

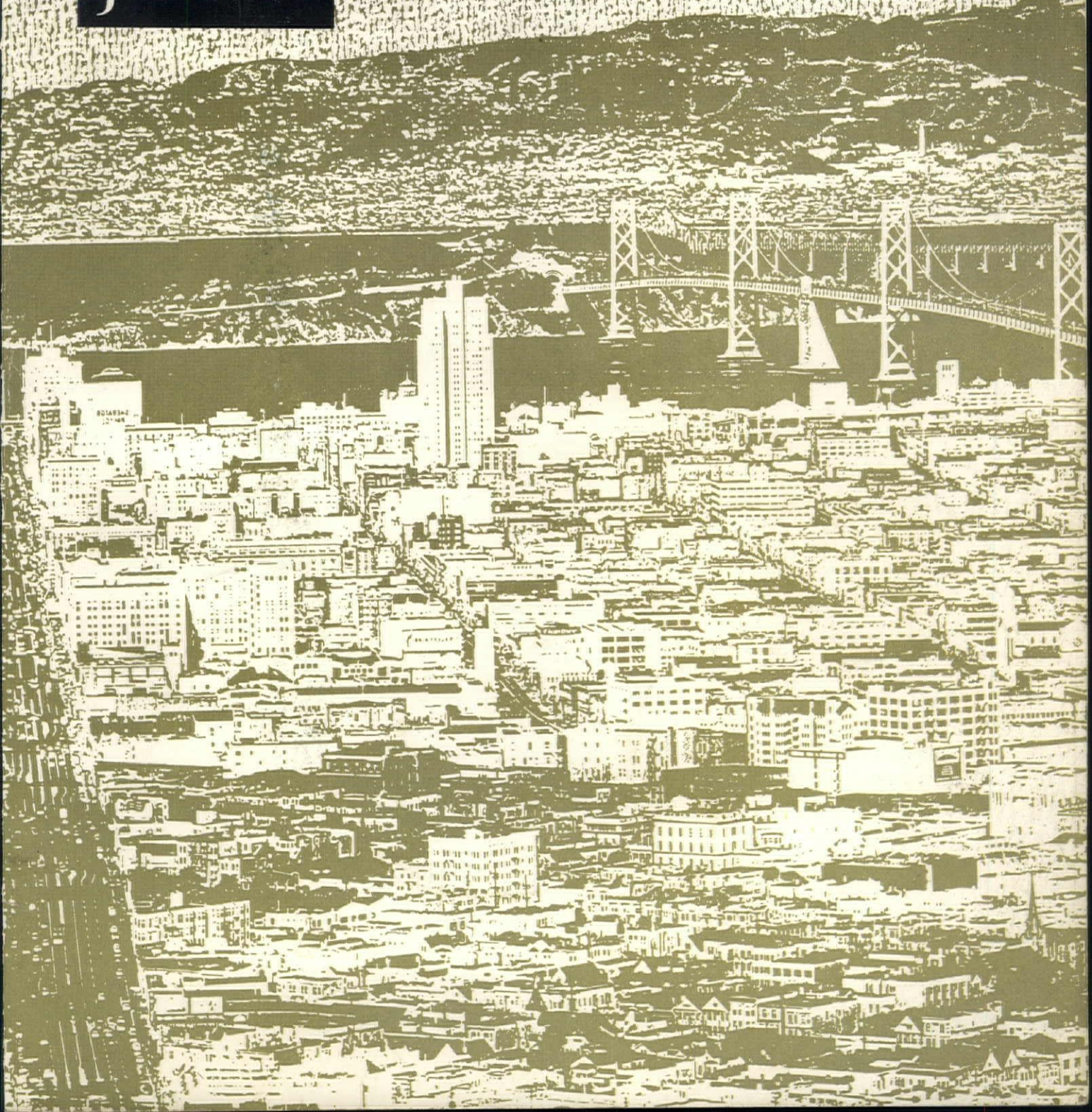


A · I · A

December 1962

Journal

OF THE AMERICAN INSTITUTE OF ARCHITECTS



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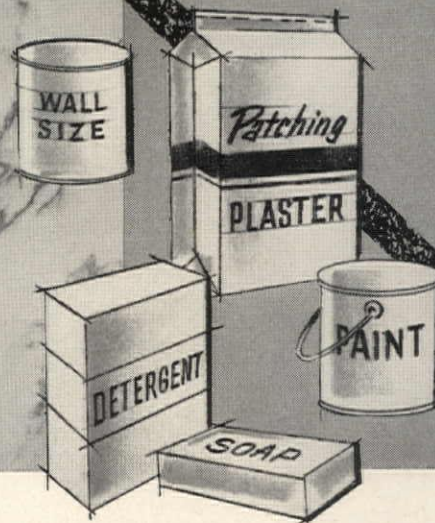
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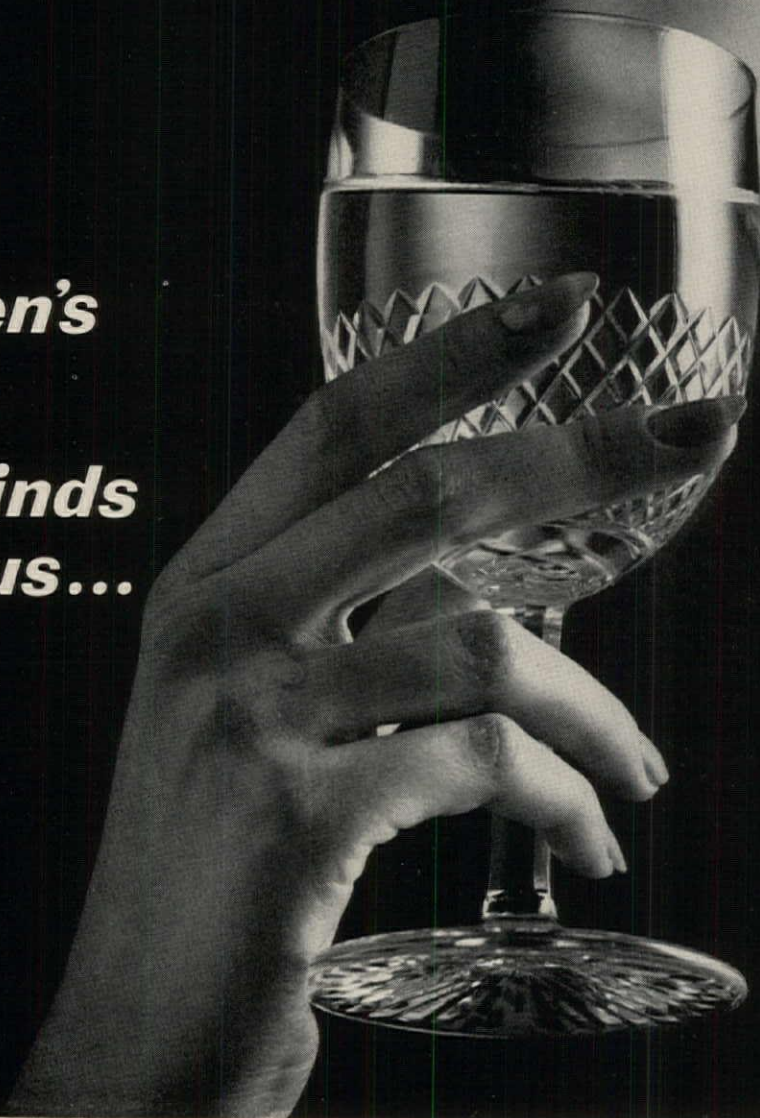
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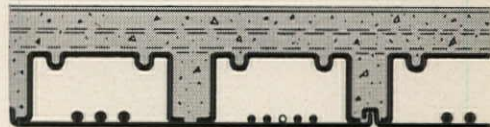
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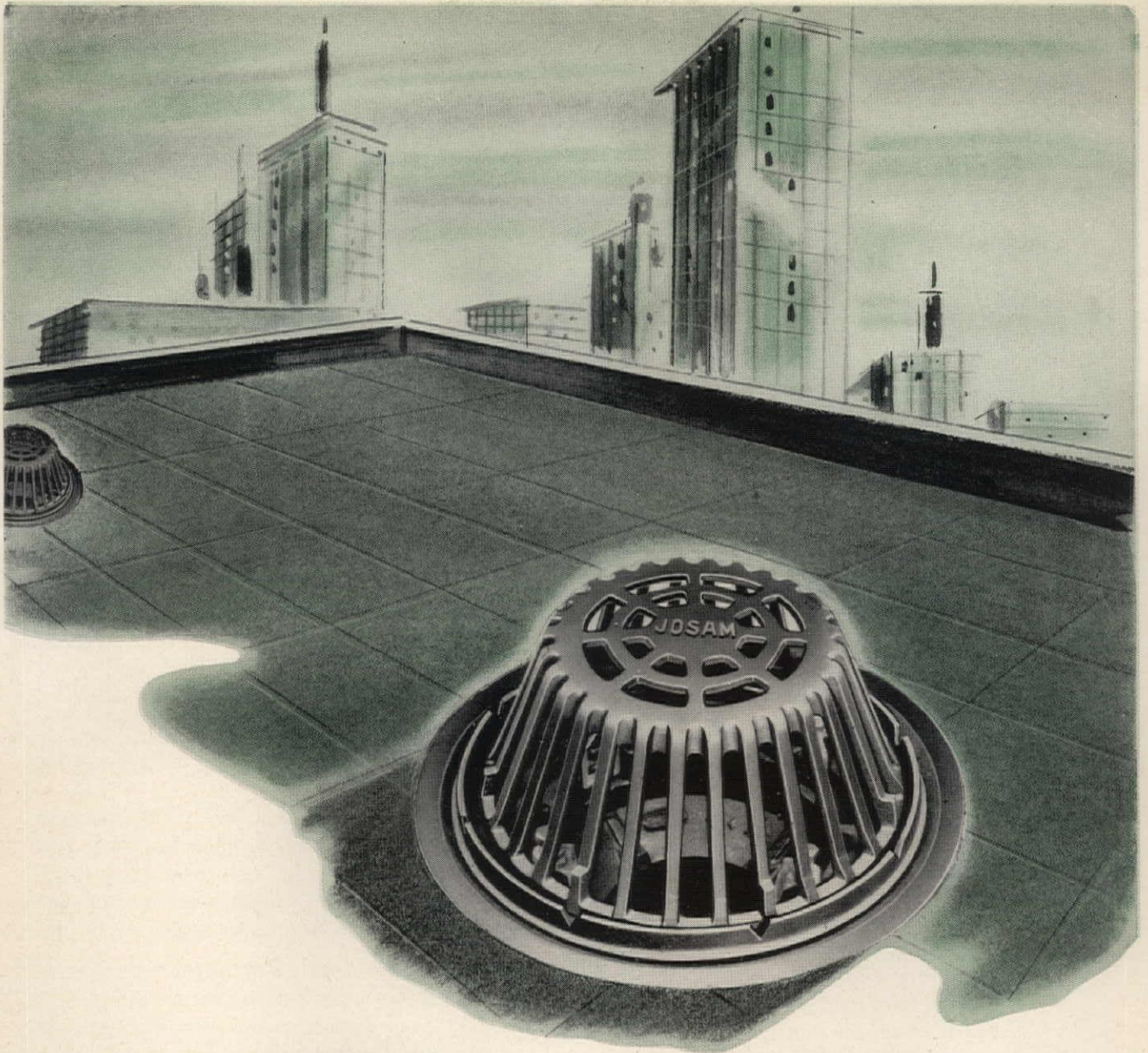


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Letters

Applause for School Study

EDITOR, *Journal of the AIA*:

The Gyo Obata school study in your October issue is one of the finest we have seen. Thus, may we please order twelve copies of the magazine (we like the cover too!)? Again, please accept our heartiest congratulations on a splendid issue.

(MISS) LLOYD MC DONNELL
Cambridge, Mass

Washington Dilemma

EDITOR, *Journal of the AIA*:

Every one in Washington should be grateful for your editorial on our dilemma in the September issue of the *AIA Journal*. As a city we are unknown or disregarded; I hope all your readers in the real world outside where people vote will come to the aid of this hapless city, which is also theirs.

The District League of Women Voters, who have no vote, made a detailed analysis of Washington's revenue problems in a little pamphlet, "A Tale of Two Cities," which has been widely distributed in the hope that some people with a vote might notice us. Your compact statement of these problems and of the effect of rule by alien Congressional Committees is a great help.

Many people in Washington, through years of testimony before Congressional Committees we do not choose, have tried to get funds for schools, for decent housing, for better organized welfare, for a more adequate juvenile court, for more coordinated city planning. To us, home rule for the District seems the obvious approach to what you aptly call "the mess."

It may be, as you say, that "every schoolboy knows that the residents of Washington have no vote," but their voting parents seem not to know it, nor what it means to be voteless, nor to care. So thank you again.

MRS. H. W. EDGERTON
Washington, DC

Shelter and Survival

EDITOR, *Journal of the AIA*:

The Administration has enlisted the help of the architectural profession in its long-term program to meet the national shelter requirements by fully exploiting existing or low-cost opportunities to shelter people. About 600 architectural and engineering firms have taken part in a survey conducted by the Army Corps of Engi-

neers and the Navy Bureau of Yards and Docks, supervised by the Office of Civil Defense.

The Defense Department has conducted highly systematic studies of the effect of hypothetical nuclear attacks on the American population. These studies were conducted for a variety of purposes, not just civil defense. The results show that between 40 and 120 million Americans would survive the blast and heat effects of a large-scale nuclear attack which might be possible in the years ahead, but would be killed by the fallout radiation which would blanket large sections of the country—unless they had access to a shielded place to take cover from radiation. The saving of so many lives under nuclear attack justifies a great deal of time and effort and resources.

Assistant Secretary of Defense Stuart L. Pittman recently stated: "There is no question that people have been confused by the conflicting pronouncements and arguments of scientists and commentators and have not fully accepted the conclusions reached by their government on this complex subject."

The shelter program, in essence, includes:

- 1 Locating and bringing into use all existing shelter space
- 2 Low-cost modifications of existing buildings
- 3 Plans for new buildings which can create new shelter space
- 4 Federal help for schools, hospitals and colleges to create new shelter space

Some of these items are moving rapidly to completion and some are pending before Congress. I believe that no resource and no opportunity should be overlooked in the development of each community's plan for a place for all of its people to go if there should ever be a nuclear attack.

ARTHUR DEIMEL, AIA
Wilmette, Ill

Kudos for Abu Simbel

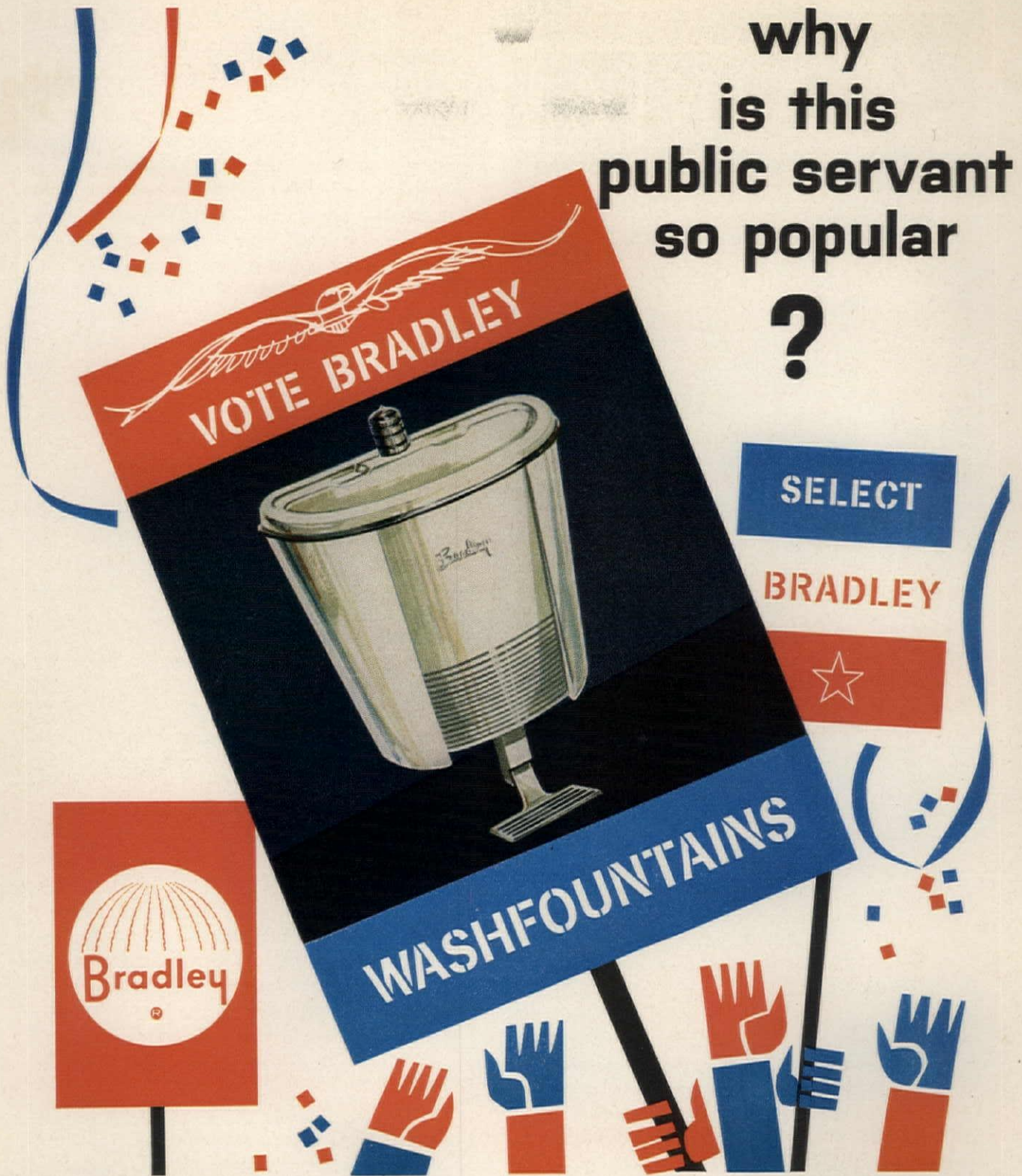
EDITOR, *Journal of the AIA*:

I was very pleased to note the piece on Abu Simbel in the September *Journal*. Last fall at the Student Forum, we distributed information on this project and initiated a proposal aimed at gaining official and public AIA endorsement for the Unesco preservation effort. This resulted in an appropriate resolution by the Board of Directors at its January meeting.

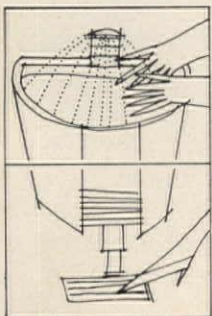
It is gratifying to see this endorsement being fortified by your informative article. I hope it will encourage individuals to support the project.

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Urbanisms (Continued)

for instance) and related subjects (such as municipal engineering and urban economics). This has led to the series being called a 'manual' or a 'guidebook,' terms more descriptive of its intention than its actual form, for the nature of the subject, *design*, is that it cannot be given precise, dimensional definition nor be expressed as a formula or prescription. To some happily inevitable extent, the series will contain expressions of individual opinion and ideas—the best we can gather together.

"For this piece of work to have the hoped-for, real value to the practitioner for whom it is written, however, it will have to leave familiar ground and lead into new and even uncharted design territory. If, in doing this, it does not cut a clear path, we hope that *Journal* readers will let us know. The Committee, in fact, will welcome any suggestions for increasing the usefulness of the series as we go along.

"Hardly anyone will dispute that it is high time the architectural profession brought its special talents to bear on the unsolved design problems of towns and cities across the country. But a serious view will realize, too, that today's urban design responsibility is vastly wider and the city planning to which it seeks to give three-dimensional expression is vastly more complicated than in the past.

"This, of course, does not alter the responsibility. Rather, in indicating its vastly widened dimensions, it emphasizes a special opportunity and, indeed, obligation, for architects. The Urban Design Committee hopes that its *Journal* series will encourage acceptance of the opportunity and, in humility, help prepare us all to meet the enlarged responsibility."

Clarification:

Some readers of this column in October inferred that we felt the URA should "seek the perceptive help of experienced architects." This was farthest from the truth (and so we thought, our words made clear). Actually, it was the enlightened administrative interpretations of URA which now provide for the specific injection of architectural services in connection with projects involving conservation or reconditioning. Eligible costs include, among other provisions, for "Hiring of an architectural consultant to provide general guidance to property owners in solving common problems on the design of properties and to coordinate exterior property improvements block by block." (See URA Manual 12-1-3)



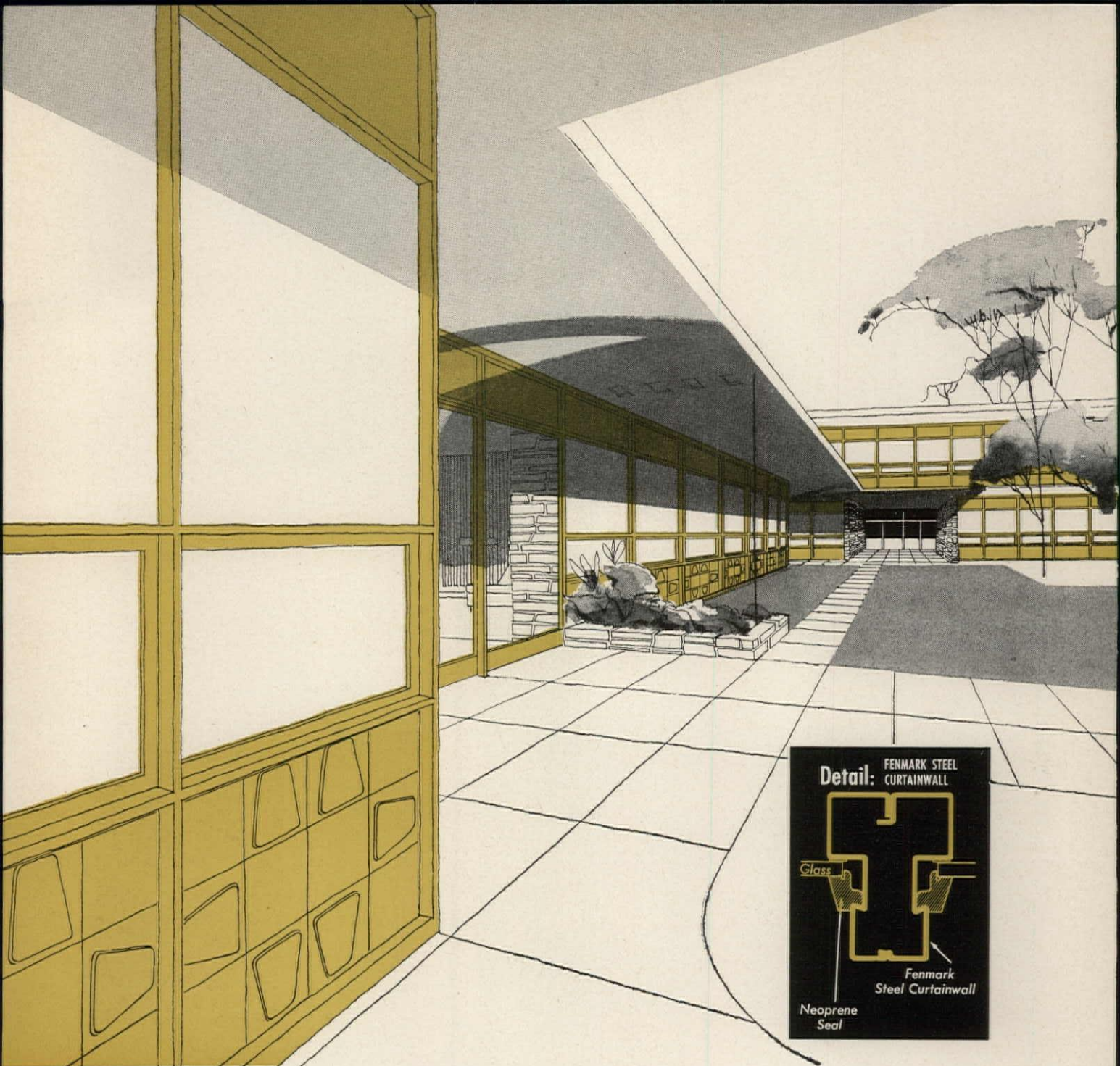
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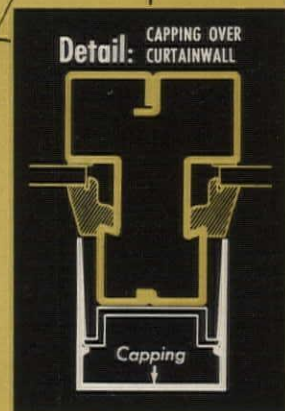
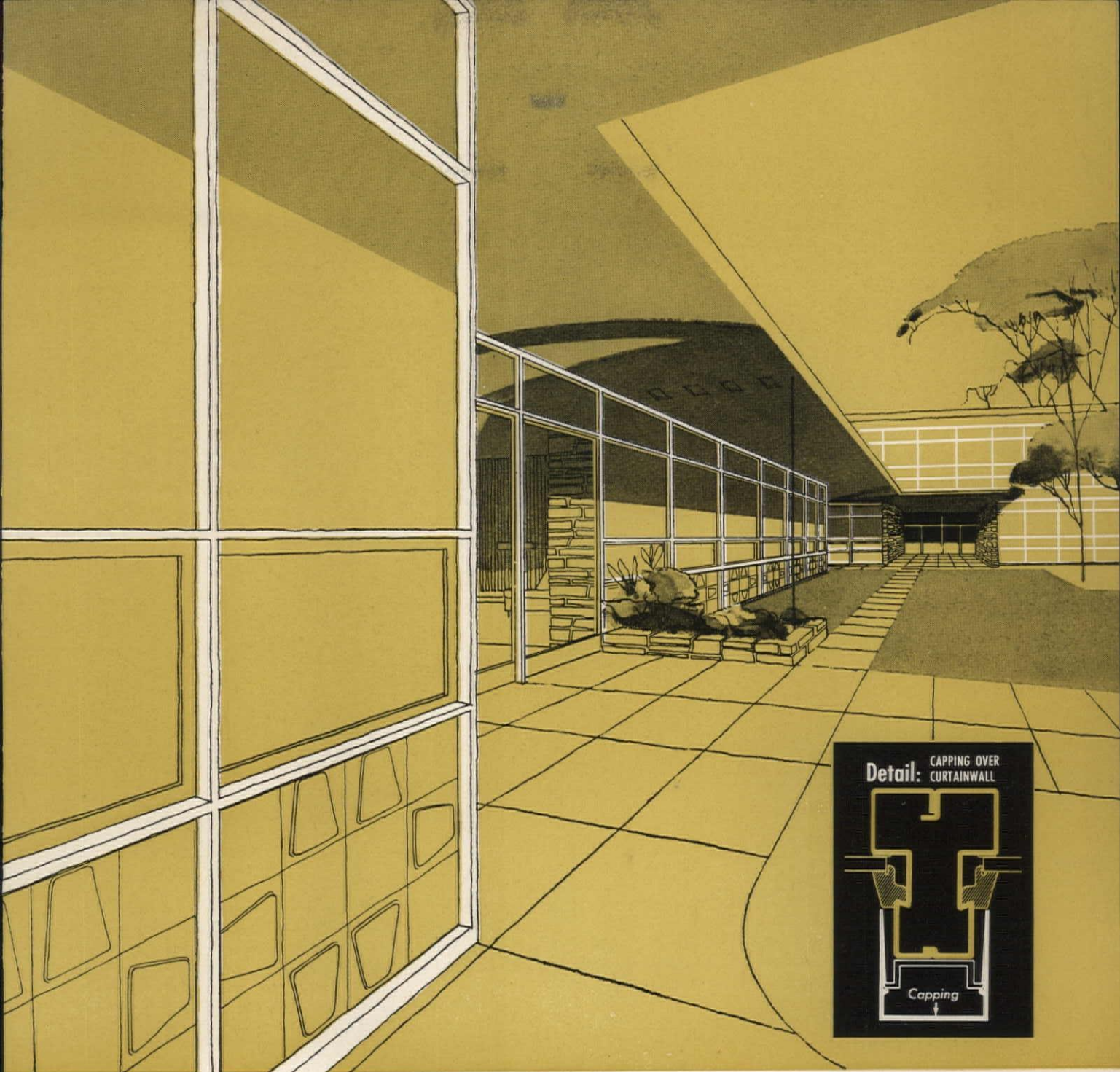


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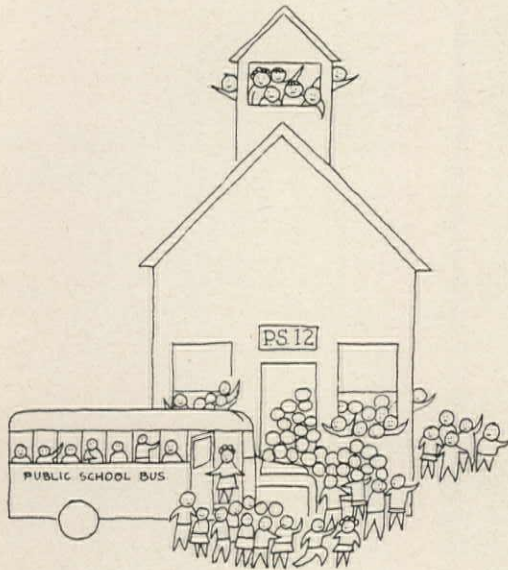
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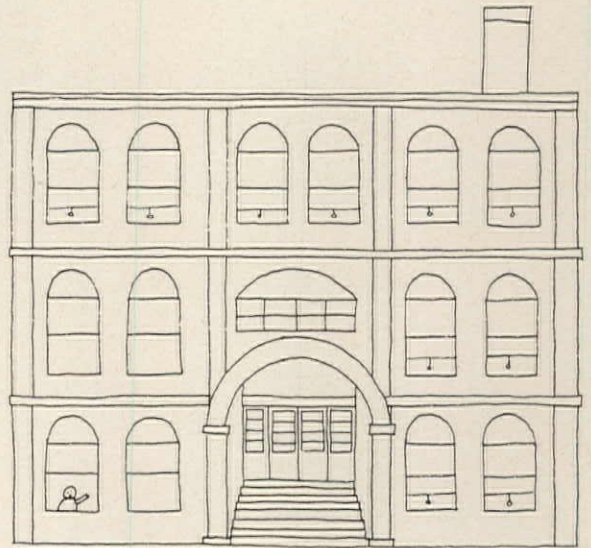
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AmBridge Portable Schools: the solution to shifting school populations

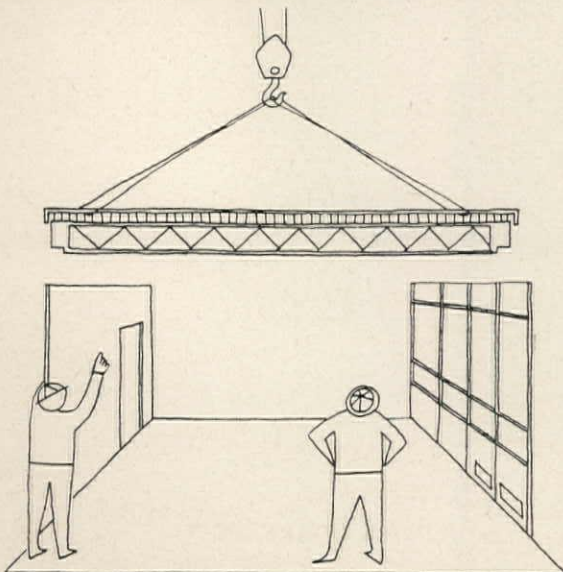
Battle of the bulge. Today's U. S. population isn't only exploding—it's on the move. Our ultra-mobile society is constantly shifting as people have never done before. School systems are particularly hard hit by these frequent population shifts. A school district that once had an abundance of classroom space now bulges from blackboard to blackboard—but in a decade might be near-empty again.



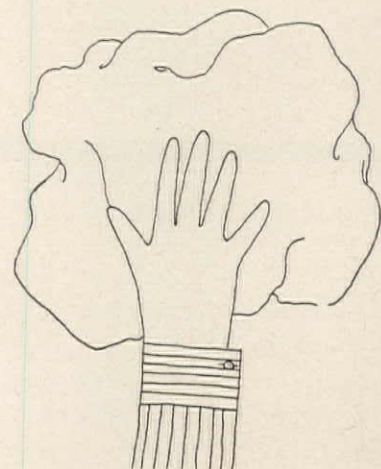
Cram, rent, or build? In over-crowded areas, school boards have several alternatives: cram classrooms past optimum teaching capacity; rent space separated from central supervision (in quarters often not well-suited for classrooms). Least practical solution is building a school that may end up being under-used. Now, however, there's a revolutionary way to cope with shifting school populations.



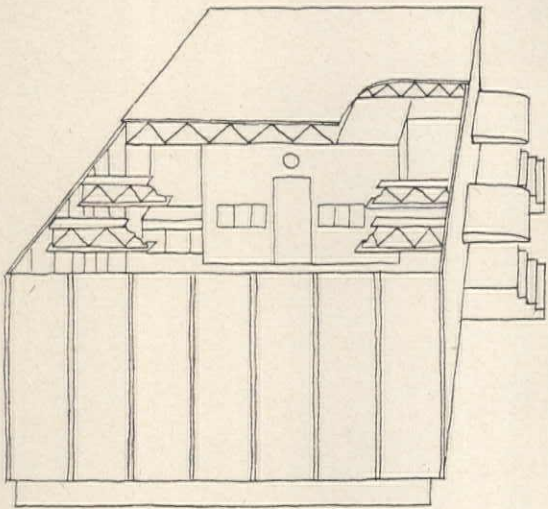
Simple and sturdy. Structural design of the AmBridge Portable School is simple: 8' by 28' floor and roof sections are bolted to standard steel curtain walls. Each unit has a complete rigid steel frame with welded channel cross-braced floor system, integral columns, and special roof trusses and panels. The entire frame is bolted together to provide the extra rigidity necessary for relocation operations.



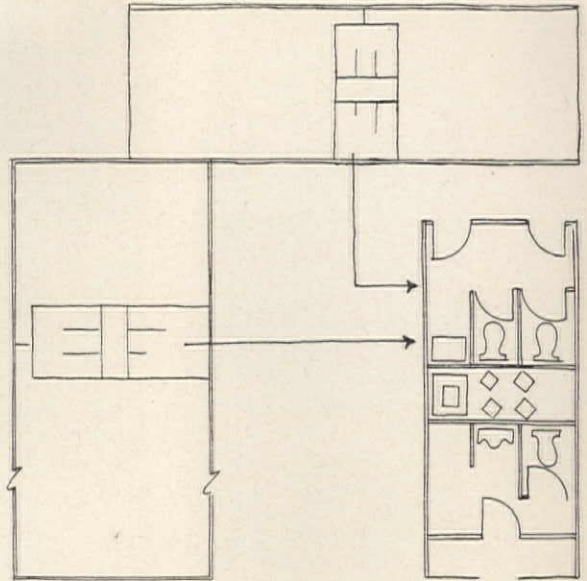
Lasting. The AmBridge Portable has the same steel walls as our Modular School. Baked enamel outside, with interior partitions of baked enamel or vinyl, these walls last and last. No need to paint—just wipe interiors with a damp cloth, let rain clean exterior walls. And you get full thermal and acoustical insulation in 2 $\frac{3}{8}$ -inch thin walls—equal to 12-inch masonry walls—and a saving of 5% floor space over conventional construction.



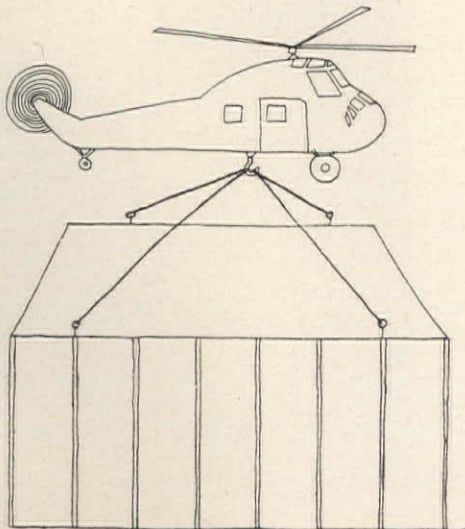
Model school. It's the AmBridge Portable School. That's right—portable. When one locale no longer needs the room space, it can be easily and inexpensively moved to an over-crowded area. But it doesn't look like a portable school. It's just as sturdy as the larger AmBridge Modular School—an architecturally designed steel structure of integrated components noted for its economy, durability, speed of construction, and attractiveness.



Variations on a theme. The basic AmBridge Portable is a 2-room, 70-student school that includes a central service core. Using this unit, any variation is possible, as exemplified by the first AmBridge Portable School in Pittsburgh, an L-shaped 6-roomer. Architects can easily "dress up" the Portable by bridging with special walkways, rearranging entry stairs, door and canopy details. (And there's a variety of colors to choose from.)



Portability. When you move the AmBridge Portable School, just unbolt the 8' steel sections, unplug the light circuits, and disconnect the plumbing and heating lines. Then jack up the section, and tow it to the new site on a dolly. It's so light and strong *it can even be moved by helicopter.* (That's how they plan to move the Pittsburgh Portable School.) All you leave behind are the inexpensive footers.

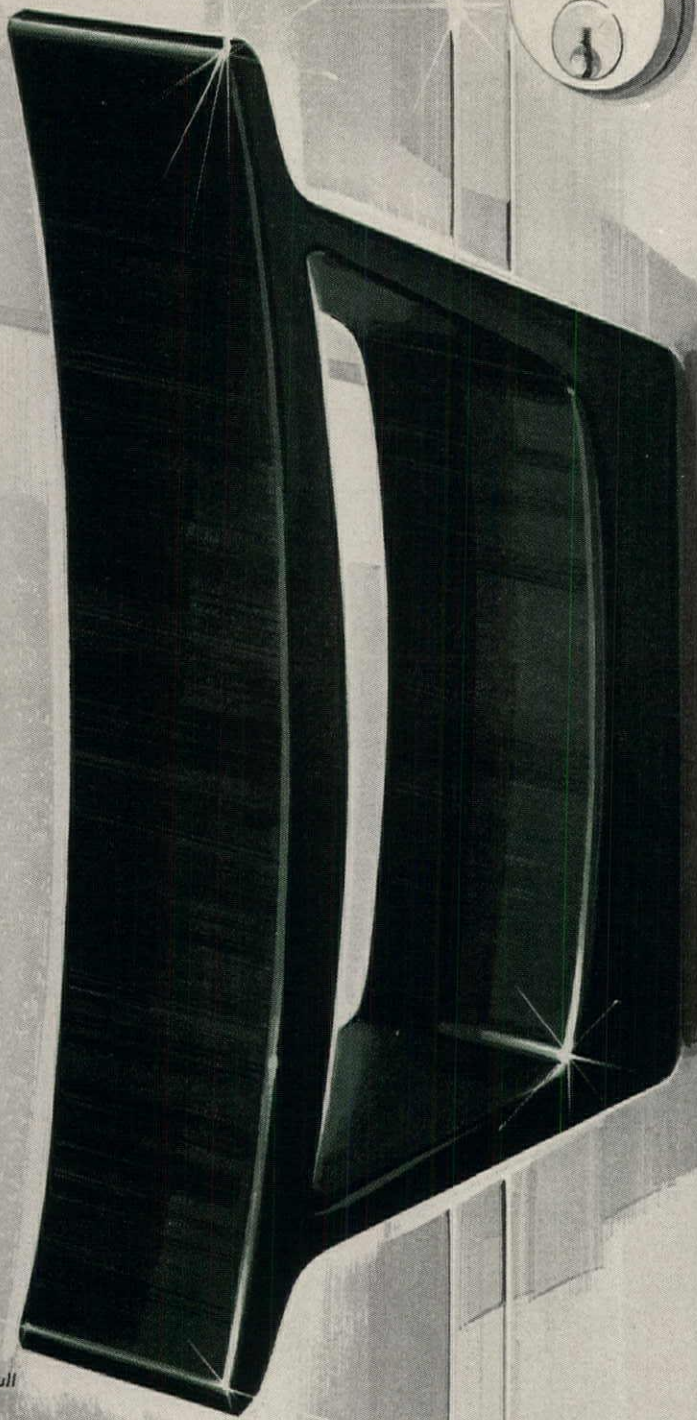
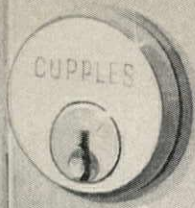


Need a school in a hurry? Normal first-time erection for the AmBridge Portable is a matter of a few weeks. When you move the school, it can be ready for students in approximately 2 weeks. One thing: don't mistake the AmBridge Portable for a temporary school. It'll last just as long as non-portable schools, *and it meets all updated building code requirements.* For more information, write American Bridge Division, United States Steel, Pittsburgh 30, Pennsylvania.

