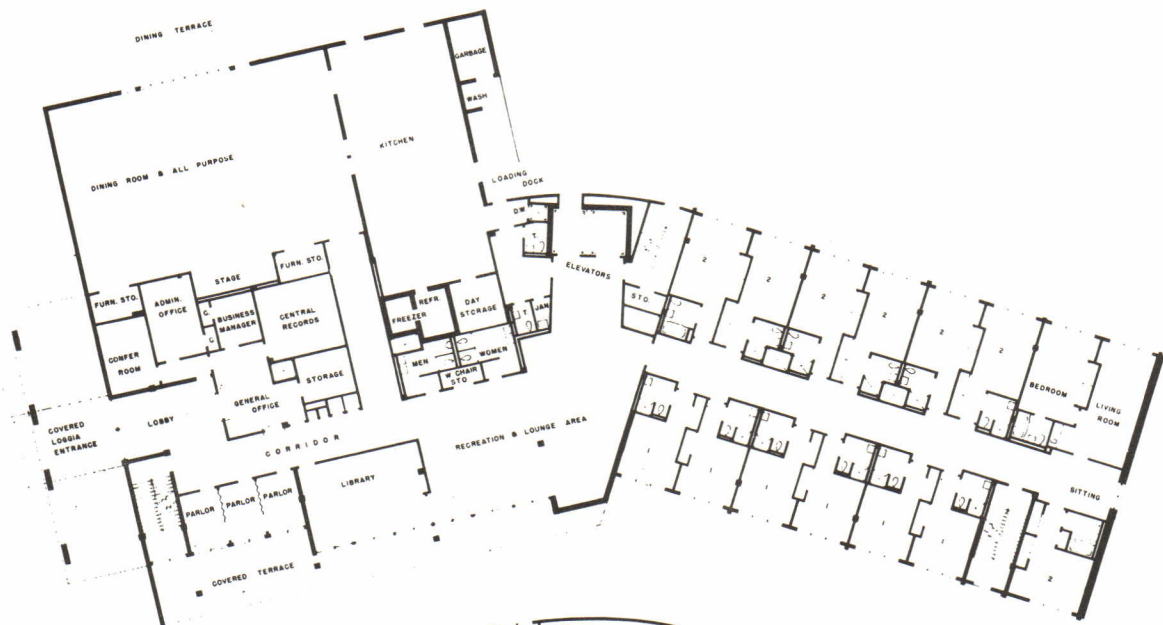
Worcester Memorial Hospital
 Worcester, Massachusetts; E. Todd Wheeler &
 Perkins & Will; Adolph Johnson, Architects



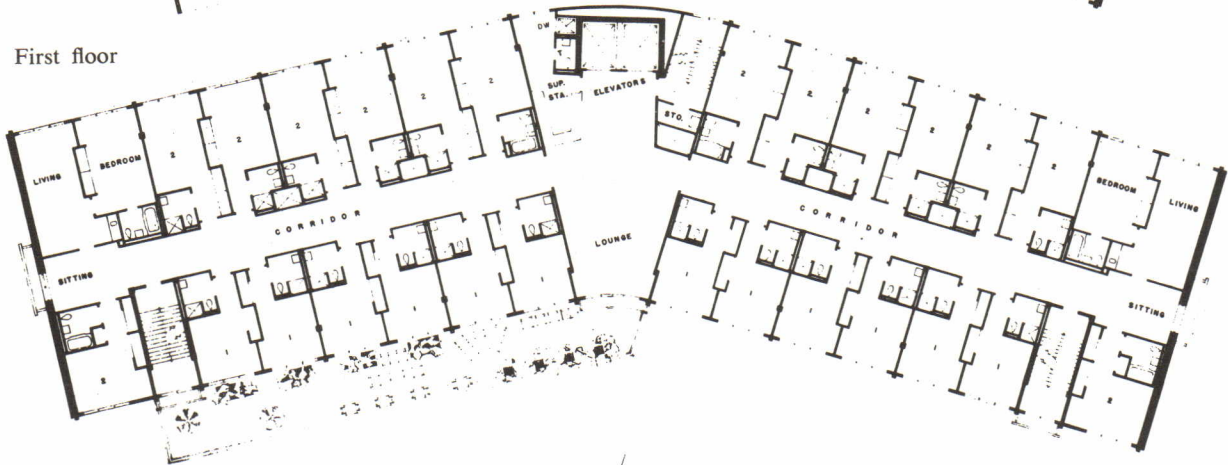


Rebsamen Memorial Hospital
 Jacksonville, Arkansas; Wittenberg, Delony &
 Davidson, Architects

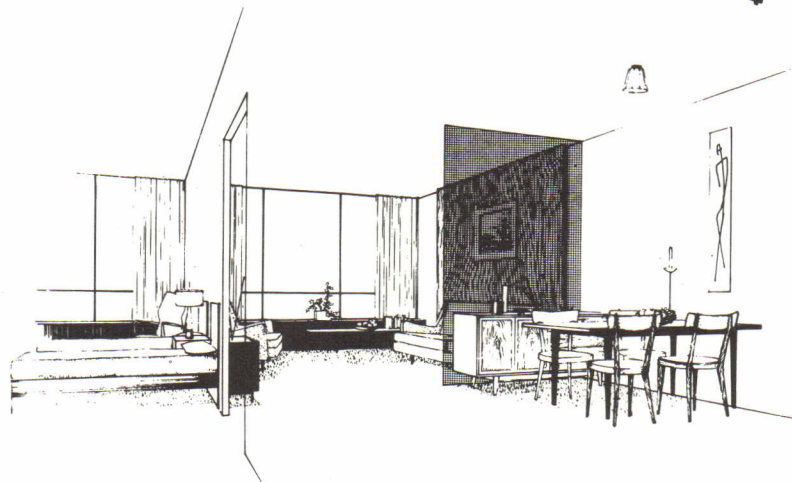




First floor



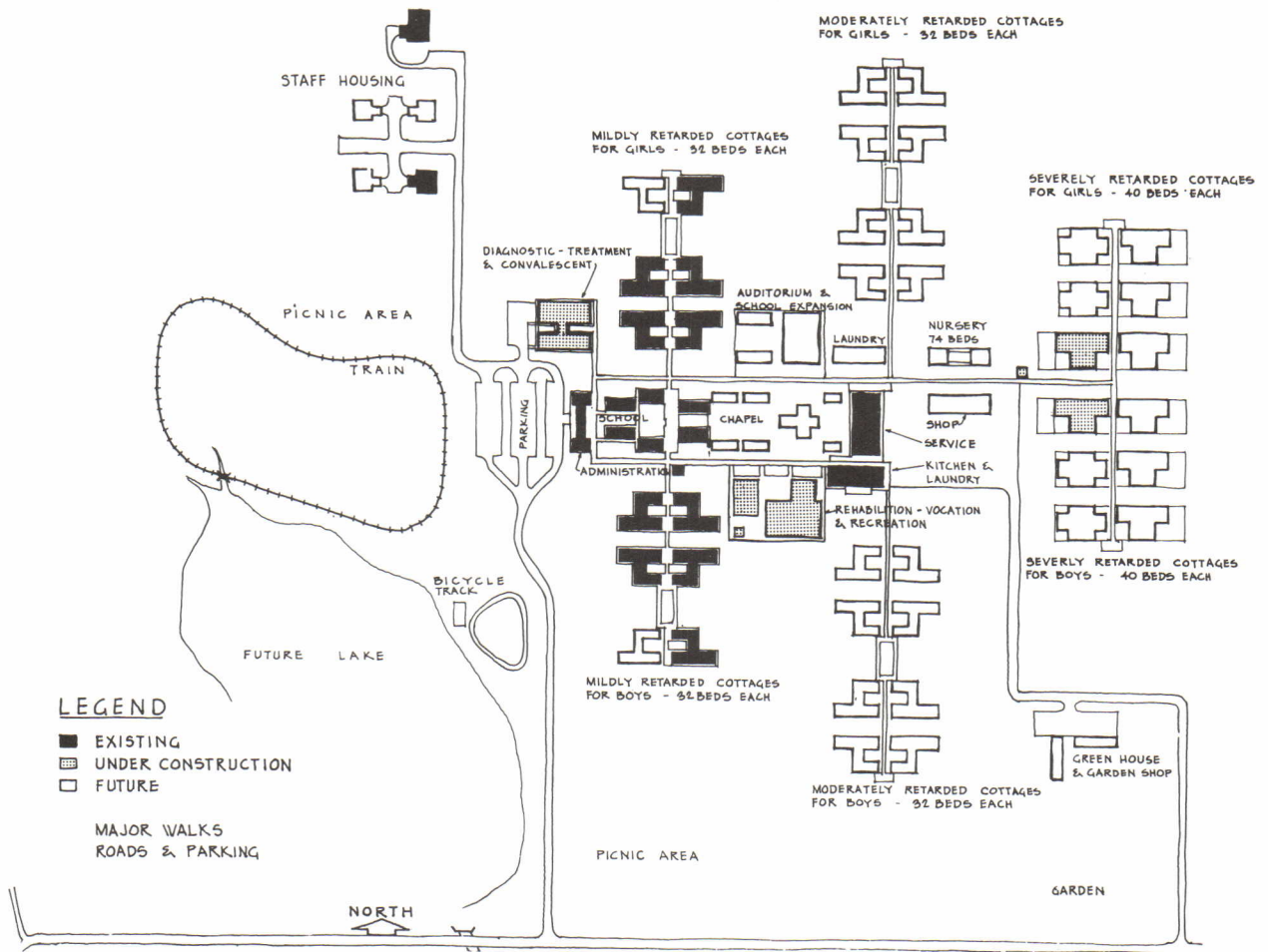
Second and third floor



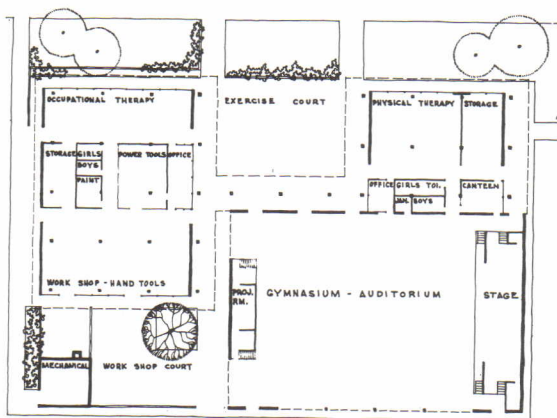
Wesleyan Home for the Aged
Georgetown, Texas; Page, Southerland & Page,
Architects

Mears Photography





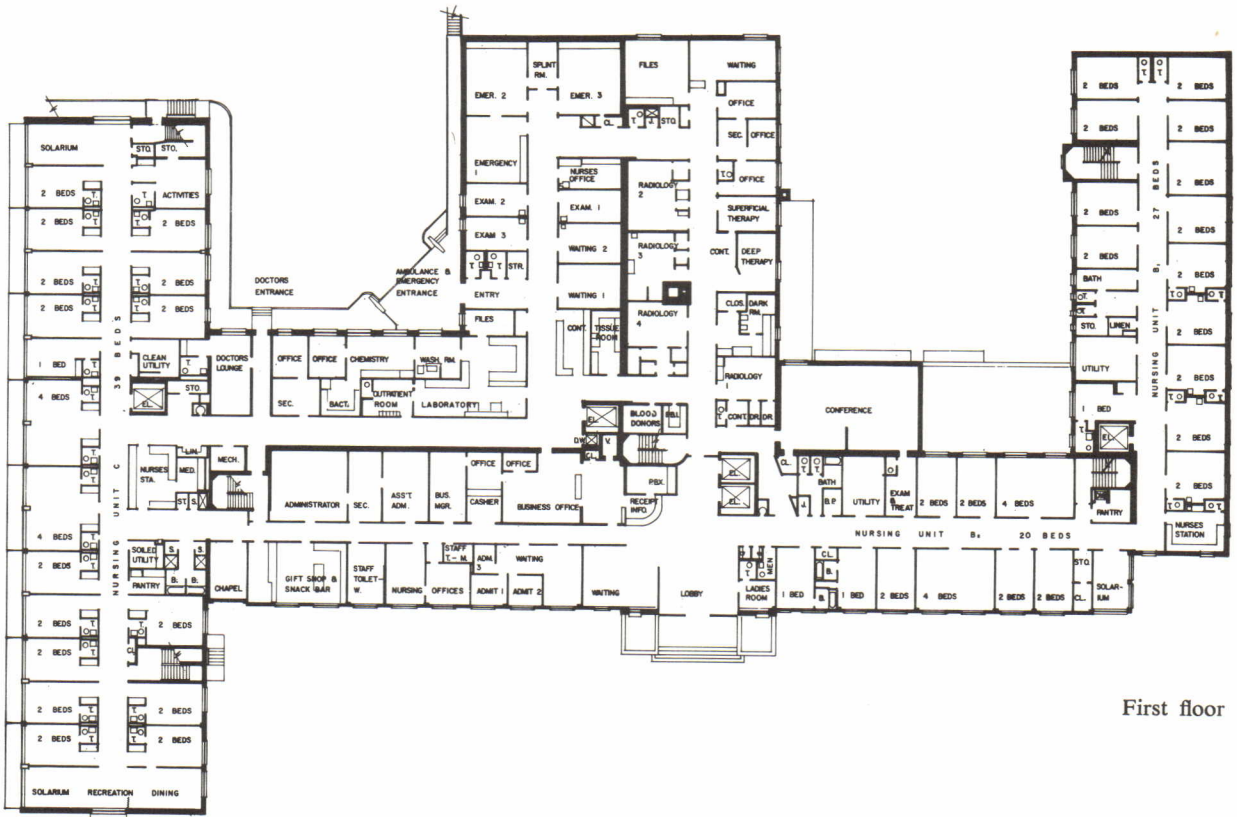
Master plan



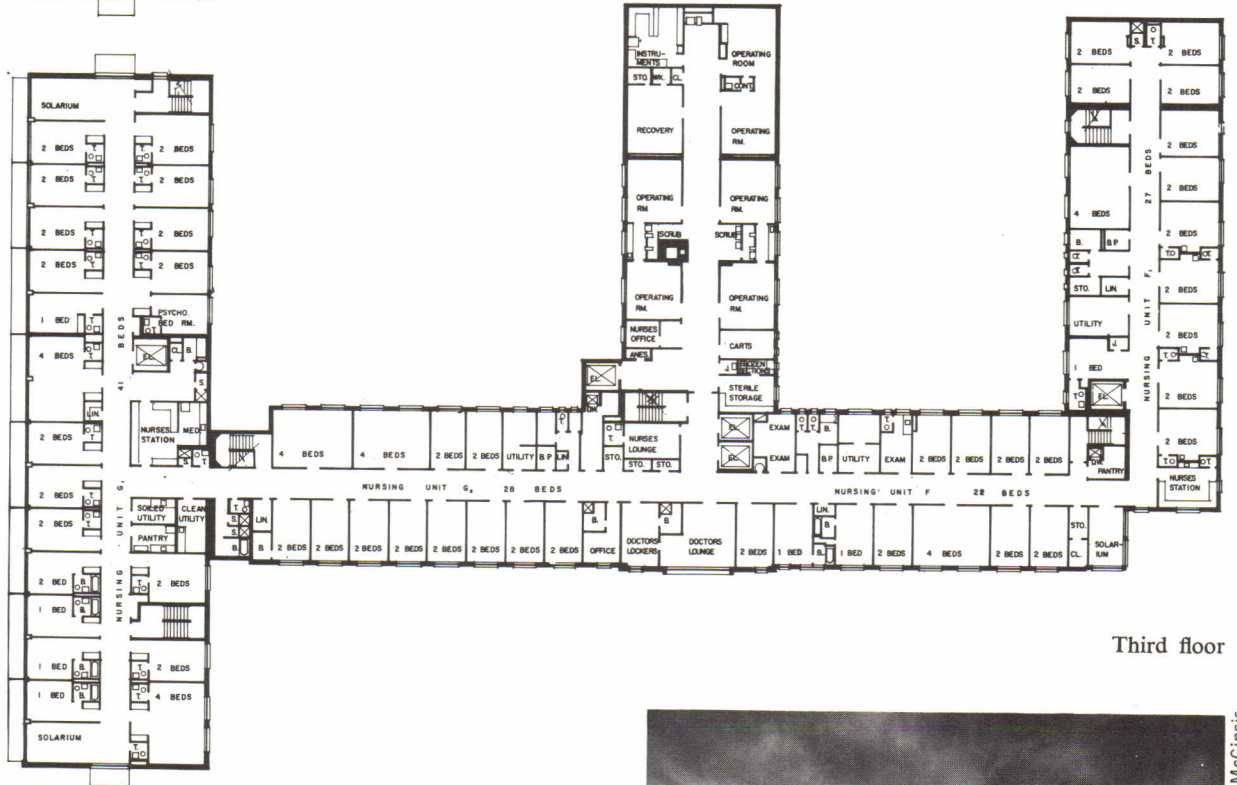
Rehabilitation, vocational & recreation building



T. Harding, Jr.

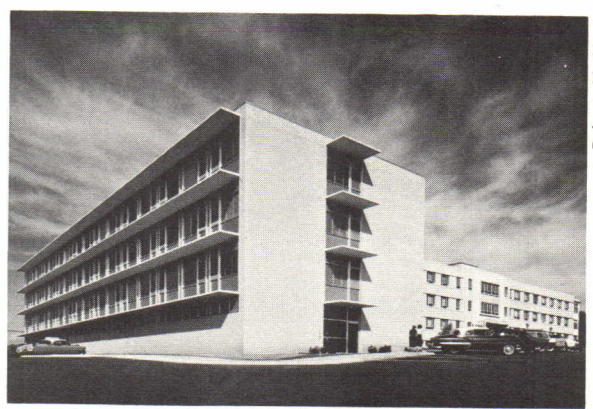


First floor



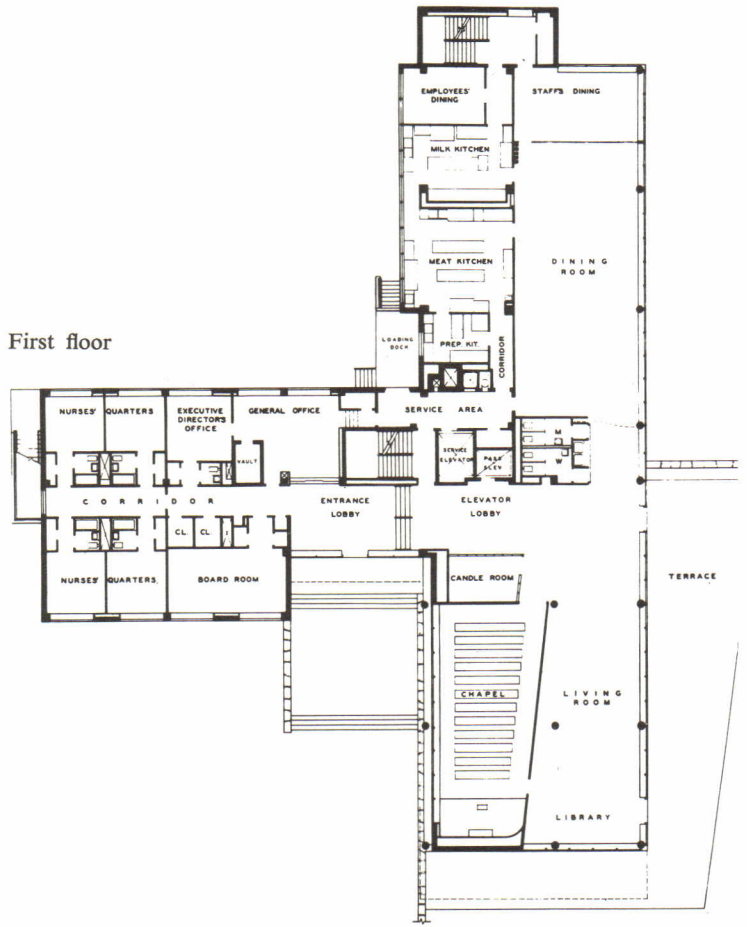
Third floor

Kennestone Hospital Addition
 Marietta, Georgia; Abreu & Robeson, Inc., Architects

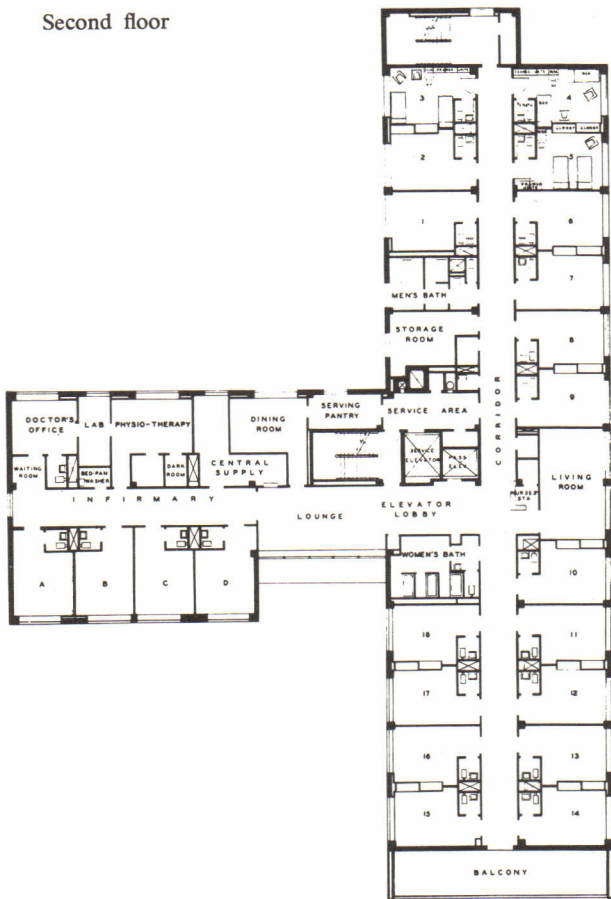


Robert McGinnis

First floor



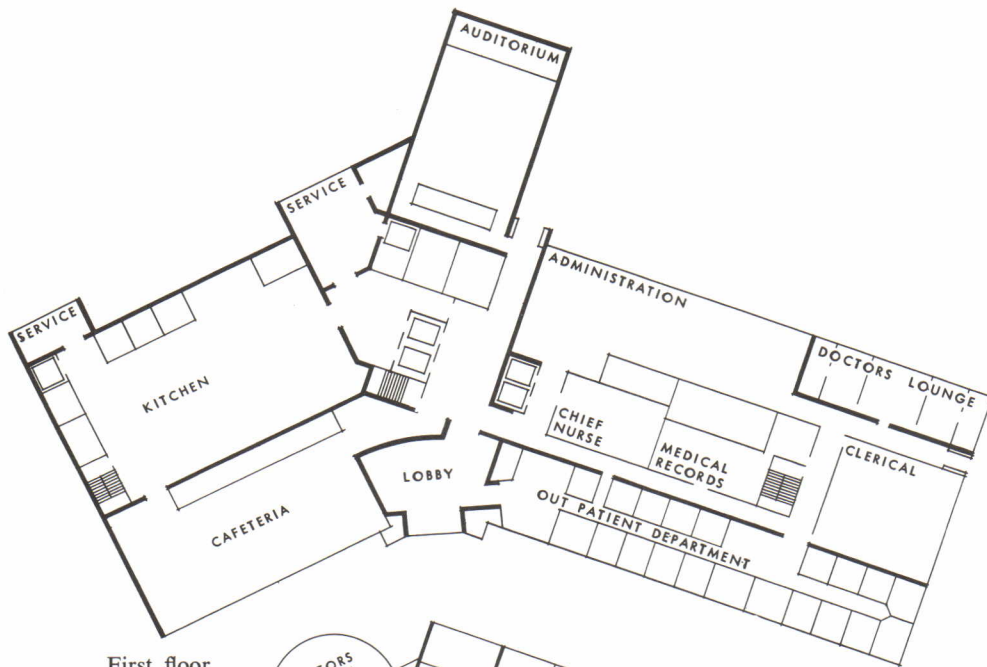
Second floor



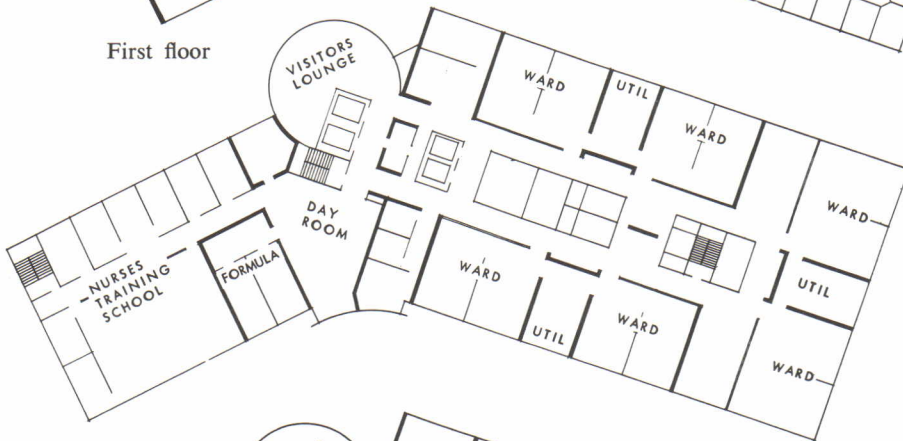
Home for the Jewish Aged
 Kansas City, Missouri; Kivett & Myers, Architects



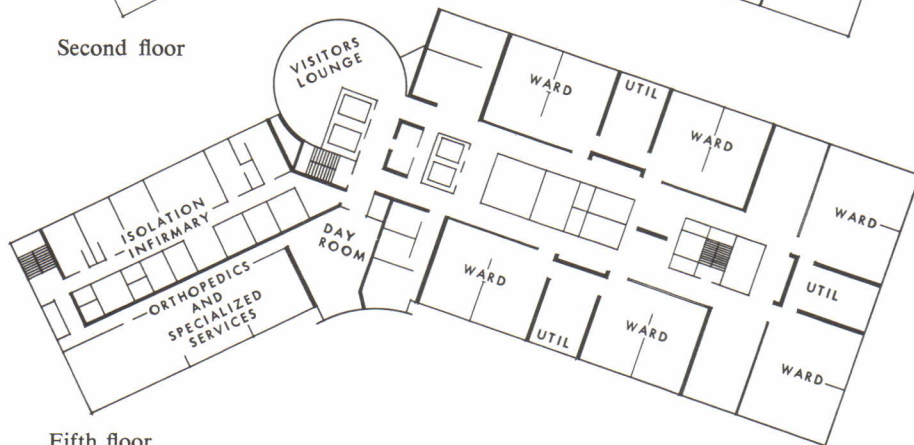
L. D. Jones



First floor



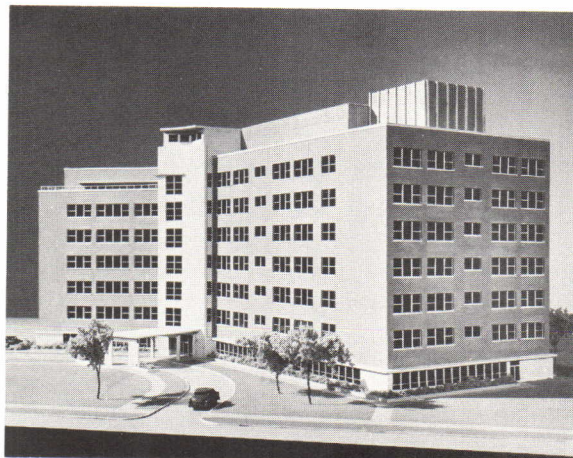
Second floor

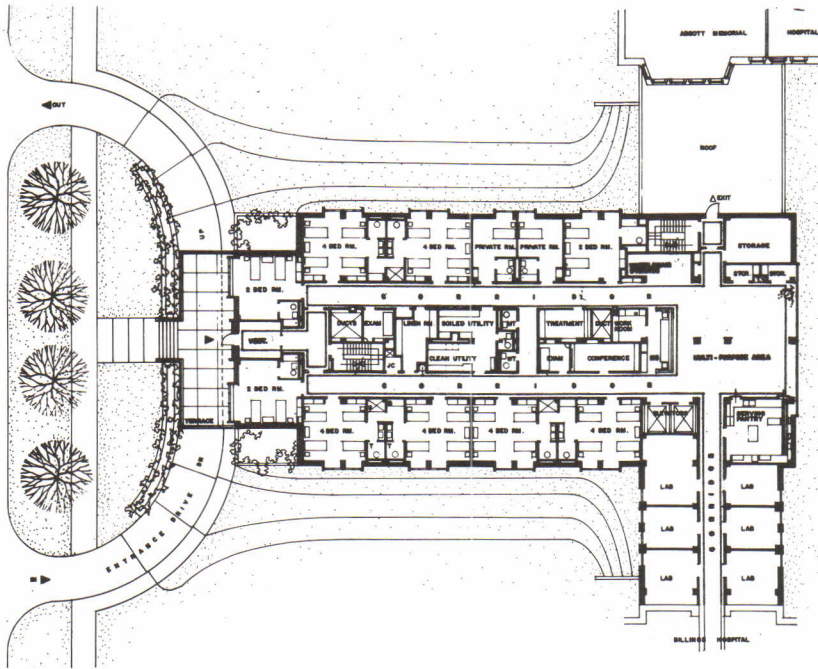


Fifth floor

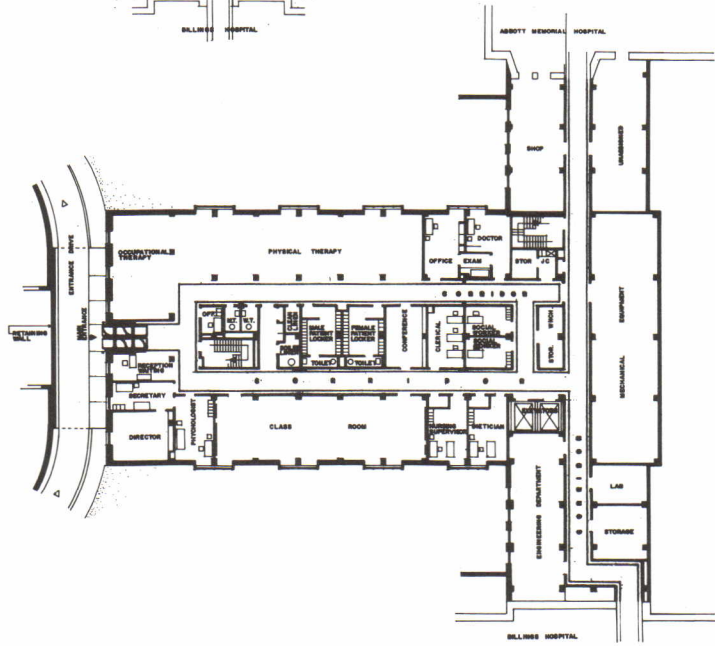
Illinois State Pediatric Institute

Chicago, Illinois; Friedman, Alschuler & Sincere, Architects



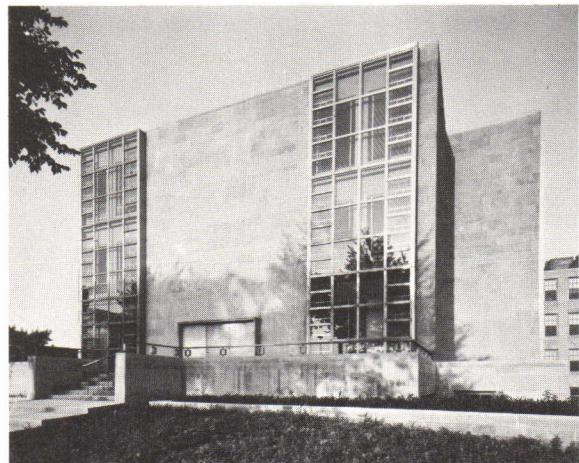


First floor



Basement

Hospital for Chronic Diseases,
University of Chicago
Chicago, Illinois; Schmidt, Garden & Erikson,
Architects



Designing for America's Biggest Private Builder

by **Howard Phillips**

Telephone companies spend millions of dollars on buildings to house their equipment and personnel. The author, Building Engineer for the American Telephone and Telegraph Company, discusses some of the design requirements for telephone office and equipment buildings

► The Bell Telephone System builds more than a thousand new buildings and additions every year—nearly two thousand in one recent year—ranging in size from skyscrapers to small community dial offices and repeater stations. Now America's biggest private builder, it has spent more than \$1 billion for buildings alone in the past five years!

With a building program of this magnitude, it becomes the Bell System's responsibility as a progressive organization to see that its buildings are not only pleasing to the eye, but ones which fit in with and enhance their surroundings and the community.

Telephone equipment buildings are not always easy to design. They often pose difficult architectural problems because efficient equipment layouts, for which the building is but the envelope, tend toward rigid rectangular shapes. These proportions have little relationship to usual architectural concepts of mass and form. This is especially obvious where a building is to be constructed in a residential area.

Outside Architects Valuable

It's a big order to erect more than a thousand buildings a year. Most of the design work is done by bringing in experts who have the experience and the manpower for the job—the private architects and engineers throughout the country.

Many big industries and government agencies have shown that design work that is "farmed out"

has resulted in lower over-all costs. In this way the owner's design and construction organization does not have great variations in size and changes in the work load. The telephone companies usually make similar arrangements with outside architects for the design of all major structures. Their building engineers have a big enough job in coordinating the work of the architects, the telephone equipment engineers, and the Western Electric Company installers when many buildings are being designed and built at the same time.

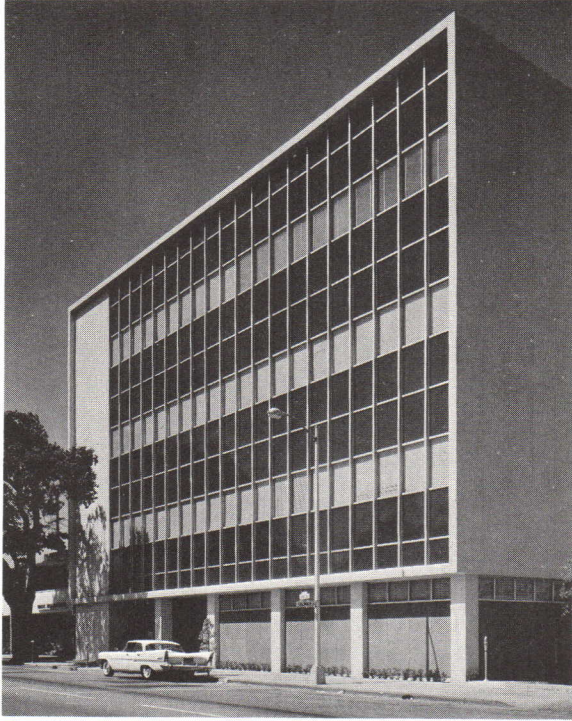
A professional architect is desirable for even the smallest building, although some of the small buildings may be duplicate designs. Just as it would be foolhardy to treat a mild case of pneumonia without a doctor, just so "do-it-yourself" architecture on a small building is poor economy. Since about half of the Bell System's more than 15,000 buildings are small structures, good small-building design is especially important.

Architects' services are valuable to the Bell System. In hiring outside architects, the telephone business obtains the breadth of experience that

The Profession

these professional people have gained through working with many clients on a variety of structures. Experience indicates that these services generally result in lower over-all costs. As the largest corporate builder in the world, it is most important that the design and construction job be done in the most efficient way.

The usual process in selecting architects is in line with the recommendations of the AIA, by a screening process of the architect's qualifications and reviewing exhibits of buildings which the architect has completed. The factors normally considered in selecting architects are such items as whether his organization is of the proper size for



Most telephone buildings are designed to grow, like these Pacific Telephone installations. Left, Palo Alto, California office, Clarence O. Peterson, architect. Right, switching center, San Francisco; Aleck L. Wilson, architect.



the job, the number of technical personnel he employs, the date of organization of the firm, services furnished, ability as indicated by exhibits of work performed, amount of work designed and constructed in the last five years of the firm's professional practice, proximity of the firm to the project, present work load of the firm, estimated work load, estimated time for completion of the project involved, and technical education and professional experience of the members of the firm.

There are more than one hundred architectural firms engaged annually on the design of Bell System buildings. More than two hundred and fifty firms have been employed at one time or another in the last fifteen years by the associated Bell Telephone Companies.

The telephone companies generally hire prominent architects in their communities, preferably in the same city with the telephone company's building engineer to permit closer coordination, or in the area where the building is to be built. However, if the local architect does not have a staff big enough to handle a large project or is not experienced in this type of construction, then one of the larger prominent architectural firms elsewhere is engaged. Where several buildings are in prospect, the telephone companies avail themselves of more than one architect, which creates a healthy competitive spirit. Of course, the number of architects engaged must be limited because of the difficulty for a building engineer to acquaint each new architect with telephone requirements.

Coordination During Construction

The Bell System companies generally arrange to have architectural firms provide a representative on the job, part or full time, to see that the work is being performed in accordance with the contract documents. This is felt to be preferable to the "general supervision" which is frequently supplied by architects.

An engineer in the associated Bell System companies building engineers' organization is usually responsible for coordination on each separate project and he acts in a liaison capacity on the job from the time a site is selected to final completion of the structure.

Even though supervision of telephone building construction is often the responsibility of the architect, the building engineer is likely to check important construction features to make sure they meet equipment needs. The required supervision by the architect usually is stated in the contract, including the specific portion of his total percentage fee that is to be designated for on-site inspection. Frequently it is spelled out as to how many man-days are allowed for project inspection.

Building Engineering Organizations

Each of the associated companies of the Bell System—and often each one of the several operating areas within the company—has its own chief engineer with building and planning engineers on his staff. These men are responsible for equipment planning and programming for all

buildings within their respective areas. They have the responsibility for selecting the architects in private practice who do the design work. Very little architectural work is done by the engineering staffs of the telephone companies. Many of the telephone companies have a licensed architect on their staff to provide better liaison with outside architects with regard to esthetics and floor plan layout. The building staff at the American Telephone and Telegraph Company functions mainly in a consulting capacity when asked to do so by its counterparts in the associated companies.

The vast majority of Bell System building contracts are awarded by the telephone companies on the basis of lump-sum competitive bids. This method has been found to be the least costly. Package deals covering both design and construction have not found acceptance in the Bell System.

Design Characteristics of Equipment Buildings

In designing buildings for the telephone companies, the architect usually has ample latitude in those structures that are not intended to house telephone switching equipment, such as general offices, accounting buildings and the like. Central offices and other buildings that contain switching equipment, however, must conform to certain requirements and limitations imposed by the switching equipment itself.

Some of the important features which are peculiar to telephone buildings are the unusually high ceilings (13 to 13½ feet clear), heavy floor loads, standard bay sizes for equipment areas, minimum windows, telephone equipment entrances, cable entrances and cable holes, special attention to fire, flood and earthquake protection, and adequate security and protection for equipment areas to assure continuity of telephone service.

Another complicating problem in the architectural treatment of telephone buildings is the fact that the ultimate building often will be considerably larger than the one first built. The building usually must be designed for expansion, either laterally or by the addition of more floors, as the telephone needs of the locality increase; and the final building may well be two to four times the size of the first portion. This raises problems of acceptable architectural treatment for the initial building, the ultimate building, and, in some cases, various intermediate stages.

These varying and unusual requirements all go to make up a collection of information and restrictions with which the architect must work, but nevertheless he is expected to come up with a good design. Because of these unusual conditions, he must be given the freedom to do a good design job within reasonable cost limits.

Low-Cost Design

The Bell System has found that modern architectural ideas and materials lend themselves well to the need for economy, if careful judgment is used. It also has found that good building design costs no more than poor design—many of the best-looking telephone buildings are the lower-cost ones.

Low-cost design does not mean cheap construction—the building serves as an envelope for modern intricate and valuable electronic and other types of communications equipment. Therefore, substantial structures must be built that will protect the telephone plant and the people who must maintain and operate this equipment to assure reliable service, whether for peacetime or wartime operation. Frederick R. Kappel, the Chairman of the Board for the American Telephone and Telegraph Company, has said recently that “The communications industry must do everything possible to satisfy the military requirement for defense communications.”

Consulting Services and Research

To assist the telephone companies in the design of buildings, two firms of consulting architects are retained by the American Telephone and Telegraph Company in New York. Specific projects are reviewed in the early planning stage so that any ideas that are useful may be incorporated in the working drawings.

Extensive research is carried on by the Bell Telephone Laboratories on telephone equipment. These research facilities are available as needed to develop proper environment for telephone equipment. For example, a considerable amount of research has been done to find the most suitable air filters for telephone buildings so that equipment performance will not be impaired by dust particles lodging in the intricate equipment.

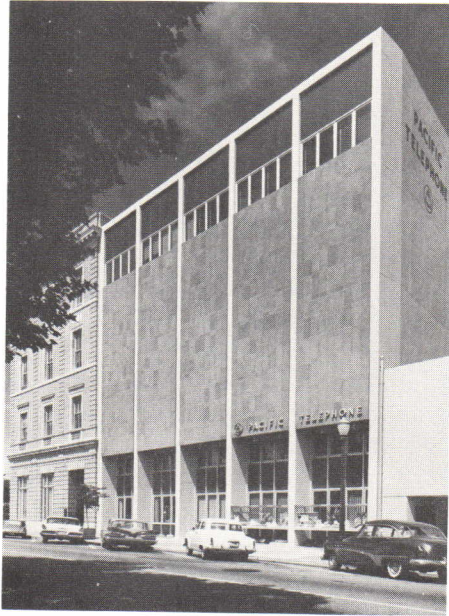
Awards Program Encourages Better Architecture

Several years ago an awards program was instituted by the Bell System to encourage better architectural design for telephone buildings. Following a judging, certificates are awarded to the architects responsible for the attractive designs. Some of the factors which are considered are:

1 *Excellence in design*—Within the limits of size and mass demanded by the type of occupancy and zoning restrictions, the building should have excellence in architectural design.

2 *Appearance, fitting the surroundings*—It should fit in with the current design concepts and future planning for a given area. The design should improve the area and be a welcome addition to the neighborhood.

Alex Myers



Few windows are needed. In Pacific Telephone's San Mateo building in Burlingame, designed by Clarence O. Peterson, only intermediate floors contain telephone equipment. Below, Pickering, Ontario, building designed for Bell of Canada by Gordon S. Adams and Associates

Frank P. Adams



3 *Cost*—Good architecture is good business, but economical buildings are essential to successful operation. The design should not achieve excellence by the appearance of luxury. Telephone customers should not feel that they are being asked to pay telephone rates to support construction of needlessly-expensive buildings.