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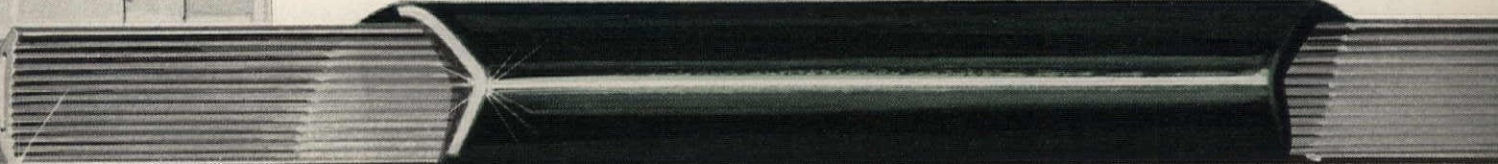
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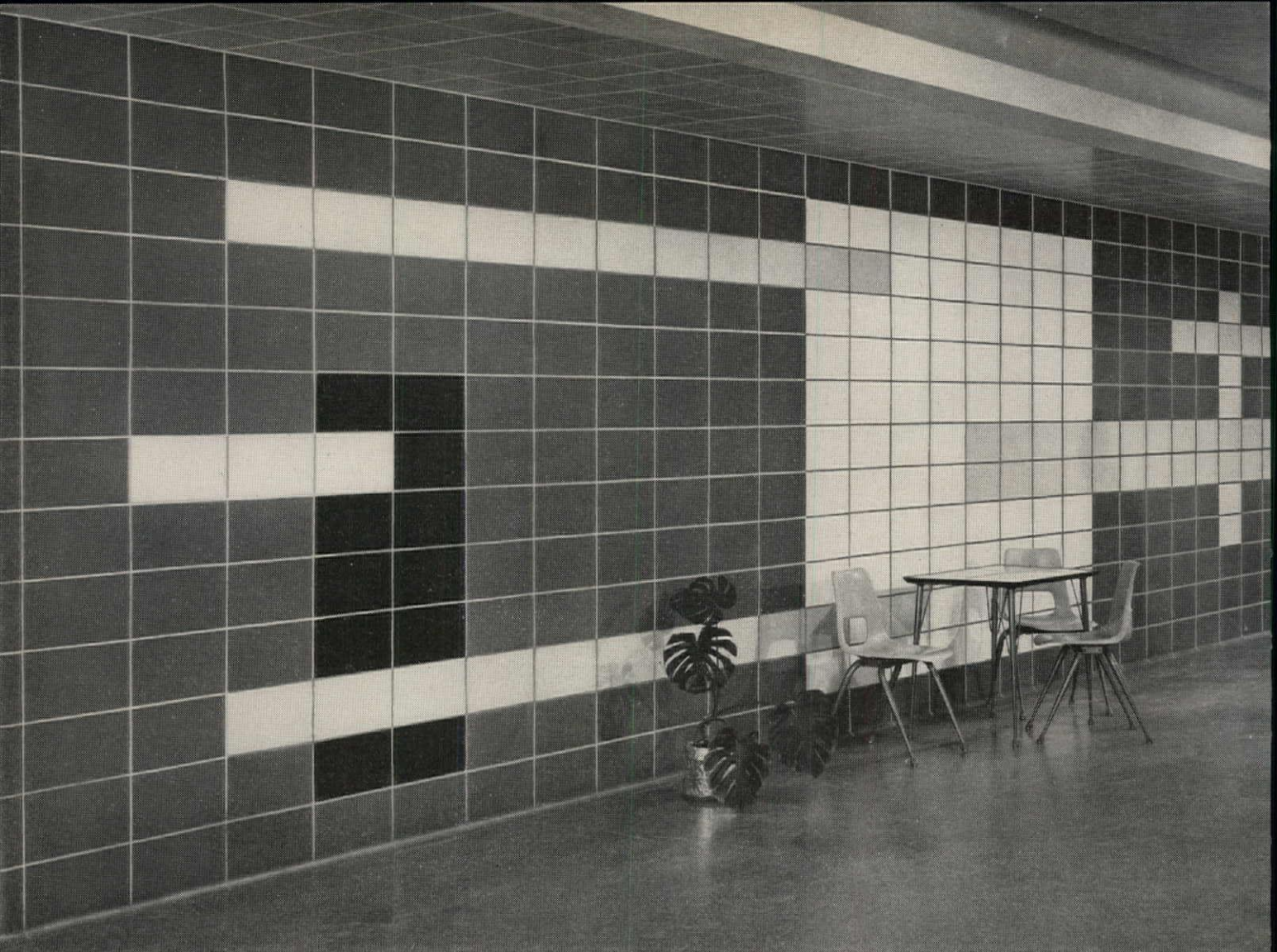
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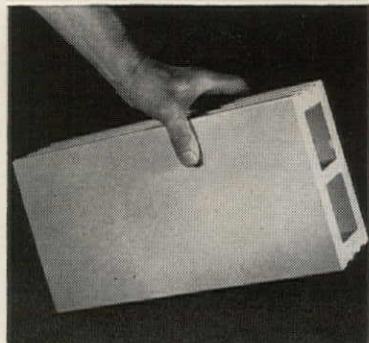
Main lobby of the Reynolds Area Joint High School located near Greenville, Pennsylvania, showing one of the decorative designs created through the use of ceramic glazed Natco Vitritile. Architect: Hunter, Heiges & Gross. General Contractor: Associated Contractors.

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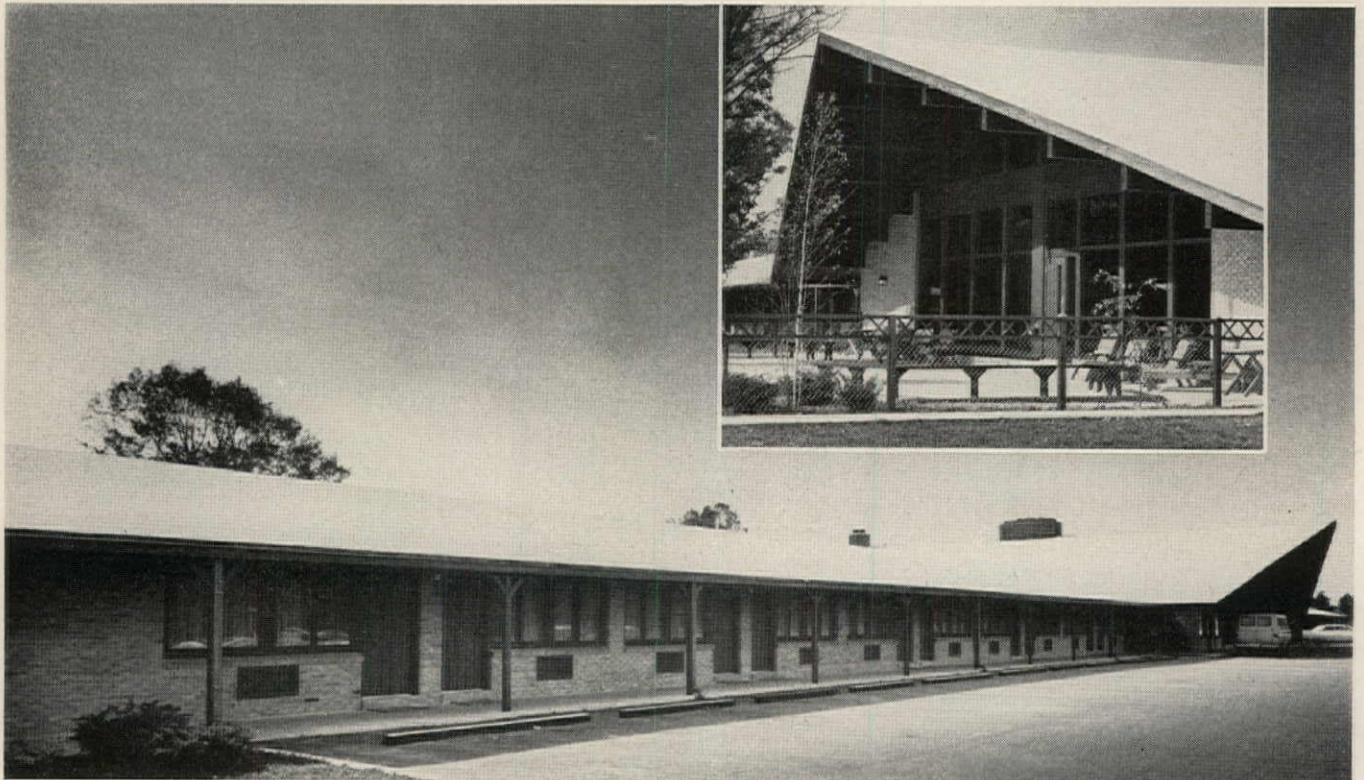
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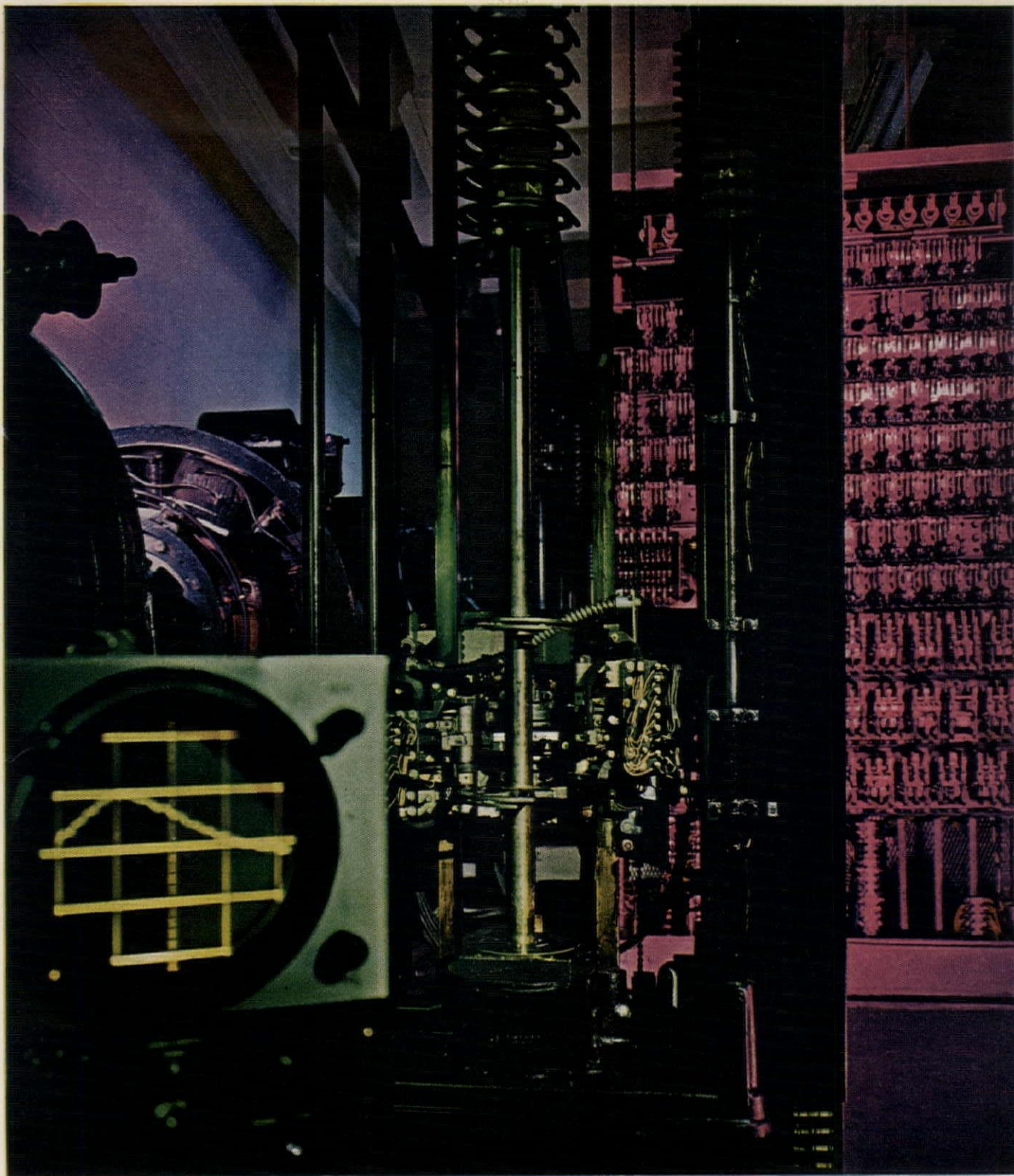
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A · I · A

Journal

Good Neighbors

Planificacion Fronteriza de Arquitectos

Norteamericanos y Mexicanos

by Edwin W. Carroll FAIA

At the 1960 AIA Convention, the President of the Commission for International Affairs of the Sociedad de Arquitectos Mexicanos presented an invitation to the Institute to join with the Sociedad in a planning study of the border between the two countries. Out of that invitation developed the "Charter of El Paso." Its story is told here

► In 1925 the new city plan for El Paso, Texas, was completed as authored by George E. Kessler of St Louis, who commented before his death in 1923 that "Cooperation with Ciudad Juarez and the Mexican Government in the development of a regional plan to create an international metropolitan area of credit to both Mexico and the United States is a Big Plan for the Future."

Mr Kessler proposed in his plans for El Paso a new international bridge with spacious parks at the approaches in Juarez and El Paso and predicted collaboration in planning between the two nations during the coming years.

Later in the forties the distinguished Mexican architect Carlos Contreras proposed in an address at MIT that three-mile-wide, free international zones be established on the borders providing joint recreational facilities, cultural establishments, educational institutions, transportation

Nosotros,

los arquitectos de los Estados Unidos de América y de los Estados Unidos Mexicanos, reunidos hoy, el cuatro día de noviembre del año mil novecientos sesenta, en la ciudad de El Paso, en el Estado de Texas, declaramos:

- 1 Que aceptamos la misión y el servicio de nuestra profesión como un deber ineludible que debemos cumplir hacia nuestros pueblos.
- 2 Que definimos esta misión como la responsabilidad que tenemos en la preparación de un medio ambiente físico y moral en armonía con las necesidades y aspiraciones más elevadas del hombre en su comunidad.
- 3 Que reconocemos que los problemas técnicos por resolver son comunes en ambas naciones.
- 4 Que debemos trabajar juntos y comunicarnos constante y libremente nuestros ideas y experiencias.
- 5 Que es imposible concebir el desarrollo adecuado de una ciudad sin el análisis y conocimiento previo de su región.
- 6 Que todos los ciudadanos que viven a lo largo de la frontera habitan en un espacio geográfico con características similares y con problemas comunes de producción, distribución y consumo urbanos.
- 7 Que estos problemas comunes merecen y requieren atención técnica urgente para lograr un desarrollo armónico de nuestros ciudades y regiones.
- 8 Que coincidimos plenamente en nuestros objetivos y en nuestros ideales básicos en la planificación y en la arquitectura.
- 9 Que transformaremos la indiferencia pública en entusiasmo cívico y la actividad aislada en esfuerzo coordinado.
- 10 Que proponemos crear comisiones técnicas fronterizas que colaboren con nuestros gobiernos para promover los fines de esta Carta.

Con un alto espíritu de comprensión humana, hoy el cuatro día del mes de noviembre de mil novecientos sesenta, hacemos un llamado a los arquitectos y a todos los demás ciudadanos de las Américas para que acepten y adopten estos principios e ideales para que trabajen con nosotros hasta lograr su completa realización.

Este documento fue propuesto y escrito originalmente por el arquitecto Guillermo Rosell de México en la ciudad de Austin, Texas, el día 3 de octubre de 1960, debidamente traducido, modificado y redactado conjuntamente con la colaboración de los arquitectos Carlos Contreras, Ramón Corona y Héctor Méndez, de México, y de los arquitectos Phil Will, Jack Cargen, Edwin Carroll, R. Max Brooks, Llewellyn Pitts, Robert Woltz, Reginald Roberts, Harold Calhoun, Arthur Fehl y Philip Greer.

Fue grabado por John Flowers y finalmente aprobado y firmado como la "CARTA DE EL PASO", en la ciudad de El Paso, Texas, el día 4 de noviembre de 1960.

Phil Will
Phil Will, F.A.I.A.
Presidente del "Instituto Americano de Arquitectos Mexicanos".

Ramón Corona
Ramón Corona, S.A.M.

Philip Greer
Philip Greer, F.A.I.A.

Luis González
Luis González, S.A.M.
H.F.A.I.A.
Presidente de la "Sociedad de Arquitectos Mexicanos".

Héctor Méndez
Héctor Méndez, S.A.M.

Robert Woltz
Robert Woltz, F.A.I.A.

Jack Cargen
Jack Cargen, F.A.I.A.
Presidente de la "Sociedad de Arquitectos de Texas".

Edwin Carroll
Edwin Carroll, A.I.A.

Arthur Fehl
Arthur Fehl, F.A.I.A.

Guillermo Rosell
Guillermo Rosell, S.A.M.

Ramón Brooks
R. Max Brooks, F.A.I.A.

Robert Woltz
Robert Woltz, A.I.A.

Carlos Contreras
Carlos Contreras, S.A.M.
H.F.A.I.A.

Llewellyn Pitts
Llewellyn Pitts, F.A.I.A.

Reginald Roberts
Reginald Roberts, A.I.A.

CARTA DE EL PASO



We, the architects of the United States of America and the Estados Unidos Mexicanos, meeting today, the 4th of November of the year 1960 in the city of El Paso in the State of Texas, do hereby declare:

- 1 That we define the high mission of the Profession of Architecture as the responsibility for creating a total physical environment in harmony with man's highest aspirations;
- 2 That dedication to this mission is our unavoidable duty;
- 3 That all citizens living along the border dwell in a geographical area with similar physical characteristics and with related problems, both social and economic;
- 4 That the problems to be solved are indivisible and shared by both nations;
- 5 That, for the harmonious development of our contiguous cities and regions, technical study of our shared problems is urgently required;
- 6 That we must work together and freely exchange our ideas and experiences;
- 7 That it is impossible to conceive the adequate development of a city without previous analysis and knowledge of its region;
- 8 That we agree fully in our objectives and our basic ideals in planning and architecture;
- 9 That we would transform public indifference into civic enthusiasm and isolated activity into coordinated effort;
- 10 That we propose to create technical border commissions to collaborate with our governments to further the aims of this charter.

With a high spirit of human understanding we, on this 4th day of November, 1960, appeal to architects and all other citizens of the Americas to accept and adopt these principles and ideals and to work with us toward their ultimate fulfillment.

It was recorded by John Flowers and finally approved and signed as "THE CHARTER OF EL PASO", in the city of El Paso, Texas, on the 4th day of November, 1960.

terminals and various other categories of projects mutually beneficial to the nations involved. He was referring primarily in his own beautiful language to the application for Mexico and the United States.

In April of 1960 a brilliant challenge was delivered to the annual convention of The American Institute of Architects in San Francisco* by a group of Mexico architects, headed by Guillermo Rossell, asking for collaboration of Mexican and American architects in the planning of border twin cities and regions. The proposal was eloquent in its story and forceful in its appeal, so much so that AIA President Philip Will Jr pledged to accept this opportunity for international brotherhood at work on the development of the border, which he hoped would encourage other avenues of collaboration once the architects and planners eliminated an imaginary boundary in planning.

Just six months later in October 1960, the Texas Society of Architects held its annual convention in El Paso and devoted the seminar sessions to the Mexican border proposition. More than fifty Mexican architects and their wives attended this conference which was climaxed by the signing of "The Charter of El Paso" by distinguished members of the Sociedad de Arquitectos Mexicanos and the AIA. The presidents of the two professional societies then announced that an International Border Planning Commission had been appointed, composed of Guillermo Rossell, Carlos Contreras and Ramon Corona Martin of Mexico and Robert E. Alexander and Edwin W. Carroll of the United States. Before adjournment of the convention, the appointed Commission elected Guillermo Rossell as its chairman.

Since 1960 definite progress has been made, but the process is much slower on this side of the Rio Grande. In Mexico two powerful Federal Ministries—the Patrimonio Nacional and the Programa Nacional Fronterizo—equivalent to cabinet rank in this country, are directly responsible to the President for action and beneficial results from this program. These official agencies have been busy through privately commissioned architects in completing the plans of more than ten of the Mexican border cities. Actual construction has begun under the National Frontier Program in Ciudad Juarez, Tijuana and Matamoros during the year 1962.

We in the United States must work from the local level in the opposite direction from the accepted practice in Mexico. This we have done,

but it takes time and our only hope is that construction will not move too fast on the Mexican side, so that we can catch up in the coordinated effort that we all hope to achieve. Recent developments are most encouraging in the border cities of Brownsville, Texas, across from Matamoros; McAllen, Texas, across from Reynosa; Laredo across from Nuevo Laredo; Nogales, Ariz, across from Nogales; and Tijuana across from the San Diego metropolitan area. Professional planners are being employed on the American side in many of these cities and their first conferences and studies are devoted to meetings with the planners and city officials of the Mexican sister cities in order that all plans might be properly coordinated from the start.

These conferences are arranged through the joint efforts of the Mexican and American delegations of the International Border Planning Commission. Existing plans are exchanged from each side for reference and only last week we were able to distribute partially completed comprehensive plans of five Mexican border cities to the architects and planners involved in the twin cities on this side of the border. Mexican architects working on the border projects have agreed to have their staffs meet with the city officials, chambers of commerce, economists, sociologists, medical authorities, architects and planners on the American side whenever we are ready for this exchange of ideas.

An excellent meeting was held recently in San Antonio, Texas, on August 17 and 18, 1962, which was attended by all five members of the original International Border Planning Commission as well as national officers of the AIA, officials of the Texas Society of Architects, Richard Ives of urban planning from Washington and F. J. Von Zubin, Jr of the Texas Department of Health, which administers federally-sponsored urban planning projects in that state. Results from this conference were immediate and more action is to follow within the coming year. Major items approved by the Commission included:

- 1 Election of Arq. Mario Pani, Chief Architect for Programa Nacional Fronterizo, and his assistant, Arq. Domingo Garcia Ramos, to the Mexican delegation of the International Commission in order to consolidate the work of the two ministries of the Mexican Government that are involved in border problems and solutions

- 2 Election of Sidney W. Little, Dean of the School of Fine Arts at the University of Arizona in Tucson, in order that Arizona might be represented on the International Commis-

* Text published in June 1960 issue of the *AIA Journal*.

son, and an American member with official status at the national governmental level not yet announced to the American delegation

3 Appointment of an executive secretary on each side of the border, one to be located at the center of the border in Ciudad Juarez and one in El Paso to assist in liason affairs of the International Commission

4 Enthusiastic endorsement of a pilot planning project of one of the Texas border cities to be conducted and sponsored by the San Antonio Chapter AIA. The program for this project has been prepared and actual work will begin within a few weeks. The School of Architecture of the University of Texas will assist the San Antonio Chapter in the development of this pilot project

5 Proposal by the Mexican delegation that the next meeting be held in Ciudad Juarez, possibly in January 1963

6 Invitation by Ramon Corona Martin, Vice President of the UIA, for the Commission to attend the Congress of the UIA in Mexico City in October 1963 and have during this congress a meeting of the International Border Planning Commission

The state of California has endorsed the Border Development Program by resolution in the last session of the Legislature through the efforts of Robert E. Alexander. California is adequately set up by law to enter into urban planning with Federal assistance and projects will soon be activated there.

The Texas Legislature has provided by resolution at its last session in January 1962 a study committee on the border planning problem. This group has been appointed by the governor, the lieutenant governor and the speaker of the House and will have recommendations to the next session in January 1963 for revisions in present Texas statutes to provide for urban planning for large metropolitan areas with Federal assistance, which is not possible under existing laws for cities over 50,000 in population.

Activity at the moment in the Juarez-El Paso region is at fever pitch. The El Paso International City Association, Inc, has been officially organized for several weeks now and has as its major objectives the creation of a foreign trade zone for the two cities, an international cultural exchange program, an international university, an international trades fair and a convention center that will be coordinated between El Paso and Juarez for the benefit of both. The citizens of the two cities are having frequent meetings to coordinate their ideas in the very best spirit of international friendship and respect.

The Washington Center for Metropolitan

Studies under Frederick Gutheim hopes to begin very soon a demonstration project entitled "A Social Framework for Physical Planning in Communities on the Mexican-American Border." These studies will be conducted through consultation with and the resources of the great state universities of the border states. The findings of these statistics will be released for use in the comprehensive physical planning of the border region as it develops.

Eventually, it is hoped that official government status may be achieved in the United States for border planning under an agency such as the present International Boundary and Water Commission. This particular agency of the State Department has been in existence for more than forty years and has accomplished great benefits for both countries in the mutually agreeable adjustments of boundary lines and the allocation of water through dams, canals and controlled diversionary systems. Each official from the commissioner down in the International Boundary and Water Commission has an equivalent counterpart on the Mexican side and they have worked quietly and successfully together for many years.

The objective of the architects of the two nations is to encourage the establishment of an International Commission for Border Development at the Federal level, with state and local working commissions set up in each area to actually carry out the realization of the program from grass roots. The international group would be the counselor and referee from the national level which is mandatory in any international planning project. The Mexican and American counterparts of the commission would resolve all problems of an international nature. It is possible that under the climate of most friendly relations that exist today such disputes as the fifty-year-old "Chaminal" problem may be resolved amicably.

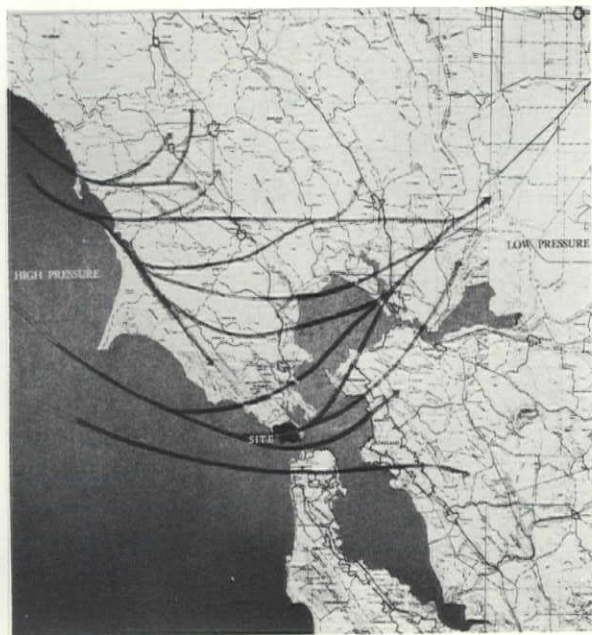
From all of the activities now in progress on the border, soon we shall see order and plan to the social, economic and physical relationship of communities that are one in history, climate, geography and resources. From the present day-to-day cooperation created by necessity of the moment in public health, police protection, traffic and commerce, which is good and certainly collaborative in the usual exchanges, we can develop all of these contacts in the future according to careful planning and understanding of each other and build a zone of mutual benefit to those who live and work in the international area.

Let us as architects consider the Rio Bravo and the boundary line as an axis and not as a line of regional division. ◀

Man's Use of Landform

by Donald C. Royse

*A Study of the Possibilities
of Large-Scale Earth Movement
by Nuclear Blasting*

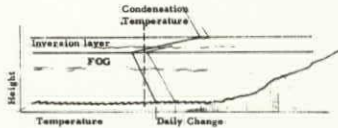


► This project, part of a bachelor's thesis at the University of California, grew out of a study of land-forming which its author later pursued on an AIA Fellowship in Europe. It develops the premise that the large-scale movement of land can contribute to the real improvement of the environment, rather than solely to the obliteration of the earth's features. Bulldozing and especially techniques of controlled nuclear blasting being developed at Livermore, California, were investigated and applied to the tip of Marin County, directly across the Golden Gate from San Francisco. This bare, hilly land, fifteen minutes from downtown San Francisco, is still in the hands of the military, largely because the wind howling up its valleys from the Pacific, and a thick summer blanket of fog, render it almost uninhabitable. Wind and fog studies were made with anemometers on the site and in an improvised wind tunnel where dry ice circulated.

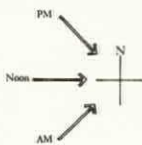
Moving a mountain blocks the wind and fog, and renders the area warm and sunny, like the "banana belt" of Sausalito, which lies on the bay side of the peninsula. Other land movements create a bowl capable of being economically ringed at the top with a freeway combined with automobile storage, and with a loop off the proposed regional rapid transit system. From this ring inclined elevators reach hillside housing whose density is carefully related to the slope; it provides for 400,000 people. At the bottom of the bowl, a system of parks and a small boat harbor in the lee of the moved hill flank a commercial area where transportation systems intersect, and the new land-forms focus, to increase a sense of community. ◀

Location near the center of a rapidly-growing metropolitan area makes Marin a logical site for high-density urban housing. As a place to live, the following weather conditions make it undesirable:

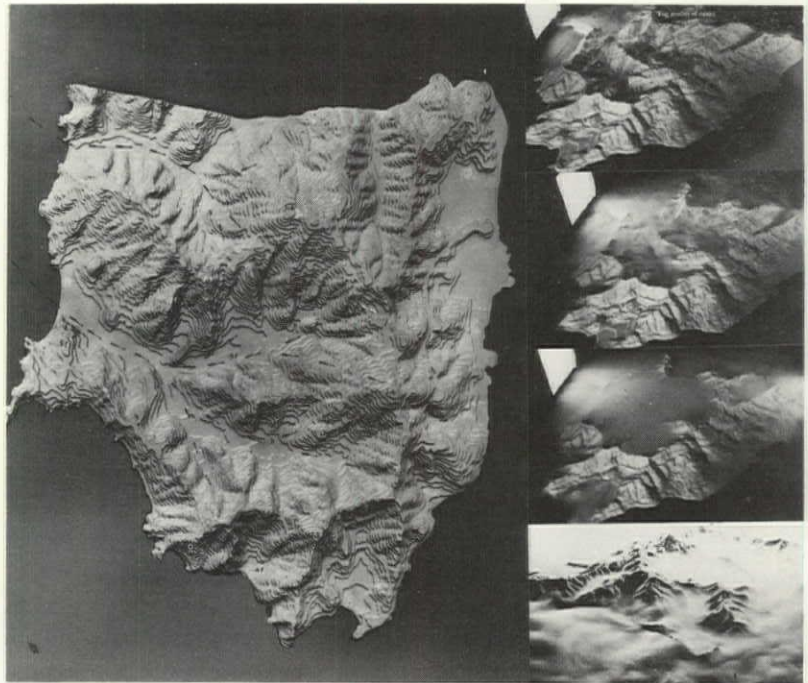
Fog formed by the passage of saturated air over the cold surface of the ocean is carried landward by the prevailing westerly wind.



Wind during the summer months is strong, steady and exhibits the following daily changes of direction:



Topography channels wind and fog, determining local weather conditions in the following ways:



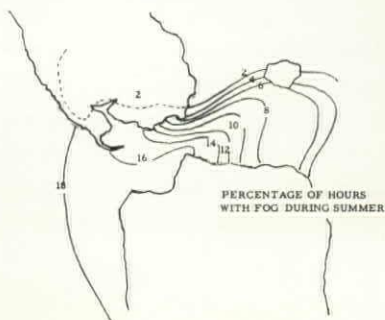
Existing landform

The technology of today suggests the feasibility of using nuclear power as an energy source for moving vast quantities of earth economically.

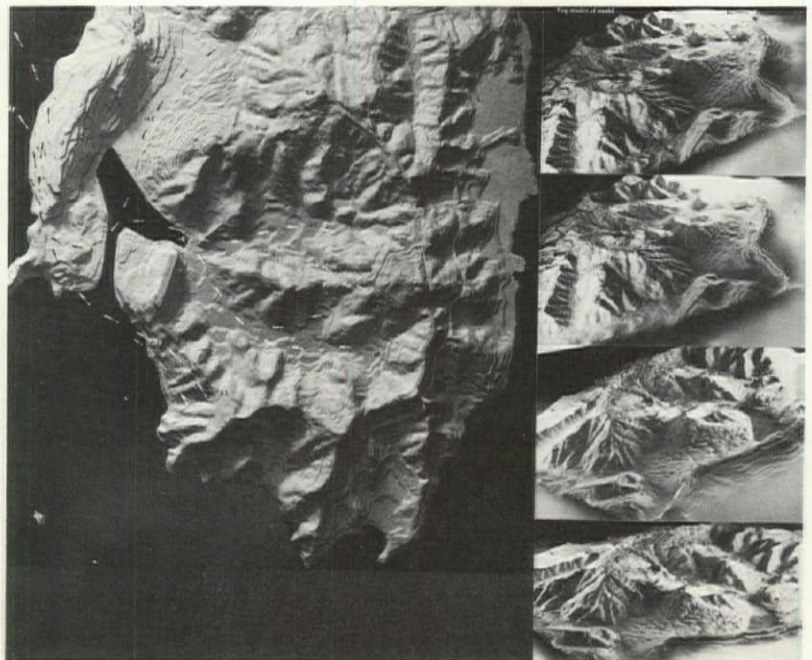
Considerations:

- Radioactivity—Clean blasts are attainable
- Air Blast
- Seismic Effects—Small blasts are indicated
- Economy—Enormous, perhaps one-fourth conventional methods

The man-made mountain deflects fog and marine air from the living area and changes the percentage of foggy hours from 18% to 2%.



Altered landform



Habitation of the transformed site would derive its physical form from the following considerations:

OCCUPANCY

The development would be primarily residential. San Francisco would remain the major urban center and area of employment.

TOPOGRAPHY

Fitting the city to the hills is determined by slope and elevation. A distinction is made between man-made and natural hills.

DENSITY

A density of 120 persons per acre would yield a total population of approximately 500,000 people. High density reduces the cost per dwelling of land movement and development.

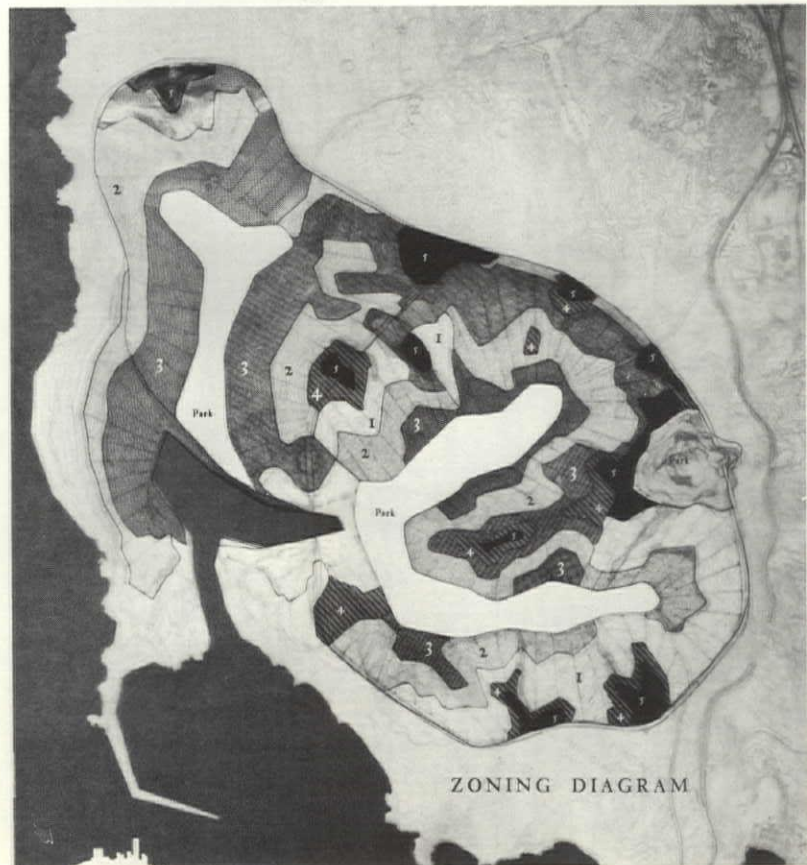
CIRCULATION

Circulation is a simple, efficient system designed to unite the development functionally and visually.



Site plan

Zoning diagram



Density is to be maintained by zoning regulations which control both the minimum and the maximum density. Ninety per cent of all horizontal surfaces must be usable. The following regulations would control the general configuration of building and site relationships:

ZONE	0	1	2	3	4	5
UNITS/ACRE	35	45	60	80	120	
SLOPE						
PUBLIC OPEN SPACE						
PRIVATE OPEN SPACE						
HEIGHT REGULATIONS (Stories above ground level)						

Elements of the circulation system within the site:

HIGH-DENSITY HOUSING

The automobile is excluded from this area. Money which would otherwise be spent on a street system would go into development of a network of inclined elevators.



INCLINED TRANSPORTATION

Inclined elevator system affords pedestrian access to vehicular transportation arteries. Services are also accommodated by this system.



RAPID TRANSIT SYSTEM

Rapid transit coincides with upper ring of freeway and links with proposed area-wide system.



FREEWAY SYSTEM

A high-level ring and loop and three low-level loops serve the entire area. They connect at the commercial center.



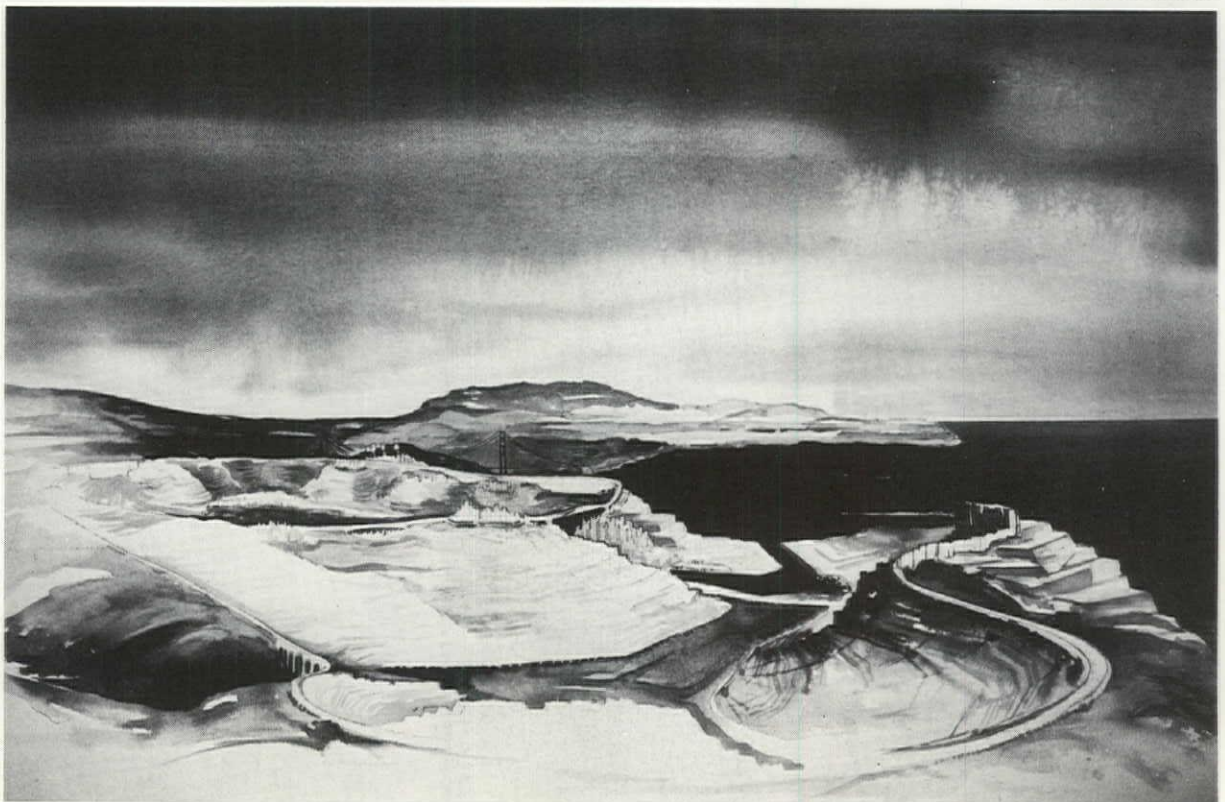
AUTOMOBILE STORAGE

Automobiles are stored in structures related to the freeway system.



Circulation within site

View over site toward San Francisco





Committee on Religious Buildings
Kenneth E. Richardson AIA, Chairman

A Guide for Planning Lutheran Church Buildings

by E. A. Sövik AIA

Another in the series of reports prepared by the AIA Committee on Religious Buildings intended as guides for the architect faced with planning a building for a religious faith other than his own

► The Lutheran branch of the Christian church traces its origins back through history to Pentecost as do other branches of the church, but its distinction as an institution begins in the sixteenth century and its name derives (against his wishes) from Martin Luther, whose initial act in proposing a series of doctrinal discussions in 1517 was followed by the profoundly important events of the Reformation and Counter-Reformation. In the part of Europe which is now Germany the many principalities became Lutheran or remained a part of the Roman Church according to the convictions of the rulers who governed them. The Scandinavian countries together with relatively small numbers of people in France, the low countries and the Eastern European countries followed the German Reformer.

The earliest group of Lutherans to come to this country were Swedes who settled in what is now Wilmington, Del, in 1638. Before the American Revolution a great many German Lutherans had settled in Pennsylvania and the neighboring states, and they became the ancestors of a large number of the eight million Lutherans now in this country. Among them the first Lutheran Synod—the Ministerium of Pennsylvania—was formed in 1748. The nineteenth century and early twentieth century immigrations from Scandinavia and Germany to the Midwest and Northwest provided other concentrations of Lutherans.

Lutherans in this country have been divided into as many as a score of separate bodies. These divisions have been partly the result of national origins—Germans, Swedes, Danes, Norwegians, Finns and other national groups having maintained their identities—and partly the result of doctrinal differences. With the passage of time the differences based on national background have all but disappeared. Strong pulses toward unity have been active in recent years and mergers have taken place which have resulted in American Lutheranism being mainly composed of three bodies. These three bodies, moreover, cooperate in many ways. Furthermore, several of their leaders are prominent in the Ecumenical Movement.

The Lutheran Reformation may be said to have been conservative in comparison to those churches whose roots are in the Calvinist (Reformed) and free church traditions. Lutheran liturgical practices, for instance, follow the pattern of the ancient liturgies; the episcopal form of government has

The Profession

been characteristic of European Lutheranism, and perhaps surprisingly, the institution of monasticism has never been completely abandoned.

Basic Beliefs

The heritage of Lutheranism has provided patterns of worship, habits of thought and patterns of activity which have tended to keep Lutheran-

ism distinct from other churches. The form of worship, as has been observed, is what is called liturgical. Lutherans would generally say that liturgical patterns make it possible for people to worship *together* in church rather than as a group of individuals, and most Lutherans treasure the idea of a fairly consistently ordered service of worship because they are concerned with *common* worship. But there are no rigid rules which insist on uniformity.

Although almost all Lutherans observe the church year and use candles and other ancient symbolic devices, a few do not, and there is wide variety of usage. Although almost all pastors wear vestments, a few do not. Although almost all congregations follow the liturgy of the service book (there are two commonly used), there are many congregations who modify the service and a few who practically write their own or follow a free and changeable pattern. Lutherans have traditionally used hymns and chorales of great vigor and restraint and have a rich heritage from Germany and Scandinavia. They have a rich heritage of organ music and other instrumental and choral works. Despite this, great extremes and wide varieties in musical usage manifest themselves. In most other aspects of liturgical practice there is similar freedom and variety.

Lutherans have more parochial schools than any church other than the Roman Catholic, but these schools are by no means general and there are strong differences of opinion regarding this educational policy. Traditionally Lutheran Sunday schools have centered around the teaching of the Small Catechism, usually involving a great deal of memorization. This type of instruction has ordinarily required provision for small classes. But there have been movements away from this type of concentration and a great deal of variety is now apparent.

One might gather from these comments that variety characterizes Lutheranism more than anything else. And it is not without reason that some Lutherans say there is room for any prejudice or preference in Lutheran practice. There are, however, certain commonly held principles or theological motifs around which Lutherans rally (without, however, claiming exclusive rights to them).

The first of these is called the material principle of the Reformation and is stated "justification by grace through faith." Lutherans speak of the "law" as that Word of God which asserts that men are by nature sinful, are therefore alienated from God and cannot by their own reason or strength meet the demands of a righteous God. The "gospel" is that Word of God which offers reconciliation through Jesus' life, death and resurrection. The one who accepts this offer is, in

Lutheran language, "justified by grace through faith." Thus God's attitude, activity and initiative (ie, the grace of God), rather than any human virtue, is the basis on which the church is built. The ethical life is not a condition of salvation but a response to God's gift. God's initiative continues in the life of the church; therefore, worship is an activity wherein God reveals Himself and mediates His grace. Man responds with thanks and obedience.

This principle has relevance to the architect in several ways. It implies that a church ought to be the sort of space where men are in an expectant and receptive frame of mind. It would be proper to say that the greatest tribute men can bring to the encounter with God is to bring nothing. It is this thought that has led to the phrase "holy emptiness." Furthermore, although the church building may be the threshold of heaven, it is, like the stable at Bethlehem, a part of this earth. Men do not cross the threshold; God does. So the church building should not aspire to be a celestial palace.

A further development of this "material principle" asserts that there are three "means of grace": the Word of God, the Sacrament of Baptism and the Sacrament of the Lord's Supper. These sacraments are "dominical" in the sense that they were established by Jesus, and they are not simply symbolic rites or optional ceremonies. Lutherans baptize infants and in practice use a font, but have no objection to immersion. The font is logically in a place where the assembled congregation can witness the reception of a new member into their community through baptism. This does not necessarily mean that it must be located in "front," but it is reasonable that it should be prominent.

The Sacrament of the Lord's Supper, like the other sacrament, is considered to be an act of God for men, and the word "communion" is most frequently used because it implies the establishment of a union between the Lord and His followers.

Architecturally the table or altar (altare in the early church meant *high place* and was not the equivalent of the pagan altars of sacrifice) is logically a prominent piece of furniture. But its form or placement is not a matter of rule. Logically, it is not more important than the symbols of the other two means of grace and is not a shrine, because the Presence of God, in Lutheran thought, cannot be localized.

The sacrament has in Lutheran practice been administered in various ways, but always both the bread and wine have been given. In some instances the communion was given in a space separated from that in which the other parts of the liturgy were held. In other instances the com-

municants knelt about the altar-table. In some they moved in procession past the altar-table receiving the bread at one end and the cup at the other. Some Lutherans still receive the sacrament standing. But usually the communicants kneel at a communion "rail" to receive the sacrament. This rail is considered to be an extension of the table, or an elongated prayer desk, not a fence, and is properly so designed.

Another of the theological motifs around which Lutherans rally is called the "formal principle of the reformation" and asserts the "sole authority of the Word of God." To Lutherans the Word of God is the "speech-act" of God as mediated in the scriptures and the sacraments. It is not equivalent to the scripture, but is not separate from them. It is constitutive of the sacraments and is authoritative theologically and religiously. This means that ecclesiastical tradition must not supplant the authority of the scriptures. It does not mean that tradition is not of great value in the understanding of scripture; indeed, tradition is unavoidable.

Architecturally, this implies that the symbol of the Word and the place from which the Word is proclaimed—the pulpit—is like the font and the altar-table, an important thing. Its design should logically imply authority and vitality. Its location or design, however, is not a matter of rule.

A third theological motif is the ecclesio-sociological principle of the Reformation: "the priesthood of all believers." This asserts that all Christians as members of Christ's body stand before God without an intermediary because they participate in the priesthood of Christ; that the Word and Sacraments belong to the community, and the ministry of the gospel is the function of the community because it is the body of Christ the Priest; that faith is the all-important sacrifice and this is the "office" of all believers. The position of the clergy within this universal priesthood is that of one who serves an office which God has given the whole church. His calling to this office, which ministers the Word and Sacraments, is confirmed by the community which selects and ordains him.

This is relevant to the architect because it implies that within the church building there is no space which is "holier" than another. In a sense there ought to be no nave in a Lutheran church; it is all chancel. It ought also to be said that what makes a church holy is not the presence of certain objects or symbols, nor an act of consecration, but the presence of God in Word and Sacraments creating a people of God and dwelling among them. It is a profoundly difficult but important thing that the church building should not seem to be holy in itself but should seem to be a habitation for holy events and holy men.

Two further observations may be fruitful to

the architect. One relates to the term "means of grace." It is proper and important to assume that God speaks to men through means other than the scriptures and that the word "sacrament" can be used otherwise than in connection with the dominical Sacraments. God presumably can use any medium of communication, including art forms, to point to the Truth. Lutherans would assert, however, that art forms in a church would derive their value because of the consistency of their content with Truth as proclaimed in Word and Sacrament. If the word "sacrament" is defined in Augustinian terms as an invisible grace ministered through a visible form, any meaningful work of art, including architecture, may be "sacramental."

The second observation is that Christian belief (perhaps any religious faith) is full of paradoxes. The architect who designs a church cannot be afraid of these, but must work to express these paradoxes without weakening them.

Church Government and Sequence of Authority

It has been noted that among European Lutherans the episcopal type of church government is characteristic. This is not true in America. Here a congregation owns its own property, selects and calls its pastors and generally controls its own affairs. Its relation to the larger body is by membership as a congregation in the larger association. This larger church or synod is usually divided into geographical entities and its duties are generally to carry out those functions (such as publishing and operating institutions) which individual congregations cannot perform. The presiding officer of a nationwide body is called a president, and smaller geographical divisions have their synodical or district or conference presidents. These officials are roughly equivalent to European bishops.

Among the agencies of the larger bodies are two with which the designer of churches is likely to be concerned. The first is the board or commission concerned with the establishment of new congregations in this country. Such an agency is likely to be named the Board of American Missions or something similar, and it will have control of the funds which the national body has allocated to help new congregations in building programs. Such agencies are not primarily concerned with architectural problems, but they are very much interested in helping the new congregations avoid planning mistakes, and their experience has brought them to a point where they can be very helpful. Like any other bureaucracy they are wary of extremes, but there is none of them which is not interested in the future and none of

them which presumes to be an architect. The other type of agency provides advice to building committees of established congregations. Such service is not mandatory for the congregations, and many congregations do not avail themselves of it. An architect may obtain from the pastor the name of the agency of the synod to which he belongs.

The government of individual congregations in this country generally follows the democratic patterns. This final authority is the whole adult community whose presiding officer may be the pastor or an elected layman. A church council is also elected to provide general control and direction. The members of the council, including trustees, are called deacons. Usually there are other boards and committees responsible for special areas such as education, music, missions, women's work and so forth. The body with whom an architect will have most of his dealings is usually a building committee, but almost always final decision on projects of great importance rests with the congregation as a whole. Much can be said against leaving decisions on architecture to a large and unschooled body of people, and there are certainly hazards and difficulties. On the other hand, it is important in the general life of a congregation that the sense of responsibility and the understanding of the issues of church design be spread as far as possible among the people.

Buildings

The history of church architecture among Lutherans is one of great variety. It would probably be correct to say that the conservatism of the Lutheran Reformation with respect to form was such that the implications of Lutheran thought have never been consistently expressed in Lutheran buildings.

In contrast to the Zwinglians and Left-Wing Reformers, the early Lutherans as a rule were not iconoclasts but used the existing churches without many changes. There were significant exceptions, however. Pulpits became more important than in pre-reformation times. Luther expressed a preference for the *vers populum* position in the rite of the Lord's Supper. The baptismal font was often moved to a place in or near the chancel. The "choir" was not reserved for clergy but was often used as a communion room where all communicants gathered for the sacrament, other parts of the service being conducted in the nave. The singing choir was characteristically situated in another part of the church rather than in the medieval choir.

In the post-reformation period the new churches took in certain areas, an axial scheme with choirs

in the "west" gallery and the three units of ceremonial furniture all situated on the central axis at the "east" end—font on nave level at the head of a center aisle, altar-table central in the chancel and pulpit above it.

This scheme was, however, by no means generally used. Hall type churches without a separate chancel space, Greek cross plans, octagons and churches which were broader than they were deep were also built. So one cannot appeal to Lutheran tradition to supply a typical form.

Lutheran churches in this country are also various. Those who built them were guided on the one hand by their memories of the European churches and on the other hand by strong impulses to "Americanize." Many American Lutheran churches are, therefore, heavily influenced by the patterns of American Protestantism whether meeting house or "theater" types. A third influence has been strongly apparent: that of the Oxford and Tractarian groups who sought inspiration in pre-reformation liturgy and architecture.

The modern movements in architecture have found the Lutherans generally more receptive than many major bodies. In Germany, for example, Otto Bartning (d 1959) produced significant work in the twenties and thirties. He also wrote extensively, but, unhappily, his works have not been translated. In this country there is currently a great interest in matters relating to worship, in both the liturgical and the visual arts. The interest has shown itself so far largely concerned with historical study; this is fruitful soil, however, for creative ventures.

The foregoing has implied that there are few if any rules which apply generally to Lutheran churches. This is true. But individual congregations are likely to have, nevertheless, distinct prejudices and opinions arising from their particular and limited traditions. The architect must, therefore, undertake two difficult obligations unless other leadership is present. One is to help the local groups to see themselves in the larger context of Christian thought, tradition and practice. The other is to restrain himself from assuming that the lack of a prescribed pattern sets him free to do whatever his whims may suggest.

There is, instead, a severe burden imposed on the architect to immerse himself in a study of Christian thought and practice so that the form of the church building will be a faithful image of ideas and spirit. If it is true that the Lutheran Reformation was never realized in terms of architecture, it is now time to accomplish this (realizing that our concern is the twentieth century, not the sixteenth). It can only be done if architects will enter into an understanding of the church more perfectly than they did in earlier centuries.

Building Requirements

A. *Worship*

The church itself has in general been described. Some words should be added about the accommodations for a choir. Ideally, in the Lutheran mind, there should be no need for a choir apart from the congregation. The inadequate musical capacities of the average congregation, however, bring about the need in almost every church for the separation of a group of singers who can lead the congregation. A second function—that of singing special music such as anthems and cantatas—is then a possibility, and these events become “propers” in the liturgy.

Most Lutherans would agree that the choir ought to be thought of as identified with the assembled people rather than “opposed” to them. Therefore, the pattern used in the early basilicas (where the choir was located in the nave and separated from the other worshippers only by a rail) might be considered ideal. Practical considerations such as the relationship to the organ, other acoustical difficulties and a variety of factors generally militate against this solution nowadays. But no common rule can be established. Instrumental music is frequently used independently or to support the choir, organ and/or piano.

If the choir is vested, as most are, provisions for a robing room or area is necessary. Since processions may be a part of the liturgical action, the location of the robing space must be considered in terms of this sort of circulation. It should not be assumed that a processional must be toward the “front” of the church since if no part of the church is “holier” than another, the direction of movement within the room is not to be of symbolic significance during a processional.

Choir rehearsals are usually conducted in a place other than the worship room for convenience sake (often they take place during the time when the church is filling up with worshippers). Logically, this rehearsal space (which may also serve other purposes) is convenient to or contains the vesting area and storage for robes, music, etc.

Other ancillary spaces are also normally built. The first is the narthex which serves as a weather lock, sound buffer and transitional space. Often a guest register, bulletin and tract rack are provided, and cloak space is associated with this space where the climate commends such a facility. To think of this space as a means of insuring the privacy of the worship space is to misunderstand it. In the days when the church operated as a secret society it may have had this function. In this day the church ought to meet the man who approaches with both the compassionate invitation, “Come ye who labor,” and the imperative “Seek ye the Lord!” but

not with an entrance which seems like a barrier.

A room called a vestry is usually provided as a place where the pastor and others may prepare for the service. Lutherans, like many other denominational groups, disavowed compulsory confessions by one Christian to another, but many Lutherans encourage voluntary confession. When this is the case the vestry is sometimes equipped for such purposes. Another space called a working sacristy serves as a storage and preparation room for liturgical materials. Many churches combine these two spaces or consider that the pastor’s study may serve as vestry. In this case the single room is called simply the sacristy.

These spaces in practice are usually located adjacent to the chancel area for convenience sake. There is both reason and precedent, however, for placing them elsewhere. The reasons are threefold: the provision for a special entrance to the chancel for the clergy is too much like the entry of actors from the wings of a stage, and it is important to emphasize the difference between the liturgy and a theatrical performance; the elements of the Lord’s Supper are considered to be an offering of the community, and this circumstance is demonstrated more effectively if they are brought to the table from the community rather than from “backstage”; if the vestry is used as a place where pastor and parishioner can meet it is often more convenient to relate this room to the narthex or nave. These reasons are not necessarily conclusive.

The church should be planned for evening as well as daytime use, and, as far as possible, allow for changes in liturgical rubrics as time passes.

Large Lutheran churches often build chapels which find their justification in providing a worship space for smaller groups, a reasonable environment for small wedding and funeral ceremonies, and a place for private devotions. The nature of such a space may logically vary from that of the larger church through accenting the last of these purposes. The service is in one case the common prayer of the members of the body of Christ where all are properly aware of their fellows and the worship has an extrovert character; in the chapel the space may properly suggest seclusion, retirement and introversion—the “upper room” motif—which is also part of the Christian piety. The provision for such a private place is often important in urban areas where, though loneliness may be common, privacy is hard to find.

If the sacraments are to be celebrated, the room should properly have an altar-table and font. If they are not, the introduction of sacramental furniture simply as decorative and symbolic motifs demeans their importance, and other symbolic devices are most appropriate. Provision of a sacristy is proper where the sacraments are celebrated.

B. Administration

Convenience almost always dictates that there should be in a church complex space for the pastor to study and for the administrative and personal ministry of the staff. A desirable minimum is a two-room suite, one of which should be private. Churches with large staffs are so variously organized that no general rules can be made. There is reason, however, to comment that an architect ought to beware of considering these rooms in the same frame of reference as the executive offices of a commercial establishment. Certain similarities in function are obvious; but there is a real difference rooted in the fact that the church ministry are servants, not executives, and anything ostentatious, overpowering, slick or lacking in integrity is out of character. A library where parishioners can read and study and from which books can be borrowed is also a desirable space. Size and methods of control vary widely.

C. Education

The long tradition in the Lutheran church asserts that the responsibility for religious education is in the home. The rite of confirmation, which takes place when children are twelve to fifteen years old, however, follows a one- or two-year period of instruction almost always conducted by the pastor. Practically every Lutheran congregation would like to provide a space where this important teaching can be done effectively. Usually it is a weekday class of not more than thirty and preferably fewer. Typically, only confirmed children and adults receive the Lord's Supper, but this is not necessarily so.

The other educational work done intramurally has developed in recent generations. Because it follows such a varied pattern, and because the issues related to it are currently in such flux almost nothing can be said which has any general validity. The possibilities include weekday classes, Sunday school, summer program, classes for small groups taught by volunteer instructors, programs conducted according to the principles of modern educational theory, classes for several whole families together, graded sequences, and many combinations and modifications of these. The space standards used for public schools and those supplied by the National Council of Churches may be useful. It would be generally agreed that religious education is not "play church," and that miniature chancels and altars are not appropriate.

D. Fellowship

Lutherans assert that it is not social fellowship but the Word and Sacraments which are constitutive of the church. Their concept of the lay voca-

tion is to bring the influence of the gospel into the life of the world. This concept of vocation implies that churches should build as little as possible of "fellowship" space, not because they want to save money but because they see their life as in the world, not separated from it; and it implies that whatever is done intramurally is directed toward the support of the ministry of Word and Sacraments, rather than toward the support of a social community separated from the world.

Despite this, there are usually compelling reasons for providing some space for fellowship and recreational activities in the church complex. These are best seen as means of introducing the members of society at large into the religious community, as means of strengthening the religious commitment of members, as means of community service and as quasi-educational functions.

Usually provision is made for a lounge where informal gatherings can be held, the size depending on the organizational pattern in the congregation. Associated kitchen facilities vary. A large fellowship hall with related food service facilities for dinners, receptions and various programs is also a normal requirement. Again its size is dependent on the program. Provision for spaces for youth work, nurseries, coordination of charitable work and other functions will depend on the congregation's particular concerns and opportunities. Most often all these spaces must also serve the educational program, and since the program of activities can be expected to vary during the life of the building, flexibility of use is of great importance.

Glossary

Chancel: That part of a church building which contains the sacramental furniture and from which the clergy leads the worship.

Font: The container for baptismal water.

Liturgical Worship: Patterns of worship which follow a fixed form common to a church group, repeated in regular sequence and deriving from ancient usage. This contrasts with non-liturgical worship which is comparatively free from tradition and is dependent on personal and local preferences and is not necessarily repetitive.

Narthex: A vestibule, foyer or entry space.

Nave: The space in a church in which the laymen assemble.

Processional: The ordered movement of a choir and other leaders of worship into their places at the beginning of a service. The *Recessional* is the reverse movement at the close of a service.

Propers: Those elements in a liturgical worship pattern which change from Sunday to Sunday, such as the Scripture lections.

Synod: An organization or council established and supported by many separate congregations. ◀

NCARB Regional Districts?

by G. Stacey Bennett, AIA
Chairman, Washington State Board of Registration
for Architects

Some forty years ago the National Council of Architectural Registration Boards was founded for the purpose of establishing and promulgating uniform standards for architectural registration, uniform examinations and reciprocity procedures between the various states. The membership of the NCARB comprised the members of the duly appointed registration boards of the states, territories and districts of the United States.

During the past forty years a great deal of progress has been made by the NCARB in the accomplishment of its basic objectives. Practically all of the states, territories and districts comprising its membership have adopted to some degree, uniform requirements for the registration of architects, uniform examinations and reciprocal licensing.

This progress has, however, been severely hampered and complicated by many basic factors, some of which are: the wide differences in requirements and procedures for architectural registration established by legislative statutes in individual states and districts; the lack of established policies and procedures within the NCARB itself for the day-to-day liaison between its member boards; and the great increase in applications for architectural registration and reciprocity in some areas of the country which has pointed out the need for revisions in the procedures and methods used for obtaining NCARB Certificates.

In the past years it has been the practice of NCARB to hold one meeting a year of its total membership to transact its necessary business. It has been very discouraging to many state boards to attend this one meeting in the hope that progress in the solution of common problems could be accomplished and to find that there was not enough time during the two days allotted to the meeting to even introduce and discuss these problems.

The committee structure of the NCARB operates efficiently and well. The opportunity for a close working relationship and liaison between its member boards leaves much to be desired, and the need for revisions in the procedures for compiling

and certifying architects' qualifications for NCARB Certificates are very apparent.

In some regional areas of this country, such as the western states, tremendous growths in population have occurred. The pressures built up in the architectural profession due to delays in reciprocal licensing and registration caused by the lack of interstate communication and uniform procedures can well be imagined.

A critical analysis of the above facts indicates that a clear and direct solution is possible: the establishment of regional NCARB districts, a "grass roots" organizational pattern that has been used for many years by such professional organizations as the AIA, the AMA and others.

The organizing of NCARB regional districts would provide the machinery for state boards within its jurisdiction to communicate on a grass roots level and to establish and determine local problems involved in obtaining uniform legislative statutes, registrations and reciprocal procedures. It is a proven fact that legislative action necessary to raise or equalize the professional standard within any one given state can be directly influenced by those standards existing in neighboring states and by concerted action by the profession on a regional basis. It is also a proven fact that problems of uniform standards in registration examinations and reciprocities may be achieved by regional activity of state boards.

A case in point is the action taken by the states of Nevada, California, Oregon and Washington in 1961. These states have had tremendous population growths and thus a corresponding increase in the number of applications for architectural registrations and interstate reciprocity. Inasmuch as the number of applications for registration examinations and interstate reciprocity within these states equals more than the rest of the United States combined, the pressures built up within the profession, due to delays in reciprocity and registration brought about by lack of completely uniform standards, need not be enlarged upon.

California, Oregon, Washington and Nevada, by joint action in 1961, established procedures for a common registration examination to be held at the same time in each state in June of 1963. Nevada and California have already held one common examination this year with marked success. Further, interstate reciprocity, within the

framework of NCARB, has been eased and simplified by the simple expedient of regional communication between the state boards of this area.

It is significant that for the first time in some forty years one of the basic objectives of NCARB—uniform registration examination—has been accomplished by the regional activity of a group of state boards in one year's time!

A survey of other state boards conducted at the 1962 annual meeting of the NCARB in Dallas indicates that twenty-two states contacted are vitally interested in this matter. Negotiations with the states of Alaska, Idaho, and Hawaii have been initiated, and it is probable that by 1964 seven states in the western area will hold common registration examinations.

In the interest of service to the profession, the argument for organization of regional NCARB districts is overwhelming, and in this light the NCARB Committee on Advance Planning recom-

mended at the Dallas convention that a special NCARB Committee be formed to investigate and report on the feasibility and method of establishing such districts throughout the United States. This committee has been appointed and the study initiated.

Revisions, simplifying the procedures for compiling records of architects' qualifications for the use of state boards, have been initiated by the board of the NCARB.

The adoption of simplified procedures for acquiring a NCARB Certificate by architects, the organization of regional districts of NCARB and the establishment of closer relations with other professional organizations will accelerate and amplify the services provided the architectural profession by the National Council of Architectural Registration Boards, in keeping with the growth and scope of the architectural profession in our times. ◀

The Fifty-Sixth Annual AIA Convention

An Excerpt from the Report of the Kansas City Chapter Delegates

Presentation of the Gold Medal to Henry Bacon, Washington, DC, 1923. Sent to the Journal by former-President Phil Will, with the comment "What they did then makes us look like unimaginative sissies!"

► Friday, the last day of the convention, dawned with gray skies and a promise of more rain. . . . At half past six that evening some four hundred delegates and guests took places assigned them at tables arranged in a large tent which was erected on the strip of ground separating the fountain pool and the reflecting pool before the Lincoln Memorial. The diners were provided with official robes of lavender, yellow and orange which they found at their seats. The colors and standards of the organizations were massed at the ends of the tables.

At the speakers' table were the officers and past presidents of the Institute, the guest of honor, Henry Bacon, Jules Guerin, Royal Cortissoz and others honored in the arts. Music was provided during the banquet by the United States Marine Band.

At the conclusion of the dinner, when President Faville rose to speak and there was silence, it was noticeable for the first time that a steady rain was falling outside, but preparations had gone so far that Howard Greenley's program proceeded without change in spite of the weather.

The mystic beauty of the final episode of the convention will surely remain for all time in the

memory of those of us who were privileged to witness it. Under the canopy of fine rain the concentrated effect of brilliant color was diffused and softened and the effect was beautiful beyond description. It must have been especially so from the viewpoint of the spectators, who were massed under dripping umbrellas flanking the wide approaches to the monument. The procession advanced in almost complete darkness, the robed standard-bearers rather suggested than revealed in the reflected radiance of a spotlight which was directed upon the burnished sail of the Barge of Honor in the center of the lagoon.

As the officers and Mr Bacon stepped ashore at the base of the monument and approached the rostrum at the top of the steps, the colors and standards were suddenly massed behind them in the full blaze of varicolored light, and followed up the steps to form a hollow square of glittering splendor against the severe classic beauty of the facade.

The formalities of the introduction of Chief Justice Taft by Mr Faville, of the introduction of President Harding by the Chief Justice, of the speech of presentation by the President, and of Henry Bacon's response, are incidents which left impressions befitting their extraordinary significance, but the splendor of the final tableau will remain always a memorable conclusion to a most delightful and inspiring experience. ◀



URBAN DESIGN:

THE ARCHITECTURE OF TOWNS AND CITIES

FIRST IN A SERIES OF ARTICLES

Historic Precedents in the Design of Cities

Throughout history man has sought to gain greater control over his physical environment, according to the needs and preferences of his times. His attention has been largely focused on the shaping of his cities. His successes, while sporadic, are marked by magnificent levels of achievement and artistry.

Today we are witnessing a rebirth of interest in the art of designing cities. As Carl Feiss FAIA, AIP, has recently written, "A major conversion of architectural practice is now taking place: the comprehensive architecture of whole communities." This task is as difficult as it is necessary. Healthy cities are fundamental to healthy societies. They are the vital forums of exchange upon which a complex society depends.

This article is the first of several on the design of cities and towns. Prepared under the general direction of the Institute's Urban Design Committee, the objective of the series is to stimulate and inform the architectural profession towards greater effectiveness in urban design by presenting the background, the elements, and the aims of Urban Design—The Architecture of Towns and Cities. The initial article of the series is a history of the great achievements of the design of cities in the past. It traces these achievements from ancient Greece to the pre-industrial nineteenth century city; that is, to the city of our own times.

Approved by the Board of Directors of the Institute as a Supplementary Dues undertaking, the project is being prepared by Paul D. Spreiregen.

Matthew L. Rockwell AIA, AIP, Director of Urban Programs

Urban Design Committee: Arch R. Winter, Chairman; Charles A. Blessing, Carl Feiss FAIA, Harry Weese FAIA, Kenneth W. Brooks; Corresponding Members—Edmund N. Bacon, Nicholas Satterlee, Frederick Bigger FAIA, Henry S. Churchill FAIA, Frederick J. MacKie, Jr. FAIA, Roland Blass, Vernon De Mars, Clarence S. Stein FAIA; Board of Directors' Liaison—George B. Mayer FAIA

Historic Precedents in the Design of Cities

The sunlight in Greece is brilliant and revealing, the air is clear and the landform rocky and hilly. The landscape of Greece is powerfully assertive. Its presence is keenly felt at all times.

To this landscape, Greek architects added temples whose intricate detailing reveals a profound understanding of how the human eye actually sees under conditions of intense light and whose siting reveals a profound sensitivity to the placement of buildings in nature. The Greeks never attempted to overwhelm nature with their buildings. They tried, rather, to assert themselves graciously as another component, and they succeeded. While the temple at Sounion stands high on the headland promontory of Attica announcing itself and the mainland, more often Greek temples were sited so that the neighboring hills were higher. In this way the temples became human parameters in nature—man-made objects which gave human measure to the landscape. It is this sense of human measure which architects have come to call “scale.”

The same was true of Greek city-state towns. They were small and could be seen in a single view set in a background of hills. So were they seen in their entirety from places within the town itself, as one can still see all of modern Athens from the Acropolis.

In the heart of Athens, the Agora, the grouping of the city's special buildings—stoas, assembly halls, temples and shrines—presented a different problem. There, buildings were not seen as lone objects in nature. While nature was very much a part of the scene, since nearby tall hills were very much in view, buildings were seen in close conjunction with each other. The architectural problem of grouping many different buildings together was solved not by a design plan drafted by an architect at a single moment in time, but by an attitude toward the design of public building groups which was held by architects generally and which prevailed for most of the long life of the Agora. That design attitude—the design concept—had several key aspects.

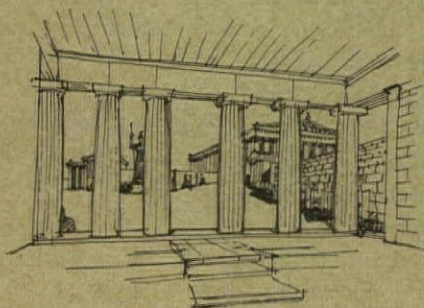
As architectural compositions these groups of buildings were a combination of masses, spaces and paths of movement. The axes of the spaces generally coincided with the paths of movement. This insured the power of the spatial axes to reveal spatial extent. Where a building lay astride a spatial axis, it might be penetrated and the observer free to walk through it. Such was the arrangement of the entrance gate of the Acropolis, the Propylaea. Where a building occurred at a dominating central location, it was complemented by spaces or paths of movement alongside. Such was the case of the Odeion (music hall) in the Agora.



*Temple of Poseidon at Cape Sounion
as seen approaching Attican
mainland on the way to Athens*



*Greek temple at Segesta, Sicily.
Superb example of the Greeks' skill
in setting a building in nature*



Parthenon from the Propylaea

The Athenian architects recognized the importance of carefully considering the massing, detailing and placement of buildings in relation to the spaces in which they were set. The buildings in the Agora, as on the Acropolis, were sited to be seen from their best vantage points, usually an oblique view. These spaces were thus characterized and formed by architecture. In this way Greek architects employed space as an element of architectural design. Building masses were further wedded in visual relationship by the common motif of classical Greek architectural detail. It must be remembered that the sites for major public building groups were often at varying ground levels and that the buildings themselves were of differing sizes and proportions. In the face of these conditions, the collective views of all the buildings were carefully contrived through the understanding of architectural mass, architectural space and the movement of people. With the aid of their awareness of these elements of urban design, Greek architects were able to group diverse buildings on difficult sites.

The plan of the Athenian Agora shows a general mixture of building types in its center as well as on the periphery. Stoas were located at the edges of the Agora. Being long, of medium height (two stories) and architecturally horizontal, they were excellent backdrops. Their horizontality gave a sense of stable repose. A pediment seen outlined against the sky here was balanced by other pediments seen outlined against the sky there, repeating a theme similar to a range of mountain profiles. The buildings themselves were symmetrical, the whole composition being one of dynamic asymmetrical balance in space. Thus, the symmetry of the component buildings maintained a sense of stability in a generally asymmetrical composition.

One may wonder why Greek architects did not achieve as orderly a geometric plan for their whole Agora as they did for their individual buildings. In Athens the answer was that they could not. The Athenian Agora was in existence before the full consciousness of geometry, architectural space and the siting of building masses could affect it as a whole. The Athenians succeeded admirably in creating a balance of irregular parts whose total impression was one of order because the parts were so clear. In Athens they were apparently unable to achieve all that their

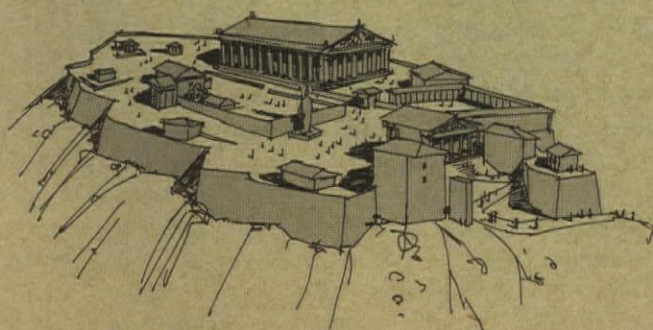


Ancient Athens c 400 BC, showing the Agora and the Acropolis in relation to city's walls and hills

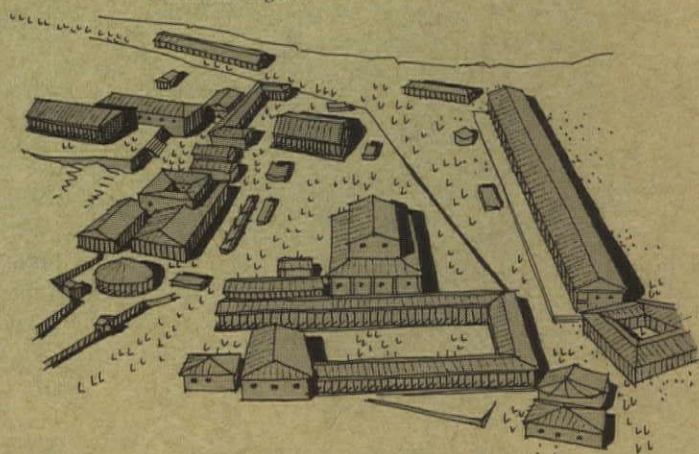


Athenian Agora with the Odeion against background of stoas. In the distance, the Acropolis

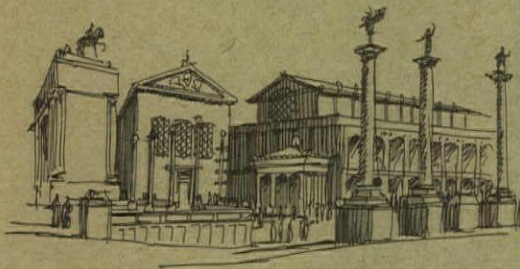
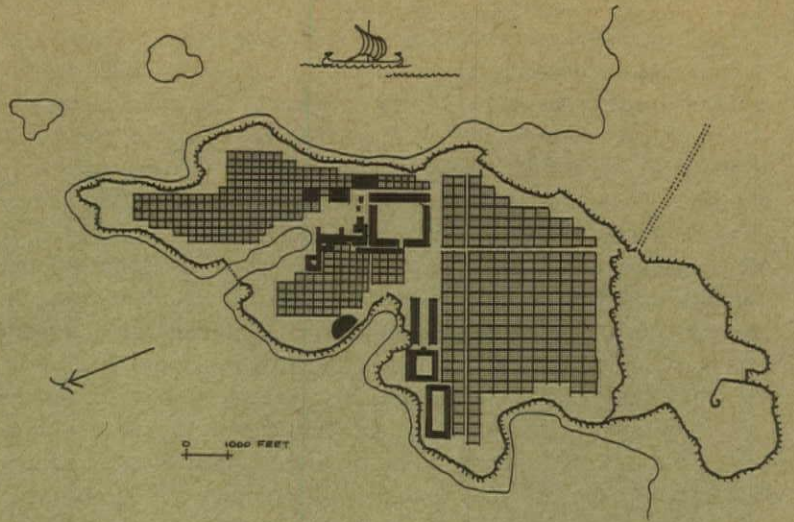
Acropolis of Athens



Athenian Agora



Greek colonial town of Miletos, illustrating principles of Hippodamus, although built before his time

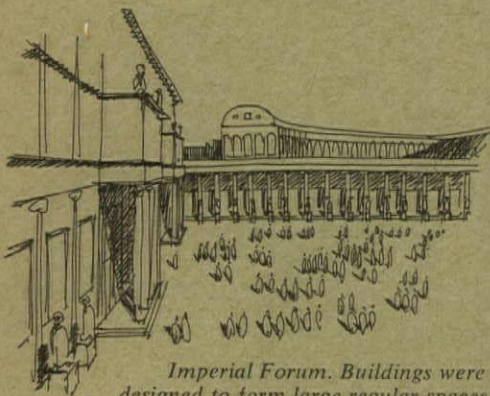


Republican Forum. Curia, or Assembly, is center building

artistic consciousness embraced, but in their colonial cities the opposite prevailed. Here they were working with virgin landscape and were building under strong central leadership.

The colonial cities of Priene or Miletus are good examples: they are quite regular in geometry and extraordinarily well adapted to difficult topography. Their public squares are crisply geometric, well contained, and the principal public buildings well displayed. A masterful balance was achieved between the abstractions of geometry and the realities of siting buildings artfully.

There were other cultures previous to the Grecian which achieved levels of conscious artistry equal to and even surpassing the Grecian in some ways—the Egyptian, for example—but the Greeks are to be cited among those ancient cultures for the extraordinary breadth of accomplishment and consistently high level of performance in their practice of building beautiful cities.

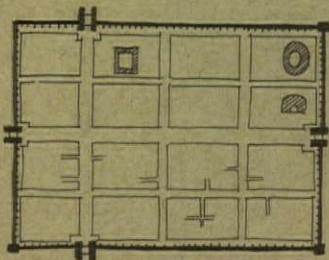


Imperial Forum. Buildings were designed to form large regular spaces

The Roman architects became heirs to the lessons of Greece. As students they might have been more attentive but they had some rather different problems and, as it happened, several ideas of their own.

Development of the Roman Forum during the time of the Republic (509 BC—27 BC) was not unlike that of the Athenian Agora. It happened piecemeal. It was much bigger, much more complex and much more exhibitionist, almost a carnival of classical architecture. Its buildings were ingenious in their detailing, their engineering and their individual siting. But as the Forum developed, as its buildings multiplied, as the complexities of Roman classical detailing increased, there was no matching artfulness in methods of arranging the complex building groups together. Recognition of this problem is well illustrated by the relation of the Curia to the rest of the Forum.

The Curia was the assembly building for the Roman Senate. It was considerably smaller than most of the other buildings in the Forum which were, to a great extent, products of architectural exhibitionism. Each one tried to outdo the other in display and importance. The Curia, however, was really the heart of the Forum and deserved special distinction. The problem was to give it that distinction. Apparently the Romans felt that if it were highly adorned with external carving, it would be in competition with equally adorned neighbors. If, however, its exterior were kept



Aosta, a typical Roman military town

simple, it would contrast with its neighbors. So it was that the Curia was an unadorned boxlike building which was distinguished by its plainness and small size amidst a scene of architectural overabundance.

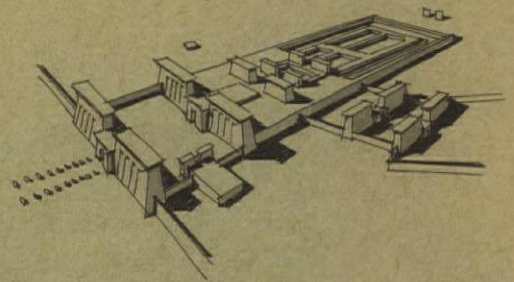
The problem in this case could not be solved by site changes since the Forum could not be altered. It was necessary to adopt a different attitude toward architectural finish and detailing, an attitude that was somewhat non-architectural but was, instead, almost urban.

It was not that the Roman architects abhorred geometric order in the grouping of buildings that made them fail to achieve it in the old Forum. They were building very orderly military outposts through their expanding empire just as the Greeks had done. Like the Greeks, they did not have the means to rebuild the heart of their city. The Athenians never got the opportunity to apply their purer geometric planning ideas to their own agora. The Roman architects did get that chance—when they enlarged the Forum during the period of the Empire (27 BC—476 AD).

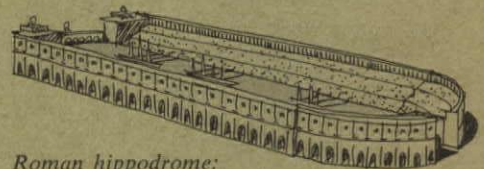
The old Forum was so complex, so filled with buildings, and the spaces so irregular that it was hopeless to try to group different buildings together as a harmonious series of masses.

By this time, however, the Roman architects had wisely learned the lessons of architectural space. Instead of filling all available space with buildings, they arranged the buildings to form enclosed spaces: true forums. In becoming subservient to the spaces which they enclosed, the buildings gained enormously in setting and quality. Their distinction lay not in individual architectural superlatives. It was achieved in collective architectural accomplishment—the creation of orderly and appropriate civic spaces.

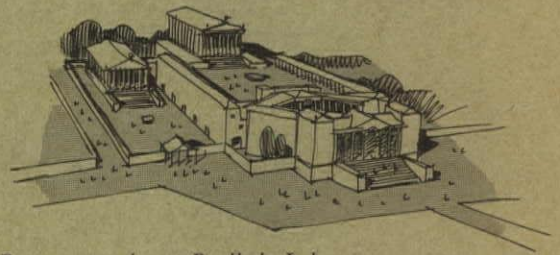
These two basic design attitudes are dramatically apparent in the contrast between the character of the old Republican Forum and that of the Imperial Forum, as seen in plan. The older Forum was a jumble of building forms arranged along an irregular spine of space whose formation was incidental. As a concept it was an arrangement of building masses. The new Forum was a work of great clarity, of immense regular spaces formed by immense enclosing buildings. As a concept it was an arrangement of building masses and architectural spaces together. Indeed, this is the very reason why a visitor to the ruins of both Forums can discern much more of the old Forum than the new. The remnants of the old Forum are now an array of stones, just as its buildings were once an array of architectural masses. The new Forum, as a composition of buildings and spaces together, can no longer be seen.



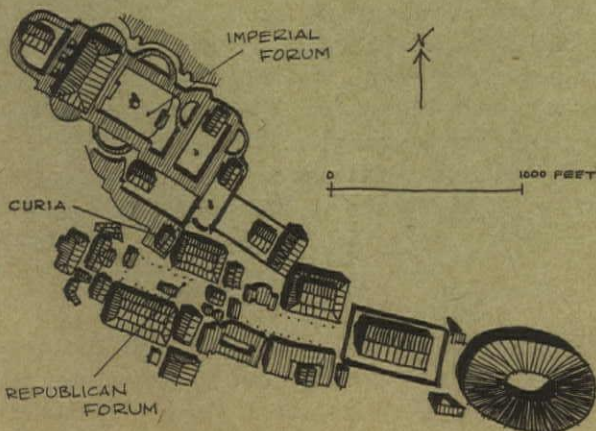
Group of temples of Ammon at Karnak in Egypt. Processional avenues, accented by pylons and court spaces, lead to religious inner sanctum



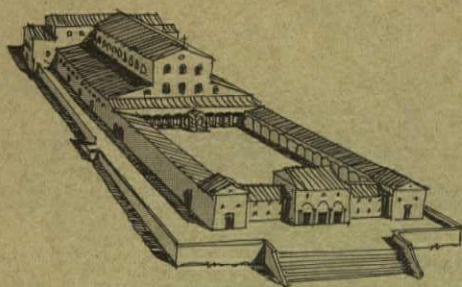
Roman hippodrome: The Circus Maximus



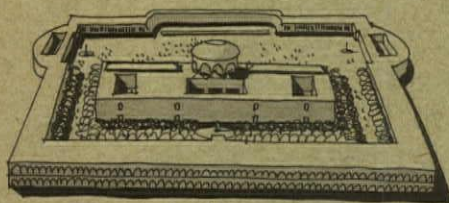
Roman temples at Baalbek, Lebanon



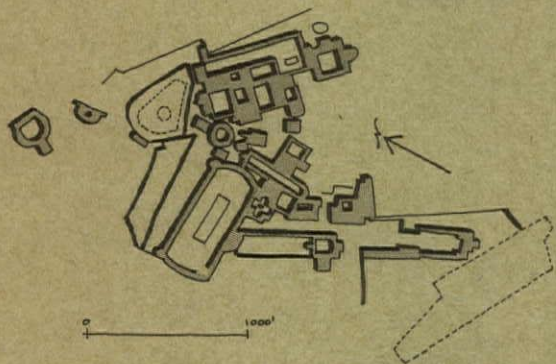
Republican and Imperial Forums together



*An early Christian church:
Old St Peter's in Rome*



Baths of Caracalla in Rome



Hadrian's villa near Rome. Main axes were bent at special joints to adjust to hilly site



Even in ruins of Hadrian's villa, principle of joints which connected major axes can be discerned

except for one great exedra. So many of its enclosing buildings have vanished that it no longer retains its former quality of enclosed architectural space.

Perhaps the Romans were fortunate in having two completely different Forums so close together. What complements they must have been to each other—the old one full of odd corners and places, cool and informal; and the new one, spacious and open, brilliant with sunlight and order.

The Roman architects continued to develop their ideas of enclosed space. They designed buildings to be contained in the centers or on the sides of large spaces, at the ends of long spaces and facing each other across spaces. The Imperial Forum was nearly a textbook of all the types.

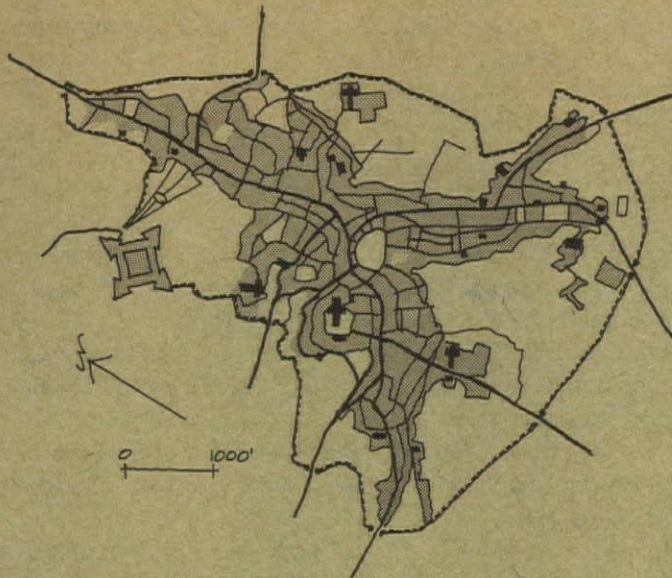
The refinement of their space concepts can be seen in the large baths of Rome. These were conceived as immense building masses in immense architectural spaces. The forming edges of these spaces made use of a very practical idea. They were made of a large horizontal colonnade. In this colonnade a variety of shops could be located, readily at hand for the bathers but not visually distracting behind a screen of columns. The Renaissance architect Palladio was to employ this same idea later.

Hadrian's country villa, ten miles from Rome, is a significant example of the skill of late Roman architects in building large complex groups in natural settings. Hadrian's villa is a series of large regular court spaces disposed to each other at irregular angles. The major court spaces were located to fit topography and their interconnection achieved through the clever bending of architectural axes. Axes were bent by a number of transitional devices, sometimes small openings or sometimes small rooms. By passing from a large space into a small bending element and then into another large space at still another angle, the effect of irregularity was nearly canceled. The observer, rather than having his orientation confused, was comfortably summoned from one space to another. Thus the courtyard spaces were strongly related to each other and the whole complex well related to the dramatic topography.