4 *Identification*—The building should reflect the nature of the business and be readily identified with the Bell System.

This awards program has been enthusiastically received by professional architects and telephone people who are responsible for the building work. The buildings being designed today reflect the increased interest by architects in designing better looking buildings.

Buildings Should Improve a Neighborhood

Operating in so many cities and towns over so much of the country imposes a real responsibility on the Bell System. The telephone companies of necessity are intimately associated with their neighbors and try to be good neighbors by using fitting and appropriate architecture in their buildings. The buildings should add something to the neighborhood, not be indifferent or detracting.

Commercial and industrial buildings are generally made attractive through a proper study of strictly functional forms. In fact, the more attractive buildings are usually achieved by a study of the composition rather than the "trimmings." A capable architect should produce the desired effect by suitable proportions, mass, and composition, and by a successful handling of construction materials.

A different approach to the problem usually is required where the building is to be constructed in a residential area. In such cases, careful consideration must be given to the architectural expression in order to insure a design which will be quietly compatible with the character of the neighborhood. This is essential if the building is to be liked and the company welcomed. In many cases this compatible design is essential to obtain zoning variations or to conform to building restrictions.

While it is not usually necessary that the building design imitate or be disguised to look like a residence, the architectural expression and character, the scale of its elements, the choice of materials, and the landscaping must be done with great care if the structure is to take its place satisfactorily in the surroundings. In any case, proper regard for the character of the neighborhood is essential.

Years ago architects seemed to think that telephone buildings should be made to look like

office buildings with many windows in the equipment areas. This doesn't make good sense today, as windows are seldom required for ventilation or light in telephone equipment buildings. In addition, the equipment is afforded better protection if the number of windows is held to a minimum, for example, just those needed to meet the fire marshal's requirements. Architects today welcome this opportunity to express the function of the building, and put windows in such areas as lounges and lunch rooms where the employees may enjoy the view when they are relaxing at their lunch hour, or in office space where some window area is desirable.

Zoning Requirements

The telephone companies avoid applying for exceptions to zoning regulations unless there is absolute necessity. Judgment in selecting sites and ingenuity in avoiding the need for exceptions are essential.

Some zoning ordinances permit telephone exchanges within commercial districts only and exclude them from residential areas. Yet, quite often equipment considerations dictate a location in a residential neighborhood and a request for a variance is unavoidable. To serve its customers properly, the telephone company must be among them.

Off-street parking is another provision of zoning ordinances that often requires arriving at an understanding with the municipal officials as to reasonable requirements. The area required for off-street parking is often based on the floor area of the building. This can create a problem if the building has large areas of telephone equipment but only a few people to maintain it. There is little need for large parking areas at many telephone buildings. Requirements vary depending upon the use classification of the building. Quite often the companies have experienced a problem as far as classification of telephone buildings within the uses outlined in the ordinances. An ordinance rarely has a use classification for establishing reasonable off-street parking requirements for a telephone exchange, with the result that there is uncertainty as to what the requirement will be in advance.

Generally, the telephone companies now are attempting to acquaint local zoning officials with their problems so that when either a new zoning ordinance is passed or an amendment is made to the existing ordinance, reasonable provisions can be put in to govern the requirements for telephone buildings.

Architects have a right to be concerned with the appearance of the telephone companies' aerial



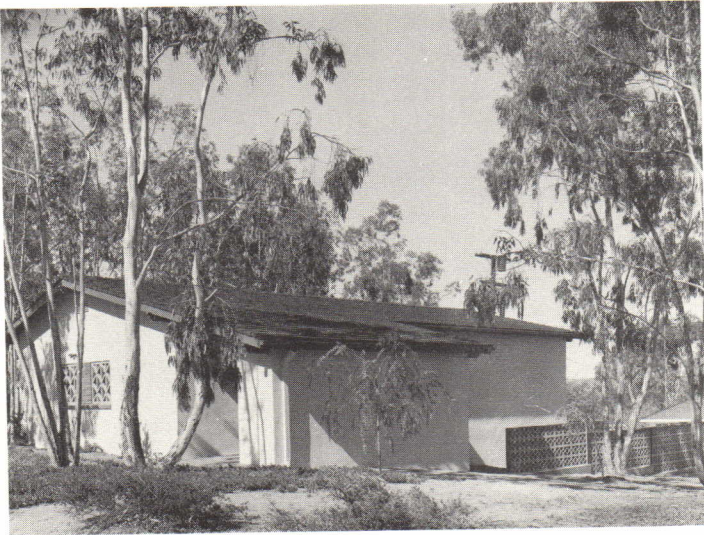
Joseph W. Molitor

Attractive office buildings, typified by Westchester Headquarters building, White Plains, NY (Perkins & Will), and accounting building in Ewing Township, New Jersey (Frank Grad & Sons)





These Pacific Telephone buildings blend in with their neighborhoods. Above, in Van Nuys, Calif. (Parkinson, Powelson, Briney, Bernard & Woodford), and, below, in Rancho Santa Fe, Calif. (Original building by Woodford & Bernard, addition by Tucker, Sadler & Bennett)



plant—poles, cables and wires. This exposed overhead distribution system was developed to provide economical and practical telephone service for a rapidly growing and expanding nation. However, the telephone companies are now very much interested in placing cable and wire underground. There are two chief reasons for this. One is a reduction in loss of service due to storm damage and the other is to help improve the appearance of the community. The telephone companies are encouraging builders and developers to consider, and include in their planning, underground telephone facilities.

Considerably higher costs of underground construction have been the delaying factor to date in getting aerial distribution underground in residential areas. However, new technology and the development of teamwork between the utility, the builder, and the community officials are beginning to trim some of these costs. With modern machines, methods and materials it is believed that new outside plants can be placed underground at costs comparable to aerial construction in many urban areas. This cannot be accomplished overnight, however. The very real problem of coordination and cooperation of all interested parties as well as the many technical aspects must first be solved.

Looking Ahead

To sum up, the Bell System must have buildings that are designed to meet some specific requirements—ceiling height, floor strength, column spacing, etc. In addition they must be economical to build and maintain. Finally, the Bell System earnestly desires that their buildings be attractive and acceptable to the public. It is in this last requirement that more help is needed from the architectural profession. This is particularly essential in the case of medium-sized and smaller buildings. Except for an occasional large headquarters building, and the more numerous good-sized office and equipment buildings, the vast majority of telephone buildings might be classified as small. Too often these buildings give the impression that they were not a sufficient challenge to the architect to produce an outstanding design. This is unfortunate. The modest building in its own neighborhood is just as important architecturally as the large headquarters building, and is just as deserving of the architect's best efforts.

The Bell System's relationship with the architectural profession has been excellent. All that is asked is continued cooperation and effort toward improving the appearance of telephone buildings, large and small. The Bell System is confident that, with this kind of teamwork, the buildings will be assets to the community. ◀



A Guide for Planning the Roman Catholic Church — PART II

by **Brother Cajetan J. B. Baumann, OFM, FAIA**

In January, Brother Baumann discussed the requirements imposed upon the architect by Roman Catholic teaching and doctrine, and touched upon the types of religious buildings he might be called upon to design. This month, the author deals more specifically with the physical divisions of the church and their necessary appurtenances

► In the light of the number of functions that take place in the Roman Catholic parish church, several items must be considered essential. It may be helpful to discuss each in terms of its physical location within the church. The church is divided into several main sections:

- 1 The sanctuary
- 2 The sacristy
- 3 The baptistry
- 4 The nave
- 5 The choir
- 6 The narthex

1 The Sanctuary

The area known as the sanctuary surrounds the *Main Altar*, and the altar is the heart and soul of the parish, the table where the Sacrifice of the Mass is celebrated each day. Therefore, for full participation in the Sacrifice of the Mass and the family meal of the Holy Eucharist, the congregation should be brought as close to the altar as possible. It is quite important to eliminate obstruction to the altar from any point of view. Every parishioner should be able to see and hear the priest when he is celebrating Mass.

Established legislation concerning the fixed or immovable altar is quite definite and detailed. While these regulations are rather lengthy, only the main points are considered here.

Four parts constitute a fixed altar, namely: the *mensa* (table); the *support* or supports; the *sepulchre* and the *sub-structure*.

The table top, commonly called the *mensa*, of a fixed altar, must be a single slab of natural stone in one piece and of a quality that will not crumble or disintegrate. Every item of the foregoing is of great importance; in fact, missing one, the altar can not be consecrated. It is the intention of the Church to have a consecrated altar. However it may be a matter of economics not having a solid altar. If the *mensa* were made of mosaic or concrete, it cannot be consecrated. The same holds true if there is a crack in the slab. The table should be smooth and polished. In shape it must be oblong and rectangular. Five crosses must be engraved upon it; one cross in the center, and one at each corner directly above the supports.

The *base* of a fixed altar must be constructed either of a solid block of stone, of stone sides under the edges of the table, or stone columns under the corners of the *mensa*. The table of the altar must cover the whole structure of the supports and must be united to it—stone to stone on all sides. However, if the base is a solid block of the correct height, length and width, the upper surface may serve as the *mensa*. It is recommended that the base of a fixed altar be immovably secured to and set into the pavement below.

The Institute

Every fixed altar must have a *sepulchre* or cavity for the relics of the saints placed therein. According to the Roman Pontifical, this is a small square or oblong chamber in the body of the altar, in which are placed the relics of two canonized martyrs, although the Sacred Congregation of Rites in 1906 decided that if the relic of only one martyr is placed in it, the consecration is valid; to these may be properly added the relics of other saints, especially those in whose honor the church or the altar is consecrated. These relics must be actual portions of the saints' bodies, not simply of their garments or of other objects which they may have used or touched.

The opening is to be covered with natural stone. The relics are first placed in a small rectangular lead or silver box, together with three grains of incense and a small document. This box is to be tied with a red ribbon and sealed with the seal of the Bishop who is about to consecrate the altar. The size of the opening may vary. About 2" to 3" square and about 1½" deep will ordinarily suffice. The top should be closed flush, using the same material as the altar. There are several locations prescribed where the sepulchre may be placed:

Slightly forward of the cross engraved in the center of the mensa; At the front of the altar, between table and base, if the support is made of a solid block; at the rear of the altar between table and base, if the support is made of a solid block; in the center on top of the base or support.

The sub-structure—A fixed altar must be set upon a solid foundation so that it is immovably fixed. Stone, brick, concrete, terracotta will answer the requirements for the foundation. The ideal, of course, would be a solid stone foundation resting directly upon the soil. However, this is not a requirement.

A fixed altar to be consecrated must not be erected directly against a wall, since the rubrics require the consecrator to circle the entire altar seven times.

The portable altar, or movable altar, is a stone, small or large in size, which is consecrated by itself and called an altar stone. This altar stone is placed in a supporting structure, but the stone alone is consecrated. The stone again must meet the same requirements as the mensa of the fixed altar. This stone must be large enough to hold at least the greater part of the chalice. Therefore the minimum dimension for the altar stone should be 9" x 9". Altars made of wood or less permanent materials usually have this kind of altar stone set in the mensa.

All principal functions in a parish church, take place at the main altar, sometimes called the high altar. In a consecrated church, at least one altar must be a fixed altar, and generally the main altar is consecrated at the same time with the church. In this case, the requirements for a fixed altar pertain to the main altar. Usually the main altar in a parish church is also the altar of the Blessed Sacrament, therefore it must be designed to house the tabernacle. The tabernacle is the receptacle for the consecrated hosts, and is resting on the middle of the altar.

The main altar should be raised from the sanctuary floor in an odd number of steps. The steps to be approximately 5½" high and 15" wide. The top step is called the predella and should extend at least 4' from the front edge of the mensa. The mensa should be in proportion to the sanctuary, more or less 8' in length and 4' in depth. A minimum of 21" from the tabernacle to the front edge of the mensa is normally required. The height from the predella to the top of the mensa should be 39". The permanent furnishings on the altar are the crucifix and candlesticks. Other additions to be considered may be a baldachin, canopy or tester, reredos, dossal, antependium, gradines and a throne for exposition of the Blessed Sacrament. These last items should be taken up with the pastor or the Diocesan Building Commission, since there is a great deal of freedom in design connected with them.

All altars in a Catholic church other than the main or principal altar, are known as the side altars. Each parish church is required to have at least one side altar which serves as a chapel for the Blessed Sacrament during the Holy Week ceremonies.

Side altars should never be constructed merely as ornaments or stands to support a statue or candles, etc. They should be large enough to allow a priest to celebrate Mass conveniently. It is not necessary that the side altars be as large as the main altar.

Each side altar should have a predella, i.e. the platform upon which the altar rests and upon which the priest stands while celebrating Mass. The side altar does not have a tabernacle unless it be the side altar of a Cathedral.

The *Sanctuary*, or area surrounding the main altar, should be spacious enough for the Celebrant, Deacon, Sub-deacon, Master of Ceremonies, the two acolytes, Thurifer and about six altar boys to move about in dignity. Space must be provided for a sedilia to seat three priests comfortably. This sedilia is at the Epistle (right side when facing altar) side of the sanctuary. Additional wooden stools for the Master of Ceremonies and the servers should be provided.

Ambry, Credence Table and Sanctuary Lamp are to be placed in the Sanctuary, the Ambry behind the main altar, the credence table at the Epistle side of the Sanctuary and the sanctuary lamp forward of the tabernacle.

A Pulpit or lectern is part of the standard equipment in a parish church. It is placed on the Gospel (left side when facing altar) side of the Sanctuary.

The Communion Rail which is located at the transition between Nave and Sanctuary, should be provided with an arrangement to hold the Communion cloth. It is highly impractical to have more than one step at the Communion rail.

At certain times it will become necessary to place a temporary *Episcopal Throne* in the Sanctuary. Its location is at the Gospel side of the Sanctuary and necessary space should be included when planning the sanctuary.

2 The Sacristy

In close proximity to the sanctuary, the priests' sacristy must be located. It will vary in area with the size of the parish. The sacristy should be at the same elevation as the sanctuary. The door leading to the sacristy must be at least 8' in height and 3' - 6" in width. This is to accommodate a Bishop passing from the sacristy to the sanctuary with his vestments and mitre, also the acolyte with the processional cross. The Sacristy is the place for keeping the vestments, the sacred vessels, reliquaries, altar linens, altar cards, Mass books, Mass wine, holy water, hosts, cruets, and all else necessary for the sacred functions to be performed daily. The vestment case should be of such dimension that three priests can vest at the same time. Above the vestment case, or built into the upper portion of it, should be a crucifix.

The Sacrarium is a basin with a drain for the disposal of water from liturgical ablutions and the washing of altar linens. The sacrarium with its location in the priests' sacristy must have its drain

connection leading directly to a dry well, never into the regular sewage disposal.

Connected with the priests sacristy should be a *work sacristy*, which is also the altar boys' sacristy. Plenty of storage cabinets for cassocks, flower vases, etc. Also items to be used during Holy Week ceremonies and for funerals are stored in this area. It should have toilet facilities and a sink with drain-board.

3 The Baptistry

Next in importance to the altar in the parish church is the baptistry. In the sacramental system of the church, Baptism is the re-birth of the new man. Today more than ever, we are conscious of the liturgical aspect of Christianity, therefore the prominence of these two sacraments—the Holy Eucharist and Baptism—should determine and find a truly related architectural expression in the parish church. The baptistry should be a separate chapel spacious enough for a small congregation to assist. Since the parish church is primarily and above all a Eucharist and a Baptism church, the location of the baptistry could be on an axis with the altar. This would bring these two functions into proper relationship with one another. However, in most parish churches, the baptistry has been placed at the Gospel side of the church, near the entrance and this seems to be an accepted location.

The material of the font itself should be of non-porous material, such as stone or marble in order to retain water. If wood or other porous material is used, the inside should be lined with metal. Provisions should be made for an ambry, a sacarium, and a small cabinet for accessories used during Baptism. Although the entrance to the baptistry,

if it is not in use, should be kept locked, nevertheless the faithful should be able to see the font prominently exposed in order to remind them of the great sacrament of baptism.

4 The Nave

The *nave* or body of the church, located between sanctuary and narthex, is used by all members of the parish, including school children.

A center aisle at least wide enough to accommodate processions, weddings and funerals, should always be provided for. Side aisles, somewhat narrower may be necessary also, depending on the size of the church.

The following items are usually located in the nave:

Pews are usually stationary and are designed in such a manner that the congregation can kneel, stand or sit comfortably at the required times during functions that take place in the church.

As regards the location and number of *confessionals*, parish churches may differ one from another. In general each confessional should have three compartments, one for the priest in the center, and one for each of two penitents on each side. When planning the confessionals in the nave, the architect should try to place them in such a manner that their use does not interfere with the movement of the congregation. However, confessionals should be easily accessible. All three compartments must be soundproof, they should also be comfortable. Good ventilation is of primary importance.

Shrines for private devotions are sometimes placed in the nave. They may take the form of small alcoves or chapels in each of which a statue is

GLOSSARY

Altar. Place of sacrifice; elevated structure for celebration of Mass.

Altar stone. Portable altar; small consecrated stone placed in the center of a temporary altar.

Ambo. Similar to a pulpit or elevated reading desk.

Ambry. Cupboard or safe for holy oils; usually found in the sanctuary or baptistry.

Antependium. Altar Frontal—used to cover front of the Altar.

Baptistry. Area for the sacrament of Baptism.

Blessed Sacrament Lamp. (Sanctuary Lamp)—Lamp burning continually before the Blessed Sacrament.

Bishop's Throne. Permanent or portable seating for the bishop for sacred functions.

Chancel. Area between sanctuary and nave, sometimes called choir.

Communion Rail. A rail forming the division between Sanctuary and Nave.

Confessional Boxes. Sound-proof compartments for private confession.

Credence Table. A small table or shelf on the Epistle side of the sanctuary on which the sacramental elements are placed before consecration.

Crucifix. Cross with crucified figure of Our Lord.

Dossal. Drapery or tapestry hanging behind the altar which may be fixed or changed according to the season. It may be suspended.

Faldstool. Portable chair with arms, but no back.

Font. Lustral water container (for Holy Water).

Footpace (Predella). Altar platform.

Gradine. Shelf behind and/or on the altar.

Missal. Book used by priest during the Mass, containing various prayers and Epistles and Gospels read each day during the celebration of Mass.

Monstrance. Vessel used for the exposition of the Blessed Sacrament.

Nave. Body of the church with seating for the faithful.

Pavement. Space between the lowest altar step and communion rail.

Piscin (Piscina). Drain for disposal of ablutions.

Prie-Dieu. Kneeling desk; kneeler with an arm rest.

Relic Sepulchre. Small repository cut into the mensa for relics of martyrs.

Reredos. Sculptured screen behind the altar.

Ridels. Curtains flanking the altar.

Sacrarium (Piscina). Basin with pipe running directly into the earth.

Sacristy. Room for preparation and vesting for the clergy. Sometimes called a vestry.

Sedilia. Movable bench seating three people.

Stipite. Supports for mensa.

Tabernacle. A receptacle for reservation of the consecrated hosts.

Throne for exposition. A small platform used for exposition of the Blessed Sacrament.

Title. Name of saint whose relics are in the altar and to whom the altar is dedicated.

Vigil Lights. Small candles lit as offerings before shrines.

placed for veneration. The architect should consult with the pastor as to whether such shrines are to be incorporated in the Church, or whether the side altars are to serve simultaneously as shrines.

The Fourteen Stations of the Cross are in essence, fourteen wooden crosses placed at equal intervals on the walls of the nave. Sometimes pictures or reliefs, representing the Sacred Passion of Christ, are used in conjunction with the wooden crosses; but these visual representations are not necessary. The wooden crosses, however, are essential.

The Twelve Consecration Crosses. In churches to be consecrated, an additional twelve crosses, called consecration crosses are to be located on the interior walls of the church. They must be of permanent material and must remain permanently in their location. These are the crosses to be anointed by the Bishop when consecrating the church. These consecration crosses can also be incised in the stone or permanently applied to it.

In the case of parish churches of a single nave, the walls are designated to receive these crosses. The candles placed in front of each cross are mentioned by Rabanus Maurus as early as the ninth century. These candles are used on the day of consecration and each year on the anniversary of the consecration.

The architect should ascertain at the very initial stage of planning, whether the church he is designing will be consecrated or blessed. When the consecration of the church is being planned by the priests and bishop, it is poor policy to begin only then to inquire where the anointings should take place.

The best way is to select the twelve points when the plans are being prepared. The crosses may be arranged as follows: one at each side of the main altar; one at each side of the main entrance; and the remaining at equal distances between these. These twelve crosses are never to be removed as they along with the rite of consecration dedicate the building to the service of God "in perpetuum."

5 The Choir

The location of the choir near the sanctuary, rather than in a gallery or in the rear of the church, should receive serious consideration. The organ, also, should not be too far from the priest and choir. If this arrangement is followed, no echo organ over the Sanctuary is necessary.

6 The Narthex

The Narthex or vestibule is the place of preparation and transition and should be treated in a dignified manner and given ample space. The holy water fountains, memorial tablets, and sometimes a place for sacred literature, are located here. Also, the newer trend has brought about the introduction of a small acoustically treated area separated from the nave by glass partitions, for the use of mothers in order that their small children will not disturb the rest of the congregation. The entrance to this particular area usually is from the Narthex.