The scholar can readily find instances of these architectural ideas elsewhere, some earlier and some later, some done far more artfully. It is interesting to conjecture to what extent the Egyptian temple with its series of interconnected courtyards may have been seen by Roman architects, and may have been imitated in the Imperial Roman Forum as a concept of interconnected spaces. It is also interesting to conjecture to what extent the Roman architects came to realize the power of enclosed outdoor space in their own hippodromes and sports arenas.

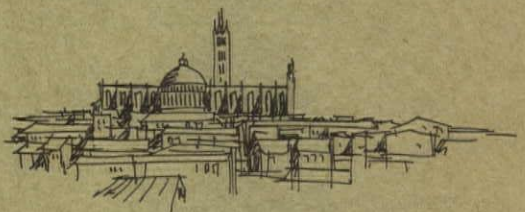
But these conjectures only affirm the Roman contribution to the design of cities: the artful design of urban architectural spaces. It is a compelling and useful concept, employed modestly in the design of the early Christian churches. More relevant in the historical flow and development of the art of urban design, it is one of the keys to understanding the accomplishments of the Renaissance.

The early architects of the Italian and French Renaissance lived in the type of medieval city which we have come to admire for a special kind of urban design—urban design which evolves slowly, an urban design of organic evolution. The medieval city



Siena, Italy. Piazza del Campo is at center, cathedral to its northwest

of Siena is an excellent example. Siena is a hill town composed of several political sections, each occupying prominent topography, each with its local church, each with its local small square, but altogether focusing on one of the finest piazzas in the world and, a short distance from the piazza, on a central dominating cathedral. The city of Siena has a pattern of streets which follow the most logical topographic lines to converge on the central piazza, the Piazza del Campo, a large outdoor living room for the whole town. These streets are all quite narrow, and the passage from them into an open piazza is quite dramatic. The main streets are those which are most level. Lined with shops, they run from the town gates to the main piazza and consequently bear the greatest volume of traffic.



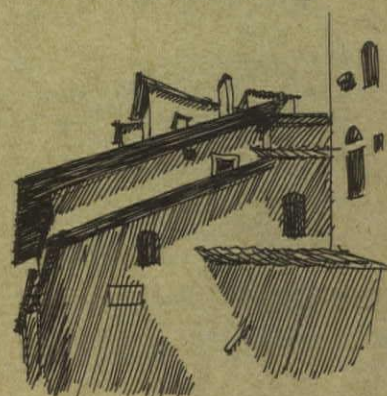
Main cathedral in Siena climaxes architectural massing of town

These conditions strongly influenced the design of the buildings in the town. The narrowness and closeness of the streets prompted the creation of courtyard spaces in the houses along the streets. The particular entrance views of a piazza were strong determinants to the placement of statues or towers, and apparently the detailing of an important public building was strongly determined by how it was seen from various places in the piazza. The relation between town-form and building-form is so strong that it is certain that Siena's builders must have been thinking of both simultaneously.



Piazza del Campo

The variety of sights of the town is enormous, yet the over-all impression is unified by a constant interplay of basic themes—open space and closed space, narrow winding streets lined with shops and opening into private courtyards, a simple stone architecture, a characteristic roof overhang on the houses, similar doors and windows, the relatively small size of the town, the frequent and dazzling vistas into the surrounding countryside and, not the least, the flow of familiar people everywhere.

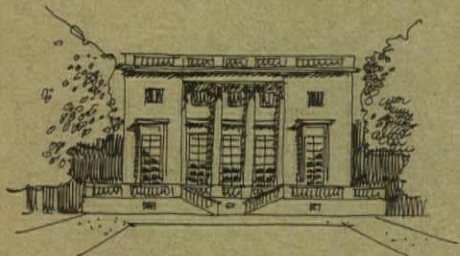


Typical roof overhangs and massing of buildings in middle Italian towns: house of Dante in Florence

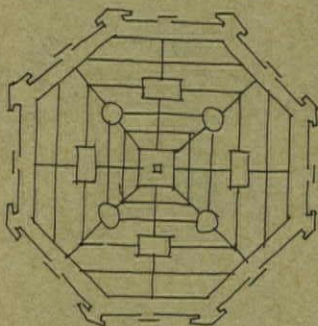
In medieval times the practice of architecture as an art revolved principally about two types of buildings: cathedrals and palaces. The design of the facades reveal a particularly sensitive appreciation of how they were viewed. Seldom was a building seen as an isolated whole from nearby. Side facades were only partially seen, if at all. The front facade of a palace or church was generally the only part of either fully revealed to view. Even then, the observer was usually forced to look up to see it. These conditions seem to have compelled architects to design the visible exteriors of their



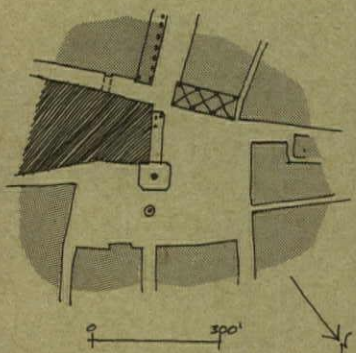
Gothic verticality on a church facade: Amiens Cathedral



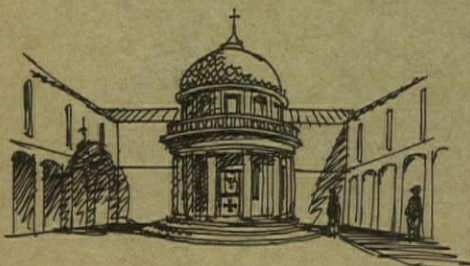
Petit Trianon at Versailles, designed by Gabriel



Plan for an "ideal city" by the younger Vasari



Piazza della Signoria in Florence. Only three vaults of proposed encircling arcade were completed



Bramante's Tempietto in Rome

buildings in ways that would best suit the total viewing conditions of very small spaces.

On French Gothic church facades, the theme of vertically emphasized general treatment, particularly in sculptural detail, developed. On Italian medieval palaces, the details of rusticated stone masonry and of heavy projected cornices against a bright sky answered to site conditions as well. It was not that the French Gothic or the Florentine architects preferred irregular and almost tortured fore-spaces for viewing their works. Indeed, they strove to get more appropriate and more regular fore-spaces. The beautiful results which they achieved are effects of buildings amazingly well suited to urban settings—settings which were largely fore-ordained and unchangeable.

As the medieval world progressed into the world of the Renaissance, its thinkers and its artists sought a greater breadth and greater refinement of expression.

The architects of the Renaissance equipped themselves with both a more refined system for detailing their facades and, in time, a concept of urban architectural space in which to set their new buildings. The source for both lay in the building ruins of classical Grecian and Roman antiquity. There were compelling reasons for Renaissance architects to turn to the classical world as a model. Their emulation of Rome and Greece makes a period of profound observation, of intelligent application and of brilliant innovation.

The details of classical architectural adornment furnished a repertoire of visual effects which allowed great flexibility in the design of building facades. Facades could be highly punctured with window openings or they could be quite solid with small window openings. Whatever the need, even for open gallery spaces, classical detailing—columns, cornices and bases—could be used to compose the whole architecturally.

Coupled with their use of classical architectural details was a new idea of space, really a combination of the spatial concepts of the classic world and their own egotistic fixation with the idea that the earth was the center of the universe. The adoption of the Roman concept of space may have come from observations in the Imperial Forum, or what remained of it after many centuries. The idea of creating an architectural space as a setting for an important building, so well developed by the later Romans, has occurred to architects of many different times and would undoubtedly have been discovered independently by the architects of the Renaissance. What makes it particularly interesting in their case was the fact that it answered so well their notions of their own centrality. If heaven were the center of all creation, if the earth were the central planet of the universe, if their temporal rulers were the center of society, why not exhibit all this as an architectural idea? The concept of a building standing in a specially designed space was an admirable answer. But, they may have reasoned, why not go even further than that? Why not exhibit it as an urban idea? The concept of a star-shaped "ideal" Renaissance city was an admirable result.

In Italy it proved to be quite difficult to achieve the new concept of architectural space in crowded cities. The core institutions of the city resisted drastic alteration. But attempts were made. In Rome, Bramante succeeded on an architectural scale in his Tempietto, a small circular temple originally designed to be set in a circular space. In Florence, on a more urban scale, the Loggia dei

Lanzi—that gigantic three-ported colonnade which now shelters sculpture—was the unfinished beginning of an attempt to surround the entire Piazza della Signoria. On the other hand, success was achieved in the courtyards of the new palaces and in church groups where control was complete. But it was in the free open country that the Italians achieved their most striking spatial results.

Palladio, in northern Italy, added superb classical building compositions to the landscape around Vicenza. The Villa Rotunda—symmetrical about both axes, set on the crown of a lovely round hill and designed to be approached by long straight ways from all four sides—almost matches a Grecian temple in its relation to nature. In his fervor over the classical world, Palladio was even more Roman than the Romans themselves. He, too, added a twist of his own.

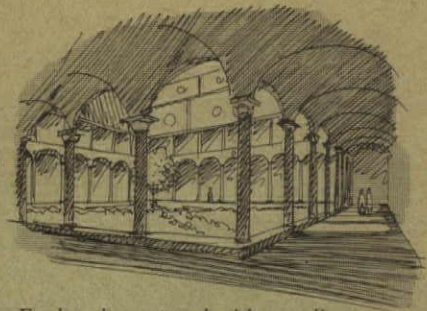
His country villas necessarily included numerous service buildings which housed kitchens, horses, servants and such dependencies. Palladio located these in symmetrically spread arms which formed either large fore-courts or low spatial enclosures for his main buildings. These arms were part of the whole complex, but they were something more; they made an architectural space. This practically insured the usefulness of his design concepts for several centuries. It is to be found extensively in English manor houses, it was used in a very simple application in George Washington's Mount Vernon, and in a very intricate and clever application in Thomas Jefferson's Monticello.

Palladio should also be credited with his skillful use of the classical column on his facades. It was a law of architecture, early in the Renaissance, that classical columns run not more than one story high. A two-story building required two classical columns, one above the other. A three-story building similarly required three. Palladio was not the only Renaissance architect to break this rule and employ the "colossal order"—a column running full building height. He used it where the intricate design of a facade required such a strong coordinating element and where a facade viewed from a great distance required clear bold elements which could easily be seen. This is illustrated in his design for San Giorgio Maggiore in Venice, a large church building seen across a great expanse of water. The "colossal order" was to play an important role in civic art later on.

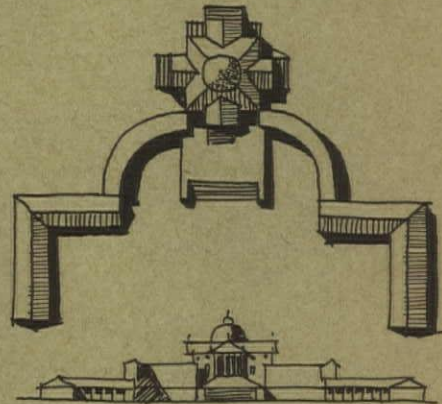
As for the realization of the ideal star-shaped city, there are more of these to be found on paper than on the ground. But there were a few built, not only in Italy, but in France and later in Holland. Because they were such ambitious projects their number is small. This concept is more frequently found in a miniature form, as in star-shaped fortress cities or small forts alone.

It was in France and later in England that the concepts of Renaissance architectural space were realized, on a large scale, in the open countryside and, on an urban scale, in the very hearts of Paris and London. In Paris, we find it designated as the *place* and in England as the *square*. In both countries it was generally put to residential use.

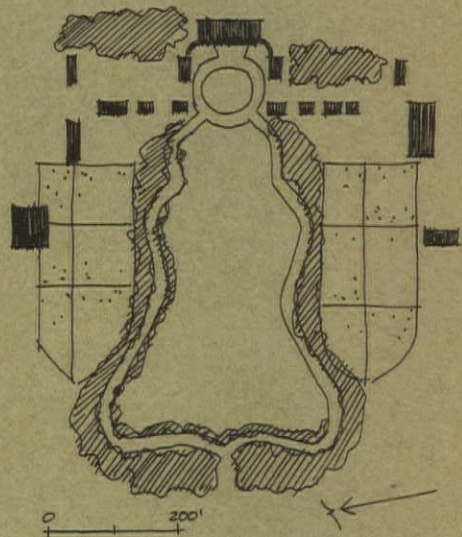
To clear out a large area of the city to make room for a large new space was by no means easy. It required a powerful central authority. Such had been the case during the time of the Roman Empire, when the new forum was built. Such was seldom the case in Renaissance Italy. However, in France, there was sufficient inducement for those people of means, the courtiers of the times, to have a dwelling place free from the general stench of the city.



Enclosed courtyard with arcading, designed by Brunelleschi



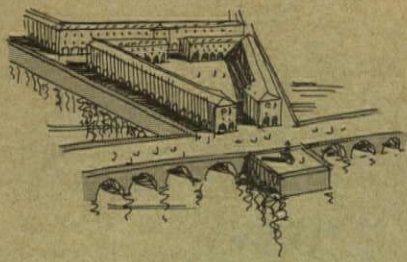
Villa in Meledo, Italy, by Palladio.



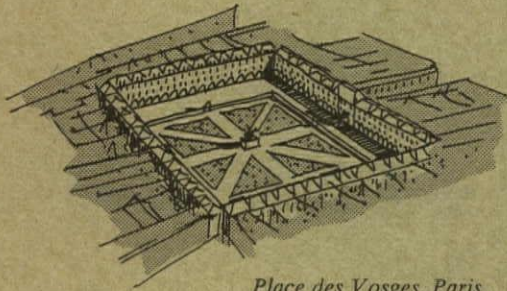
George Washington's "Mount Vernon." Palladian arrangement with an English garden



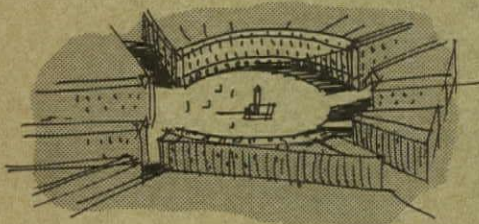
Church facade designed by Palladio, employing colossal or gigantic order: San Giorgio Maggiore in Venice



Place Dauphine, Paris



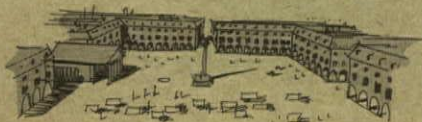
Place des Vosges, Paris



Place des Victoires, Paris



Place Vendôme, Paris



Covent Garden by Inigo Jones.
All but one side was completed

They had been accustomed to living in the midst of rabble in their *maisons de ville*; they occupied the second floor (the French first floor), and the upper floors were the dwellings of progressively poorer people. The innovation of the *place* was an opportunity to turn one's back on the squalid city.

The first two of these were built under Henry IV and still exist—Place des Vosges and the triangular Place Dauphine, dating from the early 1600's. Both had statues of Henry IV. The Place Dauphine faced out on the river on two of its three exterior sides. The important feature of these *places* is the fact that they formed a space that was isolated, indeed a space that could stand as an island of repose amidst a restless sea of urban squalor.

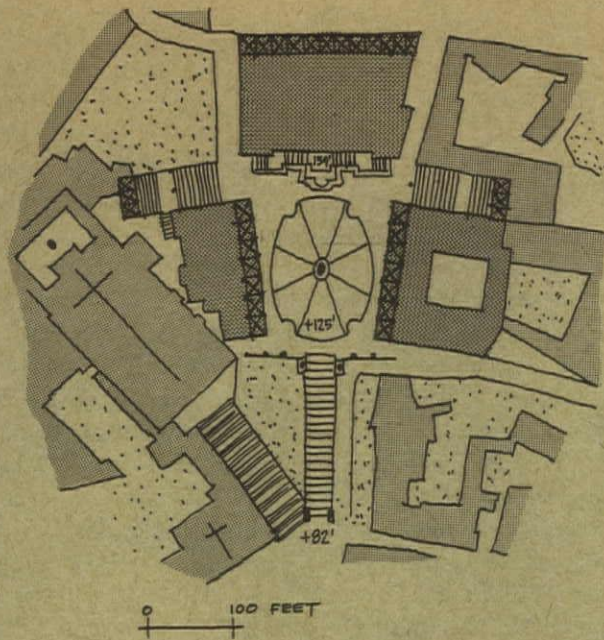
The important later *places* in Paris include the relatively middle-sized Place des Victoires and the Place Vendôme, both started about 1680; the Place de la Concorde, designed in two competitions starting less than a century later; and finally the interconnected plazas of Nancy, designed about 1750. The Place Vendôme deserves special mention.

The idea was originally conceived as a great forum of the arts and sciences by Cardinal Richelieu. Confronted with great difficulties in financing (the library was not built for forty years), it was decided to build just the front facades and then sell off the lot depth behind by the foot. This notion amazes a modern architect, steeped in rules for architectural honesty and functional expression. But it reveals much of the mentality of his French Renaissance counterpart, who was more interested in the creation of an urban entity than a single building. Its details—architectural ornament, spatial proportion and sculptural embellishment—reveal by this time a mastery over the art of designing urban spaces. The proportions of the Renaissance *place* gave a sense of enclosure without overcrowding, they allowed whole facades to be readily seen in a single glance and they kept roof lines well within the human eye's normal field of view. The statue placed in the middle (replaced later by a column) would be seen outlined in profile against the sky, just above the roof line of the buildings. In very large squares the statues, or sometimes fountains, were used to attract the viewer to the best vantage point for seeing the square in its entirety.

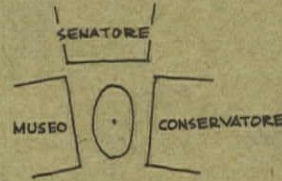
The development of Renaissance square design was accompanied by a large body of literature which described it in great detail. The writings of the English architect Christopher Wren, for example, list specific rules for overall proportion and remind the architect that to insure a continuously animated scene one must plan diversity of use in the buildings forming the square.

The concept of the Renaissance square had been brought to England by the architect Inigo Jones, who tried to reproduce the Italian Renaissance square of Livorno in London. As in Livorno, one of the sides has a projecting church facade. Most English squares were designed for residences. It was enough to show the way, however, and many others of larger scope were built as a consequence. They were soon filled with trees and grass, quite unlike their Latin counterparts which seldom included greenery.

Renaissance architects had been developing their repertoire to an awesome degree. It became so distorted and elaborately irregular that it came to be called "Baroque," a word which connotes an almost grotesque extravagance. The Baroque attitude affected urban design profoundly, first in the design of squares, but ultimately in extending its scope to the city as a whole.



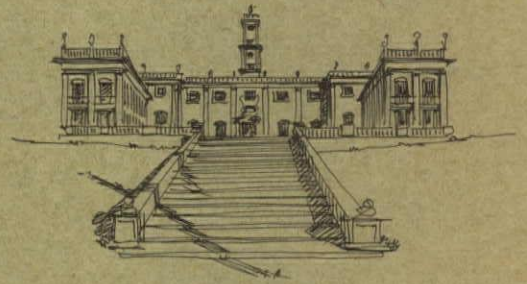
Campidoglio, Michelangelo's masterpiece of urban design



It was in Rome where this Baroque attitude first affected the design of squares. The Campidoglio of Michelangelo is an excellent case in point. Michelangelo, as an artist, was primarily a sculptor. In his paintings and drawings he placed great stress on their three-dimensional quality. As an architect he sculptured too. He sculptured classical details on his building facades with flair and freedom, ignoring the canons of the Renaissance, inventing here and improvising there. He also realized that it was possible to sculpture space. Space could be made to appear deeper or more shallow by slanting the side walls of buildings. It could be contained from one point of view but be opened outward from another. Space, like stone, could be manipulated. Michelangelo went even one step further. He also manipulated the movement of people.

A visitor approaching the Campidoglio is compelled to look up. He sees an ascending ramp leading to the center of what appears to be three buildings at right angles to each other, forming a rectangular central space. A tower rises above the middle of the central building. If he is observant, he notices that the classical columns of the facade (pilasters) run up its full height. This gives strong visual unity to the building facades when they are seen from afar, as on Palladio's San Giorgio in Venice. As he goes up the stepped approach ramp (one of the easiest architectural climbs in the world), he begins to notice an equestrian statue. It was nearly out of sight from below. A sense of expectancy ushers him farther up. Arriving in the space itself and having digested the attracting architectural inducements, he is now prepared for the principal features. There, the size and simplicity of the flat gigantic order is complemented by the intricate classical details of the one-story columns and window pediments.

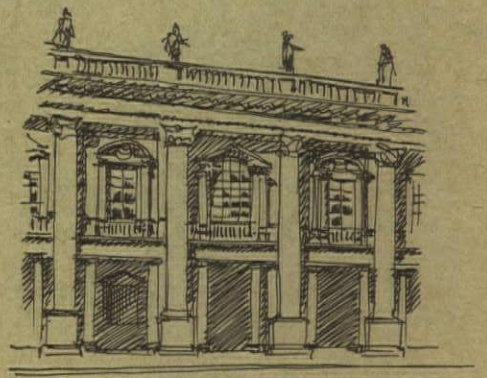
Straight ahead, the Palazzo del Senatore looms higher than the flanking Conservatore and Museo buildings. It is set on a strong rusticated podium and must be entered by climbing a grand stair. A tower set in the middle of the Senatore marks the center of this building as the climax of the group. But there is something about the open end corners of the space that beckons. The left corner offers a fine view of the old Roman Forum and the right corner another stair which leads off to narrow streets. From the top of the entrance stair of the Senatore, one turns and sees the city of Rome in retrospect. Even then there is another surprise. The



Approaching the Campidoglio via ramped entrance stair. Gigantic order unifies the facades



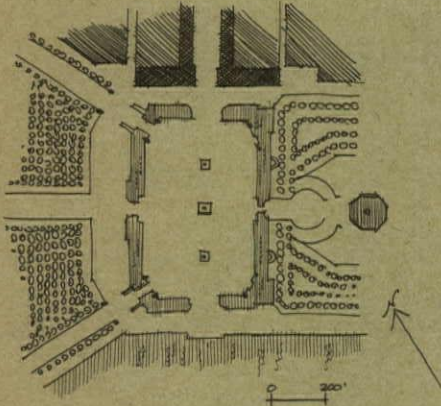
Rusticated basement and stair elevates central Senatore building in Campidoglio Plaza. From below, these could not be seen



Facade design of flanking Museo and Conservatore buildings



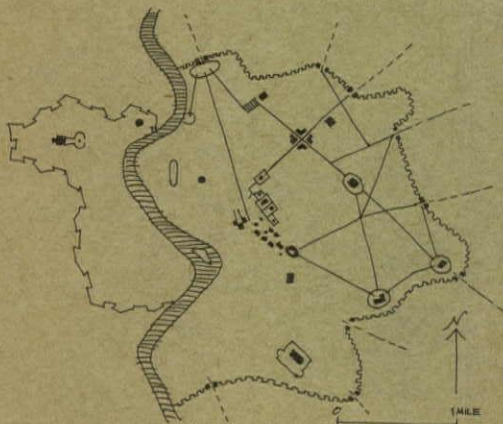
*East facade of the Louvre.
Gigantic order in a design by
Perrault, court physician*



*Gabriel's Place de la Concorde,
one of the largest of French
squares formed by ground surface,
buildings, water, landscaping
and sculpture*



*Buildings forming northern side
of the Place de la Concorde.
Central axis opened onto vista of
distant structure*



*Pope Sixtus' plan for Rome,
designed by Fontana*

paving of the plaza floor has a fantastic pattern of oval intersections.

The Campidoglio started as a remodeling job. The Senatore with its tower and the Conservatore both were original buildings. Their features compelled Michelangelo to be constantly mindful of the approaching spectator. His remodeling proved to be far more than a new suit of architectural clothing. It was the idea that building groups could be seen as a sequence of views from afar and close up, that the city area in which such a work stood was part of the whole composition, and that the spectator had to walk through this whole composition in order to really appreciate it.

In Paris this notion was later established by a skillful amateur. The winning design of Dr Perrault for the east facade of the Louvre broke all the rules of Renaissance facade design, to the consternation of the academicians. Perrault, like Michelangelo, designed his facade to be seen first from afar and then close up. Like Michelangelo, he fully appreciated how this facade would really be viewed. In Perrault's case the east facade of the Louvre would first be seen from across the Seine River. Perrault designed a large strong base for the ground floor facade to act as a visual podium for a colossal order of double columns which covered the middle and top floors. Further, he recessed the middle and top floor windows so that the double columns stood out strongly against a deep shadow. The possibly confusing window details themselves were thus out of sight.

Perrault, like Michelangelo, sacrificed the existing tenets of architecture for the broader demands of urban design. His contribution was grasped rather quickly by his fellows who faced the problem of designing ever larger plazas. We can see the result today in the Place de la Concorde, the largest of the plazas of Paris. Incidentally, this same facade concept is copied almost exactly in Logan Square in Philadelphia and has been used in innumerable instances in large buildings ever since. Even Louis Sullivan's buildings have a strong podium base, a large neutral middle section and an intricate terminal cornice.

Michelangelo in Rome and Perrault in Paris opened the door and crossed the threshold into a new world of design—the artful design of cities on an urban scale. It was in Italy and France that the seeds of these new ideas were to reach full blossom. Like so many of the great developments of urban design, they started as a series of practical problems.

In Rome, Pope Sixtus V wished to connect the shrines of Christianity by a series of roads to facilitate religious pilgrimages. The result was a plan of roadways beginning at the two principal entrances to the city and ending at the shrines themselves. Sixtus had a short pontificate; it lasted only five years. In that brief time he was able to make only a modest beginning. He placed a few monumental obelisks as landmarks to the key points in his plan and as terminal features of the vistas down his proposed streets.

The soundness of his plan is demonstrated by the fact that it was carried out in detail over the next several centuries. The popes, like other temporal rulers, were often jealous of their predecessors. They were unwilling to expend their efforts on undertakings which would bring glory to anyone but themselves. Sixtus' plan, however, could be achieved piecemeal by his successors

to their own great satisfaction. The routes of the pilgrims became great processional streets as Sixtus had envisioned and the shrines came to receive a wealth of architectural attention. Many were remodeled and had plazas built in front of them.

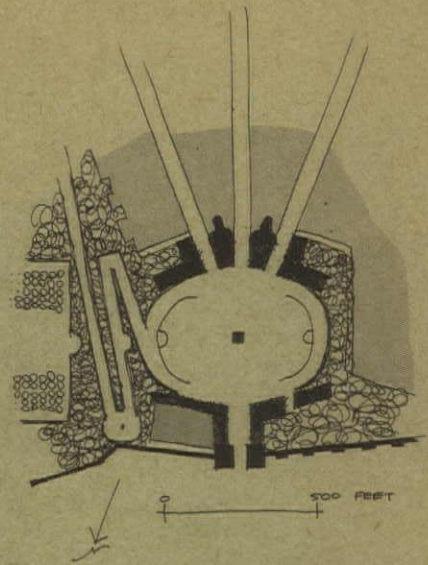
At a later time the grand avenues, which were really quite narrow corridors, became the favorite promenade streets of the Roman aristocracy who used the open squares as public salons during the early evening when the city became cool. As we see Rome today, the pattern of these streets in relation to the whole city is less discernable than it was when the aristocracy paraded in them. There are more fashionable streets for the evening *passagiata*. There are also many longer and broader avenues in the city. Sixtus' plan is more evident in the monuments which accent its various key points than in the grand avenues themselves. One of these accents in particular deserves a place of special honor in the list of great urban design achievements. That is the Piazza del Popolo.

The Piazza del Popolo was one of two principal entrances to the Rome of the Christian pilgrims. From it branched three important roads; one leading to a boat landing on the Tiber, one to the old Roman Forum and one to a church on top of a steep hill. The angle between these roads was about 22 degrees each, or about 45 degrees altogether. Such an angle, as Renaissance architects well knew, was well within the human eye's normal field of vision. The three streets could be seen at once as a single vista, just as a properly proportioned Renaissance facade in a properly proportioned forecourt could be seen as a single architectural entity.

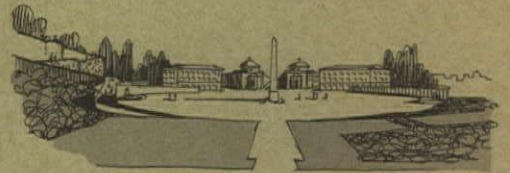
The utility of this configuration lay in its power to suggest the existence of important features further along in the city. Its potential was to go untapped by Italian architects until French architects demonstrated the full power of the *patte-d'oie*, or "goose-foot" intersection, as they dubbed it. It was in 1825 that the Piazza del Popolo was finally finished, by which time the *patte-d'oie* was a drafting room word among architects.

It may well be that the French discovered the *patte-d'oie* independently. Through their medieval hunting forests they had been cutting a myriad of paths which converged at numerous points, forming altogether a great spider-web of star patterns. A hunting party, standing at one of these intersections, could look for game down several paths simultaneously. It is not important to conjecture whether the French landscape architects recognized the dormant *patte-d'oie* in Rome or in the woods. The point is that they did recognize it and then went on to perfect it. It can be seen in many instances in Haussmann's Paris boulevards or in Rome, but, best of all, at Versailles.

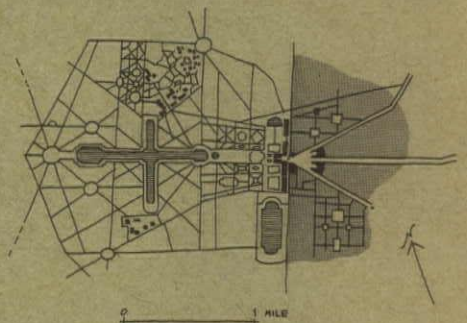
Versailles is a magnificent palace with an extraordinary garden on one side and a beautiful town on the other. Almost all of it was built during the reign of Louis XIV. The impression one gets today is very close to what Louis himself saw. The major *patte-d'oie* at Versailles is called the *Place d'Armes*. It is the convergence of three grand roads which come from afar. The central one comes straight from Paris. It is only after passing through the *Place d'Armes* and continuing further into the entrance forecourt of the palace that one turns about and sees all three roads together. They could also be seen as a trio by someone leaving the palace or by Louis looking out of the palace window. These three grand roads extended as far as he could see and seemed to embrace the



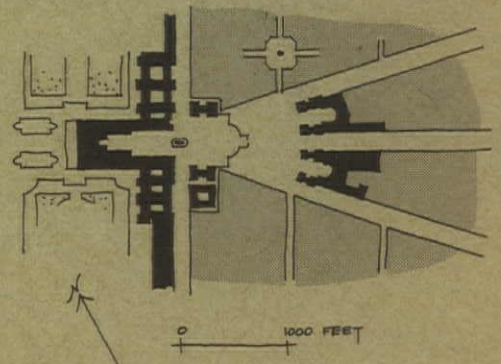
Piazza del Popolo, gateway to Rome. Final plan by Valladier



Schematic view of Piazza del Popolo with gateway and wall removed

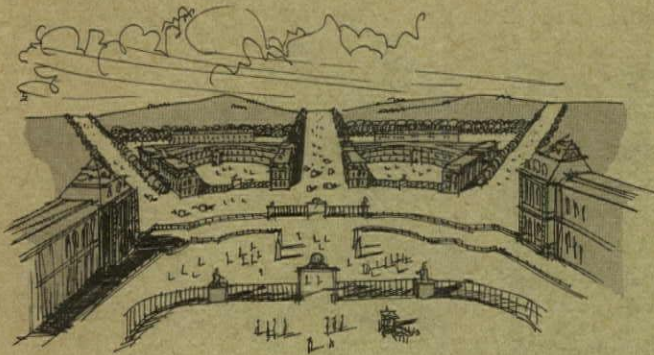


Versailles: the park, gardens, main palace and town

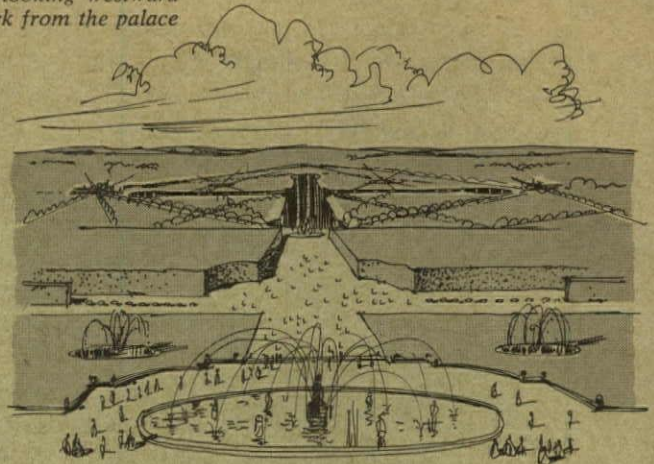


Place d'Armes at Versailles

Versailles, looking westward
to gardens and park from the palace



Versailles, looking eastward across
Place d'Armes from the palace



entire world. In some ways this was a more appropriate use of the *patte-d'oie* than at Rome, where the entering visitor is confronted with three roads that branch out to places with which he is not yet familiar.

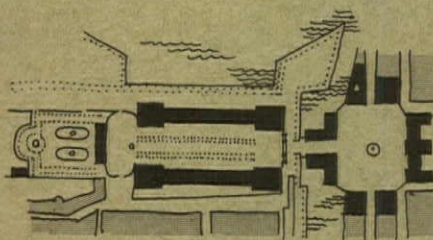
The practice of landscape architecture was brought to perfection in eighteenth century France. The purpose of this whole realm of art was to dominate nature by creating a system of vista-ways which made its extent visible. Even the sky could be engaged in the whole composition by reflecting it in large pools of water, as at Versailles.

It is somewhat puzzling and quite unfortunate that the gardens of Versailles were not designed with the multiple clarity of vista seen in the main *patte-d'oie*, that is, looking eastward from the Place d'Armes. Louis was deceived by his architect's plans. He must have been dazzled by the wonderful pattern of star shapes. They were illusion, for seldom is the promise of multiple vista fulfilled on the ground. It is interesting that most of the artists' views of Versailles are taken from an imaginary 100- or 200-foot level—a level excluded to all observers except birds. Artists had to assume this unrealistic point of view to depict the pathways. Seldom were they clearly seen as collective ensembles on the ground. A little more attention to reality could easily have brought that about. In fairness to its designer, LeNôtre, it may well be that this was the objective of the design—the subtlety of a surprising view being preferred to an easily comprehended multiple vista.

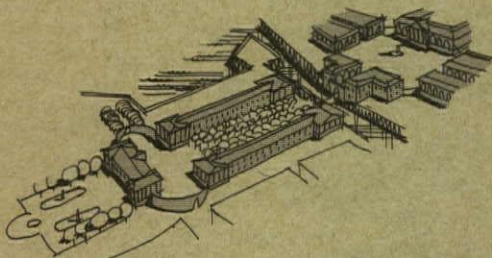
The original landscape plan of Versailles focused on the palace itself, but this did not preclude the use of additional focal places. These were, principally: a menagerie, a miniature of the large palace called the Grand Trianon, the beautiful Petit Trianon palace and the imitation dairy village called the Hameau. The first two occupied key spots at the end of the reflecting pool transept. The latter two were located in more obscure positions in the woods.

Many more features could have been accommodated in such a plan. This flexibility of arrangement suited the grand landscape concept of Versailles to urban application. One had only to imagine the great wooded areas between the avenues as houses and there it was.

It is conceivable that Louis might have tried to build his Versailles in Paris itself, the traditional seat of the monarchy. He probably would have failed. Even he could not have afforded the expense of clearing away the many houses that would have been



Nancy, France: interconnected plazas



Two interconnected plazas were built
on site of fortifications. A moat
was spanned to connect to the third

in the way. Besides, Louis hated Paris. If he had not started in open country as he did, it is likely that we would never have come to possess the model world of Versailles.

French architects were soon to busy themselves with work in the city. Their plaza designs were becoming larger and more complex. They were no longer self-contained islands of space. The design of the streets leading into them and out of them had become as important as the central space itself. More and more plazas were being designed as interconnected series, the most notable being the three interconnected squares at Nancy, dating from 1750, a half-century after the completion of Versailles and an approximate contemporary of the Place de la Concorde.

The attempt to introduce the concept of Versailles into a city as a whole was first made in London. It was proposed in plans made independently by Christopher Wren and John Evelyn. Neither plan was particularly well adapted to the topography of London, but for other reasons, neither was adopted. London was to grow horizontally and spread outwards, aided by the private development of its underground railways.

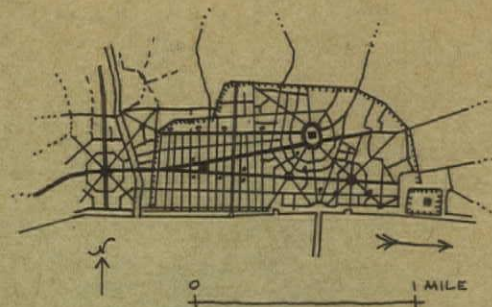
The design of Versailles with its broad paths and complex intersections, its major and minor focal points, and its array of monumental effects, combined with the knowledge of the architecture and urban design of antiquity, was to grasp the imaginations of designers for two centuries. When such a concept could not be realized in total, it could be realized in part. L'Enfant tried it on a total scale in Washington in 1792 and succeeded in establishing an unfinished plan which was poorly executed. The Ringstrasse in Vienna, a grand avenue enclosing the ancient city, was laid out in 1858 and, for the most part, executed quite thoroughly.

Few major cities have not had plans for grand streets drawn up after this fashion. "Unter den Linden" in Berlin, the Olmsted street plan for greater Boston, the extension of Amsterdam in the twenties, Daniel Burnham's plans for Chicago and San Francisco, the Lutyens plan for New Delhi—all bear a familiar stamp. The American architect Walter Burley Griffin used it deftly in his winning plan for Canberra, Australia, in 1911.

By far the most spectacular application of this kind of planning was in Paris. Starting in 1853, Napoleon III authorized Baron Haussmann to glorify Paris with a grand system of avenues and parks. Haussmann was responsible only to the Emperor for his actions. It was the system so fully developed at Versailles to which Haussmann turned. By now grand boulevard planning with all of its monumental effects was commonplace in the vocabulary of urban design. To achieve it in a crowded nineteenth century city was no easy job. It required all of the ruthlessness and cunning which Haussmann possessed, the very characteristics for which Napoleon III chose him.

Haussmann's brutal application of these principles required the razing of three-sevenths of the houses of Paris and the collaboration of greedy speculators to finance the work. The means for such an enormous undertaking are seldom mustered in time of war, but mustered they were by Napoleon III.

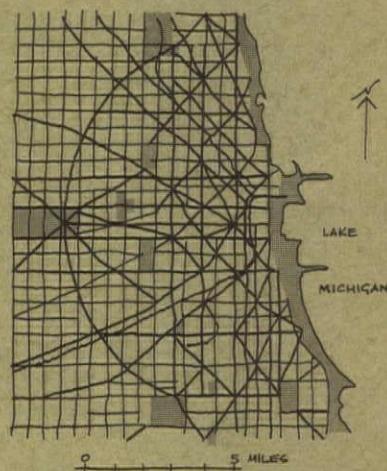
Part of its familiar rationale was the need to be able to move troops through the streets quickly in times of civic unrest and riot. The relatively crude facade designs which lined the boulevards were softened by soldierly rows of regular trees, planted full-size overnight. The harshness of the boulevards was comple-



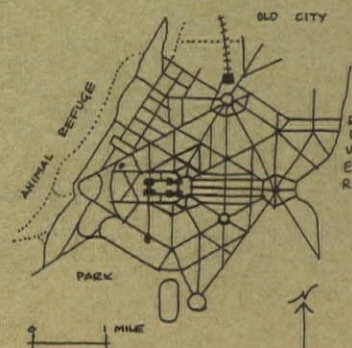
Sir Christopher Wren's plan for London. Typical of Renaissance city design in his day.



Ringstrasse in Vienna, originally, line of fortifications which encircled city. In concept, a curved axis

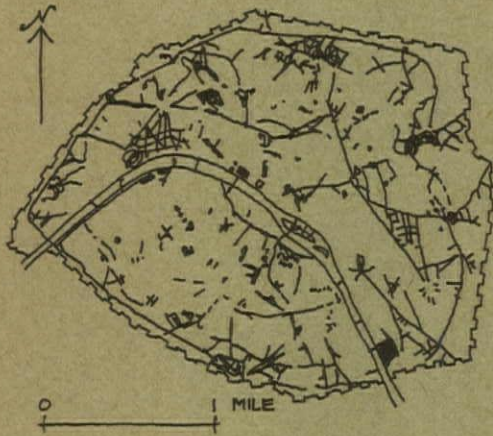
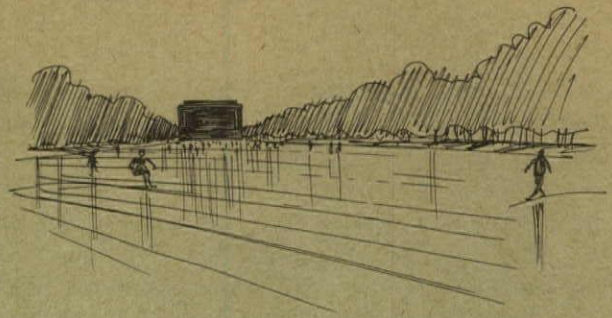


Daniel Burnham's Chicago plan

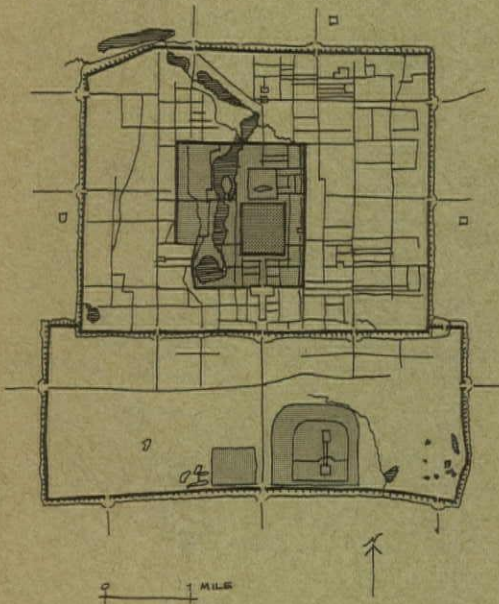


Lutyens plan of New Delhi

Reflecting pool in front of
Lincoln Memorial in wintertime—
a grand vista axis



Haussmann's modifications in Paris
indicated by blackened areas



Peking, considered to be most
beautiful city in the world



Renaissance vista axis, the Champs
Élysées in Paris. Started by Louis XIV,
completed by Haussmann

mented by the romantic park designs executed around the city. The quality of all of these designs was far below the standards of the French landscape accomplishments of the eighteenth century. Still, the world has not seen so vast an overhaul and transformation in any of its cities since.

It is worth noting that the whole undertaking did not occur during a time of prosperous stability. There was great unrest in nineteenth century Paris. Great civic accomplishments, just as great artistic accomplishments, are not always the product of abundant times but rather times of change and stimulation.