The Corner Stone should be a real foundation stone rectangular in shape and of natural material, having a cross engraved on each of its six sides. In blessing the corner stone, the Bishop retraces these crosses with a trowel or similar instrument.

Other inscriptions beside the crosses may also be placed on the stone.

The corner stone is located in the foundation wall near the place of the main altar on the Gospel side of the Church, and should be seen on the exterior. A cavity, large enough to contain a small metal case into which documentary evidence is placed, should be provided for.

A *Holy-Water stoup* or font is a shallow basin, placed close to the entrances and exits of the church. In large churches it is more convenient to have them set away from the walls, thus making the font more accessible to the faithful.

Other Planning Considerations

The Setting—The architect should exert every effort to provide a proper setting for a new parish church, large or small. It gives the church repose and dignity. Too many churches are built directly on the sidewalk where the doors and windows are exposed to the dirt and glare of the streets. Of course in large cities, conditions militate against a setback plan, but whenever possible it should be a prime consideration. It is never good practice to empty the congregation directly on to the sidewalk. After the Sunday Mass, friends will want to meet and exchange friendly greetings. This will be difficult if there is no place left to stand. It would be commendable if the people assembling for divine worship, might traverse a quiet zone, similar to the original atrium idea, to become inwardly disposed and attuned to the divine atmosphere of a sacred celebration.

Orientation—From the sixth century onward, most of the Christian churches in the west were built in such a way that the priest celebrating the sacrifice of the Mass, faced towards the East. Thus the priest would face the land where the divine Saviour offered His great sacrifice on the hill of Calvary. In Catholic countries nearly all churches are oriented.

This principle of orientation faces many difficulties in our time and is very seldom observed in the planning of a Catholic parish.

Toilet Facilities—An important consideration should be the provision of adequate toilet facilities. They could be located in the basement area, or off the vestibule of the church.

Air-Conditioning—If the church is located in an extremely hot and humid climate, the architect should discuss the possibility of air-conditioning with the pastor.

Many new Catholic churches are air-conditioned or have been planned in such a way that air-conditioning can be easily added at a later date.

Parking—Most new Catholic parishes in suburban America are required by the Bishop to have a property of from eight to ten acres before the Bishop will give permission to erect the parish church. A good part of this area must be set aside for parking facilities.

Catholic parishes fill up and empty several times on a Sunday morning and bottlenecks have been observed to occur as several hundred cars arrive for one Mass while others are trying to depart from an earlier Mass. Therefore careful planning of entrance and exit locations are important points which must be considered when planning adequate parking facilities.

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COMING IN THE MARCH JOURNAL

The Franklin Delano Roosevelt Memorial Competition

A review, a year later, of the winning design and of memorials in general, by an interesting list of observers and commentators:

The Hon Francis Biddle
Paul Thiry, FAIA
Thomas H. Creighton, FAIA
Edmund N. Bacon, AIA
Katherine Kuh, Art Critic
William F. Pedersen, AIA

Home Beautiful in City Terrible by Victor Gruen, FAIA

The well-known architect and urban planner reiterates his belief that the private automobile must be barred from the city's core.

The Slob and the Concept by George McCue

The art critic of the *St Louis Post Dispatch* writes a scintillating plea from the man in the street ("the slob") for a little "urban magnetism," a bit of humane consideration, in the environments we are so busily planning. Illustrated with cartoons by Thomas E. Hutchins

The Preceptorship Program by William W. Caudill, AIA

The Chairman of the Department of Architecture, Rice University, outlines a new concept in architectural education.

A Report on the BRI Color Conference

Two School Plant Studies on the Small School

Louis La Beaume

Louis La Beaume, FAIA, former president of the St. Louis Chapter, AIA, and Central States Regional Director and national vice-president, passed away on November 9, 1961. He was eighty-eight.

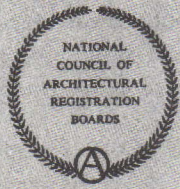
Members of Mr La Beaume's family had settled in St Louis in 1790. A lifelong resident of the city, he was a partner in the firm of La Beaume & Klein. His architectural practice was general, including many notable private residences and much important institutional and civic work. His firm was retained as official architects of Lindenwood College, St Charles, Missouri, in 1910, and many buildings have been erected under his direction since that time.

His name is well-known in the fields of ecclesiastical and hospital architecture.

Mr La Beaume served as a member of the City Plan Commission; Secretary of the Plaza Commission, Inc; and member of the Board of Control of the City Art Museum. He occupied, successively, the posts of treasurer, vice-president, and president of that body. He was responsible for many important additions to the Museum's collections as well as major changes and improvements in the interior.

He also served on the Advisory Board of the Department of Archaeology of Princeton University, was interested in the work of the St Louis Children's Hospital and many charitable organizations.

He wrote and published many professional articles and books, as well as verse, sketches and skits bearing on the local history of St Louis.



A. Reinhold Melander, President, Duluth, Minnesota; Chandler C. Cohagen, 1st Vice President, Billings, Montana; Paul W. Drake, 2nd Vice President, Summit, New Jersey; A. John Brenner, Secretary, Phoenix, Arizona; C. J. Paderewski, Treasurer, San Diego, California; Earl L. Mathes, Director, New Orleans, Louisiana; John E. Ramsay, Director, Salisbury, North Carolina; George F. Schatz, Director, Cincinnati, Ohio; Walter F. Martens, Past President, Charleston, West Virginia

Professional References

by **James H. Sadler**, *Executive Director, NCARB*

► In addition to those architects serving on architectural registration boards, there are at any given time hundreds of other architects participating in the work of the NCARB.

For each architect who applies to the Council for the preparation of a record of his education, training and professional standing, at least three other architects will be involved during the procedures to complete that record. These architects will have been listed as professional character references.

Architects who are past or present employers or those architects serving in administrative positions for professional organizations or state registration boards will be asked to answer reference inquiries

affidavit to bring the record up to date and the reference has replied to the Council inquiry, those reference replies are included in each future application submitted on the basis of that record, and it is not necessary that the same references be contacted each time the architect has need for registration in an additional state.

Due to the volume of reference letters received each day it is impossible for the Council to express its appreciation individually to each architect who takes the time to respond to a reference inquiry from the Council in regard to one of his fellow architects. The Council is therefore very grateful for the opportunity of conveying to many of those architects through the wide circulation of the *AIA Journal* a continuing appreciation for the assistance they render not only to the Council but to the entire profession by their reference letters.

In receiving thousands of letters from architects submitted as confidential information, it is reassuring to note that with a few exceptions architects show a strong admiration for the capabilities of their fellow architects and give emphasis in their reference letters to the qualities that promote high standards of professional conduct. The exceptions that occur are, however, very important, and a frank reply indicating a lack of ability, a low quality of service or unprofessional practice that has been observed and can be confirmed is of great assistance to the Council in evaluating eligibility for a registration status of national scope.

When misleading letters are received, it can complicate a record and the Council makes every effort to avoid an incorrect over-all evaluation of ability or professional standing which could result from such letters. Interpretations of unusual situations at a local level are available from the state boards that compose the membership of the Council.

If you are contacted for a letter to confirm the experience or professional standing of a fellow architect, your contribution of information may be greater than you might realize toward the goal of a constantly improving standard of professional competency throughout the country, and we of the Council extend our thanks. ◀



Camera Associates

Seated, from left: A. Reinhold Melander, Chandler C. Cohagen, Paul W. Drake, Walter F. Martens. Standing: Earl L. Mathes, George F. Schatz, A. John Brenner, James H. Sadler, C. J. Paderewski, John E. Ramsay

directed to them by the Council in regard to that record.

Some architects, widely known and highly respected in the profession, are used so frequently as professional character references that it is difficult for them to respond to each request for a letter.

The Council owes a special debt of gratitude to those architects for their recognition of the importance of their reference letters.

When the architect has listed a reference in his original application to the Council or in a later



It's Your Money

► When the delegates approved the Supplementary Dues proposed at the 1961 Convention they cast a vote for increased services to the profession.

We have taken this mandate very seriously in fiscal planning for 1962. We began by setting this policy: that the membership expects the new dues revenue to be used primarily for *new programs* that will strengthen the profession against non-architectural competition and advance the professional competence of AIA members. Consequently none of this income should be used for "regular operations."

Over the years the activities of the national program have grown in scope and complexity to keep pace with the needs of the profession. Names of departments indicate the nature of regular operations: Education, Architectural Practice, Research, Chapter and Student Affairs, Architectural Information Services, Library, *Journal*, Public Relations and News Services, Legislative Affairs, Honor Awards and Competitions, Convention, Membership and Judiciary Affairs. The names of the Committees (more than fifty) offer another clue to the myriad of membership interests translated into regular operations. Activities of the Board and committees require a significant share of income.

Now, it would be very easy to add more staff to expand regular activities simply to meet the demands that come from various quarters. But this type of growth must be kept within the bounds of "regular" income from membership dues. To do otherwise would be bad business management.

On this line of reasoning, the Finance Committee developed a budget for 1962 in two parts; one for the regular operations including all activities carried on in 1961, and a second budget for supplementary dues revenue. This new source of income could not be accurately estimated in advance, so the program of activities to be supported by it was conservatively planned with provisions for expansion as the income develops.

There were numerous proposals for projects and programs, adding up to at least twice the estimates of revenue. We had to decide where to put the chips for the best promise of payoff in real and tangible value.

We looked back at proposals made in April in answer to questions being asked about the uses of the new money *before* delegates went to the Convention. They appeared to be sound and applicable today. As a result of careful study and solid determination to use money wisely, these projects were selected for the new budget:

1 *Expanded Architectural Services*—a substantial sum to move into reality the new concepts for architects' services to "outsell" the package deal. Expertly developed educational articles and regional seminars will form the backbone of the program.

2 *Urban Design*—a substantial sum to produce publications, followed by seminars, to advance professional competence in this growing field.

3 *Committee Work*—a modest sum to take care of committee growth resulting from four new regions, and to coordinate committee work through the annual meeting of committee chairmen.

4 *Foreign Relations*—a modest sum to enable the AIA to take its proper place in world architectural activities through representation in affairs of the UIA and the Pan-American Congress.

These four items received first priority for funds totalling less than the anticipated revenue. Next in order, as the income materializes will be—

5 *Public Relations*—new projects in excess of the amount already earmarked in the regular budget for PR activities.

6 *Architect-In-Training Program*—further development of the program for young would-be architects which needs further impetus.

7 *Research Programs*—several projects to be announced when a go-ahead can be given. We are confident that new programs are being set in motion that will have real and tangible benefits to the membership.

W. H. S.

The Student Page

The Student Forum

► "You—today's students of architecture—will be the leaders in the design field in the period 1980-2000," AIA's Executive Director William H. Scheick told participants in the Institute's Student Forum which started November 20. "What you are learning today will be a powerful force in shaping the society of the 1980's. We live in fast-changing times, which have wrought enormous changes in the practice of the architectural profession. This period is like nothing that has happened in history.

"A most complex urban society is developing. This new development affects the architect in that

it requires a whole new approach to design. And it affects architectural education, which is concerned with training the people who will mold this urban society."

A hundred and sixty-five delegates and alternates, representing almost all member colleges of the Association of Collegiate Schools of Architecture as well as a few non-member schools, participated in the Forum, through which AIA reaffirmed its purpose of providing a bridge for the beginning architect to span the gap between school and practice. The Institute's goal in sponsoring the Forums is to instill in the architectural student high standards of professionalism which should characterize his work throughout his career.

Delegates held business sessions at which they elected new ASC-AIA officers as follows: Don Williams, University of Illinois, succeeds Raymond Gaio of Notre Dame in the presidency. Franklin Ferguson, University of Utah, follows Alexei Vergun of MIT as secretary. New treasurer John W. Kelsey of Princeton succeeds USC's Gary Call.

For the first time, Forum participants gathered in the Auditorium of the Corcoran Gallery of Art, across the street from the Octagon. There they listened intently to three tightly-packed days of speeches by professional people on various aspects of the field they will soon enter.

Following Mr Scheick's talk, the students listened to speeches by Henry L. Wright, FAIA, First Vice President of the Institute, and Max Abramovitz, FAIA, partner in Harrison and Abramovitz of New York. On Monday afternoon, Forum participants were warned of the pitfalls which await the unwary or irresponsible architect, by John R. Clark, a well-known Philadelphia attorney, and William W. Eshbach, Director of AIA's Pennsylvania Region. Their presentation was titled "Professional Responsibility and Legal Liability."

Tuesday's program got off to a Texan start with a talk by William Caudill, AIA, of the Houston firm of Caudill, Rowlett, Scott and Associates. Mr Caudill is also new

Chairman of the Department of Architecture at Rice University.

Will Shaw, AIA, representing the Heritage Fund, explained the *raison d'etre* for the Fund, which has been established to preserve and augment that which is beautiful in the culture of America.

Participants then hear Samuel T. Hurst, AIA, Dean of the School of Architecture, University of Southern California, and William S. Brown, AIA, of Skidmore, Owings and Merrill, Chicago. Mr Brown discussed "The Expanded Services of the Architect."

On Wednesday morning, the students listened appreciatively as Chloethiel Woodard Smith, FAIA, (Satterlee and Smith) spoke on Urban Design. Dynamic Mrs Smith, who has received honor awards from the Washington Board of Trade for her work in the Southwest Washington Re-development Project, painted a glowing word-picture of urban renewal as it can and should be practiced by the truly imaginative planner.

High point on Wednesday afternoon was a field trip to Dulles International Airport at Chantilly, Va., where the students were conducted by W. Kent Cooper, Construction Coordinator for Eero Saarinen and Associates, through the still-incomplete, soaring terminal building which is one of the last works of the late master.

Evenings, the delegates gathered in the Octagon to drink beer, eat pizza, and argue over the display of student theses which were exhibited during the Forum at their request.

When they left Washington on Wednesday, it is safe to assume that many of the participants had found a new dedication to the profession—if any was needed—in the inspiring words of Max Abramovitz: "I am trying to find in architecture a rightness that transcends today. An architecture containing a planned order, a rhythm, with an inter-relationship of spaces . . . wherein there is nothing that can be taken away from the building without feeling a loss, and where everything contributes to the desired expression." ◀

Victor Amato



Arguing over the theses

Bull session at the Octagon



Library Notes

Shelter

In view of an increasing interest in special types of shelter problems, it seemed desirable to devote this list to books available in the Library on some of these special topics. Housing for the aged or senior citizens, to use a more recent designation, is definitely of prime interest to all of us, who will someday find ourselves in this group. Since some of this type of housing will involve the use of apartment structures, these are the subject of our second group. Closely related are hotels and the rapidly developing motel. A few references on student housing are also included, as offering another special type of housing problem.

All books are available to corporate members of the Institute on the Library Loan Service, at the usual rates, fifty cents for the first volume and twenty-five cents for each additional.

The Aged

AMERICAN PUBLIC HEALTH ASSOCIATION. COMMITTEE ON THE HYGIENE OF HOUSING

Housing an aging population. New York, 1953. 92p.

CORNELL UNIVERSITY. HOUSING RESEARCH CENTER

Housing requirements of the aged, a study of design criteria, undertaken for New York State Division of Housing. Ithaca, New York, 1958. 124p.

HOUSING RESEARCH COUNCIL OF SOUTHERN CALIFORNIA, INC.

The architect looks at housing the aged. Pasadena, California. 1953. 16p.

MASSACHUSETTS. STATE HOUSING BOARD

Housing for the elderly; standards of design. Boston, 1954. 17p.

MATHIASSEN, GENEVA AND E. H. NOAKES

Planning homes for the aged. New York, Dodge, 1959. 119p.

MICHIGAN UNIVERSITY. CONFERENCE ON AGING, 1952

Housing the aging; edited by Wilma Donahue. Ann Arbor, University of Michigan Press, 1954. 280p.

NATIONAL COMMITTEE ON THE AGING

Standards of care for older people in institutions. New York, 1953-1954. 3 v.

NATIONAL CONFERENCE ON NURSING HOMES AND HOMES FOR THE AGED, WASHINGTON, D. C., 1958

National Conference on Nursing Homes and Homes for the Aged, February 25-28, 1958. U.S. Dept. of Health, Education and Welfare, 1958. 85p.

NATIONAL CONFERENCE ON THE AGING, WASHINGTON, D. C., 1950

Man and his years; an account of the first National Conference on Aging. Raleigh, N.C., Health Publications Institute, c1951. 311p.

NICHOLSON, EDNA E.

Planning new institutional facilities for long-term care. New York, Putnam, 1956. 358p.

NIERSTRASZ, FRITS H.

Building for the aged. Amsterdam; New York, Published for Bouwcentrum, Rotterdam by Elsevier Pub. Co., 1961. 187p.

SHOCK, NATHAN W.

Trends in gerontology. 2d ed. Stanford, California, Stanford University Press, 1957. 214p.

Apartments

ABEL, JOSEPH H., AND F. N. SEVERUD

Apartment houses, New York, Reinhold, 1947. 280p.

ARCHITECTURAL RECORD

Apartments and dormitories. New York, Dodge, 1958. 232p.

INSTITUTE OF REAL ESTATE MANAGEMENT

Cooperative apartments: their organization and profitable operation. Chicago, 1956. 72p.

MULLER-REHM, KLAUS

Wohnbauten von heute. Berlin, Rembrandt-Verlag, 1955. 220p.

PETERS, PAULHANS

Wohnhochhäuser. Punkthäuser; Point blocks; Immeubles tours. Munich, Callwey, 1958. 103p.

RAMBERT, CHARLES

L'habitat collectif, probleme urbain. Paris, Vincent, Fréal et Cie., 1956. 142p.

VOGEL, HAROLD N.

The co-op apartment; a guide for co-op buyers and owners. New York, Libra Publishers, 1960. 119p.

WINNICK, LOUIS

Rental housing. Opportunities for private investment. New York, McGraw-Hill, 1958. 295p.

YORKE, FRANCIS R. S.

Modern flats. London, Architectural Press, 1958. 211p.

Hotels, Motels, etc.

ARCHITECTURAL RECORD

Motels, hotels, restaurants, and bars. 2d ed. New York, Dodge. 1960. 327p.

ARCHITECTURAL REVIEW (LONDON)

Hotels, a special issue. London, 1960. p. 237-316.

BAKER, GEOFFREY H. & B. FUNARO

Motels. New York, Reinhold, 1955. 264p.

KANE, C. VERNON

Motor courts, from planning to profits. New York, Ahrens Pub. Co., 1954. 243p.

KOCH, ALEXANDER

Hotelbauten, Motels, Ferienhäuser. Stuttgart, Koch, 1958. 315p.

LA BELLE, ALTA M.

Administrative housekeeping. New York, Putnam, 1951. 420p.

LUNDBERG, DONALD E. & C. V. KANE

Business management: hotels, motels, and restaurants. Tallahassee, Peninsular Pub. Co., 1952. 329p.

MOTOR COURTS AND DRIVE-INS

Construction and operation. New York, Ahrens Publishing Co., 1952. 112p.

WILLY, J. KNIGHT

The story of the Los Angeles Statler. Evanston, Ill., Hotel Monthly press., 1953. 64p.

Student housing

BOCK, GEORGE A.

A study of the development of permanent housing facilities for married students and their families as the basis for the design of such a project at the University of Virginia. Univ. of Va., 1955. G.E.P.

Book Reviews

Architecture Today and Tomorrow.

Cranston Jones. New York, McGraw-Hill. 248pp. 360 b/w illus. and 53 color plates. 9¼" x 12½". \$17.50

When "Fountainhead" first appeared less than twenty years ago, architects could hardly suppress their delight. True, the villains—an unusually insipid and stuffy lot—resembled some well-known fellow professionals a little too closely for comfort. Nor did the hero in Ayn Rand's novel, with all his gushingly romantic idealism, evoke precisely the image of the architect the profession would pay a public relations man to create. But what did it matter? He was an architect, wasn't he? In fact here at least was an entire book which dealt with architects and architecture, and a popular book to boot. It hadn't happened in a long, long time.

Today it happens on almost every publication list. I haven't bothered to count, but it is a safe bet that more fine, earnest and well-illustrated books on architecture have appeared in the past two years than in the two decades preceding. And publishers are out scouting for more. We need no longer rejoice if an architect is shown in a whiskey ad or in a movie like "Hiroshima, Mon Amour," for the popular magazines are full of articles on architecture and the bookstores are full of serious, yet readable and attractive architecture books which for some of us lack none of "Fountainhead's" appeal. But they do lack villains, or rather, abound in heroes and hero-worship.

If times have thus changed, *Time* has a great deal to do with it. To its millions of readers *Time* tells almost week after week, literally and figuratively in sparkling color, the unfolding story of man's greatest art. The man most responsible for this, *Time* associate editor Cranston Jones, has received three AIA architectural journalism awards for his vivid writing, and rightly so. For conceiving and organizing the magnificent exhibition "Form Givers at Mid-Century," he deserves some even higher recognition. It is not too much to say that Cranston Jones' enthusiasm

for modern architecture has helped to infect the nation.

But enthusiasm alone, unfortunately, does not produce a good book. There is a time at the beginning of every new movement when the issues are still clear-cut, or seem to be, and those who are not totally for the rebels are against them. For modern architecture this time has long passed. We can safely climb down from the barricades and acknowledge that not all that is modern glitters and that, in fact, style can never automatically be equated with quality.

Cranston Jones is still up there cheering. He gives us but an occasional hint of evolution and conflict, of the fascinating tension between point and counterpoint, of the chemistry of fermentation. He cites Ed Stone's doubts as to the ultimate wisdom of Gropius' revolution at Harvard and quotes Stone as saying: "A whole generation was brainwashed and this has resulted in a kind of architectural illiteracy." But he seems just as happy with Gropius as he is with Stone or vice versa. He tells us that Yamasaki found "the Bauhaus blinders falling from his eyes." But he (Jones) certainly wears those blinders when he writes about the Bauhaus, and I don't quite know what he (or Yama) might have seen without them. He states that after the completion of the Seagram Building, Philip Johnson discovered "a more personal idiom with strong baroque overtones." But he seems just as impartially enthusiastic about the Miesian Johnson as he is about the baroquely overtoned neo-traditionalist one and, for that matter, about the rest of the twenty-three heroes of his book.

These heroes divide into three groups: The Form Givers (Sullivan, Wright, Perret, Le Corbusier, Gropius, Mies and Aalto) about whom he has little new to say; the Second Generation (Neutra, Breuer, Wallace K. Harrison, Stone, SOM, Eero Saarinen, Yamasaki, Johnson, Rudolph, Lundy, Louis Kahn, Kenzo Tange, and Oscar Niemeyer), inexcusably omitting, somewhere, Eric Mendelsohn; and the free-form, shell structure engineers (Maillart, Torroja, Candela,

Nervi and Buckminster Fuller) with the implication that theirs is the architecture of the future. Jones (in contrast to the writer of his book-jacket blurb, who claims he foreshadows "a future structural environment which will go beyond man's most imaginative dreams of progress and beauty") fortunately leaves it with the implication. He nowhere actually states that the future of architecture is either hyperbolic-paraboloid or geodesic. The question whether, beyond function limited to exhibition and sport halls, the giant, tortured egg shells are perhaps a mere fashion, is not even raised. As to Buckminster Fuller's vision of whole cities under geodesic domes "as vast areas of controlled environment," Jones merely says that it "may well appear on the moon before it is seen on earth." I, for one, am willing to let the matter rest in the lunar regions.

But aside from such mild and implied speculation, this book really adds up to a collection of biographical essays with the great virtue of including young turks like Rudolph and Lundy and a most interesting piece on Kenzo Tange. In other words, Jones has written about the great adventure of our time, as he calls modern architecture, in terms of the adventurers, without really analyzing what it was they have embarked upon. Which is, of course, quite all right, except for the pretentious title "Architecture Today and Tomorrow." But, then, this book is clearly not for the specialist but for the general public. Too bad that the quality of the printing, of the text as well as the halftones and color reproductions, does not match the sparkle of Cranston Jones' writing. Architects, who are familiar with practically all of the photographs, would some years ago have considered publication of this book an event akin to that of "Fountainhead." Today they will find that it does not quite live up to its promise. They should remember, however, that they owe it largely to its author that they can afford to be so critical. w.v.e.

Measure of Man. Henry Dreyfuss. New York, Whitney Publications. 1960. Portfolio 9½" x 12¾". \$4.95

A large amount of "human-factors" information collected for industrial design purposes and pre-

sented with some of the least lovely drawings of the human figure ever seen. Two of them are 2' x 6' full-scale charts of average Mister and Miss (?) America.

Under environmental data there is a skimpy presentation of illumination criteria with no recognition of the effect of brightness contrasts, and apparent ignorance of the important use of odor signals.

Color-blindness data is dubious—range for men and women is given as equal although it has been established that men are considerably more subject to this defect of vision.

The party line among industrial designers seems to be their profession's all-knowledge concerning facilities for "people." Another elaborately-produced booklet this year made the same questionable claim. After several years' experience in this field it is this reviewer's opinion that they are even more concerned, as are their clients, with how to build-in obsolescence.

It is curious too that, with all this concern for anthropometry, whenever industrial designers (or some of the architects who work for them) do a building it lacks scale. Perhaps there is some conflict between the idea of designing for the mass public and for individual "people?"

There is much interesting material in this collection—the body-dimensional data seem quite good. We can't help recalling a one-time 6'-5" associate, however, who—seeing the Air Force's exhibit of six plastic bodies and observing how the middle-size man paired off with the tallest girl, the shortest man with the medium-size girl—exclaimed, ". . . so that's why the tall guys get the half-pint gals . . ."

E.P.

The New Architecture of Europe.

G. E. Kidder Smith. New York, Meridian Books, The World Publishing Company, 1961. 361 pp, 225 illus. 4 $\frac{5}{8}$ " x 8". Paperbound \$1.95, clothbound \$4.00.

Kidder Smith has really done it. He has produced a fresh and exciting book on a well-worn topic, a topic which should always be fresh and exciting, but which has become almost wearisome because of the annual flood of ordinary books covering it—books with text in two or three languages, full of pictures which all look alike.

Travelling on a Brunner Scholarship, Mr Smith visited nearly all of the two hundred buildings he discusses, and took most of the photographs himself. His comments convey the impression that in every case he must have talked with the architect, the owner and the building's occupants, as well as explored and experienced the building in detail—or "in depth," as it is now the fashion to say. Surely in no other way could his remarks be so pertinent, so appreciative, so justly critical—or so lively.

He takes Europe country by country, sixteen of them. A map of each locates the buildings he visited and a one- to four-page summary tells, in a sprightly manner, the story of modern architecture in that country. Then, with a photograph for each, he takes up his examples, with his excellent comments.

Here is an example of his preliminary discussion: After mentioning some of the great names and structures of contemporary architecture in Italy, Mr Smith goes on to say:

"Other outstanding Italian contributions to contemporary architecture are anonymous; they may well be endemic. They are (1) the wonderful working relations and mutual appreciation of architects, sculptors, mosaicists, and muralists, and the employment of such artists for almost every type of building, including bars and butcher shops; (2) a keen awareness and expression of structure in building (the "bones" are increasingly prominent in contemporary Italian building and are in many cases the design dominant); (3) an absence of the clichés so monotonously dragged across the US with every new issue of the architectural magazines (Italian architects—for better or worse—think for themselves); (4) an appreciation of the richness and vitality of materials, and a fertile imagination in using them; and (5) a great knowledge of and respect for architectural inheritance, but no aping or bowing to it such as is still found in France and England.

"Against these splendid credits, the following debits occur: abysmal planning, often in the building, almost always in city and suburban development; a lack of social consciousness and responsibility; shocking lack of upkeep, especially in housing, (there would be more examples of such work in this book

if upkeep had been better); poor public architecture, and in particular, poor schools (since the war only 25,000 schoolrooms of the more than 130,000 needed have been built); and a liberty that too often becomes license.

"Modern Italian architecture is, like that in the United States, an architecture of very high peaks amid a morass of mediocrity. But, with a public that enthusiastically 'reviews' new buildings as it does new plays and books, searching and refreshingly outspoken architectural journals—which are on the top layer of every newsstand—the ambience for the Italian architect is highly stimulating."

In the back of the book are an extensive bibliography; an index of 240 European architects, with their addresses and telephone numbers; and an index by building type. Printed by offset, the excellent photographs are printed as well as can be expected in a \$1.95 volume. By the way, no residences are included, for, as the author says in his introduction, ". . . it would be an intrusion for owners of distinguished homes to have hordes of curious visitors descending upon them."

This slim little book will slip easily into one's pocket, and from now on it is a *must* for all architects going to Europe, or all architecturally-minded tourists, whether their interest in architecture be ancient or modern—for one must see the living architecture as well as the dead.

J. W.

The Cathedral of Granada. Earl E. Rosenthal. New Jersey, Princeton Univ. Press, 1961. 235 pp illus. \$20.00

This is a thoroughly documented study of the Cathedral of Granada, created by Spanish architect, Diego de Siloe in the Renaissance style. Following reconstitution of Siloe's original plan, subsequently altered, the author considers questions of form and style, and an architectural antetype. In a final chapter possible non-esthetic factors that may have influenced various aspects of the cathedral are reported. An appendix gives transcription of 236 pertinent documents principally from the archives of the cathedral. Too specialized for general interest but important for art and architectural historical collections.

G.E.P.

Editor's Page

Prognostications

I have been reflecting on the unreliability of prognostications—prognostications, that is, not such as those incredible weather forecasts that appear in the "Farmers' Almanac," but those arrived at from a study of statistical reports based upon the behavior of the human race in the past. Man defies prediction. His fertility rate is no more predictable than is his capacity for inventive genius or artistic creation. In all God's world there is something special about man. He is unique in nature. True, he has gone through a slow process of evolution, but he has changed little in 25,000 years. And he exists today in different parts of the earth in nearly every stage of that evolution. Who can predict the pattern that he will follow?

There was a story in the *Washington Post* this morning about the trolley car underpass at Dupont Circle—what to do with it?—no more trolleys! There was an implication that the engineers who planned it fifteen years ago should have foreseen the demise of the trolley car, and the suggestion that now that it isn't needed any more its approaches be filled in and paved over. I wonder what the engineers or newspaper critics of fifteen years from now will think of that? I presume consideration has been given, and apparently discarded, to running the buses which have replaced the trolley cars, through the underpass; and the paper made the inevitable, and probably very good, suggestion of its conversion to a fallout shelter.

This is purely a local matter, but every city has similar problems. Now that the fixed, long-range master plan has been discredited—and justifiably so, how far ahead *can* you plan? I do not wish to seem to give too much aid and comfort to the enemy, the highway planner, but it seems to me that he can after all, plan no farther than he can see—which is to plan for the immediate present and the immediately foreseeable future, which can hardly be more than five or ten years, depending on circumstances.

Yesterday I read a talk given at the AIA Central States Conference in September by Fred H. Bair, Jr, AIP (we'll *have* to publish it and the other talks on the panel in the *Journal* before long). His title was "The Challenge of the Unexpected Obvious." He's very quotable. Listen

to this: ". . . we are still planning for the future as though yesterday's problems will be tomorrow's, and today's answers will do. . . . We do not know what tomorrow's problems will be and we do not know what tomorrow's answers should be. . . . I believe we will learn in the years ahead to work more intensively on plans scaled to our foresight, and to spend less time writing planning science-fiction about what we should work toward in twenty years. The five-year plan is probably at the outer limit and may be beyond it."

Mr Bair brings out a point mentioned on this page in our December issue, that looking ahead from 1935, "Everybody knows that we are now planning ahead for a mature economy in which a population has almost reached its peak. Population will level off by 1950, and decline somewhat after that. . . . We must plan for a higher proportion of old people, a lower proportion of children."

The prognostications of the Bureau of the Census have been notoriously wrong. Why continue to be guided by them? (I do hope these gentlemen won't take this personally, should it ever reach their eyes. They have more odds against them than does the weatherman, and how often is he right?) The following data comes from Bair's paper: In 1955 the Bureau of the Census issued projections of state and regional population, including estimates for 1960. Seven alternative sets of figures were derived. Taking the highest and lowest estimates and comparing them with actual 1960 figures, the 1955 report failed to predict in actual 1960 performance, two of the four major regions, six of the nine divisions and 32 of the 49 continental states (counting DC). For the states, twelve were *under* the low estimates and twenty were *over*. And these were predictions for only five years ahead!

No, you simply cannot predict people. It may be possible to forecast that in such-and-such a year there will be x million women of childbearing age, but who can foresee how many children they will choose to have?

Planning cannot possibly keep ahead of the whims or genius of man and nature. It will do well if it keeps apace with them—and perhaps at the very best as far ahead as the next curve.



“... available technical information is adequate ...”

National Academy of Sciences Advisory Committee on Civil Defense

by **Richard Park**, *Technical Director**

► The task of providing technical advice in civil defense matters has some special, if not unique, characteristics. For one thing, many disciplines, including the psychological, sociological, political, and economic, are involved; for another, most of the delays and failures in civil defense appear to be caused by problems not readily amenable to scientific and technical treatment; lastly, there are few areas where more highly subjective, and sometimes emotional, opinions and viewpoints can be found, and where, at the same time, there is less understanding of what is involved, not only by the general public, but also by otherwise well-informed people.

Organization

The first official step in the establishment of an Advisory Committee on Civil Defense was a letter from Val Peterson, Director of the Federal Civil Defense Administration, to Detlev W. Bronk, President of the National Academy of Sciences. It was dated December 1953 and requested that the Academy establish an advisory committee to provide scientific and technical analysis and support for the national civil defense effort.

In May 1954, a contract was concluded between the Academy and the Federal Civil Defense Administration (FCDA), and in July, Willard Bascom began work as Technical Director, assisted by a small staff. By the end of the year, the appointment of the Advisory Committee was completed under

the chairmanship of Merle Tuve, Department of Terrestrial Magnetism, Carnegie Institution of Washington.

During the first two years of the existence of the Committee, the staff was actively engaged in a variety of projects.

The initial phase of the Advisory Committee's history can be said to have ended with the Congressional hearings on civil defense early in 1956 when the Chairman and Technical Director testified. These hearings exemplified a fundamental problem that the Advisory Committee has continuously had to face: the difficulty of separating policy and political matters from technical considerations.

Unsatisfactory progress in civil defense cannot be attributed to technical difficulties. The strictly technical problems as a rule are satisfactorily solved or appear quite solvable. But action by the people, by Congress, and by various levels of government has been far from sufficient. Thus a group such as the Advisory Committee, when it examines the civil defense program in all its detail, comes to the conclusion that the only way to achieve a capability for protecting the people from nuclear attack is by changing national policy, or by influencing leadership, or by educating the public, or by improving the planning and administration of the program.

New Chairman and Staff

The second phase of the Advisory Committee's life began in October 1957, when Lauriston S. Taylor, Chief of the Atomic and Radiation Physics Division of the

National Bureau of Standards, who had served on the Committee from the start, became chairman and Richard Park became Technical Director.

In the spring of 1958, the federal government in the course of a re-examination of civil defense arrived at a point where the answers to certain questions were urgently needed. These questions concerned the federal government's research program in the non-military defense area. Specifically, were the research programs pursued by the various agencies adequate to provide a basis for action? Were the programs properly coordinated and integrated? Was there adequate interchange of information among agencies to prevent duplication of research and still enable each agency to discharge its responsibilities? Were there any major gaps in the research effort which needed to be filled?

AIA Representation

At this time the Academy requested that the American Insti-

Technical

tute of Architects designate a representative to the Advisory Committee, and Eric Pawley, AIA Research Secretary, was appointed a full member of the Committee. The membership was also supplemented with temporary members and consultants for the emergency review of the entire research program in non-military defense. The

* reprinted from *NAS-NRC News Report*, September-October 1961:68-71 with permission for additions to indicate AIA participation

result was the Advisory Committee's Report "The Adequacy of Government Research Programs in Non-Military Defense." Because of the brief time available, and the fact that the overriding purpose was to provide the top policy-forming councils of the government with specific answers to specific questions, the report concentrated on certain aspects of civil defense.

Briefly, the report concluded that the level of knowledge was more than sufficient to support the construction of a protective capacity; that adequate shielding is the only effective means of preventing radiation casualties; that, while the available information was adequate to justify immediate action, continued research effort was needed; and that administrative improvements were called for in order to get better efficiency and more effective results. Lastly, the report concluded that the achievement of effective, nationwide non-military defense was dependent on "the assignment of a proper status in relation to military defense."

This "adequacy report" had a very limited distribution. One of the reasons was its rather technical, specialized nature. Another was the fact that its coverage of civil defense programs was confined to the areas in which specific questions had been raised.

Another Report Needed

Following publication of the adequacy report, the Committee considered the usefulness of the report as a vehicle to inform and stimulate the interest of the public in civil defense, but concluded that it was useful chiefly as the basis for a more comprehensive document that would contain fewer technical details. What seemed to be called for was a report giving the current state of technical knowledge in the entire non-military defense area. The objective was conceived as being to educate in civil defense the leaders in government, industry, and the professions.

The Committee prepared such a report, but found itself in the same dilemma that it had faced at the congressional hearings. Again the problem arose of discussing policy matters in a technical report intended for public distribution. Again the Committee concluded that the reasons for the unsatisfactory achievement of a capabil-

ity for protecting the population were not technical. The report further stated that satisfactory progress was unlikely under the national policy that provided no federal financial support, direct or indirect, for the construction of shelters.

The Office of Civil and Defense Mobilization (OCDM), the successor to the FCDA, while welcoming and encouraging such appraisals, was understandably unwilling to give a wide public distribution under its sponsorship to a report that was so skeptical of the workability of the national policy under which it had to operate.

Hence *this report could not be published* and the Advisory Committee decided to direct its activity away from attempts to inform and influence leadership on civil defense in general and toward the study of specific technical problems found in civil defense research programs. This led to the third and present phase of the Advisory Committee's history.

Scientific Studies—Shielding

Actually the third phase had begun before the second ended. It had been evident for some time that research on the fundamental problems of calculating or measuring the radiation protection afforded by various kinds of structures was of vital importance not only in the design of shelter but also in the use of existing buildings. To support this research, the Advisory Committee, in the fall of 1958, established the Ad Hoc Subcommittee on Radiation Shielding with L. V. Spencer of the National Bureau of Standards as Chairman, and with a membership drawn from the government and contracting agencies doing research on the problems of shielding from ionizing radiation caused by nuclear attack.

The Subcommittee's objectives were to provide:

- direct advice to the OCDM research staff, through OCDM representation on the Subcommittee
- rapid interchange of information, coordination of programs, and stimulation of ideas among those engaged in shielding research
- service as OCDM consultants and advisors on the OCDM research program

One of the reasons why the Subcommittee has been successful in meeting these objectives is that its membership represents most of the total research effort being undertaken in this area. At the same time, this situation was indicative of the small size of the effort and emphasized the vital need for broadening the base of shielding research programs by getting more men trained and into the work.

The Shielding Subcommittee has been meeting regularly. It prepared a status report in June 1960 that summarized the state-of-the-art and recommended actions to strengthen and enlarge the program. It provided immediate advice to the OCDM on the preparation of the Guides and Manuals for conducting surveys of the radiation protection available in existing structures. It was of assistance to the Naval Radiological Defense Laboratory in its planning and conducting of a symposium on shielding. And it carried out a continuous forum function among its members and thus ensured an improved coordination of individual programs.

The operation of the Subcommittee on Radiation Shielding has served as the pattern for the other special groups, which, with the Shielding Subcommittee, now meet most of the Advisory Committee's responsibility for providing the OCDM with scientific and technical advice. Presently, there are seven of these groups, some fully operative and some in process of formation. Their objectives, histories, and accomplishments are briefly outlined.

A Citizens' Instrument

In January 1960 the need for examining the citizens' instrument problem, which had been a matter of concern for some time, culminated in the establishment of the Citizens' Instrument Working Group. With Dr. Taylor as acting chairman, the group met to discuss the essential requirements for an instrument that would be available to the individual shelter owner for measuring the radiation hazard.

Two of the group's conclusions were particularly important: 1) that the instrument should be readable in roentgens per hour and thus give a measure of the degree of danger rather than be only an alarm device; and 2) that the most difficult problem involved was

preparation of simple, safe, comprehensive, and adequately precise instructions for telling the shelteree what to do under various degrees of radiation intensity. These conclusions were part of the Working Group's report that was submitted to the OCDM.

The task of preparing instructions in the use of a citizens' instrument has since been assigned to an OCDM contractor. A report became available in March 1961 and the services of the working group were again called upon to comment on its suitability. These comments generally endorsed the report, with some qualifications and suggested revisions, as a very good first step in meeting a very difficult requirement.

The OCDM mission for estimating damage from nuclear attack and for evaluating available resources is carried out in its National Resources Evaluation Center (NREC). Problems involved in this mission have resulted in request by the OCDM for the establishment of three special task forces.

Fallout Models (Math)

The Working Group on Fallout Models, under the chairmanship of Harold Knapp, Atomic Energy Commission, has been active since January 1961. Its major objective is to recommend what, if any, modifications should be made in the mathematical model for fallout distribution now used with the computer at the NREC. The Group has been examining available knowledge of the meteorological and radiation aspects of the fallout phenomena and has considered that knowledge in relation to computer limitations, the availability of input information, and the requirements for accuracy in damage assessment work. The Group has given informal advice and recommendations to the NREC and is writing a report.

Livestock Damage

The second group, established in January 1961 to give assistance to the NREC mission, is the Working Group on Assessing Damage to Livestock from Nuclear Attack, with John Rust, University of Chicago, as Chairman. An important phase of resource evaluation concerns the post-attack availability of food. With a substantial part of

our total food supply consisting of meat, eggs, milk, etc., it is important to know the effects of nuclear attack, particularly fallout radiation, on cattle, poultry, and other food-producing animals. As was the case with the group studying fallout models, the first objective of this group is to give advice regarding changes in the tables, graphs, and procedures currently used with the computer at NREC. Much has already been accomplished in meeting the first objective in the three sessions held, and a report is in progress.

Fire Damage

The third of the groups specializing in the OCDM's damage assessment mission is being established to look at the problem of assessing the damage from the fires caused by nuclear attack. Again, the chief objective is to improve the procedures and techniques used at the NREC for estimating such damage and relating it to the damage from other effects. A small group has agreed to serve, and a preliminary meeting is being arranged. Coordination with the Academy's Fire Research Committee is being maintained.

The last two of the special groups are in the fields of ecology and protective construction. Both are in process of formation.