The extraordinary thing about these operations, from a design standpoint, was that individual landholders and real estate speculators could be induced to subscribe to a uniform system of facade design. They must have been convinced that the appeal and value of their new buildings lay not in individual distinction but rather in the totally harmonious appearance of the street. The Parisians must have been as wedded to their notion of the street as a whole as we are to our buildings as independent individual objects. Perhaps the Parisians were conditioned to their notion by witnessing the grand plazas of earlier times. One cannot but wonder at this unusual urban state of mind. The result of it all, despite the hardships it imposed on the poor, was a conscious unity of expression which permeated the whole city.

As for the poor people of Paris themselves, they were not of a time and place whose government was much stirred by their needs. But neither were many other governments in the world at that time. They came to learn to live in and enjoy their broad boulevards as fully as do the rich. Paris boulevards buzz with both.

The history of these great accomplishments in the design of cities was better known to architects of two or three generations ago than it is today. It was a part of their training and thus part of their palette. It was a rich endowment which could spur imagination and aid in the development and execution of a design concept—if it were used with intelligence.

This sketch-history is an indication of the levels of excellence achieved in the past in designing on the large scale of the city. By no means can such a sketch-history be complete. It is difficult to refrain from discussing Peking or Venice or London in greater detail. It is also difficult to refrain from discussing how some of the great accomplishments of yesterday's urban design efforts are used today. In some cases they are used far more by people of vastly different cultures and habits. But it is impossible to include everything that comes to mind, as tempting as that can be.

To a practicing designer facing difficult contemporary problems the value of historical reflection lies neither in completeness nor in particular interpretation. It lies, rather, in the degree to which his own imagination is induced to wander and discover for itself, in sharpening his taste for excellence and in stimulating him to regard his own work with greater scope and depth. ◀

Comprehensive Architectural Practice

Project Analysis Services

by Dudley Hunt Jr AIA

Before the design phases of an architectural project can logically begin, analyses must be made of factors such as location, the site and feasibility; then programs must be prepared for project and operations to be housed

*Architectural problems
contain their own
solutions*

In the definition of the problem is the germ of its solution. Like many truisms that are often dismissed as being trite, this one states a basic principle that might better be clung to than dismissed. Architects engaged in the vast and complex areas of design and construction of the environment might be well advised not only to cling to such a principle but to cherish it. For here is the most logical, and probably the most useful, starting place for comprehensive architectural practice.

For some time now, the basic services of architects have been generally considered to begin with schematic design and then to proceed through design development, production and construction administration. Of late, it has become increasingly apparent that if they are not intimately involved with the programming of projects, very likely architects will find themselves, at worst, prevented from arriving at the best solutions to problems by previous decisions over which they had no control. At best, programming previously done by others can only lead architects into frustrating and unnecessary effort to overcome the built-in deficiencies of the program—effort that might more properly be applied to the *actual* problems rather than *artificial* ones.

So it might be said that programming—at least of buildings themselves—ought to be made an integral part of the basic and central services performed by architects. This would be a useful step, but what is truly needed is a Gargantuan stride.

*Project analysis a
basic service*

Need for operational programming

Programming of the building alone is hardly enough in a time when the operations that take place within and around the building determine, to a large degree, the final architectural solution. It would seem patently impossible for an architect to solve the overall problem of a shopping center without having been deeply involved in the operational programming of its merchandizing principles. Who are its customers? What income brackets? How do they get to the center? How do they buy? Such considerations are basic to the design of a shopping center. If he is simply presented with a ready-made program from which he must then somehow extract a building solution, the architect can scarcely expect to solve more than the piece of the total problem. Nor can his client reasonably expect more than this.

The same thing would appear to be true for most, if not all, other building types.

Need for creative analysis

Actually the needs seem to go even deeper than the programming of buildings and their operations. Writing a program for a project is one thing; deep analysis of its basic problems is something else again. Without the latter, the former cannot be accomplished with any degree of efficiency or creativity. If a program, operational or otherwise, can be considered as an exposition of the broad principles upon which design is to be based, then the program must necessarily derive from an adequate body of facts relating to the problem—facts that have been gathered with a high degree of enthusiasm and perceptivity, facts that have been creatively analyzed individually and as they relate to each other and to the whole problem.

Not only does a need exist for this sort of analysis and programming, but it is a type of need most easily recognized by clients. Proof of this is the increasing demand of clients for feasibility studies, financial analyses, master programming, and location and site analyses. Further proof is furnished by the proliferation of new types of consultants, many of whom are concerned with such functions. Unfortunately, many of these consultants, though they perform useful, even necessary, functions, somehow insert themselves in between the architect and his client, thereby sometimes erecting an unscalable wall that effectively separates the architect from his client and his client's problems.

Role of architects and their collaborators

A number of architects presently perform project analysis and programming services with a high degree of competence. The architectural profession as a whole must be equally well prepared to perform such services, not as the masters of all things, but as creative coordinators of the total environmental design and construction process. In services of this scope, the architectural profession certainly needs the help of talented specialists and professionals of many kinds—individuals who can make creative contributions to the over-all process and who can expect to receive just rewards for their contributions.

Location Analysis and Site Selection

by **Matthew L. Rockwell AIA, AIP**

For an increasing number of architectural projects, analysis of potential building locations—and site analysis and selection—have become essential phases of comprehensive architectural practice

*Architectural analysis
comes first*

A previous introduction to the concept of the architect's expanding practice describes the services which constitute comprehensive practice. In chronological sequence, the earliest of these services is concerned with the analysis of the project. Within the area of architectural analysis there may be identified several functions, some business in nature, others professional. One of these that relates specifically to an extension of the basic professional interests and abilities of the architect deals with project location analysis and site selection.

The extension of the architect's traditional services has been questioned by some on the basis that no *one* individual can hope to perform—competently—other services in addition to the traditional services of the architect. Actually larger offices can, and have for many years in some cases, perform comprehensive services with the support of specialists of various types. But for the practitioner with a small office to feel that "this is not for him" is for him not to understand the potential workings of the process.

*Site selection by
architects*

Whether large or small, every architectural office has traditionally offered some form of site services as a part of its regular commission. Usually restricted, in the past, to the planning of the site itself, it is not unreasonable today to extend this function to include the selection of the site as well. Because of the increasing complexity of the factors bearing upon the site, such as traffic patterns which affect access to and egress from sites or unchangeable zoning restrictions, it is almost imperative that the architect

become involved in the project before the purchase of a site. Site selection derives naturally from site planning. The architect is, or *can become*, as well qualified to *select* sites and to organize the analysis which should precede the construction of any but the most routine buildings, as he is now qualified in the *planning* of the sites.

Real estate activities

In this area of practice, a large part of the architect's activity will be in the field of real estate. The comprehensive services concept does not mean that the architect should supplant other professionals in any respect, or in this case that he should become a real estate broker. It does mean that architects should work directly with other professionals and should act as a correlator between these interests and his client. The time has passed when the best interests of the client are likely to be served by purchase of a site offered by a speculative interest without first making an architectural consideration of that particular site's appropriateness to the needs of the client.

Other chapters in this series have explained the principles of some of the many types of studies which are necessary in architectural practice today. For example, in the chapter on industrial buildings, it was pointed out that a study of potential markets for the industry should be made, along with studies of existing sources of supplies, and that many other considerations are in order. In the chapter on shopping centers, it was noted that driving time or transportation time of potential customers to the site was a part of the preliminary analysis. All of these considerations and many others may be handled by the architect either through an extension of his own natural planning abilities or through association with appropriate specialists. It is the purpose of this chapter to examine a specific project, in order to demonstrate some of the principles of architectural practice in the areas of location analysis and site selection.

*Location analysis
case study*

In brief the study, in this case, involved consideration of the relocation of the general offices of a major food company in Chicago. At the outset of the study these general offices were located on several floors of an office building in the central business district where rentals were comparatively high. The problem posed was threefold: 1) Was a relocation of the offices to a company-owned building in the suburbs justified? 2) Was the purchase of a building elsewhere in the central district justified? 3) Was the rental of other space in the central district more favorable for the company than for it to remain where it was? The problem obviously promised only a chance that a traditional architectural commission would result.

Yet it was also obvious that the problem, as posed, could be best answered in a correlated manner by an architect. A fee arrangement was reached with the client, setting up a charge for the location and site research, this charge to be separate from the fees for any future architectural commission. It is very important that this feature of the client architect arrangement be made perfectly clear. There should be no reluctance on the part of the

Special fees necessary

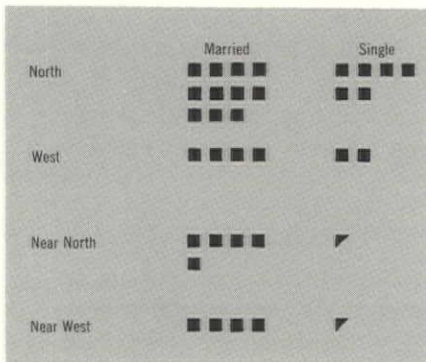
architect to request special fees for such special work. In numerous other similar relationships, our firm never found a reluctance on the part of the client to enter into special fee agreements for this type of work.

Before considering phase one of the problem of relocation of this company, it was essential to know where company employees lived. In the Greater Chicago area, any drastic change in well-established commuter patterns was certain to have an effect upon personnel roles. The study made was simple. The Chicago metropolitan area was divided into geographic sectors and the labor forces pinpointed and tabulated.

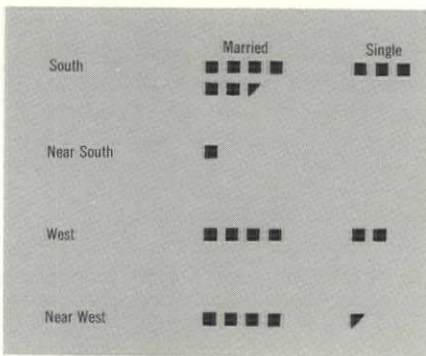
Over three-quarters of the force lived in easily identifiable neighborhood clusters on the north, west, and south of the region, there being no eastern area because of the location of Lake Michigan. On the theory that those living in the western area could, and probably would, move into either the north or south if necessary, this group was added to both of these clusters. The result was that 68 per cent of the total favored the east-to-north areas; 57 per cent, the west-to-south areas.

These figures were inconclusive. Therefore, in order to make the study more deliberate, two assumptions were made: 1) that the long-term worker of six years or over was more important than the short-term worker for reasons of loyalty, experience and ability, and 2) that, of these, the married worker was more important than the single worker because of family and property ties. This group proved to be the most numerous as well. The north area, with 123 married, long-term workers as against 80 for the south area, showed an advantage of 50 per cent over the south. This fact led to the decision that, in the further course of the study, all sites to be considered should be located in the north-to-west sector. Obviously, the ratio of male to female employees had to be considered and the relative need and availability of each; also a measurement, even though rough, of near retirement age workers and their home locations. The details of these studies are omitted here, but perhaps enough of the character of the study is now apparent to indicate that an architect can master the details of such studies with ease.

Continuing the first phase, a study in minute detail was made of the several hundred square miles of the northwest sector of the Chicago region. The obvious influences of high land values, tax rate and the generally crowded traffic and land conditions almost automatically caused the study to begin beyond the northern city limits of Chicago. A number of maps were made, the most important and costly being a map showing all zoning districts for every community in the defined study area. That such maps are not yet available publicly is surprising and lamentable. Such a map in the hands of able architect-cartographers is a tool of tremendous advantage, as well as prestige. Other useful maps were commutation diagrams showing areas of accessibility, in 15-minute increments, to 90 minutes' distance from the site area. A multitude of information can be shown on such maps, in a manner that will

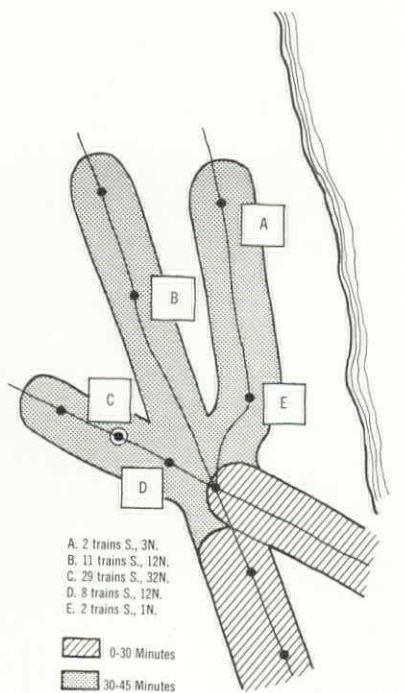


Six Year Employees—N to W Sector



Six Year Employees—S to W Sector

Preparation of study maps



Commuter Train Frequencies and Travel Times

make the meaning obvious to almost any reader, of material ranging from land use to nearby labor force.

In a project such as a general office building, as opposed to a facility such as a warehouse, the distance of the site from the bulk of the working population (the source of labor) is of major importance. But the "auto-mobility" of employees should not be underrated; for example, one suburban company never had to repay an employee for more than a single day's travel before the new employee became a part of a car pool. Talks with the State Department of Labor will uncover, as was true in this subject case, hidden pools of female labor where children of school age have left unoccupied hands.

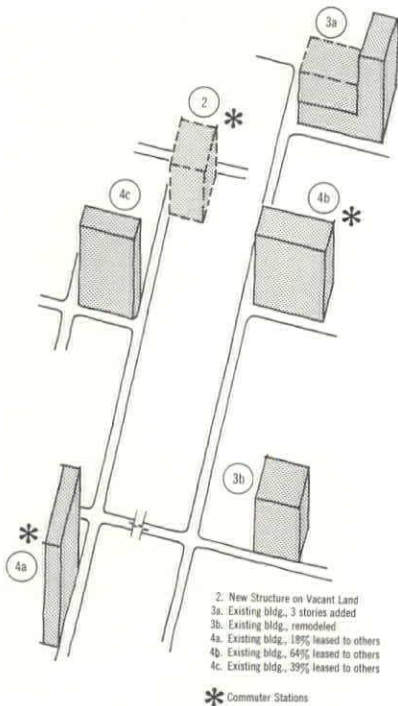
In the present case, the site to be chosen was expected to be immediately accessible to at least one of the following: a bus route, a railroad station or a main highway. Further, it was considered important that the site have a positive value for advertising to the general public—not for advertising messages themselves, but for the prestige value of the structure.

As might be expected, the land values of potential properties decreased in proportion to increased distance from Chicago; at the time of research, the range was from 60 cents to 15 cents per square foot in the suburban areas and from \$4,000 to \$1,500 an acre in the rural areas. For purposes of this study, a total building floor area of 75,000 sq ft was assumed, with a ground floor area of 25,000 sq ft, on the basis of two stories and a basement. Making allowances for setbacks and parking spaces, a minimum of three acres was determined to be necessary. In practice, parking requirements are often underestimated; this short-coming includes needs for truck loading, standing and unloading, and also visitor's parking spaces. While a 20 per cent building coverage may seem abnormally conservative, the figure is actually very reasonable for structures housing any degree of activity. Of course, once the designation of a parcel size for a project has been made, the number of sites available is immediately restricted.

In the case of the particular project under discussion, only twelve possibilities were found within the "close-in" suburban area. Of these, four were superior and had comparable physical advantages, but only two of these appealed to the company officials. However, figures for one site showed 1½ times as many job applications as for the other site. Moreover, while female applications for the second site almost equalled the openings, for the first site there were 4½ times as many female applications as openings. This factor brought the search for sites in the suburban area to an end.

A location in the rural area as opposed to the suburban calls for the consideration of a different set of criteria. Here existing sources of labor are of much less importance. The decision by management to move farther afield into a rural area implies the concept that all aspects of the new site must have true mobility in the fullest sense. Aside from the structure, the one fixed and

Considerations of rural locations



Alternate Solutions Considered

Transportation
methods compared

Consultation
with specialists

important feature is the rural community itself and the advantages which it offers, or fails to offer, to the project. Of the 27 rural sites considered in this case, 22 lay within, or immediately adjacent to, nine separate villages. Each village had its own background. In some instances, the national origin of the population within the area was important. In other cases, the attitude of village officials toward rezoning attempts gave an indication of either a dangerous or favorable local political climate.

While the supply of public facilities in every village was critical, each village presented different problems to consider. Of particular concern was the impact which *other* industry might have on the community at a later date. For example, one village of 2400 persons could support the 500 employees of the present company with service facilities (gas stations, drug store, beauty parlors, etc), but a second or third company following the first would soon disrupt the facilities for all. Seven sites were ultimately given preferred rank and a final choice made on the basis of two advantages: 1) the convenience of the site by rail to Chicago in an emergency, and 2) the general amenities of the village itself.

In arriving at the final decision as to the relocation of the offices, it was felt that the basic consideration must be a measurement of the comparative costs involved. Accordingly, five alternate cost possibilities were studied: 1) the cost of continuing to lease space, 2) the purchase of vacant downtown property and the erection of a new building, 3) the purchase of existing buildings for remodeling, 4) the purchase and use of existing buildings, and 5) the purchase of vacant suburban land for building purposes. Only vacant downtown property located in the near north and west fringes were studied since the future of the south area, with its tangle of railroads, was considered too uncertain.

At the time of survey, the use of automobiles and railroads was about 20 per cent each, and subway and bus lines about 25 per cent each. However, the use of private automobiles was growing constantly and west and northwest expressways were to be opened in the near future. A fringe location accessible to these two highways was thus heavily favored.

At this point it was necessary to consult with experts in building management. From them, accurate costs of both raw cleaning materials and maintenance charges were obtained. These costs included such items as window cleaning charges and polishing equipment so that a fair comparison could be made between company-accomplished maintenance as opposed to contract maintenance. Other real estate experts were consulted in order to determine costs to the company of vacancies which might result in a company-owned building in which space was leased to others. Reasonable rental income was estimated; interest charges on construction loans were studied; remodeling expense for both company and tenant use was calculated; taxes were considered. All calculable items of cost were matched to an arbitrary period of occupancy and measured on the basis of the following comparative

values, related to the cost to the company of remaining in the leased space occupied by the company at the time of the study:

- Alternate 1 Continuance of leased space . . . Basic Cost (X)
- Alternate 2 Purchase of vacant central property & cost of building 60% of X
- Alternate 3 Purchase of existing buildings and remodeling cost
 - Possibility a 57% of X
 - Possibility b 56% of X
- Alternate 4 Purchase of existing buildings and use as is
 - Possibility a 32% of X
 - Possibility b 46% of X
 - Possibility c 48% of X
- Alternate 5 Purchase of vacant rural property & cost of building 34% of X

With one exception, Alternate 4a, the cost figures were heavily in favor of the outlying location, Alternate 5, which could be occupied at 34 per cent of the cost of remaining in the location occupied at the time. After considering the unknown expansion needs of the remote future, not to mention the prestige values of a new modern building, the outlying location was chosen.

In moving to purchase the selected property, the company felt it would be wise not to disclose its identity until after purchase. One reason was that should there be local opposition to the invasion of industry into the village, any negative effects upon the goodwill of the company could be avoided. Also while that portion of the property under consideration was properly zoned, there were points still to be settled which could be accomplished best by a third party.

Architects as agents for property purchases

Accordingly our firm understood this phase of the commission, as the agent of the owners, and proceeded to meet with local realtors and village officials to determine their requirements. This required a period of negotiation which heavily involved the company legal counsel. There was a contract stipulation that disclosure of the company identity would be withheld until the last possible moment. This feature requires that the agent be well known locally and have a degree of confidence and integrity commensurate with the serious position of trust in which he functions as the agent of his principal.

The advantage of using an architect as an agent in this manner is that the owner is represented by an expert who is qualified to advise on the various physical problems which arise during negotiation. Other than the financial aspects, these include factors relating to entrance and exit provisions, off-street parking provisions, height and sign restrictions, coverage and setback restrictions, and aspects relating to water supply, sanitary and storm sewerage, and fire protection.

Favorable results of services

The outcome in the present case was completely favorable. The land purchase ultimately made was greatly in excess of requirements, and purposely so, for protection against possible negative growth nearby whether residential or commercial.

The accomplishment of the studies described seems so natural an extension of the architect's other services as to make it seem obligatory that "site selection" become a normal service performed by architects.

Library Notes

Foreign Books

Recently an architect from a city in the Midwest came into the library at the Octagon and inquired about what is being done in architecture under the authoritative approach of the Soviet Union. He was surprised to find that the AIA library receives regularly from Russia four journals which deal with architecture, and he spent several hours studying them.

There is an interest in the architecture produced under the aegis of social systems different from our own. Certainly architects travel as much as, or perhaps more, than other professional people. Yet these journeys do not always take them to all countries nor to all parts of any country.

One of the significant developments of recent years has been the availability of architectural books which provide important insights into the architectural achievements of all countries. Since architectural images are a visual language and there is communication by means of drawings and plans and photographs regardless of linguistic barriers, there has always been value in books which record architectural knowledge, regardless of the language in which the book is written. Assuming architects to be as familiar with French, German, and Italian as any other American professional community, there has been an exchange of ideas in books written in these languages.

In recent years, however, particularly since World War II, there has been a tendency for foreign books on architectural subjects to carry a running translation in the English language. This is particularly true of German and Italian books and periodicals, but the important development is that books in such languages as Polish, Swedish, Finnish and Japanese, among others, are published with English translations alongside the original language. This development opens up new ideas in architecture to the reader. It is not altogether satisfactory to study plans and photographs, but it is illuminating to read about the philosophy which underlies the work of the architects of foreign countries. Such a development in the publication of foreign books provides the American archi-

tect with an understanding of the creative design and construction taking place in architectural history throughout the world.

An example of a book written in a language not commonly known in America, Serbo-Croatian, with a simultaneous translation in English is a recent addition to the AIA library entitled "Arhitektura Bosne i Put u Suvremeno. Architecture of Bosnia and the Way [toward] Modernity," by D. Grabrijan and J. Neidhardt (Ljubljana, 1957). This is an extraordinary excursus into the cultural content of the city of Sarajevo in Bosnia. The elements of the city and the formative factors of the architecture are traced in intimate detail from the time of the Turkish occupation of the Balkans to the emerging new forms of Yugoslavia today.

This is an unusually incisive study of the cultural elements which went into the organization of the dwelling space in Sarajevo. The book provides the materials for an understanding of the relationships between the past and the present and the continuity of tradition in architectural and urban forms. The translation from Serbo-Croatian into English is satisfactory, indeed, and the many drawings and photographs are unusually successful in supporting the text.

Another book, from a small but influential country, is edited by Keijo Petaja and published under the trilingual title of "Suomen Liike-elämän Arkkitehtuuria; Merkantil Arkitektur i Finland; Business Architecture in Finland" (Helsinki, 1959). Printed in Finnish, Swedish and English, the book is evidence that "business architecture in Finland reflects the spirit of the day." Such architecture, in America as in Finland, reveals that commerce and industry dominate every community, and a social force such as urbanization is necessarily affected by architectural planning, as architecture is molded by the social influences bearing upon it.

The National Association of Swedish Architects, with Marten J. Larsson as principal editor, has prepared a book called "New Architecture in Sweden" (Stockholm, 1962). The purpose of this book, written in Swedish and English, is to present a survey of Swedish architecture between 1950-1960.

In addition to an introductory section on community planning, the book deals with one-family dwellings, multiple dwellings, commercial and community buildings, education buildings, sports buildings, buildings for social welfare, administration buildings, industrial buildings and churches.

Not only are these foreign books studies of local, regional and national styles of architecture, but some of them analyze examples of American architecture. Architectural studies of this kind serve the two purposes of introducing Americans to foreign architecture and of interpreting American architecture in new dimensions for us.

One recent foreign book, international in scope, is G. Aloï's "Alberghi, Motel, Ristoranti; Hotels, Motels, Restaurants." (Milan, 1961). In the languages of Italian and English, this book is filled with illustrations in black and white and in color and with plans.

In the provocative introduction by Gillo Dórfles, it is pointed out that hotels are as old as civilized mankind. At one time the hotel may have been a secondary element in the urban scene—architecturally, economically and socially—compared with churches, castles, palaces and public buildings, but today the hotel is the "tangible symbol" of our times. "There is a hotel where a stadium, a palace, or even a church is lacking; the hotel often includes a church, chapel, sporting centre or social centre." The hotel is modern man's meeting place.

The book gives examples in three categories: 1) medium or small-scale constructions in resort areas; 2) constructions of a "continuative and permanent type" in cities or important traffic centers; and 3) motels or one-night hotels. Restaurants are considered as "food hotels." An endeavor was made to include contemporary architectural examples not cited heretofore in books of this kind.

We are inclined to agree with Mr Dórfles that this book "is an efficient and up-to-date instrument of approach to this important sector destined to become . . . more and more an engaging and determining factor in the economic, social and architectural structure of our epoch."

These examples are only a very few of the foreign books, presented in English as well as in the original language, which can provide fresh insights into architectural achievements.

M.E.O.

The Shelter Program

by Jan C. Rowan AIA

► Some months ago a group of architects met in New York to discuss the architectural implications of the civil defense shelter program, with which the profession was being asked to cooperate. It appeared that none of those present felt that such a "program" had any validity, and there was some strong resentment that the Institute was urging its members to "be prepared to participate vigorously" in an activity that drew at least divided—and some strongly negative—reactions.

The group constituted itself as an ad hoc committee, prepared a statement outlining its position and solicited signatures from additional architects. A condensed version of the statement and names of those who have so far signed it follow:

"We feel it is our duty to point out the architectural absurdity of a national shelter program.

"No architect is interested in designing and building for destruction; his purpose is to construct for the future. However, as the shelter question becomes more and more publicized, clients turn to architects for advice and, in some cases, specific recommendations. No 'architectural' advice is possible.

"In the first place, the technical data available is contradictory, to say the least. The point from which an architect always begins planning—the program—is nonexistent. If one were to try to design a shelter with a certain desired effectiveness, various assumptions would have to be made: distance from an assumed blast; size of the bomb assumed to be dropped; whether it would be assumed to explode in the air or on the ground; the assumed likelihood or not of a tidal wave or a firestorm which would render any shelter useless, etc. And even to make these programmatic assumptions and set up design data, an architect would face conflicting technical testimony—from the blithe generalities published by both official and proprietary sources to the conclusion of Gerard Piel, publisher of *Scientific American*, that in the case of a 20-megaton bomb burst in the air "there is no local fallout" since the square mileage destroyed by fire would approximate that covered by intense fallout.

"The 'technical' aspects of the architectural problem thus become impossible assumptions, and

the question of *how* to design a fallout shelter is one with no real answer.

"But even more important to architects is the question of *why* we should even seriously consider fallout shelters on architectural terms. The planning of shelters is preparation, on psychological and physical terms, for war. It is anti-architecture. The purpose of architecture is the creation of environments in which civilizations can develop. War destroys what civilizations have built; therefore war is the antithesis of architecture. Planning for war prevents the fulfillment of what has been designed; therefore, war is the antithesis of planning to build. All war is destructive; atomic war can be totally destructive. Planning for destruction is an architectural contradiction; planning for atomic destruction is an architectural absurdity."

William Stephen Allen, Robert Anshen, Bertram L. Bassuk, J. Conrad Breiby, Simon Breines, Serge Chermayeff, Henry S. Churchill, Winston A. Close, Alexander S. Cochran, Charles R. Colbert, William J. Conklin, Thomas H. Creighton, Gottfried P. Csala, Joseph D'Amelio, Arthur Q. Davis, Philip A. Dworkin, Isaiah Ehrlich, Frederick E. Emmons, James Marsten Fitch, Samuel Glaser, Howard Leonard Glazer, Percival Goodman, Walter Gropius, Victor Gruen, Jordan Gruzen, Dr Paul F. Gugliotta, Henry C. Heaney, Ger-son T. Hirsch, Douglas R. Johnson, A. Quincy Jones, Jules Kabat, Ely Jacques Kahn, Meyer Katzman, Diana Kirsch, Norman M. Klein, Stanley H. Klein, Edward F. Knowles, Lawrence Laguna, Morris Lapidus, Arnold Lawrence, Thomas C. Lehrecke, Harold J. Levy, Herman Licht, Robert Lippin, Robert A. Little, Iver Lofving, William Logan, Alan Mather, Donal McLaughlin, William J. Modin, Louis R. Morandi, John T. Murphy, Ibsen A. Nelson, Herbert Oppenheimer, Harry A. Pollack, Ralph Pomerance, Robert Billsbrough Price, Harry M. Prince, John Lyon Reid, Edwin J. Robin, Jan C. Rowan, Raymond A. Ruge, George A. Sample, Vica Schiewind, José Luis Sert, John G. C. Sohn, Theodore L. Soontup, Bernard P. Spring, Clarence S. Stein, Julius Stein, Richard G. Stein, Earl H. Strunk, Hugh Stubbins, Edgar Tafel, Ikuyo Tagawa, Wallace G. Teare, Rolland D. Thompson, Maxfield F. Vogel, Henrich H. Waechter, John Carl Warnecke, Ida B. Webster, Robert C. Weinberg, Norval C. White, John Louis Wilson, Henry Wright, Morris Zeitlin.

The group knows that many more architects would be willing to sign this statement if given an opportunity. It would seem, therefore, that the Board and the Executive Committee of the Institute should consult the membership before supporting the shelter program and embarking on such activities as sponsorship of the National School Fallout Shelter Design Competition. ◀

Editor's note: The two statements presented here were written before the Cuban crisis.

The Other Side of the Coin

by William H. Scheick AIA

► The statement on the opposite page signed by some of our distinguished members expresses a viewpoint against any civilian shelter program. It has political overtones because decisions on civil defense rest with Congress.

We have kept the membership informed of our cooperation with the Defense Department on the fallout shelter program. A summary is printed here for direct comparison with the signed statement.

The public vacillates between apathy and concern for protection from nuclear warfare in relation to international tensions. In 1961, a crisis over Berlin was developing ominously and the government, reflecting public alarm, moved to strengthen the civil defense program. That crisis dissipated and the public seemed to forget promptly that a rash act by an individual or group could at any time submit us to the punishment of a nuclear attack.

In the 1961 crisis, the Defense Department planned a program to provide fallout shelters for as many Americans as possible. A survey of existing buildings was conducted, using the services of many architectural and engineering firms trained in special schools for such work. In addition, a program was planned to enable the construction of new schools with fallout shelter facilities. Congress was to be asked to appropriate \$350 million for such shelter construction.

During this period of time we received many requests from our members for reliable information on shelter design. The engineering societies and the AGC reported similar demands.

The Defense Department, after consultation with AIA and ASCE officers, decided that it needed professional advice. The AIA acted promptly to form an Advisory Committee, representing the AIA, EJC, NSPE, ASCE, AIP and AGC, which began a series of meetings with Civil Defense officials in November 1961. None of these organizations has done anything in a political sense to influence legislation on shelter programs.

Before this Committee went to work, the policies and principles of its collaboration with the

Defense Department were debated and reviewed by officers of the AIA. They concluded that policies on civil defense are matters to be determined by Defense experts and ultimately decided by Congress. They concluded that the function of the Advisory Committee was to aid the Defense Department in preparing a school fallout shelter program that would be soundly conceived and practical in terms of design, economics and administration at local levels.

Steuart Pittman, Asst. Secretary of Defense for Civil Defense, and Paul Visser, Director of Technical Operations, Office of Civil Defense, gave the Committee, as well as the AIA Board, extensive information explaining the reasoning behind the fallout shelter program. They demonstrated that *fallout* shelter for our entire population is feasible but that blast and fire protection are not. They described the necessity for fallout shelters for the country as a whole under several types of nuclear attacks where only target areas would be destroyed. The possibilities of survival through adequate fallout shelters are impressive.

From a strictly objective appraisal of this information, involving neither emotion nor philosophy, the men who heard these discussions concluded that the school shelter program was reasonable. They believed that their professional advice would be in the public interest when and if Congress approved the program. The AIA also approved a design competition to develop new ideas for dual purpose shelter space in schools.

My firsthand experience with this matter causes me to believe that the statement on the opposite page represents some misunderstanding. A *fallout* shelter program is neither absurd nor architecturally impossible. Adequate technical information *does now exist*, though there was much confusion about it in 1961. The work of the Advisory Committee helped end this confusion.

I don't understand the philosophy that planning for shelter is "anti-architecture" or psychological preparation for war. American colonists built stockades when living among hostile Indians. History offers examples of defensive architecture not considered as demonstrations of aggression. In the event of a holocaust, some must survive to build again. ◀

New York Times Reporter
Martin Arnold

Photos by Bob Warner,
Editor & Publisher

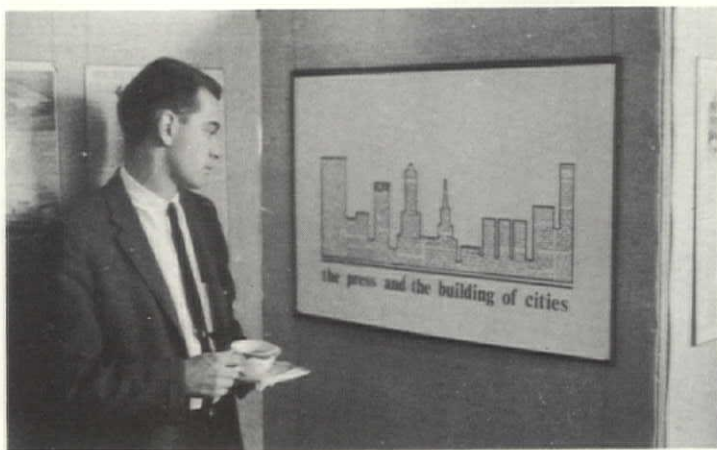


The Press and the Building of Cities

“What sort of New City is emerging or should emerge from the disorder of megalopolis in which we find ourselves? The press can ask this question more effectively than anyone.” With that statement Dean Charles R. Colbert FAIA, of the Columbia School of Architecture, underscored the *raison d’etre* of the October conference on “The Press and the Building of Cities” sponsored by the AIA and conducted by the Columbia Schools of Architecture and Journalism. Addressing the thirty reporters from metropolitan dailies who participated in the conference, Dean Colbert continued: “It is the total vision of a city which is in the hands of the press. If, let us say, a huge office structure is being considered in a region not adapted to it, the press *must* speak out. There are few disinterested spokesmen, and no other will really be heard. If, on the other hand, a fine street turns into a slum or garish midway, who can draw attention to it? Again, I believe it is a fundamental responsibility of you—the press. The cries of individual voices lack cohesion and remain unheeded.”

The newsmen were given an intensive short course in the myriad forces that shape cities and the standards by which urban design is evaluated. Not enough, certainly, to make them instant critics, but enough, hopefully, to convey the vast scope of the subject and stimulate a more perceptive examination of their own cities. The newsmen were attentive students, but they never dropped their role as reporters. They asked challenging questions. They strongly pointed out the shortcomings of the architectural profession in communicating with the public. This dialogue was perhaps the most significant part of the conference. It will be presented fully in a future issue of the *Journal*.

An AIA-Sponsored Working Conference for Reporters from Metropolitan Dailies



Tom McPhail, Detroit Free-Press (above left) views theme poster designed by Columbia's School of Architecture

Miami Herald's Frederic Sherman (above right) takes notes during discussion of "Standards for Evaluating Design"



Participating newsmen (above, left to right) Ray Hebert, Los Angeles Times, Joseph Hochstein, Newhouse Newspapers, and William Manly, Milwaukee Journal

Institute President Henry L. Wright (center at right) chats with Grady Clay (left), Louisville Courier-Journal, and Ralph Brem, Pittsburgh Press



Book Reviews

Paperbacks

The paperback is here to stay, and anyone who has browsed in bookstores devoted entirely to the low-cost editions, to say nothing of the drugstore counters, realizes that a full-fledged library could be built up entirely of so-called "flimsies." Flimsy they are not, at least as far as subject matter is concerned. Below are mentioned a dozen or so of the paperbacks that have arrived on our desk during the past year—most of them reprints, a few are originals.

From Meridian Books, Inc, New York:

AESTHETICS TODAY. Selected and edited by Morris Philipson. 1961. 475 pp \$1.65

Organized into six sections, each with an introduction by the editor, the book presents twenty essays dealing with such topics as "relations between the arts and general cultural purposes; relations between art and the nature of knowledge; relations between form and content in respect to the concept of style"; etc., by such authors as Jacques Barzun, Louis Kronenberger, Ortega y Gasset, Lionel Trilling, Sir Herbert Read, and others.

FRANK LLOYD WRIGHT: WRITINGS AND BUILDINGS. Selected by Edgar Kaufmann and Ben Raeburn. 1960. 346 pp illus \$2.10

The editors present through Wright's own words a survey of his achievement as a major figure in the world of twentieth century architecture, with more than 150 illustrations and a complete list of the master's executed buildings from 1893 to 1959, keyed to a map of the US.

From W. W. Norton & Co, Inc, New York:

THE CITY IS THE PEOPLE by Henry S. Churchill (FAIA). 1962. 206 pp illus \$1.85

One of the American classics, first published seventeen years ago, this edition contains a new preface and an epilogue by the author in which he takes back some of his earlier prophecies and restates the problems and the goals in today's terms. Still one of the top books in its field.

LOUIS SULLIVAN—PROPHET OF MODERN ARCHITECTURE by Hugh Morrison. 1962. 322 pp illus \$1.95

First published in 1935, this was the first definitive biography of the architect whom we now recognize as one of our founding fathers. Besides the biography and critique, it contains a complete chronological listing of Sullivan's buildings.

ENGLISH CATHEDRALS by John Harvey. 1961. 188 pp illus \$1.50 (Originally pub by B. T. Batsford)

There are many books on the cathedrals of England; this one claims an original approach in that it treats the buildings as a unity, a series of related works of art, rather than as individual examples. The text is very interesting and well-written, and the many photographs are excellent. In addition to several valuable statistical charts, the most unique feature for a book so small is a plan of each of the twenty-seven cathedrals, all drawn to the same scale, with dimensional and historical data and the names of the architects, where known—and a surprisingly large number of them are known.

CHRISTIAN ART. C. R. MOREY. 1958. 120 pp illus \$1.25

Professor Morey's book was first published in 1935, and has stood ever since as an extraordinary achievement in presenting lucidly to a wide audience a realization of what art and archeology really are, without vulgarizing the material.

From Universe Books, Inc, New York:

DONATO BRAMANTE by Gino Chierci.

PHILIBERT DE L'ORME by L. Brion-Guerry.

CHRISTOPHER WREN by Nikolaus Pevsner.

ANTONIO GAUDI by Cesar Martinell.

LE CORBUSIER by Jean Alazard.

1960 illus \$1.50 each

These five pleasant little books were printed in Italy, and not too carefully proof-read, but the gravure plates are well reproduced and the brief text in each is written by a recognized authority. Let us hope the series will be continued, for the field of subject-matter is almost limitless.

From Collier Books, New York:

SCOPE OF TOTAL ARCHITECTURE by Walter Gropius. 1962. 158 pp illus \$0.95

A selection from the writings of Gropius, edited by his wife, with illustrations chosen to clarify and expand the text.

From Appleton-Century-Crofts, New York

CITY AND COUNTRY IN AMERICA. Edited by David R. Weimer. 1962. 399 pp illus \$2.75

Professor Weimer, in his preface, finds that the attitude of Americans toward city and country life seems to have gone through three stages. The first, agrarianism, displayed considerable hostility toward urban life. After World War I the filtering of planning ideas through the active middle—and intellectual—classes resulted in a conviction that the city had to be made over; and out of this

gradually developed a third point of view, that of regionalism, accompanied by the "neighborhood" idea. He says "In some ways Daniel Burham is a regionalist, Victor Gruen a decentralist, and Frank Lloyd Wright more of an urbanist than he appears at first."

Included in the book are essays and articles selected from a very wide range of men who have thought and written about the city and its opposite—Crèvecoeur, L'Enfant, Jefferson, Emerson, Ruskin, Downing, Olmsted, Stein, Mumford, Sitte, Wright, Hudnut, Tunnard, and as many others.

From Dover Publications, Inc, New York:

ART STUDENTS' ANATOMY by Edmond J. Farris. 1961. 159 pp illus \$1.45

First published in 1935, and again in 1944, this pocket-size volume contains all the more than 150 drawings and photographs of the original editions. It should be an invaluable aid to art students and to any—particularly architects—whose work involves sketching the human figure. The author is Professor of Anatomy at the Pennsylvania Academy of the Fine Arts. J.W.

Modigliani the Sculptor. Alfred Werner, New York, Arts Inc. 120 pp., illus. 9¼"x12¼", \$15.00

Year 1931: Small steamer crossing English channel from Newport to Dieppe. Raw, misty night in June. On deck.

Very young Architectural Graduate: "Cezanne? Yes—but the one I have trouble with is Modigliani. How could he see people so twisted?"

Not Much Older Australian Architect: "Look again, Chum. There's a sensitivity and wonderful . . . yes tenderness for people in that poor guy's work. Only been dead ten years, you know—he'll be one of the greats, mark my words."

Well I did look again, thanks to my unknown friend in passage, and came to respect a great linear draftsman who somehow revealed more of his own and his sitters' characters with his little mannerist design tricks—unmistakably his

own—than any other painter of his time. What is captured and revealed however so often seems the sitter's compassionate regard for the artist, presented as design. It is as if Modigliani's preoccupation with humanity as a subject crystallized into these paintings as objects. His linear sensitivity expressed not only his own feelings but those of his sitter.

This book is about his sculpture. Claims to be a first. The biographical and critical essay is mercifully brief—sixteen pages plus the paraphernalia of notes, references and list of plates. The anecdotes are there, not played up, and testimony adduced for the thesis that Amedeo Modigliani wanted most of all to be a sculptor.

Patient searching has found for this book twenty-five pieces as a canon of relics and the certainty that many were destroyed by the artist in self-criticism. Here we have in splendid photographs on large pages *several* views of each of these, as well as reproductions of some twenty-six preliminary sketches for a never-executed series of kneeling caryatids of a musical quality of composition and line.

I find great personal doubt of authenticity of plates 30-31 of a girl's head (Seattle and Paris copies). Without knowing its history it seems exactly what a skillful *modeler* (not carver) would produce as "a Modigliani sculpture" if he had only the evidence of his paintings for his manner. It is far from Modigliani's three-dimensional vision and delight in the texture of raw stone directly cut. The fact that these are both casts from a lost original of course has much to do with this difference but they are psychologically not even kin to the other pieces.

To a remarkable degree many diverse historic influences—Archaic Greek, Byzantine, T'ang China, Gupta, French Gothic, Romanesque, Ivory Coast—fused in his individual consciousness to become his own expression—in sculpture. His painting seems more free of ancestry and even of current influences of Paris of the oughts and teens. A handsome book; sculpture of great architectonic quality. E.P.

COMING IN THE JANUARY JOURNAL

Washington in Transition

The January issue of the *Journal* will be a very special issue devoted entirely to the city of Washington, D. C., its architecture and its planning, its headaches and its problems of growth—past, present and future.

Over twenty articles will be written by government officials and commissioners, prominent

architects and planners, and others. This number has been prepared with the collaboration of the AIA Committee on the National Capital, and Paul Thiry FAIA, Committee Chairman, is the Guest Editor.

Don't miss it—and order extra copies now for your friends, your newspapers, schools and libraries. They will be available to members at \$1 each and to non-members at \$1.50.

Editor's Page

Washington in Transition

On this page in our September issue, I tried to give our readers some idea of "The Ordeal of Being the Capital City"—the incredible complications and headaches that beset the civic-minded people of Washington and their appointed (*not* elected!) city officials.

"Washington is such a beautiful city," people say—people who have seen it only superficially, the tourist sights such as the White House and the Capitol, the Mall and the cherry blossoms.

"Washington has the worst slums I've seen in any city in this country, and the traffic congestion is terrible," other people say—people who have seen the city more thoroughly and probed it more deeply.

Both statements are true, for Washington is *two* cities: the Federal capital and a city of 800,000 population which is the center of a two million-person metropolitan area. The tourist sees only the Federal capital; the more thorough visitor sees the city and its suburbs.

What this dichotomy, this split personality, means in terms of planning the functional and beautiful growth of the Capital City is the topic of the January issue of the *Journal*—another one of our now-famous "special issues" which achieved such marked successes. (The first was January 1960, "The Architect and the Homebuilder," and the second was March 1961, "Urban Design.")

The idea originated in the fertile mind of Paul Thiry FAIA, of Seattle—who was immediately appointed Guest Editor for the issue. It was carried out with the sponsorship and assistance of the AIA Committee on the National Capital, of which Paul is Chairman. It was he who roughed out the first draft of the contents and list of authors, and the final product sticks remarkably closely to the draft.

The issue will survey the whole planning situation here in Washington, from its beginnings with the famous L'Enfant plan, its tribulations during the nineteenth century, its new hope in the McMillan Commission's plans, current confusion in the face of the vast increase in population and activity in the area, and its hopes for the future—which perhaps are visualized in the Year 2000 Plan.

Our purpose in doing this is to bring home to the architects of the USA that the planning of Washington is *their* problem. Washington is *their* city. It is *not* the city of those who live and work there. The architects, and all the other people, of

the country, through their Senators and Congressmen, govern and plan the city of Washington, not the residents—who have nothing to say about it.

Well illustrated and handsomely laid out, the January *Journal* should make an important contribution to the understanding and appreciation of the problems of the growth of the city of Washington.

Ordeal of the Capital City—News Flash

The long-awaited report and plan of the National Capital Transportation Agency has just been made public—a thorough and complex study recommending rail and bus rapid transit, certain new expressways, and curtailment of the present highway and bridge-building program. Without venturing either to praise it or to criticize it, for it would require much study, I can at least point out what high hurdles it has to clear before it, or any part of it, can be put into effect: First of all, of course, it was submitted, not to the City Council for action or to the voters for approval, but to the President of the United States. According to the *Evening Star*, the President "has sent the plan for comment to officials of the Commerce, Interior and Treasury Departments and the Housing and Home Finance Agency, as well as to the District Commissioners and various local agencies." After they have made their reports "aides to the President will sit down with Budget Bureau representatives to forge some kind of transportation program for inclusion in the District's fiscal 1964 budget, which will go to Congress in January." So ultimately the plan will end up in the lap of Washington's 535-man "City Council"—the Congress of the United States—no members of which are citizens of the District of Columbia nor responsible to those 800,000 disfranchised Americans who are. I shudder to think what the House District Committee and the House Appropriations Committee will do to a 1.6 billion dollar transit and highway program—just for the city of Washington, DC.

Perhaps if the citizens of the country at large, and in particular the architects of the country at large, are better informed on the needs of their national capital, the members of the Congress will be more alert to the problems of their temporary residence. We hope the January issue of the *AIA Journal* will help.



Floods

AIA TECHNICAL REFERENCE GUIDE (TRG) 13-5

by Jeffrey Ellis Aronin AIA

AIA Committee on Safety in Buildings

Fifth of a planned series of Technical Reference Guides on the following disasters:

HURRICANES • TORNADOES • EARTHQUAKES • TERMITES • FLOODS • SNOW, SLEET AND BLIZZARDS • LIGHTNING

► For the purpose of this study, a flood is defined as—

- the rising of rivers, streams or lakes above levels where they are normally controlled naturally or artificially and where they endanger life, health or property
- the rising of waters of an ocean, gulf or great lake, above mean high sea level which endanger life, health or property on their periphery

Location and Causes

Almost every state and territory in the United States has experienced floods. They may occur (other than those near oceans) along flood plains or in areas which have not previously been charted as such. More than five per cent of the agricultural lands of this country and considerable business and industry are on flood plains of small streams. A large flood in most valleys and tributary streams today, therefore, may be a disaster.

The size of a flood depends on the rate, duration and extent of rainfall and the condition of the land on which it falls. From the 1955 Yearbook, US Department of Agriculture, we learn that point rainfall is greater than average rainfall over a sizable area; that is, there are storm centers in which rainfall is greater than it is in the surrounding areas. The path or direction of movement of the storm center greatly influences the magnitude of any resulting flood. Storms of high intensity usually are short and localized and occur in the summer. The so-called general rains

cover more territory but are of less intensity and last longer than the cloudburst type of storm.

Flows from small drainage areas respond more quickly to rainfall intensities than do the flows from large areas because of the shorter distance of flow. That and the higher rainfall intensities on small areas cause relatively higher peak flows per unit area from small watersheds. It also leads us to expect floods from small areas during summer cloudburst storms and floods from large areas during long, cool-season rains. Occasionally a cloudburst storm will travel a path that follows the direction of drainage for a large area, and a series of small-area floods thereby contributes to flow in the main stream. If the storm travels at a speed which causes flood flows from several small tributaries to reach the main stream at about the same time, a major flood may occur.

In streams, what may be a flood at one section may be a well-controlled flow at another. What causes floods in such situations? They could be a result of the reduction of channel capacity due to reduction in gradient, barriers to flow, changes of direction, undefined channels or siltation.

Those areas generally prone to flooding in several states are listed in the table (see pp 78-79).

Extent of Flood Damage & Loss

Flood damage has been constantly rising. This is not necessarily because the number of flood plains might have been rising, since the contrary is the case. Rather it

is because the value of flood plains has increased over the years and hence the damage has been greater. The dimensions of disasters due to floods can be illustrated by the fact that in the great Missouri Basin flood of 1952, the damage to agricultural land alone was in the neighborhood of \$100 million. The Columbia River basin flood of 1948 caused 40 deaths, made 60,000 persons homeless and effected \$200 million worth of property damage.

In the entire United States it is roughly estimated that the total average annual damage from floods and sediment approximates slightly more than \$1 billion. Estimates prepared by the Soil Conservation Service in 1952 indicated that the annual loss to agriculture alone is about \$557 million. The estimates were developed from studies covering 15 years and 77 watersheds, whose area is about 52 per cent

Technical

of the continental United States. The average annual upstream damage (the damage in tributary or headwaters of major rivers) is estimated at \$545 million annually. The average annual downstream damage is estimated at \$500 million, about \$165 million of which is agricultural damage.

Loss of life on account of floods is hard to estimate because sometimes such loss is attributable to other causes. In Alaska the Depart-



Farm bordering Mississippi River opposite New Boston, Ill, April 1951

ment of Safety maintains that since 1951 there has been no loss of life there due to floods. In California there has been a significant human life loss over the years. In Florida the 1959 floods did not cause loss of life, but in the past, particularly in hurricane-spawned floods in the Lake Okeechobee area, there has been significant loss. In September 1928, 1,836 people perished there.

The exact flood losses in the various states are hard to pinpoint but some comments follow in the table.

Type of Damage Due to Floods

It is current, not the depth, of the flood waters that causes the most damage. Also, the length of time that a building is wet affects the extent of damage.

Experience shows that the average two-story home in good repair, when flooded to the top of the first floor, sustains comparatively little damage. In one report the average repair bill (1936 prices) was \$350 (about \$1000 today).

The same house when flooded to its roofline will probably be in a fairly strong current. The result is that the house is often shifted from its foundations and is sometimes washed away.

The largest flood damage to homes occurs on the low river banks, where are usually located the poorest houses in the community. Damage can be of various forms, mainly water soaking, flood-

ing of basements and the depositing of silt and mud. Furnishings may be destroyed or ruined. Basement walls can collapse. Plaster can be damaged by inundation. Wood flooring and subflooring will swell. Buildings may move off their foundations and may also be demolished by current or impact of debris. Windows can be broken.

It is curious that little damage to utilities has been reported, and what damage has occurred has been easily repaired. Sewage lines are apt to become silted. Sewage disposal plants can become inundated and electric motors damaged. Inadequate surface and subsurface runoff facilities occur during floods. Telephone and power poles are snapped off. Railroad beds are washed out, littered with silt or sand or otherwise damaged. Underground power vaults can be put out of service. Water supply can be contaminated. Utilities are generally rendered useless during period of flood not only in flood area but in surrounding districts.

Roadbeds may be weakened considerably, undercut or completely washed out. Bridges may be damaged or washed away. In Florida it is noted that limerock subbase, with asphalt wearing course, when waterlogged and subject to wheel loads, quickly softens and develops large potholes. Mud, trash and embankments may be washed up. Losses due to suspension of normal business and industrial activities may be tremendous.

Flood Control Agencies

The Corps of Engineers, US Army, US Soil Conservation Service, State Departments of Water Resources, Flood Control Commissions, county engineers and other bodies, and the various offices of civil defense, are responsible for flood control in various parts of the country. On the state level, the various agencies involved are shown in the table.

The exact amount expended by agencies in their battle against floods is indeterminate since the figure depends on method of calculation. The sum is colossal, however, and defies reasonable estimate.

Zoning Regulations and Building Code Provisions

Existing major building codes have been reviewed in two previous AIA studies on hurricanes and tornadoes.* Generally, where strong foundations, good anchoring and framing are specified there will be

favorable resistance to flood damage. Damage to surface materials would still occur, however. Recommended construction practices will be reviewed in a subsequent section of this report. The national situation is reviewed by states in the table.

Zoning ordinances should regulate building in areas subject to flooding.

Recommended Construction Practices

The best construction practice in a flood-prone area is not to build there. If the United States was being pioneered today instead of in the last two centuries, the pattern of development would be different. In days gone by the main traffic arteries were along waterways. In addition, factories were powered by water and major installations were put at low levels, subject to flooding. Other necessary developments followed, and accordingly there are many expensive properties in areas that sometimes may be flooded.

The following precautions may be taken to avoid damage due to floods, insofar as buildings are concerned:

- land use should be intelligent
 - no construction on flood plains
 - protective strips near waterways (to widen course of water)
 - use of flood plain lands for parks and other uses that water will not hurt
 - provision of levees in flood-prone areas
 - paved areas and other artificially produced conditions should have adequate runoff facilities, drainage, etc
- construction of building on high ground
- construction of high foundations
- elimination of basements
- use of reinforced concrete or steel structures
- use of materials not damaged by water or floating debris
- provision of adequate drainage
 - inside building
 - outside building
 both storm and sanitary sewers should be provided
- provision of pumps in buildings
- high thresholds on doors, raised floors

* "Hurricanes" *AIA Journal* Oct. 1959: 75-86.
 "Tornadoes" *AIA Journal* May 1960: 73-82; reprints available.

- screening of windows, as by shutters
- anchoring of frame to foundations
- easily accessible electric panels and gas cutoffs
- garages and cars to be kept on high ground

Flood Insurance

In many states it is impossible to secure insurance against floods, and where it is possible the premiums are quite high. Private insurance companies would require large reserves to protect themselves, and even then they could be ruined by major disaster. Congress enacted certain Flood Insurance Acts to enable insurance companies to withstand effects of early losses, but then did not appropriate the necessary funds. Reports by states are shown in the table.

The Role of the Architect

The architect and the AIA should continue to lead the public in recommending good planning practices. This involves good local land use and zoning practices and good regional land use developments.

Douglas Haskell wrote an eloquent editorial in the October 1955 *Architectural Forum* (p 178):

"More tragic than having an avoidable catastrophe is preparing to have it all over again. . .

"Some things can be done about floods right away. We can plan to avoid a catastrophe where we do new building and we can rebuild in flooded areas on a pattern different from that which positively invited the disaster. . .

"The key to the whole flood situation is in the intrinsic nature of rivers. Thirty years ago a shrewd New Englander, Benton MacKaye, pointed to the perfectly obvious fact that almost every river has three natural levels. One is its normal summer level when all seems gay and peaceful. Second is its normal flood level involving an area inundated by spring freshets, where building is unwise. Third is the disaster level, which may not be hit for decades or even centuries, when the stream kicks out of bounds like a wild beast and produces, with fearful erosion, the pattern which any sharp eye can discern as the 'flood plain.' The fact that the flood plain is there proves that the river has been there—and can come again.

"Why did our ancestors build on these flood plains when the savage

Indians knew enough to keep safely higher? The answer was the water power delivered to riverside mills over the waterwheel. These wheels are gone, but we stayed anchored by our investment in plants, railroads, highways, all in the wrong place, and land values—again in the wrong place—which these have created.

"A small town like Putnam, or Winsted, Conn, cannot well rebuild on the river, but it could move plants higher. . . What then, is the obstacle? Mostly a set of obsolete pictures in the townsmen's minds. Zoning authorities, who once relegated industry to the flood plain because industry was dirty, smoky and noisy, have failed to notice that new fuels, new smoke-consuming devices, noise abatement and a new code of being a gentleman, let industry be often a first-class neighbor. Even the conservative British have reversed themselves and often rezoned river cities. . .

"State and federal governments will have to come in where towns like Winsted or Putnam leave off, since the causes of floods are remote, not local. Here again MacKaye had sage advice. He pointed to the enormous waste of all-out flood control programs. Where it is assumed that building will be done right down to the river bank and all water above normal summer level must be held back, the result is a vast overdesign of dams and reservoirs at enormous expense. Moreover, the fine agricultural land or hunting and fishing preserves that are drowned are sometimes themselves priceless. When all costs are balanced, funds spent helping towns to draw back from the flood plains may be saved twice over in lessened public works, which no longer try to challenge nature's annual rhythm. . .

". . . the problem is one of local planning and also of regional planning. It so happens that both Pennsylvania and New England have splendid schools of city and regional planning. Why not give them the needed funds and then let their recommendations be thrashed out in city after city. . .

"Since the building industry is directly and extensively involved, architects and builders should take the lead. Let us turn our emergency into an emergence—of better community planning."

In the West, flood danger is being increased by the encroachment of urban development of forest and wilderness areas—by log-

ging and grazing practices which remove natural ground cover, by fire, by neglect of conservation practices and by other means. The Stanford Research Institute of California suggests that the AIA can render a service in this field by supporting legislation in Congress and action by the responsible departments, particularly the Interior and Agriculture Departments, to protect watershed and wilderness areas against practices which destroy irreplaceable resources and at the same time greatly increase the flood hazard. Similar effort is needed at the state level to protect watershed areas and their resources, which develop the water, power, recreation and other resources needed for a growing population.

REGIONAL COMMENTS

Alaska

"It is my belief, backed up by 20 years in the construction industry prior to my government employment, that too frequently architects either ignore or do not sufficiently research the climatic and topographical peculiarity of the areas where they are designing buildings. Adequate storm sewers are, of course, the responsibility of municipalities. Architects and engineers can point out the need for such facilities and also can design adequate drainage for the building. In Alaska, buildings must be constructed so that they can resist earthquakes, floods, high winds and tremendous variations in temperature. Too frequently firms from outside the state have not considered all of these factors and have found themselves in bad situations. I might add that even Alaskan architects have had these problems."

Florida

"Architects can help by making builders and developers aware of their responsibility to construct in flood-free areas. They can encourage appropriate zoning and can educate the public as to what to look for in the way of flood-safe location and construction."

Indiana

"Architects can help the government and the public by informing themselves in regard to the problems which are involved in reducing flood dangers and in assisting in the obtaining of funds to finance such public works as are required by the best engineering standards. It is especially important to give

(Continued on p 80)

National Flood Picture

Alaska

Location of Floods & Causes

Almost every part of the state has experienced flood. Fairbanks area, Matanuska Valley—especially Wasilla area—frequently flood

Damage & Loss Due to Flood

Estimated at several million dollars

Agencies Involved in Flood Control & Laws Protecting the Public
Office of Civil Defense, Department of Public Safety

Zoning Regulations & Building Code Provisions Relating to Flood
No zoning regulation in flood-prone areas

Flood Insurance

Possible to insure property against floods. Rates are high

Location of Floods & Causes

Entire state subject to some sort of flood. Stream overflow in valleys. Sudden heavy precipitation. Flash floods in desert area

Damage & Loss Due to Flood

Hundreds of millions of dollars—estimate of Stanford Research Institute. Significant loss of life over the years

Agencies Involved in Flood Control & Laws Protecting the Public
Department of Water Resources

Zoning Regulations & Building Code Provisions Relating to Flood
Little or no zoning regulation & building code to control construction in flood-prone areas

Flood Insurance

No Insurance Available

Florida

Location of Floods & Causes

All low-lying area river valleys—Suwanee, Kissimme, Apalachicola, etc. Marsh and low areas surrounding lakes and extensive glades areas, suburbs and cities in low and flat topography which has insufficient drainage

Damage & Loss Due to Flood

No good estimate of monetary damages. Damage to agricultural lands—high-value truck crops and grazing and citrus lands. Damage to residential areas amounts to several million dollars

Agencies Involved in Flood Control & Laws Protecting the Public
Department of Water Resources
Zoning Regulations & Building

Code Provisions Relating to Flood

No flood zoning regulation and building code, except some zoning acts

Flood Insurance

Flood insurance is not generally written for residential property, but special coverage is available for banks on their vault contents

Illinois

Location of Floods & Causes

Unprotected portion of flood plains of Mississippi, Illinois, Wabash and Ohio Rivers, especially southern two-thirds of state are probably most prone. No extensive area is entirely free of flood problems

Damage & Loss Due to Flood

No record available

Agencies Involved in Flood Control & Laws Protecting the Public
Division of Waterways of the Department of Public Works and Buildings

Zoning Regulations & Building Code Provisions Relating to Flood
No flood zoning regulations and building code

Flood Insurance

No insurance available

Indiana

Location of Floods & Causes

Wabash River Basin. Localized flooding problems caused by encroachment of construction on streams, channels and waterways previous to establishment of Indiana Flood Control and Water Resources Commission

Damage & Loss Due to Flood

Estimate average annual loss in main Wabash River Valley is \$5,000,000. Loss in other parts of the state is unknown

Agencies Involved in Flood Control & Laws Protecting the Public
Indiana flood control and Water Resources Commission

Zoning Regulations & Building Code Provisions Relating to Flood
Zoning regulations are beginning in several communities and counties. A few building code provisions recognize the dangers of flooding.

Flood Insurance

No insurance available

Iowa

Location of Floods & Causes

All major rivers subject to flood at

times of high-intensity rainfall. Lower reaches of Iowa River, Little Sioux River, Des Moines River are protected against major floods by dams, etc

Damage & Loss Due to Flood

No record available

Agencies Involved in Flood Control & Laws Protecting the Public
Iowa Natural Resources Council

Zoning Regulations & Building Code Provisions Relating to Flood
Restrictions for the use of flood plain areas

Flood Insurance

A marine type of insurance is available

Maryland

Location of Floods & Causes

No serious flooding problem. Areas which were prone to flooding have been rectified by flood control projects. Most flooding occurs in farming areas

Damage & Loss Due to Flood

Chief loss is growing crops

Agencies Involved in Flood Control & Laws Protecting the Public
No single state agency has the overall responsibility for flood control

Zoning Regulations & Building Code Provisions Relating to Flood
No zoning regulations and building codes

Flood Insurance

No information available

Minnesota

Location of Floods & Causes

Red River of North at western boundary of the state, vicinity of Mankato on Minnesota River, Marshall on Redwood River and Mississippi River from St Paul to Iowa border

Damage & Loss Due to Flood

No record available

Agencies Involved in Flood Control & Laws Protecting the Public
Department of Conservation

Zoning Regulations & Building Code Provisions Relating to Flood
No flood zoning regulations and building codes

Flood Insurance

No insurance available

New Hampshire

Location of Floods & Causes

Connecticut River Valley, Merrimack, Saco, Androscoggin, Skowhegan at Salmon Falls. Several of larger lakes and tributaries

Damage & Loss Due to Flood

No record available

Agencies Involved in Flood Control & Laws Protecting the Public
New Hampshire Water Resources Board

Zoning Regulations & Building Code Provisions Relating to Flood

No flood zoning regulations and building codes at state level, except some at local level

Flood Insurance

No insurance available

New York

Location of Floods & Causes

Virtually all areas in state are subject to flooding

Damage & Loss Due to Flood

Damage would exceed one billion dollars in the last half century. Forty-eight dead due to flood in the last twenty-five years

Agencies Involved in Flood Control & Laws Protecting the Public
New York State Flood Control Commission and the Department of Public Works

Zoning Regulations & Building Code Provisions Relating to Flood

Flood zoning regulations in some municipalities. Building code provisions relating to the dangers of floods are in effect in some cities

Flood Insurance

Insurance is available. Rates are high

Ohio

Location of Floods & Causes

Watersheds of major rivers—Ohio River and many minor streams

Damage & Loss Due to Flood

January-February 1959 floods in excess of \$104,000,000 to public and private property

Agencies Involved in Flood Control & Laws Protecting the Public
Adjutant General's Department, Civil Defense Section, and Department of Natural Resources, Division of Water

Zoning Regulations & Building Code Provisions Relating to Flood
No zoning ordinance, except few local flood plan zoning ordinances

Flood Insurance

Certain types of water damage insurance are available. Rates are high. Flood insurance is not available

Rhode Island

Location of Floods & Causes

Valley of Blackstone River from Woonsocket to Pawtucket. Paw-

tucket River serious flooding of coastal communities by hurricane-induced waves

Damage & Loss Due to Flood

Blackstone River (1955)—\$27,620,000. Hurricane Carol (1954)—\$92,000,000; 80%—residential, commercial and public property; 20% industrial, rural highway and railroad. Hurricane—(1938)—\$120,000,000

Agencies Involved in Flood Control & Laws Protecting the Public
Rhode Island Division of Harbors and Rivers

Zoning Regulations & Building Code Provisions Relating to Flood

Flood zoning regulations in some communities

Flood Insurance

No insurance available

South Dakota

Location of Floods & Causes

Bottom lands of streams and major tributaries

Damage & Loss Due to Flood

No record available

Agencies Involved in Flood Control & Laws Protecting the Public
State Water Resources Commission

Zoning Regulations & Building Code Provision Relating to Flood

No state flood zoning regulation and building code

Flood Insurance

Insurance companies are willing to insure. Rates are reasonable

Virginia

Location of Floods & Causes

Flood plains along the major streams and their tributaries

Damage & Loss Due to Flood

Salt water damage in coastal areas. Minor loss of life

Agencies Involved in Flood Control & Laws Protecting the Public
Division of Water Resources. Most of the responsibilities are borne by the Corps of Engineers, US Department of Agriculture

Zoning Regulations & Building Code Provisions Relating to Flood
No zoning regulation prohibiting construction on flood plains

Flood Insurance

One company is approved by the state to insure against floods, but this sort of insurance is not being written. Rates are open

Washington

Location of Floods & Causes

Twenty river systems are most subject to flooding

Damage & Loss Due to Flood

Slight loss of life. Various kinds of damage in different incidents. Estimate average annual loss of \$4,270,000

Agencies Involved in Flood Control & Laws Protecting the Public
Flood Control Division, Department of Conservation. No laws for complete evacuation except by declaration of a state of emergency by governor

Zoning Regulations & Building Code Provisions Relating to Flood
No zoning regulation or building code relating to flood

Flood Insurance

State law does not prohibit such insurance, but it is not done because of the act-of-God features of floods in flood-prone areas. Rates are prohibitive

Wisconsin

Location of Floods & Causes

Rock River, Pecatonica River and Lafayette Counties in southwestern Wisconsin, Kickapoo River in Vernon and Crawford Counties, Pine River in Richland County, Black River in La Crosse and Jackson Counties

Damage & Loss Due to Flood

Minor loss of life in flash floods

Agencies Involved in Flood Control & Laws Protecting the Public
Public Service Commission of Wisconsin

Zoning Regulations & Building Code Provisions Relating to Flood

State law authorizes county government to adopt zoning regulations. No state building code provisions recognizing the danger of flooding

Flood Insurance

No insurance available

Wyoming

Location of Floods & Causes

Along Snake River in Jackson Hole area near town of Jackson, city of Sheridan, town of Greybull

Damage & Loss Due to Flood

Estimated average annual benefit from levees on Snake River—\$193,000, Sheridan River—\$77,300

Agencies Involved in Flood Control & Laws Protecting the Public
No specific state agency responsible. Usually handled by US Corps of Engineers

Zoning Regulations & Building Code Provisions Relating to Flood

No zoning regulations in flood-prone areas

Flood Insurance

No information available

(Continued from p 77)

more consideration to good drainage and grading practices on all new subdivisions, with proper sewer installation, previous to construction."

New York

"Architects should use their influence in encouraging flood-plain zoning."

Ohio

"Architects can assist by promoting a structural-minded citizenry, by giving guidance in recommending structures (buildings, facilities and construction methods and principles) making it possible to develop conditions less susceptible to flood damages including elements of site engineering, to produce the safest possible locations available in a given flood-prone area."

Rhode Island

"Architects can help by working for the enactment of laws requiring safe construction design; proper location with respect to areas subject to flood; the ability of river channels to pass swollen stream flow."

South Dakota

"Architects should give technical advice to clients as to the degree of flood hazards associated with the sites of proposed improvements."

Virginia

"Architects should encourage the adoption of local ordinances for flood plain zoning."

Architects can be of particular help after a disaster has occurred and, in this respect, they may refer to the action of the AIA after Hurricane Diane's destructive effects in August 1955. The AIA through its president George Bain Cummings FAIA of Binghamton, NY, reported the *Architectural Record*, offered "... all possible assistance of the Institute and its local chapters in the job of reconstruction." In a letter sent to the governor of each of the six affected states, Mr Cummings said regional directors in each case would approach the governor directly to find out how the Institute could best be of service.

"Possibly the most valuable service we could render," Mr Cum-

mings noted, "would be in connection with the long-range community planning in which the rebuilding program should be based. Such a program could result in the creation of a better environment for living and for industry that would serve to enhance the value of the entire region. Also it might well avert or minimize future losses from storm, fire or other disaster."

In New England, which had the widest area of devastation, Regional Director Austin W. Mather of Bridgeport called a meeting on September 10th in Boston of the AIA's New England Council, comprised of the presidents of each of the region's seven AIA chapters. There it was resolved to set up special urban planning committees in the Rhode Island, Connecticut and Massachusetts chapters to provide a channel for making services of chapter members available to whatever state agency the governors of these states, the hardest hit in New England, might request. Mr Mather was authorized to advise the governors of the Council's action and of its desire to be of any assistance possible. ◀

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Personal Space

by Robert Sommer PhD

Assistant Professor of Psychology, and Director of the Psychology Clinic, University of Alberta, Edmonton, Canada

► In order to design buildings from the inside out rather than from the outside in architects need information on how people use space. It is surprising how little is known about people and space in comparison to what is known about animals and space.

Perhaps one reason is that if too little or too much space is provided for animals in zoos or circuses, they soon become ill and die. Since zoo animals are valuable property, the zookeeper strives to learn the conditions suitable for his animals. Unfortunately this consideration does not apply to human beings. Whether they are put in closet-sized rooms or castles, we don't know what happens to them. If they become ill and die, it is blamed on a weak heart, poor constitution or inadequate diet. The last thing that is ever blamed is the amount of space available.

Flight Distance

I do not intend to suggest that human beings are like animals or

vice versa. I do wonder, though, whether any of this research devoted to animals and space has any relevance to humans and space. For example, we know that most wild animals have a specific "flight distance" beyond which the animal will flee if intruded upon. Hediger, an animal biologist, found that the wall lizard can be approached to within a few yards while the crocodile makes off at fifty. The sparrow and crow have very small flight distances in comparison to eagles, deer and chamois.

As far as we know, there has been no research to discover whether man has a flight distance. It seems obvious that people feel uncomfortable when others stand too near them. I have often tried what I call a "waltz technique" while speaking to others. Sometimes I slowly move toward the other person until he gradually starts retreating. I've also done the reverse, moving back, while talking to someone. Soon I found that he would gradually, almost involuntarily, begin moving toward me. Modifications of this technique can be quite useful at parties for maneu-

vering a potential customer or attractive blonde into another room. One simply invades her personal space and forces her to the right or left. This is the same method used by lion tamers.

Personal Space and Territory

For the past few years I have studied the personal space of human beings. In doing this work, I found it necessary to make a distinction between *personal space* and *territory*. The idea of territory is very important to anyone who has ever worked with animals. In their natural habitat, almost all animals have territories.

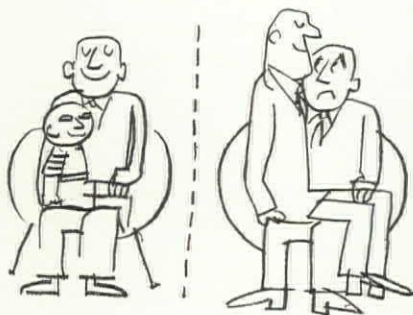
The most thorough research on territories was done by Eliot Howard with birds. He emphasized the role of territory during mating and rearing offspring. He observed that male finches quickly isolated themselves from one another and reigned supreme in small areas. Elton noted that no more than one family of African lions could be found inhabiting a single district. Territorial boundaries vary considerably from season to season. For the majority of woodland birds, territory is confined to the spring and summer. Badgers will permit trespassing by other badgers, except when the cubs are small and possibly in the late autumn when food is scarce.

In recent years, a lot of publicity has been given to use of territory by adolescent groups. Often referred to as "turf," a gang's terri-

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tory is where the members feel safe and where they will attack intruders. Within the last month, there was a newspaper report of a young boy who shot another because the latter dated a girl in his gang's territory. Salesmen, of course, have territories, as do people in housing developments.

Personal space is a different concept and refers to the distance that an animal customarily places between itself and other animals. The distance may vary from species to species and from individual to individual. A person may feel comfortable when his child stands near him but be uncomfortable if an adult male occupied the same place.



A chicken would not be disturbed at the approach of a robin, but a hawk would upset her.

Personal space can be distinguished from territory in several ways. The most important is that personal space is carried around while territory is relatively stationary. An animal or man will usually mark the boundaries of his territory so that they are visible to others, but the boundaries of personal space are invisible. Personal space has the body as its center, while territory does not. Often the center of a territory is the home of the animal or man. Animals will usually fight to maintain dominion over territory but will withdraw if others intrude into personal space.

Positions for Conversation

My first research into personal space took place in the staff cafeteria of a large mental hospital. The cafeteria was 36 x 68 ft and contained 13 tables (36 x 72 in). Each of these tables consisted of two 36 x 36-in tables placed together surrounded by eight chairs. At dinner the employees secured their plates at the front, went in line, were served and then sat at whichever table they chose.

Over a two-month period, my wife and I made periodic observations of people who were conversing. For example, did conversation occur between the head and foot positions? Or between people seated alongside one another? When we began the study, we had no specific ideas about what we would find.

The results showed, not so surprisingly, that most of the conversation took place between people seated in adjacent chairs. We also found that the corner positions were the loci of most of the interactions. There was far more conversation at the corners than there was across the tables. These results could mean two things—either the corners themselves spark the interactions or people who want to converse will sit at the corner positions.

To learn more about this, we asked people to enter the cafeteria and discuss certain topics, while we observed where they sat. We found that people in pairs or threes who wanted to discuss a topic would choose the corner positions. We also found this when we repeated the experiment in another cafeteria with different sized tables.

In other experiments, we employed a "decoy," someone who was a confederate of mine and who was *already seated* at a particular chair before the person entered the room. Another person was then asked to go inside the cafeteria, sit down and discuss a topic with the seated decoy. We used both male and female decoys and male and female discussions.

We found gross differences in the ways that males and females would sit opposite decoys. Females would sit much closer to a female decoy than they would to a male decoy. Males tended to sit opposite decoys of both sexes. These results parallel other observations about the differences between the sexes in this respect. Females are often seen holding hands or kissing, while this is comparatively rare among males in the Canadian culture.

We also tested groups of three, four and five people at the tables.

Some of the groups had "leaders" while others did not. We found that the leaders gravitated to the end positions and that other people would try to face the leaders.

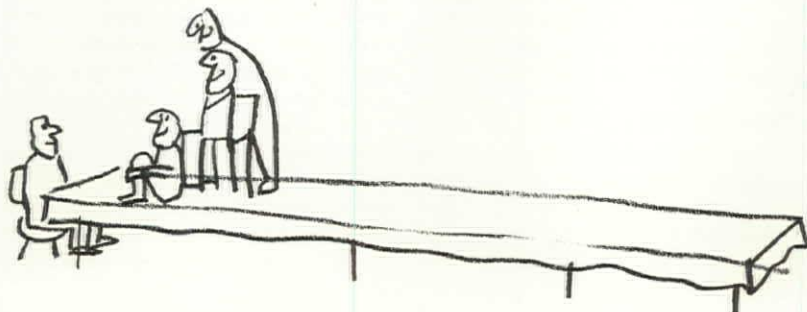
The usual concept of the leader in the center surrounded by his followers was not supported in our research. It seemed more important for them to face him than to be on both sides of him. In groups with single leaders (only one end of a table was used), the people fanned out along one end of the table. We hypothesized that if both ends of the table were occupied, this would tend to divide the group into two factions. With this type of table, the best place for a leader to sit would be the side-center position. From here he could reach all the people in the group.

I recall a friend complaining that whenever he sat at one end of table, the most vocal member of the group always sat at the other end, too far away for a comfortable discussion. When I suggested that it would be easy to reach all the people from the side-center position, he felt that he would lose status if he gave up the head position at the table.

We also conducted a series of experiments to learn what de N. Schroeder called the "arc of comfortable conversation." We wanted to find out how close to each other people would sit when they wanted to converse. Our method was straightforward, and we used some of the principles that we learned in our other work.

We took two couches and arranged them one opposite the other at various distances. We then asked pairs of people to enter the room, sit down and discuss certain topics. We wanted to learn whether the people would sit side by side or opposite one another. We reasoned that people would begin sitting side by side when the distance between the two couches became too great for comfortable conversation.

The results are shown in the graph which reveals that when the couches were 3½ ft apart, the people began to sit side by side. It



should be noted that the distance between the couches was not necessarily the distance between the people. In actual fact, the people's heads were about 1 ft back on each couch. In other words, the transition from opposite seating to side by side seating came when the people were 5½ ft apart. This distance we conceive of as "the arc of comfortable conversation" under the conditions we used. When we repeated this work in another room with chairs instead of couches, similar results were found.

Whether this is a fundamental trait of human nature I do not know. We know that the hero of the western movie likes to sit with his back to the wall, and many wild animals will sleep with their backs to trees. In biology the attraction of some cells to a solid surface is called "thigmotaxis."

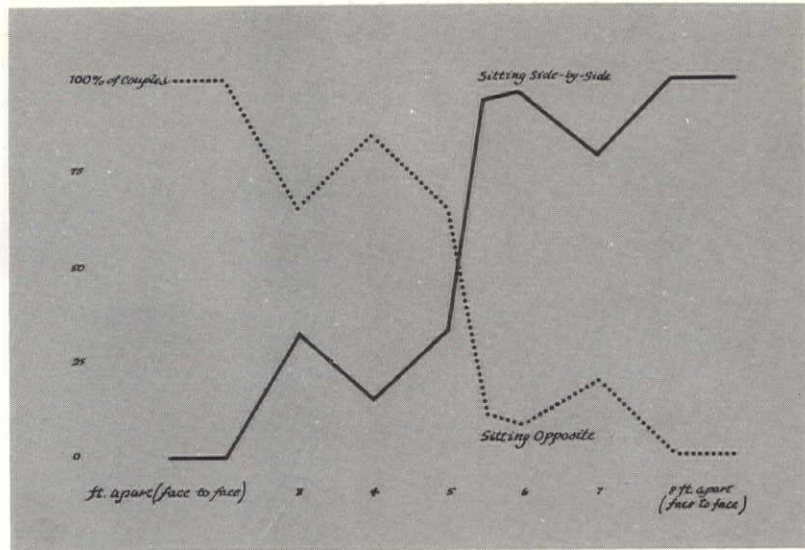
In 1959 at the Geneva Foreign Ministers' meetings, the issue of the shape of the tables to be used attained world-wide prominence. The Russians insisted on a square table, while the Western powers wanted a round table. The issue was finally settled by the adoption of a round, hollow table with separate rectangular



lar tables for the East and West German representatives. Whether this solution aided the conference, I do not know, but the matter was important enough to delay a meeting of Foreign Ministers for several hours.

Room Geography

At another occasion we ushered people into a small dormitory containing eight beds, four on either side of the room. When we asked pairs of people to choose which beds they would prefer to occupy if they had to sleep in the room, we found a marked preference for the corner beds. This result parallels what we had found when we tried to shift the chairs around on a ward containing many older people. We found that whenever we tried to shift the chairs around from the walls, they soon returned on the



next day. The people like to have their backs against something.

Presently we are attempting to learn something of the characteristics of round and square tables. It is apparent that the arc of the table has a great deal to do with its effects on conversation. With a round table of large diameter, interaction would be limited to people in adjacent chairs, while at tables with smaller dimensions, people could converse across the table.

Eventually it may be worthwhile to experiment with freeform and hexagonal tables. Tables with straight sides, such as rectangular or octagonal tables, provide the person with clearer boundaries to his territory. He knows where his neighbor's territory ends, and his own begins. With round tables a person is less certain about the limits of his territory.

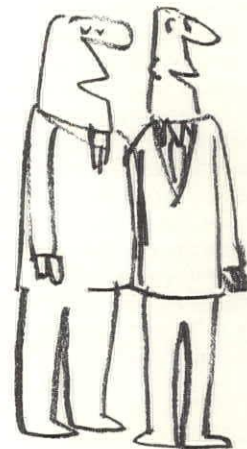
This work has made me aware of the effects of room geography. At private parties or meetings I have found myself observing the way people were arranged and how close they stood to one another. I recall one party at which people sat in chairs along the walls of the room, and the two sides of the room 8 ft apart. I noticed that during the entire evening there was *not one* conversation between people sitting on different sides of the room. All conversation took place between adjacent chairs.

The angle at which people stand from others is another matter that needs exploration. I have noticed that people rarely stand directly opposite one another. They are much more likely to stand at an angle. Perhaps this, like the preference for corner seating, reflects the need for psychological escape. When people sit or stand directly opposite one

another, it is very difficult to avoid looking at the other person. When they sit at an angle, only a slight movement of the head will remove the other person from view.

I hope this research proves useful to architects. Perhaps some readers may think this an exaggeration, but I believe it is just as important for man to learn about space on this planet as it is for him to learn about outer space*—I have been in enormous cars that lacked ample head- and foot-room; have been seated too far away from my friends and too close to strangers on various buses, trains, and airplanes; have seen meetings fail when people were not properly arranged.

All these are reflections of a basic ignorance on the part of many



designers about people and space. I hope that the kind of research described here will do something toward remedying this situation. ◀

* See also "Language of Space" by Dr. Edward T. Hall, AIA JOURNAL, Feb. 1961, pp. 71-74

Design for Friendship

by **Robert Sommer PhD**
and **Gwynneth Witney Gilliland**

Formerly Psychologist at Saskatchewan Hospital, Weyburn, Canada

► The only time the word "friendship" is found in architectural magazines is when it refers to the relationship between two architects. It is rarely considered when a home or public building is planned. This is an important omission since encouraging fellowship is one of the most vital functions of enclosed space.

Two people may meet on a train, work in the same office or attend the same university, but won't call themselves friends until they have visited in each other's home. In fact, cementing friendships is one of the primary functions of the North American home.

Some public buildings also have this function while others, of course, go to extreme lengths to discourage friendships. Libraries are not intended to encourage camaraderie nor are railway stations. On the other hand, the common room in a dormitory or the lounge of an ocean liner should make provision for encouraging friendships.

Probably the architectural requirements for encouraging firm friendships are different from those for encouraging transient friendships, but there is very little empirical research on the architecture that encourages *any* kind of friendships.

This is an important problem for people who design public buildings,

especially hospitals, barracks and camps. In these cases, the people who ultimately use the facilities are not the people who design or even pay for them. Perhaps this is one reason why specific planning for friendship rarely occurs in these building types.

We became concerned with the problem of building friendships during some of our research in a large mental hospital in western Canada. We found that the architecture of the wards had a significant effect on the amount and kind of interaction between people. Our research was later extended into other settings and some of it was described in the previous article, "Personal Space." In the present article we will describe some studies of the way that the architecture in a large mental hospital affects friendships between people.

Although patients on chronic wards may reside there for months and even years, it is surprising how few friendships actually form. Osmond and Izumi¹ attributed this to what they call "sociofugal" architecture. By this they mean architecture that discourages interaction between people. They suggest that architects and hospital administrators should aim for "sociopetal" architecture which encourages interaction.

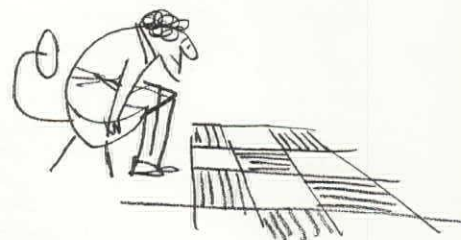
Examples of sociofugal buildings are bus stations, waiting rooms and railway stations. Examples of sociopetal buildings are places which draw attention to the center of the room, and here a good example would be the living room of a Japanese home with its central hearth.

It was also felt that most wards in mental hospitals today are more sociofugal than sociopetal. This was illustrated very clearly when

we examined a portfolio of photographs that had been submitted to a psychiatric association awards committee. The photographs were intended to show the tremendous improvements that had taken place in this hospital and, from one standpoint at least, they were effective since the hospital won an important award.

However, when we re-examined these photographs we were struck by the contrast between the modern furniture and surroundings and the total absence of any interaction between the people who were present. One photograph showed ladies sitting in their new chairs staring silently down at the new tile floor or up to the freshly painted ceiling. This ward, which had always been considered a "model" area in terms of design, soon took on a different appearance. We now perceived it as a gigantic waiting room where people were effectively isolated from one another.

This caused us to examine other wards and ask: "How does the

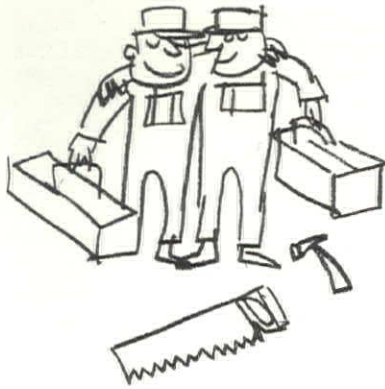


design of the ward and the arrangement of the furniture affect the interaction between people?" Later we progressed to what we felt was a higher level of social intercourse and began asking: "Does this architecture and decor encourage friendships between people?" Although interaction is a necessary prerequisite to friendship, it is not sufficient by itself. Furthermore, interaction can range from borrowing cigarettes, asking about the weather, to quarreling.