Ecological Aftermath

A preliminary meeting of ecologists and of those interested in the ecological problems that might arise in the aftermath of nuclear attack was held in May 1961. The question of how serious these problems might be as compared to the more direct effects of nuclear weapons was raised, as well as a discussion of what sort of working group would best assist the OCDM in the ecological area. Written comments and suggestions from the participants were sought and are being received.

Protective Construction — Again the AIA

The latest of the groups which the Advisory Committee has approved is the Subcommittee on Protective Construction. Merit White, University of Massachusetts, an authority on structural engineering, has agreed to serve as chairman, and initial membership is

complete. At the suggestion of Advisory Committee member Eric Pawley, AIA, additional architectural liaison was effected by appointment to this Subcommittee of Lyndon Welch, AIA, of Detroit, Michigan. Mr. Welch has worked on a number of OCDM contracts for prototype shelter design and was added to the *AIA Committee on Safety in Buildings* in 1961 because of his interest and proficiency in this field. He was the author of the article "Civil Defense Shelters" which appeared in the *AIA Journal*, November 1961, pp 99-103.

The National Academy of Sciences Subcommittee on Protective Construction will have as a major objective the task of making the available information on protective construction more readily accessible to architects and construction engineers. It will work closely with the Building Research Institute, also part of the National Academy of Sciences — National Research Council.

It is probable that, as it develops, the Protective Construction Subcommittee will include in its field of interest a consideration of the environmental engineering needed in protective structures. In that area, the Advisory Committee was a joint sponsor, with the National Bureau of Standards and the OCDM, of a meeting in February 1960, and published the proceedings of the meeting.

The shifting of the responsibility for civil defense to the US Department of Defense is not expected to cause significant changes in the Advisory Committee's objectives, and plans for the future envisage a continuation of the present procedures. Special task forces will be formed as required and will work until the task assigned is completed.

Another emergency task force review of civil defense research by the Advisory Committee has just been completed and was assisted by still another AIA staff member, Maurice W. Perreault, Head, AIA Department of Education. Mr. Perreault came to the AIA staff recently from the faculty of the College of Architecture at Cornell University and in 1960 in a civil defense project called "Schoharie Valley Townsite" acted as liaison between the school and the US Naval Air Reserve which had an important part of the survey work required. ◀

Civil Defense Programs

by Max Flatow, AIA

At the beginning of the last war, when the United States sent its team of international scientists to the wilderness of New Mexico to develop the atomic bomb, the wisdom of the ages demanded that a like amount of energy, talent and wisdom be spent to develop a counter-acting defensive mechanism. An equal amount of talent would have demanded our greatest philosophers in the field of social order and engineering know-how.

In this fast moving age of technological development where yesterday was not as fast as today and tomorrow will double the pace, we have allowed a twenty-year exposure of our people to a weapon system which we devised without a defense. Why has this happened? Although it will be expensive to develop a defense system against nuclear weapons and will require great talent and great effort, the reason for this negligence probably does not lie in the high cost or in the lack of know-how. Some will argue that the power of the atom is so great that defense is not possible. Alfred Nobel said this about dynamite when he invented it in 1867.

There are probably two reasons why this lag has been allowed to exist. The first was the fact that we held back Germany, our chief rival for the A-bomb, in the nick of time. For a number of years no other nation showed promise of developing the technological know-how and we spent our time trying to convince the world that we had invented the weapon to end all weapons and end all wars. We preached the gospel that there was no defense against this system of weapons with such vigor and dedication that we began to believe our own folly. Much of this smoke screen that our military and our

statesmen sold the world still lingers in our thinking. This is manifested in the action of our military high command who believe that the only defense is a good offense. More serious than this, civil defense authorities believe that any nuclear war can last only two or three days. This supports the supposition that there is no defense against the atom bomb. The meager type of defense that they see for the United States is a minimum shelter that will give protection perhaps for an initial blast plus a few weeks of radioactive fallout. They have not faced the possibility that if these minimum shelters work, then we may live to fight another day.

The placement of missile-launching sites, around and upwind from cities in fixed locations within the continent can be accepted only under the irrational theory of total destruction, for certainly this placement guarantees complete annihilation of certain major population areas.

Security—the Enemy

The second cause of our blindness, which even now is difficult to evaluate, is the system of *security* and the restriction of knowledge that withheld basic information from our people on the supposition that they didn't have "a need to know." This cancer stopped the mouths of our philosophers, blinded our visionaries, and strangled the vitality of the entire nation. Even in our weapons-development field *security* was the excuse used by various commands to keep information from each other and fostered enormous waste in development of various rocket systems. It is still a strong factor in this free system of government. This secu-

rity system frightened our people from asking questions or making demands and caused us to follow the dictates of the military, whose only consideration, it seems, was offense.

For twenty years now we have been hypnotized. Those charged with responsibilities for civil defense have spoken with a very weak voice indeed. The budgets that have been set up for civil defense action have been wasted. The people placed in charge are a far cry from the giants that they should have been. Although history might reveal that the cost of defense is approximately equal to the cost of offense, very small appropriations have been made by Congress for defensive purposes. This is understandable, as those in responsible charge of developing a system of defense have not generated any reasonable scheme that the people and the Congress would buy. They have not tackled the problem in its national scope. They have been reluctant to recognize the nature of radioactive fallout as a national enemy, generated through national problems and with world-wide implications that will continue to plague us for generations.

Programs

Signs of awakening are in every newspaper. The Holifield Committee dug deep enough into this problem to cause a major reorganization of our Defense Department. The President is now on record for an adequate defense posture that will include all citizens. Recent hearings before the Military Operations Subcommittee of the House have disclosed that the \$531 million spent in the last ten years for civil defense has been almost completely wasted on plans which are now in

the process of being discarded. A cursory reading of the excerpts from the testimony before this committee in August 1961 convinces one that the Office of Civil & Defense Mobilization simply failed to carry out its assignment. It is even more appalling to learn that the present objective envisions a shelter program which, at most, will save ten to fifteen million lives and leave unprotected and subject to annihilation one hundred and sixty-five million. The program outlined by Secretary McNamara on 1 August, 1961, if carried to completion, would furnish protection for a very small percentage of the population. Realization of the objectives may be limited by budgetary considerations, but that furnishes no excuse for limiting the planning or the objectives of the program. The illusory nature of all programs proposed to date is illustrated by the Holifield Committee hearings and weaknesses of these programs can be summarized as follows:

Downtown shelter marking program:

- it hopes to find shelter in mass building in metropolitan areas and will protect, at best, approximately 25% of the people, 25% of the time (a 6% coverage)
- it envisions *reverse* evacuation—to inner cities (Hearings, page 17)*
- it supposes that the white collar worker would stay in the metropolitan area even though his family would not have protection in the suburbs
- shelter provided will be evaluated as a fallout protection facility which in all probability will not furnish proper blast protection. Certainly metropolitan areas will be prime targets and subjected to blast and fire
- the rental cost of storeroom space would be considerable assuming that necessary warehousing in these high-cost structures would be permitted by private owners. It is noted in this regard that square foot rentals in this type structure runs as high as \$4.00 to \$6.00 per square foot *per year*

Home Fallout Shelter:

- the home fallout shelter system envisions protection for the well-to-do, annihilation for the non-home owners and the poor

- the home shelter may be entirely unsuitable for the protection required. In certain locations the problem will be one of blast rather than one of radiation
- in the home shelter proposal no provision is made for a center for civil defense. Community effort to fight fires, to take care of injured, to collect and preserve food and water supplies, to preserve continuity of the community activities that become more necessary than ever in time of emergency, would be difficult under the home shelter program
- the home fallout shelter if perfected could take care of a maximum of 30% to 40% of the national population assuming 100% efficiency
- any national plan that brings forth philosophical discussions as to whether it is moral to shoot one's neighbor in order to preserve one's life must be basically fallacious. In other words, are we fighting a national enemy or shooting our neighbors?

- the home fallout shelter will be the most expensive solution, per family or per protection unit

Hundred-man or Small Community Type Detached Shelter:

- this type of shelter, which was tested by the US Navy Radiological Defense Laboratory in San Francisco, is essentially a buried corrugated metal Quonset hut of the type used for ammunition storage at quartermaster depots. It is a worthwhile "theater of operations" solution. If the problem is a two-day war—and long-range costs of stocking and maintenance are not a factor, this type of shelter will have merit.
- the detached shelter built as a one-purpose structure, such as this program proposes, will be an economic waste, since structures built for productive purposes can be used equally well as blast or fallout shelters
- the primary problem is one of location—this solution is offered only as a *method* without consideration of location
- unless the design of these proposed shelters is improved considerably it will not be serviceable in areas of the nation with poor

*Hearings, Military Operations Subcommittee of House Committee on Government Operations, 87th Congress, 1st Session, August 1961

soil conditions and/or high water-tables

- maximum length of life will vary with corrosive effect of chemicals in the soils which, together with the moisture content, will vary from site to site. Experience with this type of buried pipe indicates an expected life of ten years under conditions demanding less strength
- the per-year-cost-per-unit of protection, based on the short life expectancy of this metal tunnel, will be very high in comparison with more permanent units

In New Federal Buildings:

- new federal buildings are located in downtown cores and suffer all the ills enumerated under "downtown shelter marking program"
- based on current per-square-foot construction costs this program will be enormously expensive. The average has been over \$20.00 per square foot *not* including land costs

Nature of the Problem

Design of a new city would require, as a primary consideration, a solution to both blast and fallout protection problems. These would be controlling factors in the health and welfare of the city. Although the solution would not take the form of the ancient city wall or the defensive street pattern, it might well be as dramatic in its physical manifestations. This is no short-range consideration. The nuclear weapon is here, and is probably here to stay. This means that in a very short time all the nations on the earth, both major and minor, will possess its destructive power. Today the nation is frightened because of the Russian threat, but tomorrow it will be Red China or Castro or who knows what. The physical plant that we are considering building to give us a chance to survive, then, must be thought of as a long-term plant investment for living. This is a minimum thirty-three-year life facility. It is not a short term tax writeoff. People who understand long-term capital investments would be better equipped to initiate this program. The Theatre of Operations (temporary) facilities, that will certainly result in great economic waste, are being offered and will be sold unless those in responsible charge are oriented to the long-range nature of this problem. ◀

Shopping Center Shelters for Fallout Protection— Feasibility and Construction Costs

by Max Flatow, AIA, and Robert J. Nordhaus

► This study has been prepared to investigate the feasibility of using shopping center parking areas in our urban districts as sites to construct underground parking facilities that will serve neighborhoods as drive-in fallout shelters. There are under construction in the United States hundreds of new shopping centers and thousands of existing centers are in use all of which stockpile the supplies, drugs, foods, clothing, etc., needed during emergencies. These centers occupy strategic locations in the center of our neighborhoods, are equipped with large parking lots fed by our major arterial streets. This investigation is made to determine whether or not these shopping centers could fit into the scheme of national protection against fall-out.

If this is feasible it would enhance our urban planning by construction of usable parking facilities at critical locations. It would increase the food warehousing capability of the nation and place this warehousing where it would do the most good. It would automatically solve the circulation problems to shelter locations which, under any other scheme, may prove to be a major urban planning and cost problem. It would fit our daily habit patterns, a requirement necessary to guarantee some degree of success if shelters are to function properly during emergencies. As private enterprise would be called

on for the major stocking and warehouse duties, as a normal function of daily merchandising, a greater saving might be possible over any other scheme of public shelter construction.

70% Protection?

The Shopping Center Shelter (or Scheme for Civil Survival) (SCS) is based on the use of the shopping center and shopping center locations as a primary shelter for each community. This plan is based on the use of private enterprise and private funds with Government subsidy for establishing, building, maintaining and stocking these needed shelters. The total amount of additional national protection that could be obtained from construction of shopping center shelters in the center of our urban neighborhoods could run as high as 60 to 70 percent of the urban population. It is not the intent of this report to solve all technical problems involved in actual construction of the fallout shelters—this report is aimed at a feasibility study for increasing national protection. All of the basic information and data necessary for solving the technical fallout problems have been adequately researched by others, from the standpoint of blast damage, fallout patterns, shielding, etc. This report is to meet the urgent need for a valid and realistic application of these technical data for our cities.

This is not an engineering problem—it is a planning and architectural problem.

Previous Studies—Technical

Under the direction of the Office of Civil and Defense Mobilization there have been many fine studies made to determine effects of fall-out, shielding properties of various structures against various concentrations of fallout, effects of blasts from nuclear weapons against structures at various distances from detonation point, etc. Many solutions for home shelters have been devised and published and now manufacturers are busy selling these home shelters under government-sponsored finance plans. Fall-out shelter surveys are being conducted to determine efficiency of various existing buildings for performance as fallout protection shelters in our metropolitan areas. Some excellent studies have investigated the possibility of placing fallout shelters in our schools. These facilities contribute to the protection that must be available to the population if we are to survive a prolonged nuclear attack. When the percentage of protection afforded by these existing buildings and home shelters is summed up to compute our national fallout protection capacity, it is alarming to realize that this degree of national protection needs to be strengthened by an additional fall-out protection system that would

offer our urban and suburban population a far greater percentage of protection. The authors of this report, an architect and a shopping center builder and owner, simply believe that more protection, percentage-wise, is needed than is likely to be secured from sources presently being explored and developed.

Shelters in Large Buildings

For example, a cursory examination of the possible national protection afforded by large buildings in our metropolitan districts based on the weekly protection time afforded the labor force working in or near this type of facility taken from the Statistical Abstract of the United States would indicate that the maximum protection available would be in the neighborhood of 3% to 7%. This is based on the assumption that the labor force would stay in the metropolitan area even though their families did not have adequate protection in the suburbs. There are no figures available to indicate the amount of national protection available through home-built shelters (although the national goal has been stated to be a million shelters by next year), or from the amount of national protection available through schoolhouse shelters, if any. What percentage of protection do we need to survive? After this research has been performed we would have a better basis to determine how to achieve required protection. One thing is apparent at this time—we do need greater total national protection from fallout. After study of where this additional protection might be placed and how it might be secured, the authors of this report offer the shopping center shelter solution.

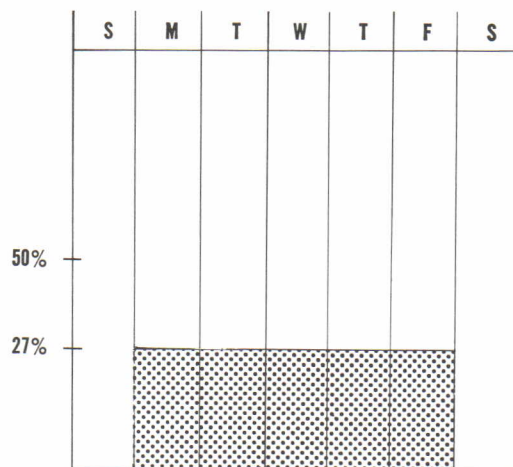
A Long-term Problem

The shelter problem must be solved on a *permanent* basis that will serve us for generations. As more and more nations stockpile nuclear weapons (and as we become less popular) the danger becomes more severe. Temporary (Theatre-of-Operations) solutions will be costly and impotent. We must not approach this fallout shelter problem in the same way that other acute national military housing and plant problems have been master-planned. The problem is so long-range that careful planning, considering national wealth,

Protection afforded by Office and Industrial Shelters:

Total Labor Force From Statistical Abstracts US 1959	Maximum Protectable	Non- protectable
Mining	700,000	100,000
Construction	2,400,000	1,200,000
Transportation & utilities	4,000,000	2,000,000
Manufacturing	16,000,000	2,000,000
Wholesale & retail	11,000,000	3,000,000
Finance, Insurance & Real Estate	2,400,000	1,200,000
Service & Misc.	6,400,000	3,200,000
Government	8,000,000	2,000,000
Totals	50,900,000	14,700,000

Protected Time:



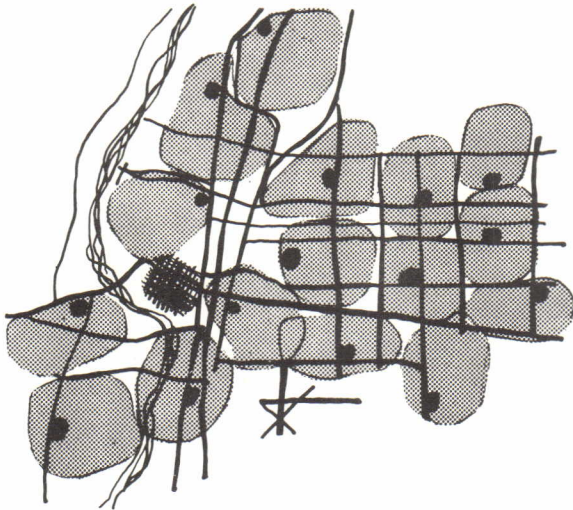
Percentage of Total Population:

Total Population	180,000,000
Labor Force	50,000,000

26%

Total Protected:

7% Maximum



Shopping Center Shelters service urban areas on major streets at available sites and afford quick access. They are stocked by daily merchandising, daily habit patterns, and stimulate private participation

long-term use, guaranteed perpetuation and maintenance costs, and probable new weapons, will be controlling factors.

Location

Shopping centers are located at the center of gravity of the shopping public. Much research goes into the selection of shopping center sites by private industry to assure that these sites give proper coverage insofar as residential areas and traffic patterns are concerned. Careful analysis dictates the location of these shopping areas and takes into consideration ease of access into and away from centers, proper spacing of centers from one another for maximum coverage without duplication, and in general considers all factors that would logically be put into the equation if the nation should start on a nationwide community shelter construction program. In short, probably the correct location for any system of shelters based on population distribution would place them at the sites now occupied by shopping centers. The large, massive structures that now afford some protection are located in the downtown sections of the metropolitan districts. These shelters are better located for white-collar workers than they are for children and families. Since metropolitan districts are occupied only part of the day the time-frequency of hav-

ing shelters located on the periphery (at such locations as are now being used by shopping centers) would have a great advantage from the standpoint of frequency probabilities.

Design

Shopping centers are designed around large parking areas. These parking areas could be built with half parking underground and the underground portion of these centers could become shelter areas for neighborhood districts. The merchandising areas themselves could be designed with full basements for warehousing use. These basement areas could be connected directly to the underground parking structures. Large supplies would be available to the public with protection from fallout, for civilian use during emergencies. All air-conditioning systems for the entire aboveground structure could be centralized and placed underground with conversion devices that could divert for underground use. Filtering and refrigeration equipment necessary for an entire shelter would be continuously available and maintained and used by the shopping area above at a minimum cost to the shelter amortization.

The construction problem becomes more complicated but not prohibitive, in placing shelters at existing shopping centers. Portions

of the large open parking areas can be released by these centers during off-season business for underground parking area construction. Each center will need individual engineering study and some will cost more than others to convert. The costs in these existing centers will be greater because of the loss of existing paving, replacement of lighting systems, etc, but still the over-all gain to the centers will be considerable and this will help in amortizing investments.

Supplies for Shelters

The shopping center shelter would afford a tremendous advantage to the public in that stocking of these centers would become a routine of daily merchandising. Turnover of stocks would be guaranteed. Latest types of drugs, etc, would be available. Supply of these vital areas for civil defense would not become a political football that could be eliminated easily by congressional act, but would be guaranteed as a normal operation of supply of daily goods.

Shopping centers contain the neighborhood supply of all those articles and foods needed. Cost of special supplies necessary would be an absolute minimum.

Storage Units

Logical extension of this family plan would be the purchase or rental of survival kit lockers in the community shopping centers that could become a major part of the survival plan. A family could simply maintain a locker at the underground storage area in the shopping center into which they could place all the necessities of survival apparatus and supplies. Private industry could get into the act in regard to this and could sell standard packaged survival units consisting of food, medical supplies and whatnot that civil defense considers appropriate. Local merchants could tender these lockers and service them.

Costs

The construction cost of providing protection per family in Shopping Center drive-in shelters will vary considerably depending on the following factors:

- new center or existing center
- number of units of protection required for particular location
- soil conditions

- utility changes
- value and type of existing paving
- construction cost index in area

Long-range amortization costs will vary with—

- value of parking stalls to shopping center
- value of storage areas in basement spaces to shopping center merchants
- competition factor in varying locations

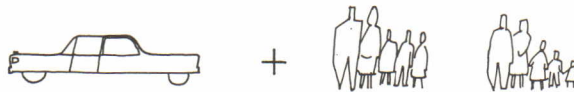
Based on a rough study of construction cost in the Albuquerque, New Mexico, area and predicated on the use of one car for each two families, cost per family would be approximately \$1,200.

Such a permanent solution would justify spreading of initial costs over a long period of time—say 25 to 30 years. On this basis it is likely that cost to government would be smaller on this type of protection than for any other scheme.