Before describing our research, it may be helpful to give a brief description of the physical appearance of this particular hospital. Like most of its genre, it is old, overcrowded and poorly designed in terms of its actual functions. It was built according to the Kirkbride

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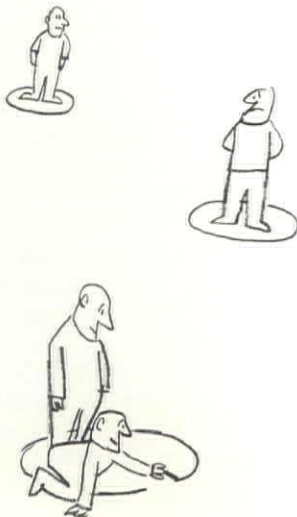




plan, which means separate wings radiating out from a central administrative area.

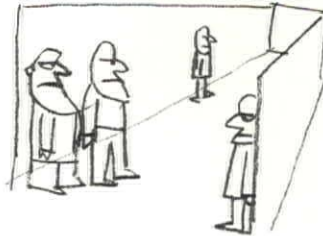
One large building and a few smaller out-buildings house 1500 human beings in addition to about 500 staff members who work in three daily shifts. The wards vary in amount of occupancy per square foot from the admission wards which have an average of 150 sq ft per patient, to some wards for older people which have an average of 45 sq ft per patient (and neither figure takes into account the space occupied by furniture, nurses' stations, etc).

There are three main areas in each of the wards—a dormitory, a large dayroom and a large corridor. Some wards contain smaller dayrooms or recreational areas, while a few have their own dining rooms and kitchens. Several years ago we conducted a series of observations to find out exactly what took place in each part of the ward. We found that five times as many patients were occupied constructively in the dayroom than in the corridor or outside hallway. Those patients



who sat in the outside corridor, and on some wards at least half the patients congregated there, tended to sit and stare or retreat into private worlds.

Most of the sociological research dealing with architecture or space has focused on the effects of propinquity. The studies, which have taken place in such diverse locations as sorority houses, factories, and classrooms have all shown that people who sit or work close to one another tend to become friends. William Whyte, in his excellent book, "The Organization Man,"¹ spent several chapters describing how friendships in suburbia closely parallel the physical arrangement of homes. For example, families with adjacent yards are more likely to become friends than families whose homes are separated by a street or intersections, etc. Robert Blood and William Levant² found that with boys in a summer camp, the desire to bunk with one's best friend out-ranked the desire to move farther away from one's enemy.

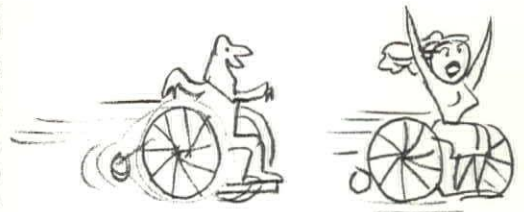


The goal of our research was to learn something of the relationship between friendship patterns and architecture in this particular hospital. Essentially our method was to find out who were friends with whom and then observe where they sat or stood. We were especially interested in those people who had no friends at all (in the technical jargon of sociologists, these people are known as "isolates"). Our hunch was that these friendless people would congregate in the corridors and away from the dayroom area.

The method of the research was simple although somewhat time-consuming. The first step of the research was to mimeograph the floor plans of four separate wards in the hospital. During subsequent weeks an observer went through each ward in the company of a

nurse and marked down on the particular floor plan the location of every patient. The observations were carried out over a two-week period and were spaced throughout the day.

At the end of each week the observer approached each patient and asked him to name his friends on the ward. The wards were fairly representative of the hospital popu-



lation as a whole: two were male and two female; two wards contained older patients; one was an active treatment ward that contained middle-aged patients; and the fourth was a male admission ward with a heterogeneous population.

The full scope and methods of the study are described in detail in a master's thesis by Gwynneth Witney Gilliland, which is on file at the University of Alberta library. In this article we can only describe the main trends in the results.

Basically, when we compared the location of people with their friendship patterns, we found, as we had predicted, that patients who were friendless tended to congregate in the corridors. The percentage of friendless patients in each location is shown in the accompanying table. The situation on the admission ward was somewhat different since there was such a mixed group of patients, but the trend there was also that the people in the dayroom had more friends than people in the other areas.

As far as we know, this is the first study that relates the location of people in an institutional setting to their friendships. We realize that few readers are interested in mental hospital architecture as such, so we will try to point out the more general implications of these findings. First of all, it seems likely that the principles governing interpersonal relations in mental hospitals are also valid in tuberculosis sanatoria, common rooms of geriatric centers

Type of patients	Percentage of friendless* people in:		
	Day room	Corridor	Bedroom
Older women	8	41	53
Older men	54	73	60
Younger women	31	54	24

* The figures show the percentage of people who are friendless in each category, in each

area. Thus, 8% of the older women in the dayroom are friendless.

and general hospitals for chronic diseases. The administrator in any one of these settings is concerned with developing social relations among his patients. In fact, one of the more important tasks of a hospital administrator is to prevent his longstay patients becoming "desocialized."

Many writers have vividly described how people who spend several weeks or months in a hospital become uninterested in their surroundings and begin to lose contact with other people. Our study has suggested that long corridors should be avoided, but if they must be included in a design, they should be so constructed that they cannot be used as residential areas. Some writers have even described longstay patients as "corridorized." Before we did this study we had no real evidence that corridors were anti-therapeutic. In fact, several of our staff had maintained that patients sit in the corridors because they like to see what is going on, and thus the corridor dwellers were among the more social and active patients. Whenever we urged the nurses and doctors to keep patients occupied in the dayroom, we had lacked proof that being in the dayroom was more beneficial than being in the corridor.

It would be interesting to see if these trends are found in other institutional settings. For example, where do the friendless students in a college dorm congregate during study hours or periods of relaxation? Would we find that friendless students remain in their rooms while their more gregarious fellows gather in the common room? Or do

small cliques invariably gravitate to bedroom areas where they have more privacy and room for greater informality while the "lone wolves" spend their hours in the common room vainly looking for friendship or diversion?

It is especially intriguing to reflect upon the friendship patterns of those students who habitually congregate around a television screen. Our hunch would be that this is the most isolated group of students, but it would take further research to determine if we are correct.

Some years ago Professor Robert Blake² studied the effects of living in different types of barracks on the social relations of army recruits. He found that in a long open barracks the recruits knew the names of more people than they did in a partitioned barracks, but they had more close friends or "buddies" in the partitioned arrangement. This same effect is also found in office areas. Open offices lead to a greater number of acquaintances but fewer friends than partitioned offices. Gullahorn³ found that interaction among office employees is decreased by the presence of filing cabinets that separated subgroups of people, but that interaction within subunits is increased. Of course in some situations an employer would want to discourage cliques, since they might have a subversive effect on the goals of the organization. Under other circumstances he might want to encourage small work teams with high in-group esprit.

The architect can quite probably turn to the social scientist in cases

like this. Unfortunately he is all too likely to be told that no firm evidence on the question exists. This can be discouraging but it should not deter the architect from continuing to ask questions.

The main reason why answers and data have not already been collected is that architects have not asked the right questions in the right way. For example, we have often discussed matters of hospital design with architect friends and were asked such questions as "What colors should be used on a surgical ward?" and "How close together should beds be placed?" We had to point out that these were not the kinds of questions that a social scientist can answer, at least not in his capacity as scientist.

Research yields information and not advice—that is, a scientist can tell an architect "Surgical patients prefer subdued colors; nurses like yellow; doctors like white; cleaning men prefer dull blue, etc." The ultimate decision about the color that *should* be used falls to the architect who must weigh such factors as cost, maintenance and harmony, in addition to the psychological effects on surgical patients. Instances like this have taught us that fruitful collaboration between architects and social scientists is possible but requires considerable time and patience so that each party learns the other's vocabulary, interests and spheres of competence.

The research we have described in this article showed that friendless people congregate in corridors, but how an architect *should* design a therapeutic hospital depends on a hundred factors, only one of which is the social effect of corridors. Yet knowing the probable effects of long corridors on social relationships is undoubtedly helpful, although only a small step forward in the quest for knowledge of the effect of man's physical environment on his social behavior. ◀

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Sketches by Thomas E. Hutchens.



The Magnus T. Hopper Memorial Fellowship in Hospital Architecture

RECENT NOTES ON RECIPIENTS

by Margaret Phillips

► The Magnus T. Hopper Fellowship Program in Hospital Architecture began unofficially at Yale University in 1949 when a jury selected three hospitals from competition entries to be exhibited along with their student designs at the New England Seminar on Hospital Design in Boston.

In 1950 the fellowship program was formalized; through a competition third-year students of the Graduate School of Architecture were selected to study hospital planning—at Yale, by travel, or in the office of a hospital architect. Students worked closely with the medical school, the university teaching hospital and the Department of Public Health which gave a course in hospital administration.

This program was discontinued in 1960. Recognizing the need to encourage young architects and students to enter the specialized field of hospital planning and the value of the intensive education and experience provided by the Hopper Fellowship at Yale, the AIA and the American Hospital Association have created a new hospital architecture fellowship program.

Continuing the practice at Yale where architecture students worked with the Department of Public Health, the teaching hospital and medical school, universities at which fellowship students may study have been limited to those with both a school of hospital administration and a department of architecture with a graduate course in hospital design. Seven schools meet this restriction—University of California, Columbia University, Cornell University, University of Michigan, University of Minnesota, Washington University and Yale University.

Two \$1500 awards will be made each year to graduate architects who have suitably demonstrated an interest in the field of hospital planning and who are actively seeking a master's degree in architecture.

Three fellowships were awarded for 1962-63 academic year: Clyde H. Dorsett, Asheboro, N. C. and James Falick, Brooklyn, at Columbia; Adam Karibian, Detroit, at University of Michigan. Three will again be awarded for 1963-64.

Students in ACSA schools wishing to apply for the fellowship can obtain applications from their dean; architects who have been accepted by one of the above graduate schools should write to the AIA Department of Education for applications and further information.

The accomplishments of the ten out of twelve Hopper Fellowship recipients that we have heard from testify to the value of a fellowship program in stimulating interest and improving quality of hospital design. Although a few of these architects have become more active in other areas, they all will retain their interest and ability to contribute to hospital planning.

Herbert Shalat—1949

Mr Shalat and his design for an acute general hospital for an industrial town were sent to the New England seminar in the fall of 1949 as part of the developing fellowship program. Upon leaving Yale he continued to work on hospitals for several years with the hospital architectural consulting firm, Neergard, Agnew & Craig (Charles Neergard was one of the originators of the fellowship). He now is employed by the New York firm of Bloch & Hesse AIA architects, and

although he does little hospital work now, he assures us that he continues to follow developments with interest.

Chia-Yi Jen—1950-1951

Chia-Yi Jen of Tientsin, China, was the first official recipient of the fellowship award. Mr Jen received his BS degree from Kung Shang University, China, then his master's degree in architecture from Yale. We do not know of his subsequent career.

William Metcalf, Jr. AIA—1951-52

Mr Metcalf has contributed much to hospital design since he won the fellowship with a design for a hospital—public health—group practice clinic for Levittown, NY. This proposed hospital had an unusual plan for horizontal expansion for up to 55% increase in beds (204-316) by enclosing strategically placed patios.

Travel across the United States visiting hospitals, then work with US Public Health Service in Washington, DC for four months completed his fellowship project.

While with Sherlock, Smith & Adams he worked on two Kentucky hospitals for the United Mine Workers. One of these, the Whitesburg Hospital won a *Progressive Architecture* Design Award in Health Facilities in 1953. In four years as medical construction liaison officer for USAF Surgeon General's office, he worked on 85 Air Force medical facilities of all sizes.

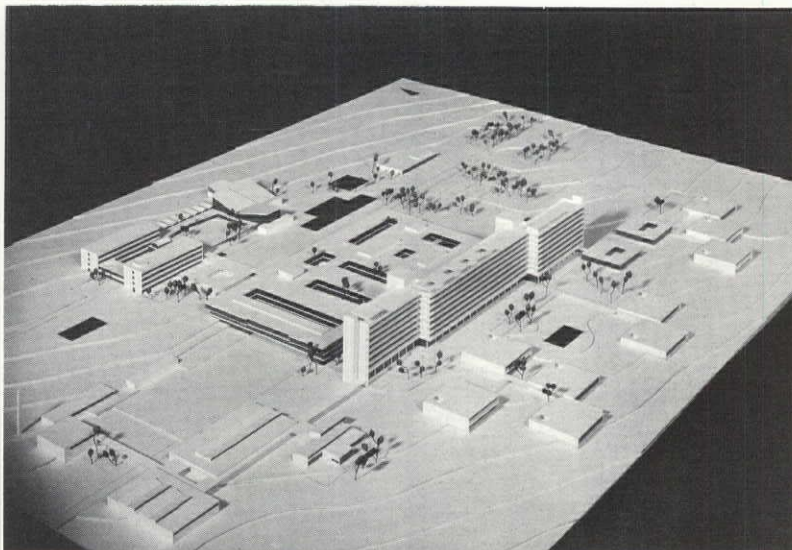
Soon after becoming established in his own firm, he won another *Progressive Architecture* award—this time for the Somerville (Mass) Hospital in association with Paul Schweikher AIA.

Current hospital projects are four medical facilities in Lagos, Nigeria: expansion of a teaching hospital and complete new medical-dental school for the University of Lagos, a new school of nursing for 500 nurses and a children's hospital. And as consulting architect:

- Thomason General Hospital, El Paso, Texas; 300/550 beds; to be completed October 1962; Garland & Hilles AIA, architects
- St. Thomas Hospital addition, Akron, Ohio; 400/600 beds; now in working drawings; Wagner & Luxmore, architects
- Kansas City College of Osteopathy & Surgery, Mo; in planning stage; E. M. Fuller, architect, Paul Schweikher AIA, also consulting architect



Third prize national award in Mastic Tile Competition for "Long-Range Planning for Medical Care Facilities in the Community": John V. Sheoris AIA, W. J. Johnson ASLA, Clarence Roy ASLA. Central hospital facilities core, three stories and basement; and dispersed satellite units for rehabilitation, doctors' offices, pediatric and medical-surgical nursing units



Central treatment building and satellite nursing units, University Hospital and Medical School (Medical Center), Teheran (Iran) University: Baur, Carlstedt, Nissen, Poelzig, architects; Martin Kirchner, project architect; Mahkorn-Ros, structural engineers

Arnold Mogensen—1951-1952

Between 1952 when he left Yale and 1958 when he established his own office, Mr Mogensen worked on several hospitals in the offices of Claire Ditchy FAIA, Detroit, Vincent Kling FAIA, Philadelphia, and Louis Drakos AIA, Hartford. Since 1958 however, he has been more active in other building types.

Warren Peterson—1952-1953

The winning design for the fellowship award was a general hospital for a city of 100,000 (proposed district hospital for Jamestown, NY) and was to be coordinated with the central plan for New York State Hospitals. While holding the

Fellowship he worked on a plan for the Children's Hospital in Boston with Robert Coolidge, New Haven, and Neergard, Agnew & Craig, New York. He was awarded the Fellowship in Architecture by the American Academy in Rome for 1953-54. Lately he has concentrated mainly on college and university buildings and is now a partner in the firm of Meyer and Ayers, architects, in Baltimore.

John V. Sheoris AIA—1952-1953

In the year that he held the Hopper Fellowship, Mr. Sheoris worked closely with hospital consultant Joseph Neufeld AIA and traveled through Europe visiting hospitals.

From these experiences and from knowledge gained while preparing the design for the fellowship competition (rural rehabilitation center, for psychiatric patients near general hospital), he conceived a design for a medical center for his Master's thesis.

Recently Mr Sheoris has designed three major projects:

- South Macomb Hospital, Warren, Mich; 200 beds, planned expansion to 600 by 1968; not yet completed; as chief designer for Harley, Ellington, Cowin & Stirton, Inc, architects

- concept study for 100-bed composite medical facility, Selfridge Air Force Base, Mt Clemens, Mich, 1960; as chief designer for Harley, Ellington & Day, Inc, architects

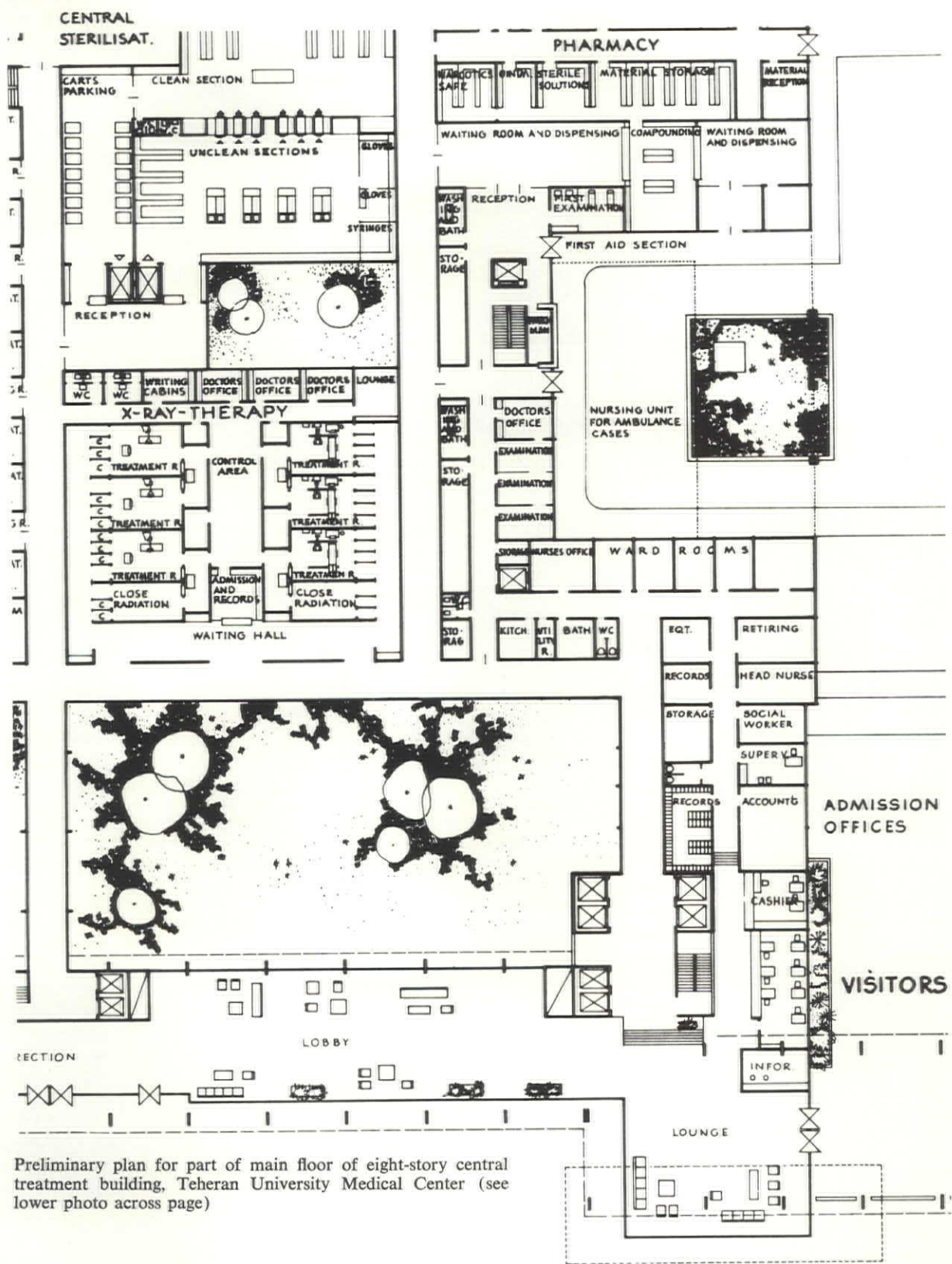
- Mastic Tile Competition third prize, "Long-Range Planning for Medical Care Facilities in the Community," with W. J. Johnson ASLA and Clarence Roy ASLA. This is a comprehensive project including hospital facilities, rehabilitation center, doctors group, nursing units, old age home, staff residence and nurses residence, in separate "human-scaled" buildings enhanced by pleasant landscaping

Mr. Sheoris is presently chief designer and head of design department at Harley, Ellington, Cowin & Stirton, architects and engineers, of Detroit.

Avery Faulkner—1953-1954

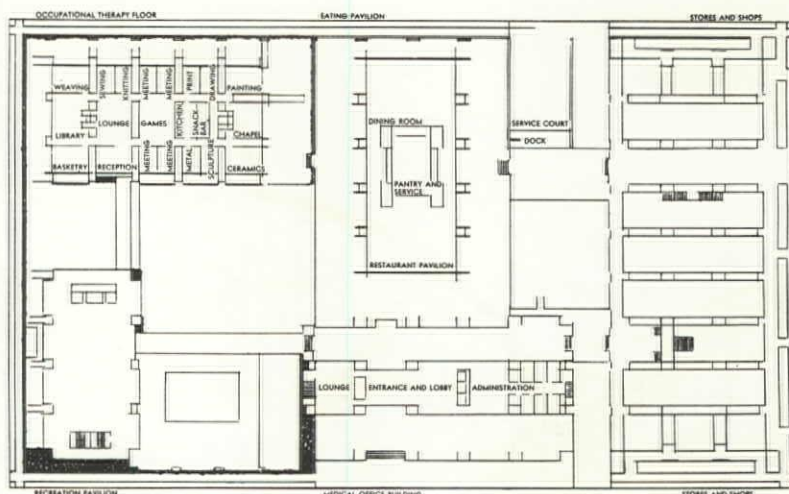
Mr Faulkner earned the Hopper Fellowship Award with his design of a 500-bed teaching hospital combined with extensive research laboratories, medical school and dormitories for nurses and doctors. During his year of graduate study under the fellowship, he traveled to Europe to become acquainted with hospital design and administration there. He also worked with individual psychiatrists, the National Institutes of Health and the American Psychiatric Association in preparing plans for a 300-bed Receiving and Intensive Treatment Center for a 1500-bed State Hospital.

Following receipt of his Master of Architecture degree from Yale in 1955, he entered the Air Force and was an architect for the Surgeon General. In his three years there he had the opportunity to redesign 10 "standard plans," worked with Skidmore, Owings & Merrill on the Colorado Air Academy Hospital, designed a 500-bed teaching addi-



Preliminary plan for part of main floor of eight-story central treatment building, Teheran University Medical Center (see lower photo across page)

Village for the mentally ill which contains public shopping center, medical office building with hotel floor, parking, recreation and living. Thesis project at Yale, 1959, by Bruce P. Arneill. Reprinted by permission from the *Modern Hospital*, Vol 93, No 6, Dec 1959. © The Modern Hospital Publishing Co, Inc, 1959



tion to the Lackland Air Force Base Hospital in San Antonio, Texas, and worked on many other smaller projects. He is presently consultant on hospital design to the Surgeon General of the Army.

Since joining the firm of Faulkner, Kingsbury & Stenhouse, architects, Washington, DC, in 1958 as designer, he has worked on three major hospital projects—preliminaries for Holy Cross Hospital, Silver Spring, Md, George Washington University Hospital addition, Washington, and has complete responsibility for the McLean Medical Building, Va, now under construction. Recent articles on pediatrics and transportation systems have been published in *Hospitals*, Journal of the American Hospital Association.

Thomas Hume—1954-1955

We have no recent information on Mr Hume.

Martin Kirchner—1956-1957

Mr Kirchner came to Yale as a Fulbright student and stayed to receive the Hopper Fellowship. He feels that he profited immensely from his stay in the US and from the award. He writes: "Since I have left your country I have almost daily communicated to friends and colleagues in Europe and the Middle East some of the technical skills that make America, and American architecture, what it is."

The subject for his fellowship thesis, which he worked on with Paul Nelson AIA, was a medium-sized general hospital in Essex, Conn; the findings were to be incorporated into the actual design. It was developed according to his belief that the function of hospitals

is in process of becoming mostly laboratory work, research and education, as obstetrical, psychiatric and preventive medicine are emphasized.

Following his education at Yale, he first worked with Paul Schweikher AIA, Pittsburgh, then returned to Germany to work with the associated architects Herman Baur, Basel; Carl-Gustav Carlstedt, Stockholm; Godber Nissen, Hamburg; and Peter Poelzig, Berlin, and now is in private practice in Hamburg.

In 1959, while in the office of Peter Poelzig in Berlin, he was project designer for an addition to an existing hospital in Stade, Germany. The design was basically his own for an increased capacity of 250 beds, with complete treatment facilities and supply areas, housing for 150 nurses and a nursing school. However the project was abandoned in 1960 in favor of a regional hospital outside the city.

Another recent project, the Teheran (Iran) University Hospital and Medical School, is a huge scheme developed by the international group of architects, Baur, Carlstedt, Nissen and Poelzig. Kirchner was project architect for the scheme from the beginning and contributed some ideas to the project as is customary with such large group work. His idea for separate nursing units, for instance, was used in the final plan. Construction is to begin early in 1963.

Bruce P. Arneill—1959-1960

Mr Arneill's fellowship project developed from almost two years of travel in the United States, research on urban renewal in relation to retired elders, and study of

preparation for retirement. It concerned specifically a complex of housing, eating, recreation and therapeutic facilities, and a diagnostic clinic and eating facilities for a downtown New Haven site.

After leaving Yale, he worked on two hospitals for Fisher and Davis, Architects. His major current hospital project for Pederson & Tilney, architects, New Haven, is a design for the Yale University Mental Health Center.

Marc Goldstein—1957-1958

As a third-year student at Yale Mr Goldstein designed one of the earliest progressive-patient-care hospitals and won the fellowship competition. For his project he worked in close association with the US Department of Health, Education and Welfare in Washington, DC and Grace New Haven Hospital. He then won a Fulbright scholarship to Italy in 1959-60. He is now with Skidmore, Owings & Merrill, architects, in San Francisco.

Tom Holzbog—1959-1960

Following his studies at Yale which concluded with his year as Hopper Fellow, Mr Holzbog also went to Paris with a Fulbright scholarship. While there he worked on low-cost housing with Candilis, Josic & Woods, architects, then moved to England to do a dormitory for a college at Cambridge with Sir Leslie Martin and Colin St John Wilson, and currently is working on a new social center for Leicester University with Deny's Lasdun & Partners, architects, in London—not on hospitals, but we believe he has not left the field entirely. ◀



THE ARCHITECT AND THE CITY

The 1962 AIA-ACSA Seminar Papers presented at the Cranbrook Academy of Art. Part II

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Cleveland Chapter AIA
Middle Tennessee Chapter AIA
Detroit Chapter AIA

The speakers of the 1962 AIA-ACSA Teacher Seminar at Cranbrook Academy were divided into three groups to discuss "Determinants of Urban Form," "The City Designer in Practice" and "Directions in Education." A condensation of the papers from the first group was included in the November issue of the *AIA Journal*. The latter two groups are presented herein. Again, each paper has been kept intact, though drastically reduced in length, to retain its internal consistency. We hope that the original flavor and style have survived the distillation process.

Because of space limitations, none of the discussions or workshop presentations has been included in the main body of this two-part report; however, during the sessions a great deal of valuable synthesis took place, even though it seldom reached the form of concrete proposals for action. (If the Seminar ever produces unanimity it probably will have become a failure.) The need for a clearer and immediate focus on educational responses to the future role and responsibility of tomorrow's architect prompts this writer to present some of the ideas and suggestions concerning education for urban design which developed from the discussions and workshops. These observations seem to fall into three groups: "Basic Curriculum Changes," "Fundamental Studies" and "Applied Studies."

Basic Curriculum Changes

- Determine means to reduce human waste in our schools, to encourage specialization and to establish equality with other professionals by requiring two to four years of pre-architectural training in the liberal and fine arts.
- Introduce into the curriculum, courses to stimulate awareness of our environment parallel to basic design and encourage non-architects to participate in these.
- Examine the content of the professional curriculum to determine essentials, concentrating on learning methods of acquiring and applying knowledge.
- Expand the role of research in our schools to encourage a spirit of inquiry and discovery, to enlarge and enrich faculties in research, and to systematize and further the profession's fund of general knowledge.
- Institute an "internship" program coordinating basic and specialized activities through the collab-

oration of the AIA, the ACSA member schools and the registration boards.

Fundamental Studies

- Study historic civilizations to understand their social structures as determinants of urban form.
- Study contemporary culture and the ecology of urban form as they may be influenced by economics, climatology, physiography, morphology, social goals, political systems and technological developments.
- Study the dynamic social, economic, geographic, cultural and recreational activity systems of our contemporary society and their spatial requirements.
- Study the elements of urban anatomy, their systemic qualities, their proportioning and interrelationships. Develop skill in their manipulation and parallel skill in the technique of programming for growth and renewal.
- Study elements of real estate, finance and land economics to achieve a basic competence.
- Develop a familiarity with the methods of policy formulation, decision-making and design implementation in government and a general knowledge of planning legislation.
- Develop a time and change consciousness about the processes of city building and rebuilding over long-time intervals.

Applied Studies

- Seek enduring solutions to problems of city engineering such as expressway design, interchanges, parking terminals, air rights developments, transportation terminals, etc.
- Intensify research activities into industrialized building processes for application to mass housing requirements.
- Engage in research to evolve new solutions for the basic cells of our cities, new group forms and new combinations, reflecting the new determinants emerging at all scale levels.
- Emphasize inter-disciplinary collaborative projects and team efforts as exercises.

In his keynote address Dean Perkins stated that every school would not suddenly begin to produce "experts" in urban design, but rather this is an evolutionary process, with some few schools taking the lead.

All schools have the responsibility to develop a greater awareness and a basic competence in the areas of urban design if the profession is to assume its obligation in the tremendous programs ahead.

Not all schools will uniformly respond to these ideas, but each school must find its way and, hopefully, a variety of approaches will be developed.

NORMAN DAY, EDITOR

ALTERNATIVE TO FUTILITY

by David A. Crane AIP, Director, Comprehensive Planning and Design
Boston Redevelopment Authority

Architects seem to adopt one of two attitudes toward the complexity of urban renewal and city planning, neither of which is valid. The first is the heroic: "Only the architect is capable of leading the team." The second is the futile: "It's all too much, too complex, too difficult—let's retire from the field."

The result has been that the architect is called upon only to give cosmetic treatment to others' decisions. This is a tragedy, for there are earth-shaking issues involved in urban renewal in American cities. We are struggling to define the architect's role in this vast enterprise and to then grasp this role. I will not argue that the architect should be at the center of the urban design process, rather that urban design should be at the center of architecture. We must immerse architects in the city. Until then no leadership can come from the profession.

If architects are to become effectively involved in this mushrooming new realm of government-aided urban development and renewal, they will need wholly new and more dynamic philosophies and principles of city form and design. These must emphasize movement, time and process in the growth of cities and character and emotional conditioning for an unfamiliar role in the administrator-created environment. In short, I propose that architecture as we have known it is dead and that in its place we should raise up a new art of "urbitecture."

There are three great facts of the modern city which inspire a more dynamic concept of space and a more process-oriented approach to shaping it. The first is the fact of the City on Wheels. Roads are more than a mover of goods and peo-

ple; they make real estate by creating or destroying land values, they provide shelter and space for services and activities, and they have a fundamental role in revealing intelligence about the city.

The second is the fact of the kaleidoscopic City of Change wherein a comprehensive view of the time dimension—past, present and future—is related to space. Over a long period of time, change is more than replacement; new forms gradually evolve to suit entirely new purposes. The time required for this kind of change in cities is now shorter than ever before. Onrushing change does not find new forms very easily, and it is therefore destroying many useful physical resources in the process. We have failed to distinguish between the *activities* and the *structure* of a city; between forces which affect the pattern of the city and those which affect the nature of the unit. We must learn to recognize a hierarchy of permanency.

The third great fact is the discipline of the City of a Thousand Designers. Throughout the ages three disciplines have controlled the building of cities: that of the king, that of the architect or tastemaker, and that of the regional vernacular. Today the king has been replaced by the FHA, other legal bodies and a skein of laws. The architects are confused and cannot agree among themselves, and the vernacular has broken down badly. We must redefine the relationship of king, pace-maker and vernacular for today. The city-making processes which are possible in the City of a Thousand Designers are based on the concept of the capital web establishing a skeleton guiding individual acts which by accretion become the connective tissue of the city.

These are some of the ideas that I and nine like-minded young men brought to Boston one year ago. You may understand why the Boston situation appealed to us as a place to put the designer back at the core of city design, as a place to explode the didactic and cosmetic theories of design, if I tell you something of the revolutionary nature of the Boston Redevelopment Program.

Boston is the only city in the United States where the City Planning Commission and the Redevelopment Authority are amalgamated into one agency. It is this unique combination which offers the possibilities of creative public design as in the London County Council.

The Boston program deals with one quarter of the city's land area; one-half its population; the rehabilitation of 40,000 houses and the relocation of 30,000 persons. The Philadelphia program is smaller, yet the comprehensive plan published in 1960 was seventeen years in process.

The basic ideological emphasis and biases of the program in Boston are largely the results of public reaction to the clearing of the West End area where a large, stable center city community was removed by caprice, by riding roughshod over the sentiments of its inhabitants. The resentment and furor which ensued caused a general re-shuffling of the planning authority and brought Edward Logue to Boston.

Having given you a rough picture of the content and climate of the planning program in Boston, I would like to outline some principles of staff organization. The first principle is to avoid the compartmentalization of skills. The "teamwork of specialists" approach is based on our disbelief in the capacity of any one profession to produce a unified and whole-minded product. Thus we introduce the architect at the core of decision-making rather than have him relegated to the role of "beautifier of other's decisions."

The second principle is to exercise complete interdependence of staff design work on three area-time scales. A total attack on the renewal of our cities requires a dual interaction of microcosmic design and macrocosmic logistics. Therefore, we conceived a program of physical planning in these categories: 1 the metro-city area scale with emphasis on long-range strategic logistics; 2 the project or district (GNRP) which is immediate and finite; and 3 the study of architectural prototypes such as streets and highways, housing, rehabilitation, community facilities, mixed uses, etc. This last scale has its validity in demonstrating such things as experimental construction techniques, the effectiveness of controls and the feasibility of various building types.

A third principle is to operate a cyclical work program which grows increasingly refined as time

and knowledge allow while providing a continuous framework for decision-making. We discovered early that administrative decision-making processes in the BRA have a way of not waiting for studies to be completed. Thus we devised a multi-cycle sequence of studies with each cycle in phases of statement or parti, research and development, and testing and analysis.

It would create an unfair picture if I did not review some of the inevitable conflicts and adjustments in our philosophy and technique that the past year has brought about. We were disillusioned by the reluctance of urban renewal officials to develop a time-change consciousness or to accept its implications. We have found it difficult to apply the theory of capital design because of the strong residential bias of the BRA wherein the heroic generative act is difficult and because this concept depends upon politically difficult public architecture.

The liberal philosophy of the "Thousand Designers" is not understood by the administration even though they may espouse the idea of planning with the people. This facet of our philosophy suffered for lack of a clear capital design to support and from insufficient staff work on architectural prototypes. The concept of the cyclical work program broke down because of the lack of scientific mentality in the BRA. What the agency got was an artistic parti and a political and public opinion testing in a "planning with the people" bias which outweighs rational scientific testing. Thus, although many of our theories were accepted to a degree, we have been jolted by the administrative environment and, often in a personal and moral sense, we have not held our own.

There is little doubt in my mind that the philosophies and theories of dynamic city form are more "urban-renewal-oriented" than what passes for urban renewal today. However, our education acculturates us to a number of positions which are against the tide of social and political thought today. The designer's greatest adjustment must take place in his characterological and psychic attunement to working in a complex, public decision-making process.

A year ago I entered the biggest and potentially the best public development and renewal program in America. I entered it with a bundle of ideas on which I had worked for years. Some of these ideas worked, more of them failed, most of them remain good potentials for that day when the renewal process and its practitioners become more alive to a dynamic, neo-functional, "urbitectural" concept of city-building.

A year ago I went to great lengths to induce an unusually talented and sympathetic team of young men to join me in an adventure in public

city design. Some of these young men have stood up very well in the struggle they were involved in. Others made an intellectual adjustment to a dynamic process-oriented approach to city design but did not have the psychic or moral attunement necessary. Some of these young men will soon retire to the smaller, simpler and more traditional role of the architect: designing individual finite entities for completion in a finite period of time. For my part, retiring to that role is to retire into futility, to leave the city to the impersonal, amorphous Frankenstein designer mechanism that we now have.

The alternative to futility is involvement in bureaucracy while it can still be effective; in trying to reshape the bureaucratic processes of city de-

sign and renewal before they become further entrenched with the gigantic national programs ahead. If we are to supply this kind of leadership and innovation, architecture must look, not for a role in the middle of urban renewal as a matter of right, but for a way to make the city and its problems the root and essence of architecture. This calls for nothing short of an ideological revolution in architecture, changing its meaning and redefining the profession of architecture.

I would like to close with a quotation from Tagore. "Death can continue to dwell in the same sepulchre, while life must seek a new dwelling place. For life is a creative idea . . . it must increasingly find its expression in changing forms."

ENVIRONMENTAL ARCHITECTURE

by Victor Gruen FAIA, Victor Gruen Associates

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What are the outward expressions of this chaos? Though our cities are growing dynamically, their growth is unhealthy and cancerous. Instead of mature growth within, it is an uncontrolled, sprawling and scattering growth around the periphery; a growth which destroys the beauty of landscape and nature, a growth so unplanned and rapid that public services—water, sewers, roads, schools—lag far behind. We cover the countryside with urban fallout and simultaneously experience the rotting away of the historic city cores. If a halt is not called soon, we will all live in continuous mortal sameness, void of any interruption by landscape and plagued by a steady deterioration of original historic and dynamic urban centers.

In the last ten years the chaotic growth and development of our urban areas has awakened the public to its dangers. There is a deep undercurrent of resentment toward the ugliness and inefficiency of our public environment, toward the time wasted on congested highways and toward the lack of

values which urban life presents. The climate is right for a decisive attack toward the improvement of man-made environment.

We in Victor Gruen Associates believe strongly in this new activity field of architecture and we are, to the extent of our ability, trying to practice what we preach. Though I am aware that, measured by the size of the total task, our contribution is an extremely modest one, I would like to relate to you how we approach the new problems of architecture through our organizational setup and through teamwork with others.

Within a tightly knit organization we have departments of architecture, planning, structural, civil, mechanical and electrical engineering, transportation engineering, economics, interior design and graphics. The activities of the organization are guided and directed by six partners, each of whom performs a double function. Each heads one or more departments and is also in direct charge of a number of projects. Thus each project is assured of a participation by all partners and

departments and the totality of the experience and talent available. About thirty associates work closely with the partners and with outside consultants and coordinate the work of our staff of about two hundred.

As for the scope and character of the projects on which we are working, we are engaged in only one specialty. Our specialty is that we oppose specialization, and thus our projects range over every building type from small shops and interiors, to residential projects, retail establishments, civic structures, new communities, planning for redevelopment, city planning and regional planning. They range in cost from \$50,000 to \$200,000,000.

This nonspecialization is a principle based on our conviction that activities concerned with large segments of the man-made environment can be fruitful only if they are based on intimate knowledge of the individual elements of the environments, on the needs of the people who live, work, or shop in a structure.

We did not, of course, start with environmental architecture but worked toward this aim from small beginnings widening our range over the last fifteen years. The first projects which permitted us to express our ideas on environmental architecture were regional shopping centers. In building them, we attempted to create urban clusters which could form a crystallization point for social, cultural and civic activities in sprawling suburbia. These regional shopping centers gave us an opportunity to test on large, virgin pieces of land, planning concepts which we felt effectively approached the problems and potentials created by twentieth century technology and sociology. We later applied these principles to existing urban complexes or newly planned communities.

We are, of course, deeply aware of the fact that scientific and technological development have put into the hands of mankind not only the means for improvement of the man-made environment but also those for its total destruction. Believing in life and believing in people, we must hope that reason will prevail and that mankind will not destroy itself.

If reason prevails, the craze of armament competition will subside and vast energies will be released for an all out attack for the improvement of the places in which man lives. This, in our opinion, is the task and responsibility of architecture in the second half of the twentieth century.

Wherever architects or architectural critics or historians meet, the profession of architecture is

accused of being in a state of chaos, confusion and aimlessness.

Some architects are engaged in a feverish search for a new style of twentieth century architecture. We hear about *brutalism*, a new *romanticism*, *purism*, etc. Some work in one specific so-called style, others manage to change their stylistic approach from project to project. The result of this is described aptly in architectural magazines as *chaos*.

We fail to perceive that real styles cannot be created. They are only discernible from the tower of historic observation fifty to one hundred years later. Twentieth century science and technology has robbed us of the historical restrictions which gave us Greek, Roman, Renaissance or Baroque architecture. We can overcome extremes in climate by insulation, heating and air conditioning. We have a multitude of building materials and construction methods from which to choose, and technology has advanced to such a degree that practically every shape and form can be created at any place in the world under any conditions.

Distances between all parts of the globe have shortened dramatically, and the web of communications is so tightly knit that what is built in Chicago today can be discussed in an architectural magazine in Tokyo the following month. It appears that the search for style may only lead to frustration and a waste of creative energy.

Should one thus conclude that architecture is void of an exciting and exhilarating mission in our times? Nothing could be further from the truth. The mission of architecture in these times of mass production, mass consumption, population explosion and urban growth lies in a completely different area than in historic times. Architecture must widen its horizons; it must switch its attention from the individual structure to the entire man-made environment.

Why, from the architects own point of view, is this switch necessary? The reason is simply that within a complex society the individual structure has lost its significance because it is so totally dependent on the environmental conditions surrounding it. The most brilliantly designed structure can, and indeed often does, become ineffective. If architecture of the individual structure as a personal expression and as an expression of the synthesis of sculpture and painting and architecture is ever to become meaningful again, the task of reshaping the existing chaotic human environment must be tackled first.

THE URBAN RENEWAL ARCHITECT:

Dr Purist and Mr Compromise

by James J. Hurley

Vice President, HRH Management Corp

According to Lewis Mumford, the historical origins of the city were to serve the purposes of the gods. I quite believe this.

If we examine the contemporary city or any city of the past with critical subjectivity, we must conclude the city was not created to serve man. The village came into existence during man's paleolithic or neolithic history when man's primitive mate desired more security for herself and her offspring than the nomadic huntsman's life afforded. The village was the first expression of man's communal instinct and woman's desire for collective security. Each family had its own independent economy based on crude harvesting.

The huntsman, technologically unemployed by the somnolent village agricultural economy, grew weary of the dull, domestic routine and discovered a new purpose—the creation of the city which was to be the dwelling place of a god or gods. The city, therefore, had its foundations in heaven so that the gods might dwell on earth. The historical purpose of the city has never been, and is not now, to serve man but rather to serve some god or thing outside man.

It is very important that we should recognize this theological origin of the city, although you may be unwilling to admit the existence of gods in this enlightened age. You may say that in the days of Memphis, Nineveh, Babylon, Ur and

Karkemish, the citizens believed in the actual presence of gods dwelling in the citadel. In the Old Testament we are told how the ancient Hebrews built their city at the command of Jehovah so that he might dwell among them. Each Pharaoh god in Egypt dwelt on the banks of the Nile near the site of his pyramid tomb and thousands upon thousands of his slaves dwelt about him spending their brief lifetime building his tomb. With his interment his city disappeared leaving behind a necropolis barren of life while a new city formed around a new Pharaoh god.