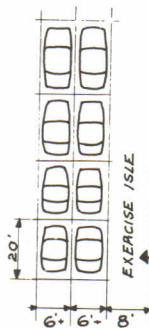
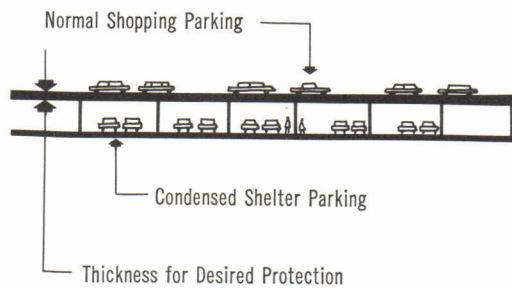
Patterns

Every day the women frequent neighborhood shopping centers. This function of daily life could become a part of civil defense training. If shopping centers are used as the central defense shelter for the district, the women frequenting these centers as a daily routine, become completely familiar with going to the shelter area which will serve them during an alert. As women are accustomed to taking their children on shopping tours to the market, they also engage in this preparedness program. At the present time it is customary for a woman to shop by driving her automobile to the shopping center. As a matter of fact, the automobile has become such an important part of our daily life that most women will take their vehicle even though distance to be covered is only a very few blocks. During emergencies habit patterns are important factors. It is unlikely that any scheme of transporting people from their homes to proposed shelter locations, which does not include the automobile, will be successful. During a time of fallout concentration occurring immediately after a nuclear attack, even if it were possible to have people move into shelter areas by foot, it would be impossible because of radiation fallout. In any case, the automobile is such an important factor in America's life today that any reasonable system of civil de-

The Scheme



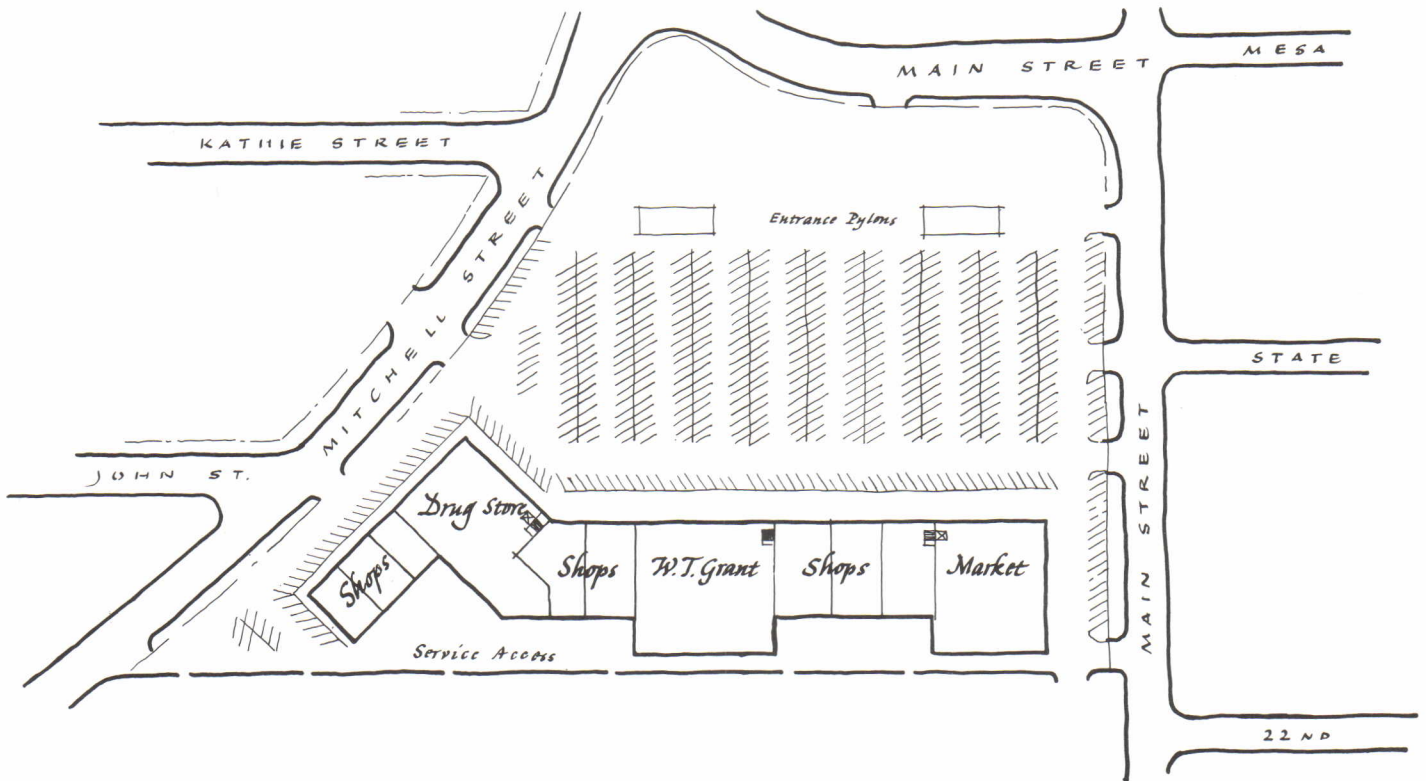
The car becomes survival unit for transportation to shelter; home unit in shelter dispersion unit after critical period. It provides emergency power in shelter



Design based on maximum fallout protection consistent with economy keyed to national fallout pattern studies

Minimum Protection 250 Units

Shelter Parking Pattern



Street-level plan of proposed shopping center including shelter. Drug storage and emergency hospital would be housed in basement of drugstore. Center is strategically located and readily accessible from neighborhood streets and arterial highways. Parking area can accommodate 648 cars

fense should include it as a primary tool. If the automobile is kept operable and is protected by underground shelters such as suggested, then after the initial attack it may be possible to work out dispersion methods for getting large numbers of people into areas that have been unaffected by nuclear fallout. Automobiles may become the primary unit of family subdivision within the underground car shelters at the shopping centers.

Getting There

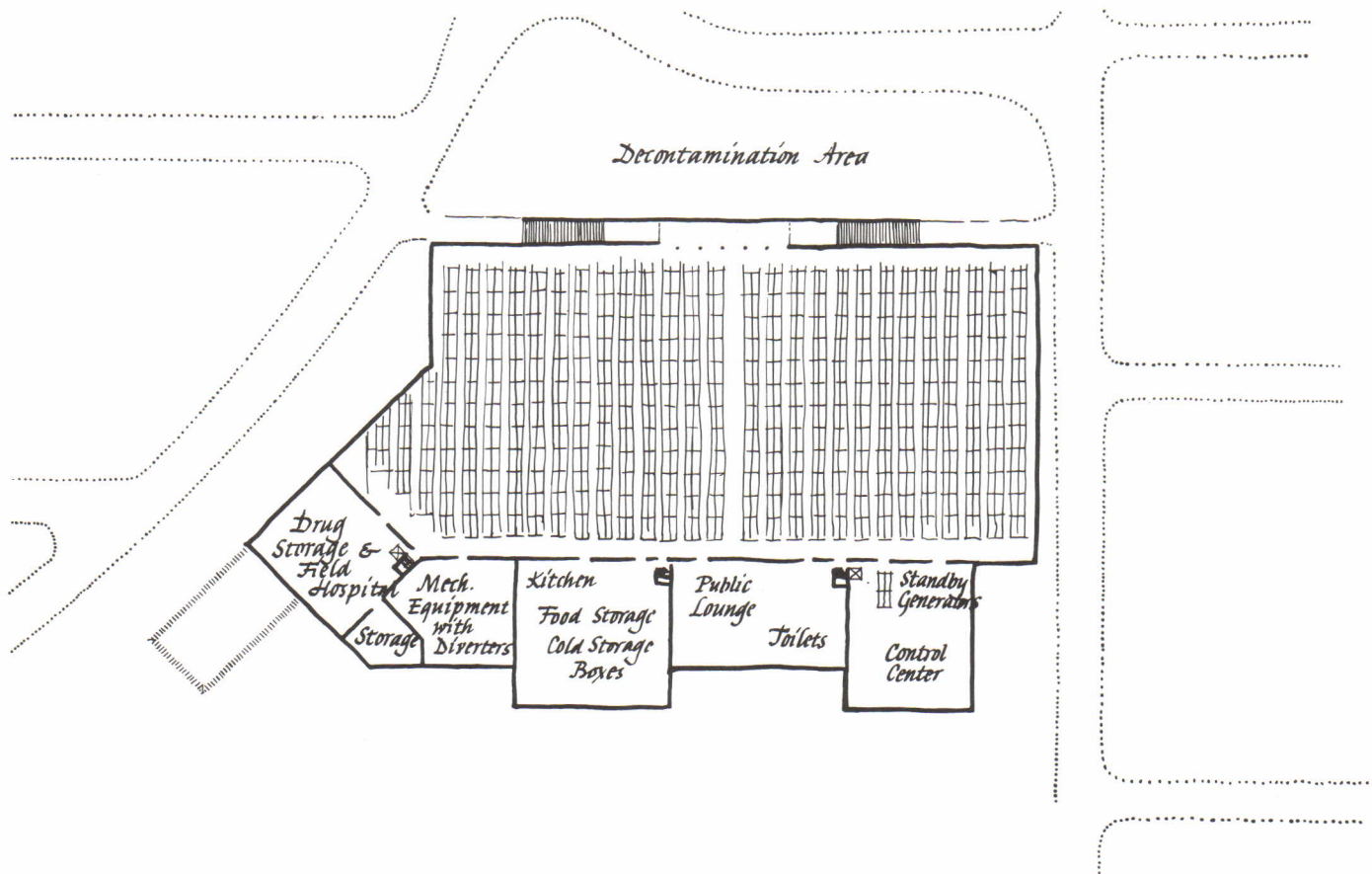
Community shopping centers could logically be the rendezvous point for families usually dispersed during daylight hours, as all members of the family know the routes and ways to the community shop-

ping centers. Analysis will show that schools are generally located close to community shopping areas. It could be the family plan to meet at the underground parking garage of the community shopping center. The father, working in the downtown area would know that if and when he could safely get to the community shopping center that he would find his family at that point. It would not be necessary for the housewife to run all over the city to collect children from various schools during a time when traffic across the cities would be practically impossible; instead, she would proceed directly to the community shopping center and there would find that her children had done likewise from the adjacent or nearby schools.

Traffic engineers view with alarm the identification routes presently marked by civil defense officials. Where do they go? What protection from fallout will be offered at their end? Many routes cross one another and many streets are marked as escape routes in both directions.

The SCS offers a simple solution. Keep the people in their neighborhood and build adequate protection there. Neighborhoods could then engage in civil defense shelter loading without affecting the remainder of the city and with little interruption of city traffic flow.

All routes within the neighborhood would be marked leading toward the neighborhood shopping center.



Lower-level of shopping center, showing basement survival facilities. Standby generators (indicated at lower right) would be powered from rear wheels of cars. Mechanical equipment room contains diverters for shelter use during fall-out. Over-all civil defense control center is at lower right

The Argument for Community Shelters

Home shelters, mass shelters in federal buildings, subway schemes and others all contribute to our national ability to survive a nuclear attack. How much these schemes contribute toward the percentage of protection necessary for our nation to survive depends on where they are placed, and how well they can or will be stocked and maintained.

The construction of individual home shelters for the protection of urban population falls short of goals. The survey of existing massive structures in metropolitan areas is not conclusive. During enemy attack would people in the downtown areas stay put in their shelters (even if they are available)

unless adequate protection is afforded their families in the suburbs?

More individual home shelters would improve the situation. However, many psychologists and civil defense authorities question the use of home shelters as there are many psychological unknowns. Unity of action by the community may be important under such severe conditions.

Unity of action by the community would be impossible in the home shelter scheme.

It seems that some form of community shelters in the suburban neighborhoods surrounding our large cities may be the solution if our large urban populations are to have some measure of security.

Parking

Sideline benefits accrued by the use of the SCS system would be a partial solution to parking problems around shopping areas, which is acute nation-wide. Communities everywhere are plagued with need to supply more and more parking at retail outlets. If a large percentage of parking at any center could be underground or two-level, the ground area required within our cities for accommodation of automobiles would be materially reduced. This fact in itself would promote better city planning, could help consolidate our cities, which would tend to lower construction costs, fewer streets and fewer utilities would be required to serve the consolidated area. ◀

Correctional Architecture

BUILDING TYPE REFERENCE GUIDE

by Clinton H. Cowgill, FAIA

PART II

(Continued from January AIA
Journal pp 73-78.)

Architectural Planning

Correctional administrators generally would be able to collaborate more effectively with their architects if they knew more about architectural practice and procedures.

Importance of the design program cannot be overemphasized. Much information regarding the project must usually be furnished by the administrators and their professional consultants, but an architect may help to organize the material. The program should be based upon decisions regarding Correctional Essentials (see Part I of the article: *AIA Journal* January 1962). In some cases, architects may participate in these decisions, and some decisions may be postponed pending outcome of investigation and research. Completed program should give approximate area, special requirements of each unit (such as desirable orientation) and important relationships between units. Units may be rooms, buildings, or outdoor spaces.

Checklist of Required Planning Data:

- type and *ultimate* population of each institution to be built during stated period
- priorities and proposed construction dates
- initial and ultimate number of each classification of inmates in each institution to be planned *initially*
- distribution of living facilities between cells, rooms, dormitories, and hospital facilities
- number and size of housing units, including admissions facilities, disciplinary unit, cottages and barracks

- number of scheduled groups for efficient use of normal dining, school, industrial and recreational facilities
- areas of normal dining, school, industrial & recreational facilities
- security measures for these facilities
- diagram of administrative relationships within institution, within correctional system, and within overall government system
- area of each administrative unit

Checklist of Required Spaces and Facilities

SPACES SUPERVISED CONTINUOUSLY

Control Unit

vehicle & pedestrian trap
arsenal
guard towers
keys
mail & packages
communications
deputy for security
secretary
visitors' room
records
guard room

Infirmary or Hospital

wards
nurses' stations
bath & workroom
examination
treatment
conference
operating room
emergency operating
eye, ear, nose & throat
dental department
outpatient department
pharmacy
patients' rooms
dying room
autopsy room
morgue

Medium Security Housing

Maximum Security Housing

Honor Housing Units

SPACES SUPERVISED IN DAYTIME

Receiving Unit

examination rooms
conference rooms

Administration

warden
secretary
conference
business manager
general office

Food Services

central kitchen
individual serving units
inmate dining rooms
staff dining rooms
chef
meat preparation & storage
vegetable prep & storage
bakery
dishwashing
garbage disposal
lockers & showers

Maintenance, Industries and Vocational Training

classrooms
director
barber
shoe shop
tailor shop
industrial shops
fire station
power house
utilities

SPACES SUPERVISED DURING DAY AND EVENING

Education

director
library
classrooms
conference rooms

Religious Facilities

chapels
offices

Recreation Facilities

inmates' store
playfields
courts
hobby shops
general purpose room

REQUIRING LITTLE SUPERVISION

Visitors' Parking

Staff Parking

Staff Housing

Any peculiarities of climate should be noted. Complete topographical data should be recorded on a map of selected site. Also surrounding areas, transportation facilities and community facilities should be described.

When politically feasible, it is wise to select the architect before a decision has been reached concerning site or sites. It is generally agreed that ideally the site should be well-drained good agricultural land (1 acre per inmate) near a city or easily accessible thereto, for convenience of visitors and staff. If more than one institution is to be maintained in a single state, relationships to population centers should be considered. If possible, utilities (water, sewage disposal, electric service) should be available. Site should be large enough for all anticipated future activities.

Before attempting to design the plant, it may be helpful to make a diagram indicating relationships between units. Figure 1 indicates possible relationships between plan elements of two institutions using some facilities in common.

Economy

There is general agreement that security and suitable facilities for treatment are essential, but administrators and their architects must also be concerned with economy. With economy as an objective, the cost of guarding deserves study. If fewer guards are necessary, more and better counsellors may be had within same budget. Number of guards may be smallest where:

- compound enclosure is as short as possible with adequate space for all activities, and with smallest number of guard towers and gates

- plan elements are arranged so that those not being used may be closed down and made inaccessible during part of each 24-hour period

- inmate housing is arranged so that as many inmate rooms as possible may be supervised from one station without undue security risk and adverse effect upon treatment

This optimum number should be determined for each class of prisoners to be housed. Number of rooms per housing unit should be determined by effect upon treatment. The well-known X-plan, with as many as four (or even five) such corridors supervised from one station is currently out of favor, but it may be considered for some projects. Where lay counselling by guards-in-contact is desired, the number of inmates per guard should not exceed 50. If guarding of housing at night is limited to periodic inspections, guarding cost is little more where number of inmates per housing unit is small than when it is large.

In some institutions high priority should be given convenience in administration. With use of modern communication devices, location is now less important, and many executives prefer to be close to activities for which they are responsible. Thus, superintendent of buildings and grounds would be near maintenance shops and storage; manager of food services near the dining

rooms, kitchen and food storage, and so on.

Convenience leads to economy of operation. Economy in maintenance may be ignored where there is a surplus of labor, but materials should be selected which can be maintained in sanitary and attractive condition.

There is no reason why public funds should not be invested as wisely as private—as taxpayers become better informed they may insist upon it. For his information, the architect (as well as the prison administrator) should compare annual cost of each proposed scheme. Thus amortization, interest and insurance should be added to cost of operation and maintenance.

Penologists, many of whom have been handicapped by outmoded correctional plants which cannot be replaced understandably favor temporary construction because supposedly it will last only a short time. Experience has shown, though, that most so-called temporary buildings are used longer than originally intended. They usually depreciate rapidly and have excessive maintenance costs. If used for the short period for which they were intended, amortization cost is high.

Correctional institutions should be of sound but flexible construction. If standardized modular units for walls, partitions, floors, etc. are used, it should be possible in the

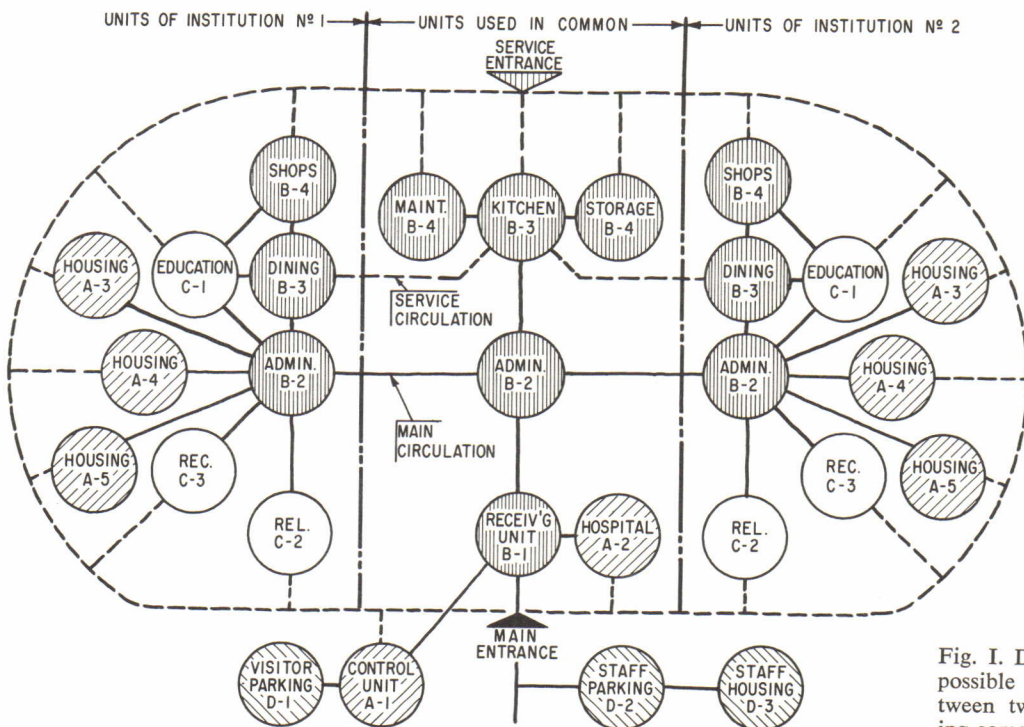


Fig. 1. Diagram indicating possible relationships between two institutions using some units in common

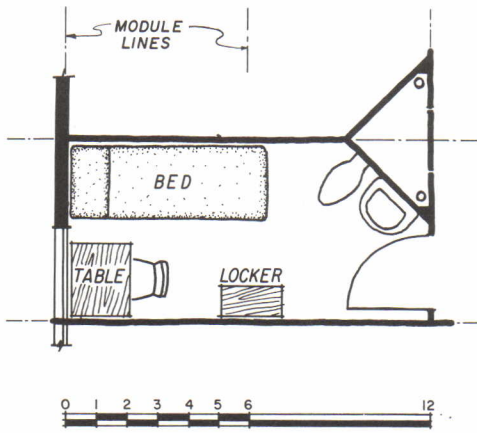


Fig. 2. Cell with WC and WB—6' module

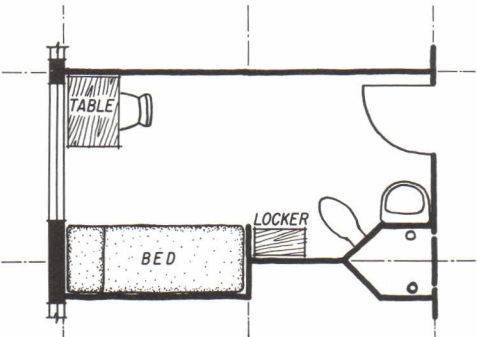
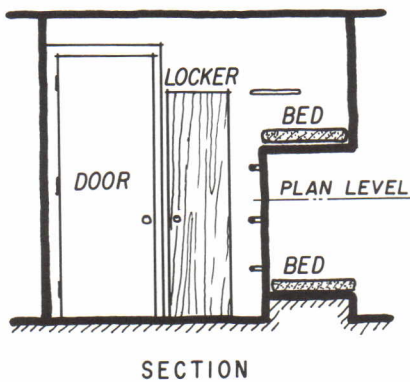
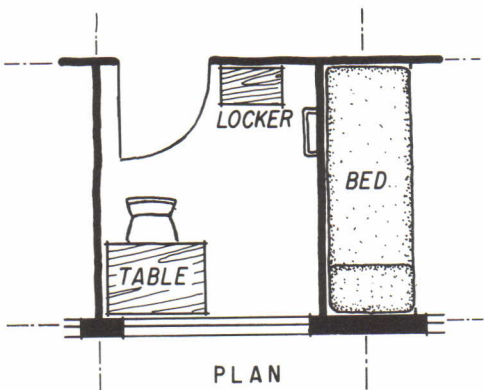


Fig. 3. Over and under cell with WC and WB—7' module



SECTION



PLAN

Fig. 4. Over and under cell—7' module

future to rearrange the plan as needed to make it suitable for changed functions. If this is done and if buildings are soundly constructed, they should be useful for upwards of 100 years. Thus, although first cost of plant might be higher than it would be with temporary construction, costs of maintenance and amortization are less.