You may say that was ages ago when men lived in fear, ignorance and superstition. Spiritually men live today no less in fear, ignorance and superstition, and the modern commercial city is no less a dwelling place for gods than was ancient Karkemish. The deities of the modern city are Greed and Power, which compel urban man's mind and heart and motivate his action.

These spirits existed before, of course. They were manifest in motivating the neolithic villages of Egypt as well as financial operators from rural Texas. There is a little bit of the gods, good or evil, in every man; therefore, it is not surprising to find homage paid to the wicked gods in our cities, great and small alike. Let us call these gods of Greed and Power the motivating spirits of Mr Compromise.

What about the motivating spirits of Dr Purist? They are the gentler and nobler spirits of Beauty, Art, Harmony, Reason, Balance, etc. They are as real as the wicked spirits, but somehow their gentle natures are hardly a match for Greed and Power. You are less likely to find them in the great cities. The city does not pay much homage to the ideals of Dr Purist, lip service perhaps, but not true homage. I do not scoff at Dr Purist nor at his ideals. I laugh at his naiveté when he insists that the wicked gods of Greed and Power abdicate in favor of his gentle spirits. No city, to my knowledge, exists today where only the good spirits of Dr Purist reign supreme. This is no reason to abandon your faith in the good spirits of Dr Purist, merely a reason to reckon with the dark powers of Mr Compromise.

If anyone wishes to make a mark in city planning, he must approach it rather schizophrenically, recognizing both the good and evil motivation that build and operate the contemporary city. By no means abandon your visions, but do not expect to find them fully realized in the city as we know it. You cannot be an urban renewal architect without encountering these spirits and their high priests.

To the god of Greed belongs the market place, the bankers, the mortgage lenders, the landlords and the developers with their talk of economic feasibility, return on investment and rights of ownership. To the god of Power belongs all the apparatus of government with its myriad agencies—the FHA, the URA, the HHFA, the Building Code, the Master Plan, etc, etc. (Your saddest frustrations will come from the servants of Power or Greed who will invoke the names of the good spirits of Dr Purist, such as Economy, Public Welfare or Safety, to support some inhuman demand by the god of Power.) Let me give you a few brief examples of how the gods of Greed and Power operate, how they can be outwitted and how they often hurt themselves.

Of four developers bidding on one sixty-acre renewal project, the one submitting the lowest bid for the land clearly had a superior design. The local director of urban renewal, a Dr Purist, made a courageous decision and awarded the project on its architectural merit. Then all hell broke loose.

The other developers cried for the director's scalp. The god of Power stirred and "required" the chosen developer to match the highest bid. At this point the architect rebelled evoking the sacred cows of proportion, scale, balance, etc, because in order to absorb the extra land cost, one hundred housing units had to be added by adding five floors to each of two buildings. As consultant to the developer, I told the architect that without this increase the project would never go. The architect

yielded, the project was built and he has since admitted that he was wrong about the esthetic limitation on the height. The god of Power received an additional \$150,000, the director has a good completed project built at least somewhat to the ideals of a Dr Purist and the architect was reasonably content.

The master plan of another city called for five hundred housing units for middle class families in a renewal area. This apparently meant semi- or detached houses, but the economics of the density proved unworkable and a town house scheme was developed using the land area saved for high-rise apartments. But the god of Power has many minions and one of them was the evil Building Code which called for minimum lot areas for single family homes. We outfoxed the evil Building Code by classifying the row houses as a multi-family apartment. The wicked regulations of the Fire Department called for a four-foot continuous, fire-resistant overhang connecting all exterior apartment entrances. We outfoxed the Fire Department by calling them individual row houses and so presented different faces to the god of Power and thus he was fooled by man!

A developer was awarded a project for twelve hundred housing units in an Eastern city. I estimated the market would absorb a ten to twelve net gain in tenants every week. In response to the pressures of saving \$400,000 and the director of urban renewal wanting to complete the project as soon as possible, he built the entire project at once against my advice. My prediction proved surprisingly accurate and the project sustained a loss in excess of \$700,000 in the two-year three-month period it required to rent all the units. The god of Greed defeated himself with a little help from the god of Power.

The important conclusion which I have drawn from my experience is that the wicked gods of Mr Compromise are not so terrible or omnipotent that they cannot be outwitted at times and a point or two scored for the good spirits of Dr Purist. The urban renewal architect must recognize the presence of the wicked spirits, learn their whims and their weaknesses and pay due homage to them while continuing to serve the noble spirits of Dr Purist. If your client is either Power (the city) or Greed (the developer) and you serve him slavishly, you will end up as a hack, unworthy to be called an architect. Though your plans may be built they will hardly renew the city. If your client is really your own ego, you will probably end up an architect of literature, the quintessence of Dr Purist with your files of unbuilt dreams. You will need character and temperament as well as art, not the character of Hector or Ajax but rather the character of Ulysses.

EDUCATION FOR URBAN DESIGN

by *Jaqueline Tyrwhitt*

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The term *urban design* is used at Harvard in quite a limited and specific sense to mean an area of interaction between the three professions of architecture, landscape architecture and city planning, which are there housed together under the general umbrella of the Graduate School of design.

I have come to this conference fresh from the Harvard commencement ceremonies and this year considerable play was made with the president's traditional greeting to the graduating class from the Harvard Law School as men qualified to devise "those wise restraints which make men free." I would like to take this phrase as a description of the tasks and limits of urban design as we see it.

Order and hierarchy—the wise restraints which make men free—are at the very basis of civilization itself. For it was only after early man had discovered a cosmic order in the heavens that the first high civilizations could arise in Sumer and Egypt. This cosmic order formed the basis of the first architecture as well as of the first systems of social and religious hierarchy. It is totally impossible for us to deny order as the basic premise of civilization, but our interpretation of the scale on which it should operate in order to "make men free" has varied from one culture to another.

In the Harvard program, urban design operates on two scales: the conceptual system and the visual scene. The first is a frame of reference, conceptually sensed but not necessarily visually apparent at any one moment. The second is directly

concerned with what is physically visible at the human scale; in other words, with the design of variant elements within the conceptual system. We hold that both the general system and the detailed element are equally important, that the designer must always be simultaneously conscious of the macrocosm and the microcosm.

At Harvard we have two programs in urban design which fall into the awareness field and one that is strictly professional. We endeavor to expose all students entering architecture, landscape architecture or city planning to some general principles of environmental design. This occupies studio periods throughout the first term. After this joint work, designed to give an intelligent awareness of the interaction of man and his physical setting, all students are plunged into the technicalities of their separate professional fields.

The fall term program of the first year in the Graduate School of Design falls into three phases: a general visual reconnaissance of a given area; a period of abstract research into general factors thrown up by this reconnaissance; and a rather longer period of moving from a sketch plan to a three-dimensional model to a carefully drawn two-dimensional plan. The reconnaissance program includes such items as events and their visual repercussions; relative scale of buildings and land use; graphic documentation of specific qualities and features; and comparative studies of the nature of urban spaces.

These and many others are discussed and analyzed in class as a basis for undertaking library research into a number of topics such as factors that influence apparent scale, view, privacy from sound, communality, walking distances and street furniture. Such information is used by the entire class as a basis for subsequent work.

The class then undertakes an analysis of problems and possibilities and a sketch plan, intended to show a system of design and the three-dimensional interpretation of this system. At this stage the building types and their standard sizes are given; the exercise is in their placing in respect to all the criteria evolved as a result of the previous studies.

Ostensibly those who wish have at least one subsequent opportunity for collaborative work on an urban design problem, but this has become less and less practicable to organize for a number of complex reasons. It was partly as a result of the inadequacy of collaboratives that the Harvard urban design professional studio came into being.

Students entering the urban design studio must already be fully qualified in one of the three professions and must satisfy the admissions committee of their ability as designers. This is at present a one-year course designed to give further training to qualified men to fill the gap between the planning programs prepared by the city planner and the building plans prepared by individual architects. It does not attempt to substitute for either. It accepts the fact that a dangerous gap exists which neither profession is at present being trained to fill. Thus the Harvard program in urban design does not aim to train architects in city planning nor city planners in architecture.

In principle it adopts a planning program that has already been developed and works on its three-dimensional interpretation. The purpose throughout is to create a framework to guide but not inhibit those individuals who will normally carry out the final work, much as the conceptual system, derived from the planner's program, has guided the urban designer.

In addition to his major studio course, each urban design student attends a special seminar throughout the year and one or two elective courses at Harvard or MIT. These elective courses are selected with the instructors and we try to spread them so that a wider range of general awareness will rub off on the group as a whole.

The urban design studio has two long problems

during the year: one on more or less a downtown urban renewal scale, the other tackling new development in an open area. In addition, there are some short problems, particularly an opening problem dealing with some area well known to the individual student. This gives us a chance to size up his interests and general capabilities and guide his subsequent work.

Last year the urban problem given was the Charles River Basin, taking as a basis the plans already prepared in the local planning offices of the bordering cities and universities. The second long problem was entitled "Intercity," which was the theme of this year's Urban Design Conference.

The students spent the first few weeks analyzing, at comparative scales, a great number of historical and contemporary projects such as Eastwick by Doxiadis, the Greater Copenhagen Plan, Kennemerland by Bakema, the new town of Hook by the LCC, Levittown, etc. Following this, each student developed a system of intercity growth to suit his country of origin, and three were chosen for subsequent development by the whole class, each student at that stage acting as an urban designer required to work within the overall system.

The USA project chose to work on an actual site along one of the corridors of the Washington Year 2000 plan. The other two groups, for Western Europe and India, worked on an abstract, flat terrain but within the geographic and climatic conditions of a specific region.

The faculty working with both the first-year studio and the urban design studio are drawn from the Departments of Architecture and City Planning. Their tasks fall into three categories: the provision and sources of information; a constant reminder that the designs have to be realizable in stages and by different people; and a continual reference back to the macrocosm, the microcosm and the reality—in other words, the system, the building types and the special problems of the site.

The urban design studio has now been operating for two years. Men graduating from it get a master's degree in their own field with a specialty in urban design, a further emphasis on the fact that we make no pretense to turn an architect into a city planner or vice versa within this one year program. We have learned a lot in two years, but the program will undoubtedly go through many changes before its curriculum becomes stabilized. The program is still young.

QUESTIONS CONCERNING URBAN DESIGN PRINCIPLES

by Jesse Reichel, Professor of Design

Department of Architecture, University of California

Architects and planners continue to carry—and educators in these fields distribute—a bundle of outmoded notions and concepts which have been elevated to the status of principles.

New problems derived from other disciplines, as well as concepts of order and techniques for solution, are either unknown or ignored by architects and planners. We must seek to develop a visual-physical ordering from the activity systems with which we are dealing, even if such concepts of order demand a denial of those “principles” which we have been taught to accept as eternal.

If the function of the architect and the planner is to provide a spatial system that will facilitate the process of activity systems, how then do our plans correspond to the operation of those systems in the real world? Are we planning or praying?

When we examine the buildings and cities of the past, we find that they are derived from the prevailing socio-economic patterns and the available technological capacities of the times. Are our notions concerning the ordering of our physical world based upon the present state of these factors? Or are we using concepts relevant to prior eras and attempting to apply them to present and future situations?

There are many more questions that trouble me; however, those which I have stated are sufficiently general as to encompass the others. I will not attempt to answer them, rather only share some thoughts that they bring to mind.

We who have been initiated into the mystic rites of design look at our cities and cry *chaos*. Of course, we except those portions of the city

which we have designed. And about those, others cry *murder*. We claim that our cities have no order, no structure. I say that this is not so. Our cities do have an order. That which is without order cannot be thought of or objectively seen. Where there is no order perception and cognition are not possible.

When we cry *no order* we are, in fact, saying that we don't know what the order is or dislike whatever order we do perceive. The order of cities—any city, even Los Angeles—is open to rational understanding by the minds of men. I would suggest that the architect, urban designer and planner are seeking the lost paradise, the unity and order of simplicity, comprehensible at a glance, easily identifiable and thus an easy way to one's own identity, having not the ambiguity of life but the specificity of death.

The systems by which we live are either of our making or exist in their present states because of the changes we have brought about in them. These systems—biological, social, etc.—are open and interdependent systems, wherein action in one effects a change in all others. We of the AIA, ACSA and even the AIP have fenced in one sector of our environment—the physical environment—as our area of concern.

Because of our desires and special training, we have chosen the physical environment to do our good works in for the ultimate benefit of our fellow men. Since changes in our physical environment will come about willy-nilly, we wish to direct them so that they are more willy than nilly. In order to be more willy we must act rationally. And in order

to act more rationally we have evolved a set of principles to guide our decisions. The dictionary defines "principle" as a fundamental truth. Let us examine some of these notions which have been elevated to this status by nothing more than calling them that.

"The Greenway Principle is a basic linear system of connecting greenways, focusing on significant symbols such as churches, schools and clubs, forming a skeletal backbone which gives significance and meaning to a series of individual projects, and provides a sequence of sensations for the people moving through it. It is a very humanistic principle that the community will be seen as a series of meaningful space sensations by the people who inhabit it."

Except for color, I fail to see how the greenways differ from the freeways. Freeways can and do all else that it is suggested the greenways do. They focus on significant symbols, perhaps not the same ones, but on others of equal or greater significance. Such terms as "meaningful space sensations" and "sequence of sensations" are nonsense without some indication as to what the meaning is and what the sense experience wants to communicate. Therein lies the rub and therein lies the mumbo-jumbo that we use to communicate to ourselves, our students and the people we wish to serve. The environment, with or without the designer, is filled with space experiences and they all have meaning as an expression of nonspatial experiences in the nonphysical aspects of the environment.

Our teachers have told us what their teachers have told them, that our compositions must have unity. It seems not to matter that our present state of understanding of the urb tells us that the activity systems we are dealing with are not composed states but are process states. We are in constant search of unifying devices—building material, building heights, street furniture, colors and textures, signs, architectural styles, etc—as if unity corresponds to our real experience.

In fact, we have gathered a whole pot full of devices which we use to achieve *good* urban design. The list can be taken from any of the student projects at our schools or from the proposals of our more sophisticated practitioners. Open civic spaces (plazas, squares, parks) express urbanity. Varied building types protect us against monotony. Distinctive communities give us our identity and sharp boundaries our sense of place. Vistas—open and closed, short and long—give us the spatial experiences we need. Landmarks provide us with our orientation, symbolically and physically. Pedestrian ways give us the human scale we want, the exercise we need and a means of rejecting the automobile we love.

Recently we have those who are guided by the admirable objective of increasing choice. This is accomplished by cramming every conceivable building type, economic level and ethnic group into each and every project.

We seem to accept these notions and devices as surefire ways of achieving good urban design, even though they came into being as responses to very different patterns of life. We seem to ignore the fact that the spatial systems that developed from them do not reflect or facilitate our activity systems. Nor does it seem to matter that they inhibit the use of available knowledge and technology and strait-jacket us in our efforts to understand and adapt concepts of order that have evolved in the sciences and in other fields of art.

In the meantime, the architect engages in bartendery, mixing space cocktails, without having any confirmable idea as to the effects of his concoctions. He holds fast to his physical determinist position without producing any acceptable evidence to support his contention.

In more general terms, what I have said is that we must be able to develop means of describing present events and predicting the outcome and prescribing the nature of future events. Each architectural design, urban design and city plan is in effect supposed to be doing this, but there are many who contend that we are using antiquated tools and primitive methods in attacking this task. We continue either to ignore or to remain ignorant of tools and methods that have demonstrated a great potential for utility. In like manner we have disregarded important concepts of order that have emerged from the sciences and new patterns of order that have been revealed by studies of contemporary societies.

The principles that we have been using no longer have any claim to being fundamental truths, since they do not relate to anything in our contemporary life experiences. The devices we have been using for establishing an order for our experiences are not in accord with the pluralistic and ambiguous nature of our existence and the patterns of our behavior. Our problem is to provide a spatial system that will facilitate an activity system that is diverse in its parts, equivocal in its structure, changing in time and divergent in purpose.

We must stop rephrasing the problem so as to conform to our preconceived image of the solution and so as to be susceptible to manipulation by our ready stock of useless principles. Our design decisions must be based upon concepts of order derived from the problem at hand. Design principles that have been formulated as a response to problems that no longer exist are irrelevant and detrimental.

DESIGN FROM KNOWLEDGE, NOT BELIEF

by Barclay Jones AIP, Associate Professor
College of Architecture, Cornell University

The architect in this country today is a failure at urban design. One of the primary contributing factors is that the educational process in architecture fails to prepare the future professional to solve problems of urban design. What reasons underlie these two related failures and what can be done about them?

No useful purpose will be served by further castigation of the planning profession nor by reiterating that we architects *can* do urban design if anyone will let us. We can remedy these failures only by drastically changing our ideas about the nature of architecture and our ideas about education. These changes will be so great as to constitute a complete revolution.

Architecture today is one of the most conservative and traditional of academic and professional fields so far as the recent revolution in attitudes toward behavior is concerned. Architecture continues to the very present in its ancient and venerable emphasis on the differences between itself and other fields. Design is taught as architectural design—a kind of unique human behavior. Most of the student's time is spent in indoctrinating him in those things which differentiate him from all others. In this sense architecture today is totemistic.

Many of the people I would label as totemists, those who stress the things that are different about architecture, claim that the architect is and must be a generalist. If they indeed meant what they said, they would then be stressing those things architecture has in common with other fields. But this is not the case, for what is usually meant by the statement is the grossest perversion in terms. They mean he must be completely specialized in architecture, he must know nothing specific about any other field. The very nature of the revolution necessary in architecture today is to make the field really general, not in fact more specific while we give empty lip service to the development of generalists.

Creative behavior depends on two characteristics: the ability to learn, to acquire knowledge, to receive information, to perceive reality; and the ability to apply our learning to the solution of a specific problem whether abstract or practical,

to synthesize, to solve, to create, to design. We hold this in common with many other disciplines. Many fields are deeply concerned with creative behavior, and many academic fields are dedicated to eliciting this kind of behavior.

If we accept this fact, then education should develop out of two characteristics. First, the student must learn how to learn—not simply learn how to do what is already known, the way we initiate him today. He must learn tools for learning, for acquiring knowledge relevant to a problem, any problem. He must start at the most fundamental level with the nature of knowledge, the process of acquiring knowledge and the ways in which we apply our knowledge to solve human problems. Then he must apply his tools to very general problems, acquiring relevant specific knowledge and using it to arrive at the selection of a course of action. Only then may he proceed to those things which are specific to his own field.

The creation of architecture as a form of human behavior has persisted for a very long time. The process I have described of acquiring relevant knowledge and applying it to the solution of problems of shelter has always prevailed, but the methods by which the process have been carried out have changed considerably.

The aspect of behavior which is the decision process leading to the solution of problems of shelter exists at its most rudimentary levels in various forms of insect and animal life. Here the decision mechanism is biological and is built into the genetic equipment of the creature. Complex hives, burrows, webs, nests, cocoons, dens and lairs are the elaborate results of these instinctive decision processes. Man lacks biological decision-makers to a great degree. This gives him the greatest flexibility of all animals in solving problems of shelter.

Through history man has developed several methods of approaching problems and transmitting behavior patterns. We recognize three main kinds of systems: belief, reason and scientific method.

Belief as a decision system requires the ritualization of as many separate decisions as possible. It breaks down when the number of ritual solu-

tions to specific problems increases beyond the capacity of human memory or methods of storing ritual solutions in writing or diagrams.

Reason and logic provide a more powerful decision system. Their application permits the development of much more fresh and creative solutions than the ritualistic approach, making it possible to solve rapidly changing problems with greater ease. The development of a design philosophy by rational methods and the application of it to a whole range of shelter problems in the work of a single architect becomes an object of beauty in itself, serving as sufficient testimony to the advantages of using reason as a decision system.

However, there is one serious fault with systems of this kind. They need be only internally consistent and true only to themselves. Reason is not necessarily connected with reality. As our shelter problems develop incredible complexity in a three-billion-people world, reason as a decision system becomes increasingly inadequate.

Scientific method seems to close the gap between the real world and reason. Inductive logic is substituted for deductive logic. Empiricism becomes the order of the day. We learn to develop theoretical statements and generalizations from our observations of phenomena about us. Very powerful techniques for advancing our knowledge become available to us. Scientific method is being extensively applied today as the decision system for shelter problems.

I suggest to you that architects must change and adopt this new decision system, for there is not the tiniest hope that architects will make any worthwhile contributions to urban design problems, given the present scales and complexities of our cities, until they do.

We really have only two choices in trying to achieve the standards set by successful urban designs in the past. One of these is to make our cities as relatively simple and uncomplicated affairs as they were a thousand years ago so that they are within the powers of our decision system to seek solutions. The other is to accept the complexities of the world about us and to seek more powerful decision systems as a basis for design.

If we choose the first, the solution will belong to another period. There is no alternative to the second route to a truly twentieth century urban design. The process remains the same, only the methods change. The solution of a problem of any kind requires the acquiring of relevant knowledge and the successful application of it. The differences are in the means by which knowledge is acquired and the methods by which it is applied in the process of synthesis.

Suppose we have the will to revolt, how do we implement it? First, we must ask ourselves who

about us is concerned with new systems of acquiring knowledge. What have they learned that they can share with us? Possibilities range from philosophical attitudes concerning the nature of knowledge such as probability, to methods of absorbing bewildering quantities of information in usable form contributed by mathematical statistics, to tools such as electronic data processing for rapidly handling, storing and retrieving great quantities of information.

Next we must ask ourselves who is concerned with the application of knowledge to the solution of specific problems. Again we find many. The planner, the administrator, the systems engineer are all vitally concerned with the same order of application as we are. Here, there are two levels of approach we must take.

First, we must learn something of the powerful tools for ordering knowledge in useful form such as statistical decision theory, matrix algebra, stochastic processes, linear programming—the rudiments of operations analysis—all useful in these ways.

Second, we must sit with those who are using in many ingenious ways all of these methods and others in the solution of design problems. The creative leaders of industrial, mechanical and electrical engineering come most rapidly to mind. How do they and others approach, structure and seek solutions to design problems? How do they reconcile the ancient conflict of combining information and judgment?

Too often we seem completely convinced that the basic problems we are faced with in architecture are unique to us alone. I suggest that this is contrary both to life and art. There are many, many others groping with the same kinds of fundamental questions that are baffling us. It is entirely possible that some of these others are finding brilliant insights into the nature of these problems.

It should be obvious that in many ways this is a great departure from our present approach and requires the redoing of the whole educational curriculum. Many of the things to which we currently subject the architecture students are no longer relevant in this context. They can be dispensed with at no loss. I am not suggesting a process of adding but rather one of substituting more powerful approaches for weaker ones.

The designer would approach the complex problems that are the order of the day with a deeper understanding of the city, a better capacity for acquiring knowledge relevant to the problem at hand and better methods of applying this knowledge to the solution of problems. We would be given a basis for urban design. A more profound, a more truly creative solution would result.

SUMMATION FOR THE SEMINAR

by *Thomas W. Mackesey* FAIA

Dean of the Faculty, Cornell University

One of the most curious things that happened at this seminar was the complete abdication of technology from a form-making role in the city. Everyone seemed to agree with Fleisher's statement that technology of itself is not a determinant.

I suspect, however, that one of the difficulties the scientists and the technologists have in the area of the city is that they are completely scared of the number of variables and the irrational concepts found there. A prominent space scientist was recently quoted as saying, "Nature is much easier to grasp because you can take a specific natural law and be assured it will repeat itself."

Not so with people. Therefore, the scientists, or some of them, simply withdraw and say, "Well, there is nothing we can do in this area of technology; we can't tell you how science will have an impact upon this rather curious thing we don't understand: the city."

We've heard a lot of inevitable talk about the motor car and motor traffic. I am glad that Reichel touched on this for I do share his admiration of the motor vehicle. I have some resentment toward those who say we can solve our problems by turning our back on what is probably one of the most marvelous pieces of machinery that we have been able to invent. The fact that we have not been able to be as inventive in the use of the motor car as we were in making the machine itself is no reason for turning our backs.

Of course the most obvious evil of today's city is motor traffic, but the problems are far greater than the central issue of moving and storing. The motor car has destroyed the ancient concept of the city as a social and political entity and it has created in its place the urbanized region. The auto has not only taken over the street but it is dissolving all the connective tissues of the city.

What can be said for the form and the organization of a city in a world that is changing so rapidly? Only one thing. We don't know what form the city will take but we can be quite certain that it will be a very different form from anything with which we are familiar. We have to take a fresh look at the institution of the city and translate social and economic demands and possibilities into a rational organism, taking advantage of all the

wonderful mechanisms and techniques offered by this age of technology. The problems of providing form and organization to the city are so vast and so complicated that they require the concentrated attention of all the best brains, not only in the fields of architecture, urban design and planning but the best minds in a great many other disciplines as well.

Some time ago Edwin Herbert Land said, "Discoveries are made by some individual who has freed himself from a way of thinking that is held by friends and associates who may be more intelligent, better educated, better disciplined, but who have not mastered the art of the fresh clean look at the old, old knowledge."

Dr Luther Gulick sustained this theme recently when he said, "New conditions now require new thinking as a basis for new institutions and action. Some may think that our great need in the cities is water or sewers or wider streets or more schools or housing. Fundamentally, they are wrong. The real things we need are brains, character, drive, organization and leadership."

At the same time, we must never forget that the city is for man, the individual man, who still reacts emotionally and often irrationally to external stimuli. How can we organize our cities in their regional, national and global sections, not as a bloodless, organized environment, for a bloodless, organized man, but as an environment that, by its organization, will free man from oppression and chaos? It must furnish a framework within which he may enjoy what we describe in this country as his inalienable rights of life, liberty and the pursuit of happiness. If we are to preserve our civilization, we must find ideas and tools to make the city a habitable place in these terms.

I am confident we will find the answers to these problems, but it will require thinking and action on a far larger scale than that to which we have been accustomed. The problems that we face are vast and difficult, but I regard this as an evidence of vigor in the city rather than of decadence. Growth in any organism is inevitably associated with disturbance and dislocation, and I would be much more concerned for the future of our cities if they had no cares.



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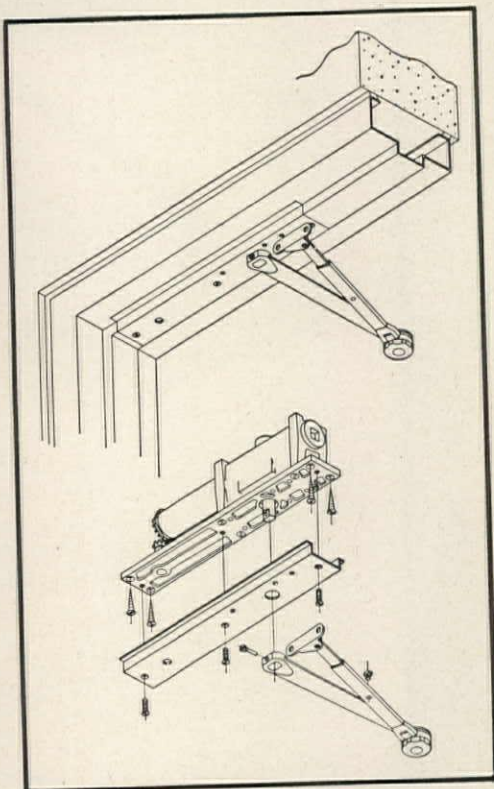
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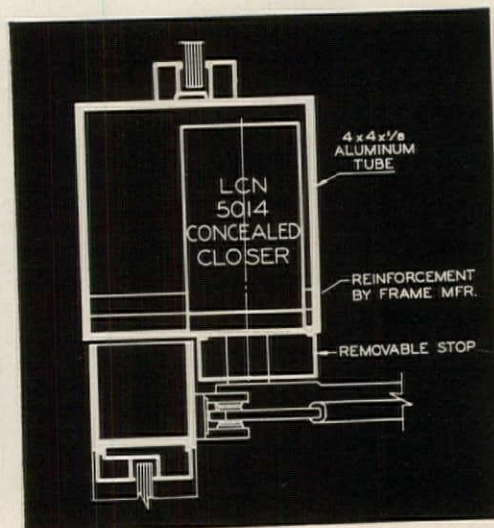
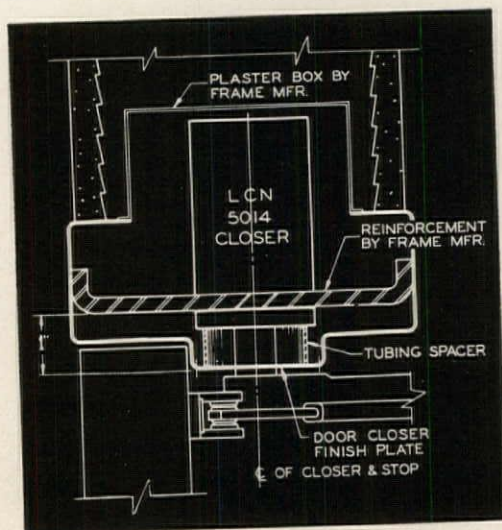
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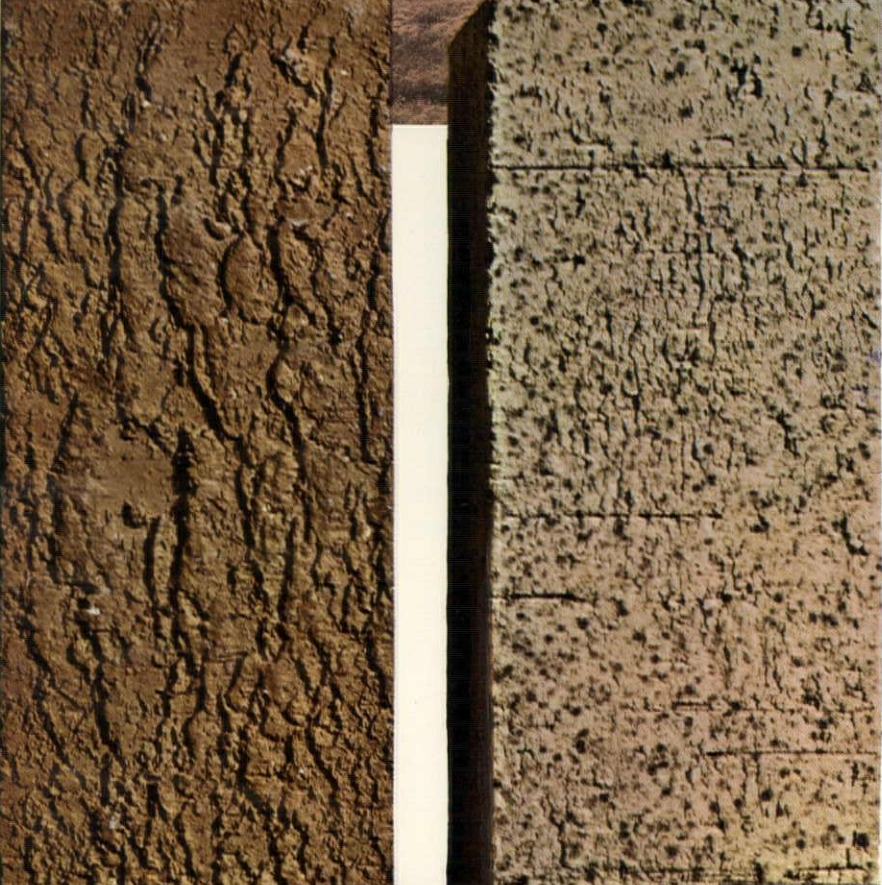
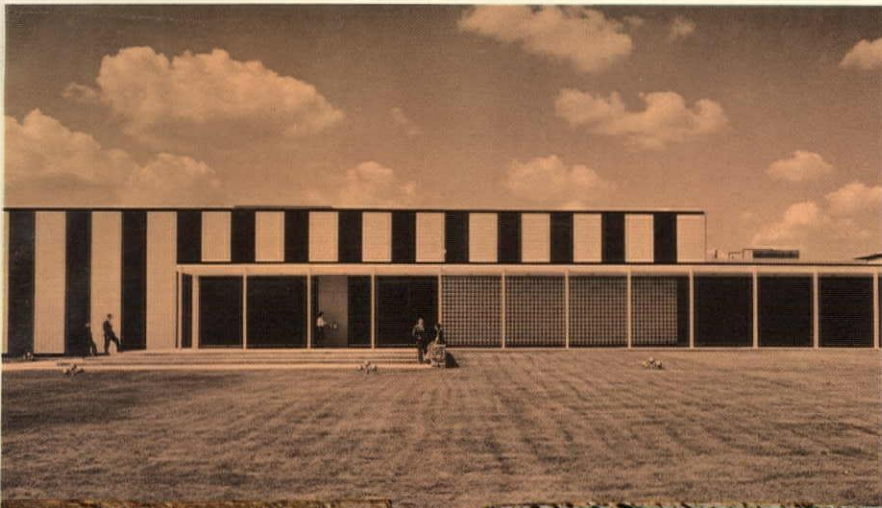
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January 24 to 26: Society of Architectural Historians, Lord Baltimore Hotel, Baltimore

February 1 to 17: Minnesota Society of Architects' Study Tour of South America (contact Viking Travel, Inc., 1505 First National Bank Building, Minneapolis 2, Minn)

March 4 to 8: Joint Annual Conference on Church Architecture, Olympic Hotel, Seattle

May 6 to 10: AIA National Convention, Miami

June 23 to 28: ASTM 66th Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, NJ

September 20 to October 3: UIA, VII Congress, Havana, Cuba

Future AIA National Conventions

1964 June 15 to 19: St Louis
1965 May 5 to 14: Washington DC
1966 June 28 to July 1: Denver
1967: New York City
1968: Portland, Ore (tentative)
1969: Chicago (tentative)
1970: Detroit (tentative)

Necrology

According to notices received at The Octagon between August 22, 1962 and September 30, 1962

DAILEY, ALAN, Scottsdale, Ariz
DOMANN, WALTER A., Wauwatosa, Wis
GAERTNER, FRANK, New York, NY
GREEN, MARTIN J., Evanston, Ill
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How is this possible? Three years of Inland research

have combined (1) a Burgess-Manning radiant ceiling system*, (2) a Kathabar chemical air conditioner†, (3) a standard refrigeration plant and (4) Inland Hi-Bond Cellufloor, into an integrated system. All of the circulated air can easily be carried in the cells of Inland Cellufloor, with ample room left over for power and signal lines.

Space is too limited here to explain how the Inland IAF System works, but a sound-slide program has been prepared which tells the story quickly and meaningfully. If you would like your organization to see this program, please write the Milwaukee address listed below or call your local Inland office.

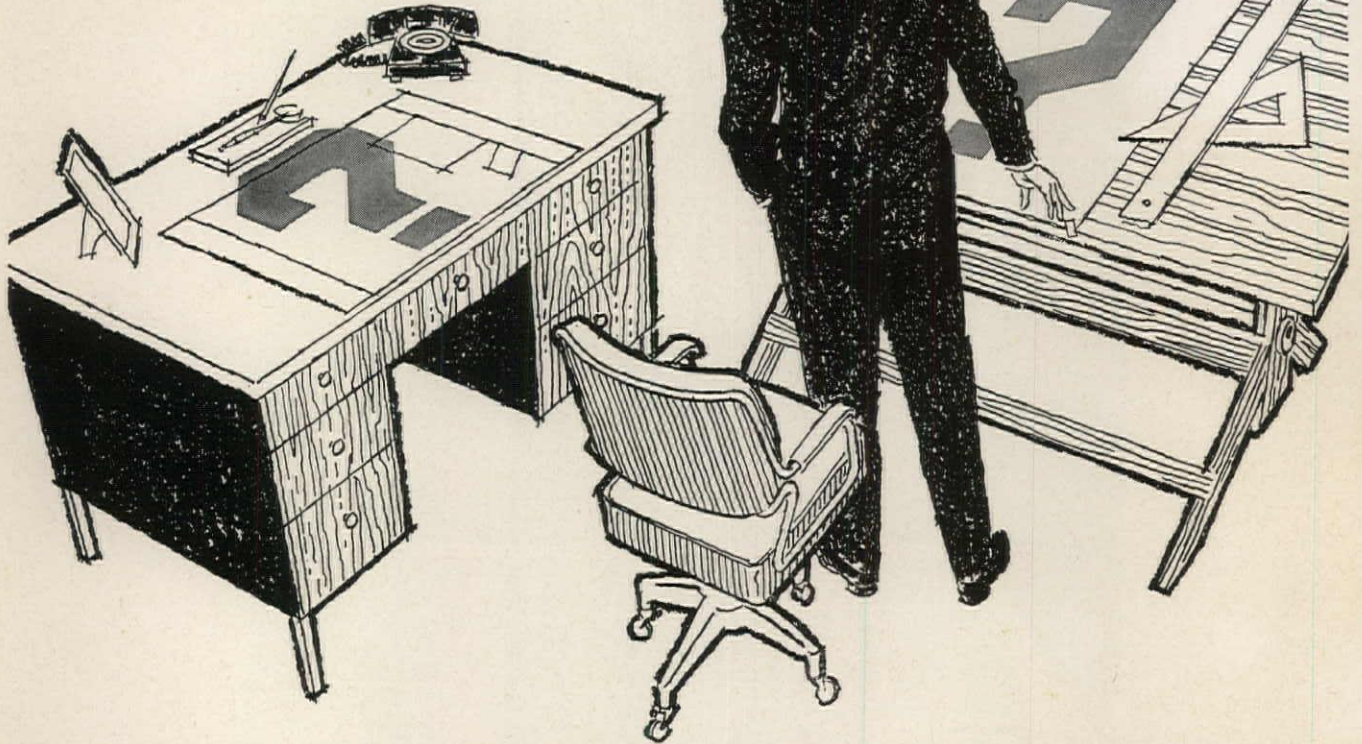
*Burgess-Manning Company, Libertyville, Illinois
†Surface Combustion Div., Midland-Ross Corp., Toledo, Ohio



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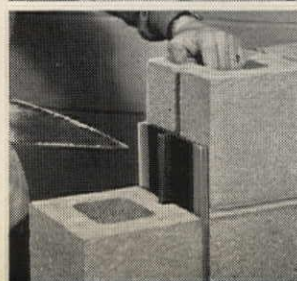
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**SERVICEABILITY STUDY
ALUMINIZED STEEL
TYPE 2**

RESEARCH REPORT



**Research and
Technology Division**

**Armco Steel Corporation
Middletown, Ohio**

Economical Durability of Armco ALUMINIZED STEEL Type 2 Proved by Research Survey

Detailed inspection of installations, 1 to 10 years old, shows outstanding performance of special Armco aluminum-coated steel in range of atmospheric exposures and applications.

Armco ALUMINIZED STEEL Type 2, sheet steel hot-dip coated with aluminum, has become a widely used architectural metal because of its low-cost resistance to atmospheric corrosion. To assist architects and building product manufacturers in effectively using ALUMINIZED STEEL, Armco has just released the results of an extensive research investigation of its service performance. The report provides evidence of the utility and economy of Armco ALUMINIZED STEEL.

The serviceability study covered 55 installations ranging up to 10 years old. Products included roofing, siding, building panels, air conditioner housings and rolling doors. Installations were located in seven selected geographical areas to permit an accurate determination of the effect of various environments on the metal's serviceability.

Results of the survey confirm that the coating on

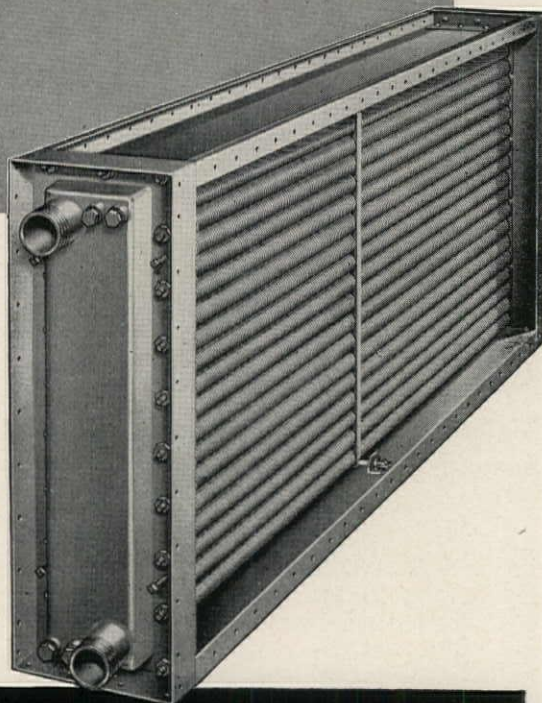
ALUMINIZED STEEL Type 2 lasts at least 4 times as long in industrial atmospheres as an unpainted commercial galvanized coating. They also show that ALUMINIZED STEEL is suitable for industrial, rural, and many marine atmospheric exposures. The survey indicates where and how ALUMINIZED STEEL should or should not be used for best results, and describes design and fabrication factors that influence the metal's serviceability.

This informative study, "Armco Research Report—Serviceability Study on ALUMINIZED STEEL Type 2," is available free to architects, engineering firms and manufacturers of building products. Write us today for your copy as well as additional information on the properties and applications of this special Armco Steel for architecture. **Armco Division, Armco Steel Corporation, 2912 Curtis Street, Middletown, Ohio.**



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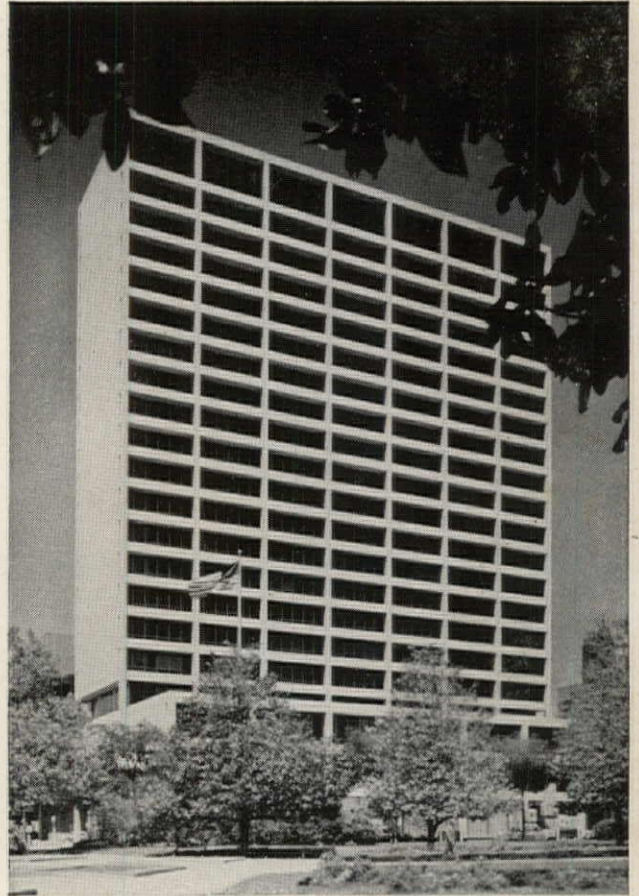
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