In estimating annual costs, interest on capital invested should be computed at rate expected on government bonds for useful life of building, even though funds are to be appropriated. Many states provide their own fire insurance, but amount charged for standard insurance for type of construction and occupancy should be included in annual costs.

Generally speaking, the more soundly a building is constructed the higher will be the capital investment and thus the annual interest charge. Insurance charges, although related to invested capital, tend to be lower for buildings which are soundly constructed. To recapitulate, annual cost equals sum of such items as:

maintenance

fuel, light, heat, power, cleaning, waste disposal, water, repainting, replacements

operation

communications, guarding

amortization

interest

insurance

management

salaries, expenses
food services & farms

treatment

salaries, expenses
books
hospital supplies

In comparing alternative designs for a given project, management and treatment could be omitted because they would presumably be same for each design. Total annual cost divided by number of inmates gives annual per capita cost. This is much more meaningful than capital investment (construction cost of buildings) divided by inmate population.

While many prison administrators believe that chain-link fences as enclosures are more economical than walls, a comparative study should be made of savings when prison labor may be used with skilled foremen and superintendent. Where double chain-link fences

are compared with walls, the cost of lost land area and its effect upon number of guard towers should be included in calculations. It is reported that contraband comes over walls as well as over or through fences, but some experts claim that more contraband is passed across fences than walls.

Buildings have been used as part or whole of the compound enclosure. This is not widely favored—it places limitations upon possible arrangements—but where economy is stressed and area of compound is limited such schemes may deserve consideration.

Plan Units

Since correctional buildings may need to be altered in the future, they should be designed so that changes may be made as easily as possible. Anticipated enlargements should be allowed for as well as additional buildings. In order that rooms may be rearranged readily, columns should be as widely spaced as feasible and standardized prefabricated elements of construction should be employed. If plan is based upon a fixed design module, elements of walls, partitions and floors may be designed so that they can be demounted and re-used where needed. It is desirable to use same design module for layout of entire project.

Length of such a module might well be the width of inmate rooms from center to center of partitions. Thus, if partitions are 4" thick and the planning module 6', net width of rooms would be 5'-8". Length might be 2 modules or 11'-8" net. If corridor width were one module (5'-8" net) the overall width of such a housing unit with 12" exterior walls (reaching 10" beyond module line) would be 31'-6". (See Figure 2) For honor rooms, 2 modules wide, net dimensions would be 11'-8" x 11'-8".

If an "over and under" scheme similar to that used in California were adapted to modular design of rooms, using a 7' design module, net width of room would be 6'-8" (5'-5" clear of bed), net length would be 13'-8", and with 6'-8" corridors the overall width of housing unit would be 36'-6". (See Figure 3 and 4) For greater roominess, rooms could be 1½ modules long.

Housing units may be of one story or may be assembled in barracks buildings two or more stories high. A method should be devised to release inmates via an emer-

gency exit and to close off from adjacent or connecting wings any units in which a fire is started. Fire extinguishers and standpipes with hose-reels should be strategically located and accessible only to members of staff. Each floor unit of barracks should have toilet and bathing facilities and a dayroom (recreation room or lounge) large enough for games and meetings of inmates and staff. Use of wide corridors for games is not recommended—neither are wide corridors with balconies to facilitate supervision of cell blocks. Near each entrance on each floor of the barracks there should be a linen room and a utility closet. Stairways should be in fire towers. It is desirable to have counsellors' offices near entrance on lower floor.

Barracks for tractable or honor inmates may include dining rooms, if they can be connected with a central kitchen. It is now generally recognized that inmates should be served in small groups. Two or more meal hours may be established for each meal, and each inmate may be permitted to eat at any time during his assigned period. Thus, dining facilities are needed for only $\frac{1}{2}$ (or even $\frac{1}{3}$) of the ambulant inmates. There should be separate dining rooms for staff. Hospital (or infirmary) and inmates in receiving unit should be served from main kitchen either individually or in small group dining rooms, using heated conveyances. Cafeteria service is now widely used. Storage rooms for dry, wet, and frozen foods should be located where they can be effectively guarded. A receiving room and a cooled garbage room should be accessible to trucks. Consideration might be given to establishment of a single central storeroom which would be supervised constantly whenever open. Trustworthy inmates can be selected and trained for kitchen, laundry and other services.

In keeping with the policy of dividing inmates into small groups, there is little use for large assembly rooms. More active games may be played outdoors in suitable weather and recreation fields should be arranged for types of sports which are popular with classes of inmates housed. In colder climates, a general purpose room large enough for basketball and suitable for theatricals may be justified.

Number of classrooms may vary

according to type of inmate, institutional policy and number of classes scheduled. Library and chapels should be located to attract inmates during free time. Some institutions have as many as 20,000 library books.

Chapels should be designed so that services of different denominations may be held. Number of services should be scheduled to meet demand. Some inmates attend religious services in order to break monotony of prison life.

Facilities to provide productive employment should be combined with those for vocational education. They will vary greatly in different institutions. Farm activities may predominate, and these, as well as housing for farm workers, are located outside the compound. Since the more trustworthy inmates are selected, supervisors are not armed. Armed guards, if used, are in constant danger of being surprised and having their guns turned against themselves. Farm products may be processed and used by the institution and sometimes by other state institutions. For the shops, also, the more trustworthy and useful inmates are selected. Kind and quantity of products are limited by state policy. Some may be used in the institution or sold to other state institutions. Following are representative of many items produced by some institutions: fruit, grain, livestock, milk, poultry, tobacco, vegetables, canned foods, dairy products, textiles, cement, brick, metal and wood furniture, garments, meat, paint, printing and binding, shoe repairs, and soap.

Admission and discharge facilities should be in a special section of administrative building or in a separate reception center. As a precaution against escape when prisoners are being received, a vehicle trap may be incorporated in the plan. This is a space into which the automobile bearing one or more prisoners is driven, gate to which is closed and locked before gate leading to receiving unit is opened. Control may be from a nearby guard tower or a control building. A separate similar trap for pedestrians may be provided, through which visitors as well as new prisoners are received. In the receiving unit, new inmates are relieved of clothing and possessions, bathed, examined, and assigned to a room.

Visitors are conducted to the

visitors' room. Official personnel must be present. Inmates are searched before and after visits to prevent passage of contraband. When prisoners are discharged, they leave via the control unit, possibly in company with friends and relatives.

Hospital or infirmary should be located near receiving unit and administration building.

Institutions

In some states, there is a central admission and classification unit to serve all correctional institutions. It may be a part of one of the major institutions.

It is unnecessary here to consider needs of maximum-security penitentiaries, because in most states present facilities can be altered to become reasonably adequate for this type of institution. After needs of tractable prisoners have been met, remodeling or replacement of other facilities may be examined.

Penitentiaries

Essentials of a penitentiary for tractable prisoners are:

- barracks with inmates' rooms or congregate dormitories
- central kitchen & multiple dining facilities
- shops for vocational training & production
- recreation facilities
- classrooms & laboratories
- library
- chapels
- admission, visiting & discharge facilities
- offices for counsellors & teachers
- administrative offices
- hospital or infirmary
- disciplinary unit
- control unit

A currently popular arrangement of penitentiaries for tractable prisoners may be referred to as the community type. Buildings are not connected. Arrangement may be formal or it may be informal taking full advantage of natural settings. A more economical arrangement has separate buildings adjacent to each other.

When, for reasons of economy, two or more institutions are joined, the question arises regarding what facilities may be used in common. If there is not a wide difference in characteristics of inmates, possibly all facilities could be used in common except barracks. It is desirable, however, to provide separate recreation facilities for each group. If there is a wide difference in characteristics of inmates, each should have separate administrative offices

and treatment facilities, with a warden who understands the needs of prisoners assigned to his institution.

The greatest saving in operating cost may result from common use of kitchen facilities, hospital or infirmary, utilities and some administrative functions. If a rural area is chosen for the site of a group of institutions, institutions may be widely separated and still make use of a common admission and classification center and hospital.

Institutions for Juveniles and Females

Institutional character is to be avoided in design of these "homes." Some juvenile delinquents and youthful criminals must be sentenced to adult penitentiaries. In institutions for juvenile delinquents, counselling, education, leisure-time activities, and religious facilities should be emphasized in the program, and facilities for active sports should be given a prominent place. A favorite sleeping arrangement, especially for boys under age 12, makes use of 4-6-bed dormitories with congregate plumbing rather than rooms with separate wb and wc.

Some institutions for women are "open institutions." Provision should be made for such activities as washing, ironing, cooking, cleaning, gardening, garment making, and arts and crafts.

Temporary camps for selected inmates may be set up in national or state parks or other places near where suitable work can be done.

Lock-ups, Jails and Detention Facilities

Every community needs a safe place in which to lock up overnight disturbers of the peace and an occasional felon. It may serve as a facility for detention of arrested persons awaiting trial. Since continuous guarding is seldom possible in small lockups, cells should be escape-proof. Some cells should be segregated for use of women.

In the past, jails have served many functions. Ideally the following functions should be assigned to other facilities:

- Children under 12 or 14 years of age, arrested for minor offenses, should be kept pending trial in their homes or foster homes or "shelter care" institutions. A child should be kept in a detention home if he is thought to have committed a serious

crime, if he is emotionally disturbed and aggressive, if he is likely to run away, or if he is witness to an adult crime and may be threatened or hurt.

- Those who are physically and mentally ill, insane, and those chronically addicted to alcohol or narcotics should be cared for in specialized non-penal institutions.

- The destitute, aged, and feeble-minded should be given the necessities of life in "homes" in which they could do some useful work.

- The crippled, epileptics, and the tubercular should be cared for in special nursing homes.

- Adults awaiting trial should be confined separately from convicted criminals in adult detention facilities.

Some of these institutions may be supported by states, cities or private donations.

Jails in large cities and populous counties may have many features of penitentiaries. In future planning, an attempt should be made to combine jail facilities of smaller cities and counties into institutions comparable to penitentiaries. Generally, most inmates of jails have committed minor offenses and have been sentenced for short terms. For this reason, facilities for vocational education and production shops are usually less extensive than in penitentiaries. Diagnostic, classification, counselling and other treatment facilities, however, are even more essential in jails than in other correctional institutions.

Present practice, for men, is to provide dormitories (with from 8 to 30 beds each with dayrooms) and single occupancy cells; and for women, dormitories (with from 2 to 10 beds with dayrooms) and single occupancy cells. Single rooms for special detention are approximately 2% of nominal capacity for men and about 12.5% for women. Administrative units include:

waiting room	main kitchen
offices	dining room
receiving unit	work rooms
infirmary	laundry
visitors' room	store rooms

Provision should be made for exercise and recreation. It is usually impracticable to provide 24-hour supervision for smaller jail—if so, an apartment for jailer (and possibly one for guards without families) should be included.

A modern detention facility for adults is being erected in Philadelphia; the architects¹ offer the following description: "This establishment will contain men charged

with crimes ranging from . . . minor to the most heinous . . . Seventy-five percent of the 800 detainees will be housed in dormitories . . . Penthouse dayrooms . . . afford a fine view of the surrounding countryside. . . . One guard, from his control station . . . on the half-level can observe activity in every portion of his two-story building.

"The facility is completely self-contained. There is an administration building with offices for the superintendent and wardens, lockers and showers for guards, an armory and a public lobby. The structure is joined by a bridge to the receiving building, which has special provisions for receiving, holding and discharging prisoners, three types of visiting rooms, a lineup room and a complete infirmary. Other facilities include a kitchen-cafeteria, gymnasium-auditorium, shops, library and chapel." (See photograph of model in the July 1961 *AIA Journal*, page 64.)

Community lock-ups are usually under control of local government, even though arrangements with county or state governments may provide for certain prisoners. Officials of local government may or may not be well-informed concerning correctional institutions. Local lock-ups may be included as parts of town halls or municipal buildings.

Architectural Character

With few types of buildings does architecture have as great possibilities for good or ill as with correctional institutions. To the inmate and his family, the institution represents the state and the society which he has offended. In many 19th century prisons, the architecture of the middle ages was imitated and it was often suggestive of inhuman treatment and the dungeons common at that time. Highly monumental architecture is equally inappropriate. If possible, the architecture of our correctional institutions should express the most advanced attitude toward wrongdoers. It should portray a society which is firm in its determination to make crime unprofitable, compassionate in its attitude towards the unfortunate, and magnanimous in its efforts to lead wrongdoers to take their places as cooperative members of society. ◀

¹ Thalheimer, Weitz, Bellante and Clauss.

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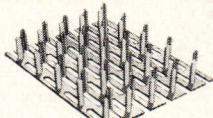
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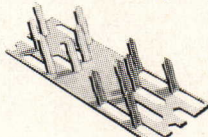
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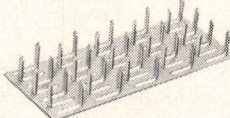
Invis-I-Nail



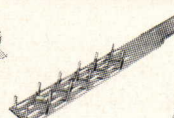
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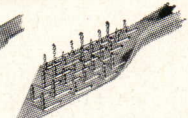
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Technical Abstracts

Mental Health Aspects of Home Design

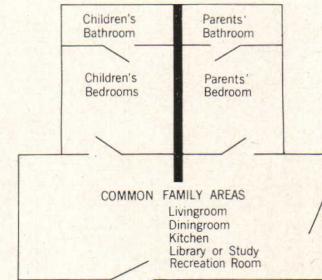
N. Balfour Slonim, Ph.D.
1578 Humboldt St., Denver 18,
Colorado

A most important cause of mental disability and suffering is the chronic emotional disorder termed psychoneurosis and psychosis. Psychoneurosis involves interplay of factors such as mental constitution, intelligence, parental emotional disorders, disruption of normal family life by sickness, absence or death of one or both parents during the early formative period of personality, and environmental factors such as certain arrangements of home living areas which can facilitate expression of unconscious parental destructive trends.

Modern psychiatric knowledge and understanding can be applied to home design so as to avoid accidental psycho-traumatic experiences and to hamper expressions of unconscious parental hatred which occur in bedroom and bathroom. Although only one of many factors in causation of psychoneurosis, home design is a factor which is both significant and remediable. From a psychiatric point of view it demands immediate serious attention and should no longer be ignored.

Key points in design of the psycho-prophylactic home are (see illustration):

- certain functional areas are common family areas and readily accessible to both parents & children



THE PSYCHO-PROPHYLACTIC HOME

- certain functional areas are specifically for either parents or children, and should be implied by architectural design (separation by walls, distance, levels).

AIA TECHNICAL ABSTRACTS FEB/62

National Press Photographers' Association Recommendation for Adequate Natural/Artificial Lighting for Candid Photography in Building Interiors

Ollie Atkins, P.O. Box 11, Fairfax, Virginia, Chairman of the Special Committee of the NPPA, for the purpose of making this study

The purpose of this study was to set forth minimum lighting requirements to permit photography without use of flash or other supplemental lighting. It is a guide for the use of lighting engineers, architects and all others interested in providing adequate illumination in public or private building interiors to permit photography with the existing light.

The figures set forth here are the result of inquiry among working press photographers representing various types of media. There was some variance in individual recommendations and this report repre-

sents a reasonable compromise in many cases.

Minimum footcandles¹ of light necessary for non-supplemental lighting in public places: 64

Desirable footcandles of light necessary for non-supplemental lighting in public places: 125

Do you recommend that lighting in public places where candid photography might be used by photographers be controlled by a master rheostat and, if so, what foot-candle-power do you suggest to be the maximum? *Not Recommended: 500*²

Do you feel that foot-candle-power should be strong only in areas where photography is likely to be necessary or should it be even over the entire area so candid photography would be possible anywhere? Local area only: *No*
Over-all: *Yes*³

Do you feel that foot-candle power should be high enough to permit

candid color photography? *Yes*
If *yes*, how many footcandles do you recommend? *250 and up*
Color temperature: *3200 degrees Kelvin to 4000 degrees Kelvin*
Would photographers tend to use less flash or other supplemental lighting if existing light were sufficient to perform photographic operations? *Yes*

¹ In all cases the term *footcandles* represents the minimum and is measured by the Norwood-type incident light meter which is a standard tool of the working photographer.

² It is the feeling of the majority that a master rheostat is desirable only as a compromise last resort. The feeling is that rheostats are reset during public functions and often set up for photography during critical periods only. Also, press photographers cannot always find the electricians in charge or get proper permission for them to increase the illumination. Experience is that banquet officials tend to prefer low lighting.

³ Strong illumination on local area scenes tends to limit picture-making to this area and the people there, and also forces photographers to congregate there.

AIA TECHNICAL ABSTRACTS FEB/62



Why damage before dedication?

Chances are this floor will receive more abuse during construction than in the next 5 years combined. As the building goes up, we forget to look down...but it's a very critical time for new floors.

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Translucent Beauty

by Wolf Von Eckardt

► More people saw Marc Chagall's magnificent stained glass windows during their six-week sojourn at New York's Museum of Modern Art than are likely to see them in as many years at the synagogue of the new Hadassah-Hebrew University Medical Center in Jerusalem for which they have been designed and where they are being installed this month. The day I saw them, or rather, was herded past them by burly guards who kept chanting "keep moving, keep moving, please!" (as though there was any other alternative to being trampled to death), the crowd numbered approximately six thousand. This, I understand, was about the average daily turn-out for the Chagall windows, a record attendance even for the Museum of Modern Art. Just what accounts for this popularity, no one can explain. To be sure, more than ten times that number (82,679 on the first day it was on display, to be exact) visited the Metropolitan Museum to see *the Rembrandt*, the one with the \$2,300,000 price tag. And the number of people who line up at the National Gallery in London to see the bare spot on the wall where the stolen Duke of Wellington by Goya used to hang, is said to be double the number of those who went to see the picture itself. But no cool two million or brazen theft attaches to the windows. Chagall, while undoubtedly among the leading half-dozen or so modern artists, is far from being a household word. And there was no spectacular publicity about the exhibit. The fact is, that the only sensation about the windows is that they are sensationally beautiful. Crowds, ropes and chanting guards notwithstanding, their dazzling, translucent color and incredible richness of design just takes your breath away.

There are twelve arched windows, each a little over eleven by eight feet, and each symbolizing one of the twelve tribes of Israel in terms of semi-abstract and very Chagall-esque fish, animals, flowers and trees, following Judaism's injunction against depicting human images. Their

setting in New York was far from ideal, not only because stained glass windows hardly belong on a staircase and landing, but also because they were not actually the, or even a, source of light, but electrically illuminated which, naturally, robbed them of all their potential mystery. It was pleasant to contemplate, though, what a marvelous experience it must be to enter architect Joseph Neufeld's simple, square synagogue where, installed in the dome, they constitute the dominant design feature. They will immerse the space in colored, jewelled light, like that of Sainte-Chapelle or its modern and even more daring counterpart, Wallace K. Harrison's First Presbyterian Church in Stamford, Connecticut, which, seemingly, I alone among people who venture to write about architecture, consider the most overwhelmingly beautiful religious space of our time. Harrison, of course, used stained glass in chunks, set in special cement, a newly developed technique. And he used it structurally in a design of his own. Chagall's windows are just that, using the whole range of traditional glass painting techniques, including acidifying, a method which produces gradations in tone. Their setting, too, is traditional but, to judge from a model, promises to be entirely appropriate not only to the rest of Neufeld's Medical Center but also to Chagall's great art. Both Harrison and Neufeld have drawn from the same rich source: The astounding revival of stained glass-making in France.

The art, or rather craft, was, of course, never quite dead since Adalbéron, the bishop of Rheims (from 969 to 988) rebuilt his cathedral and decorated it with the first *vitraux*. But it declined considerably in the seventeenth and eighteenth centuries and even though the *Service des Monuments* opened stained glass workshops in all parts of France in the nineteenth, their work was imitative rather than creative. The new burst of creativity began when painters like Georges Rouault and later Matisse, Léger and Chagall became interested in the medium. This, in turn, stimulated the craftsmen to new achievements, a combination which many consider worth a pilgrimage to Venice, Metz, Assy and Audincourt and which will surely rank a visit to the Hadassah synagogue equal to the other art treasures of Jerusalem.

Chagall and his craftsmen—the St Juste glassworks in the Loire valley and the atelier Simon-Marq in Rheims—worked for two years on these windows. They have proved, if nothing else, that a great art is again very much alive and ready to serve architecture if architects will have it. ◀