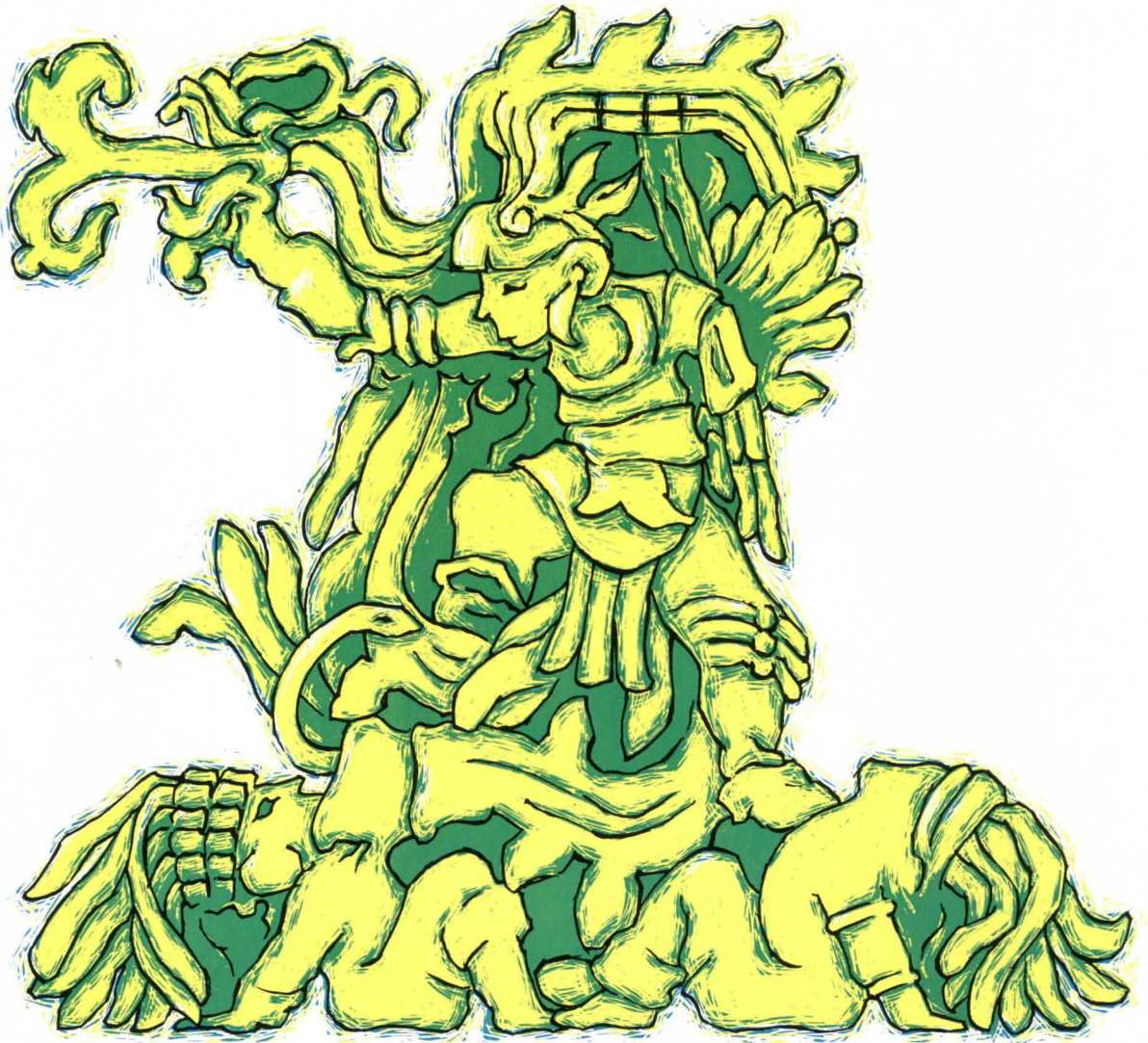




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Journal

March 1964



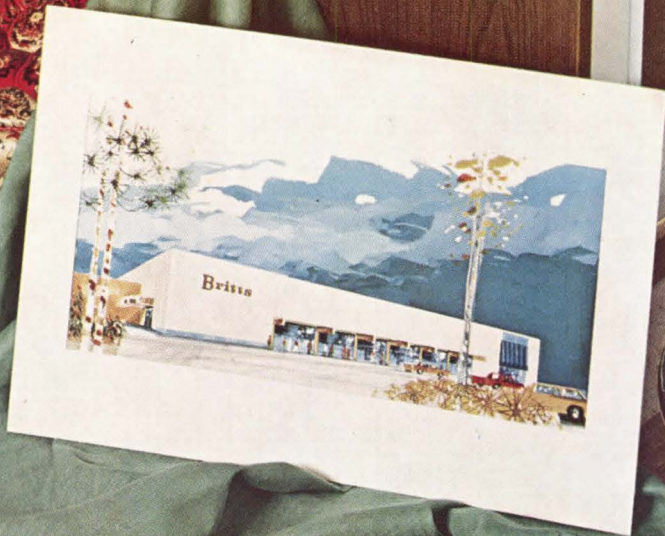
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MARCH 1964

VOLUME XLI, NO. 3

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March 1964

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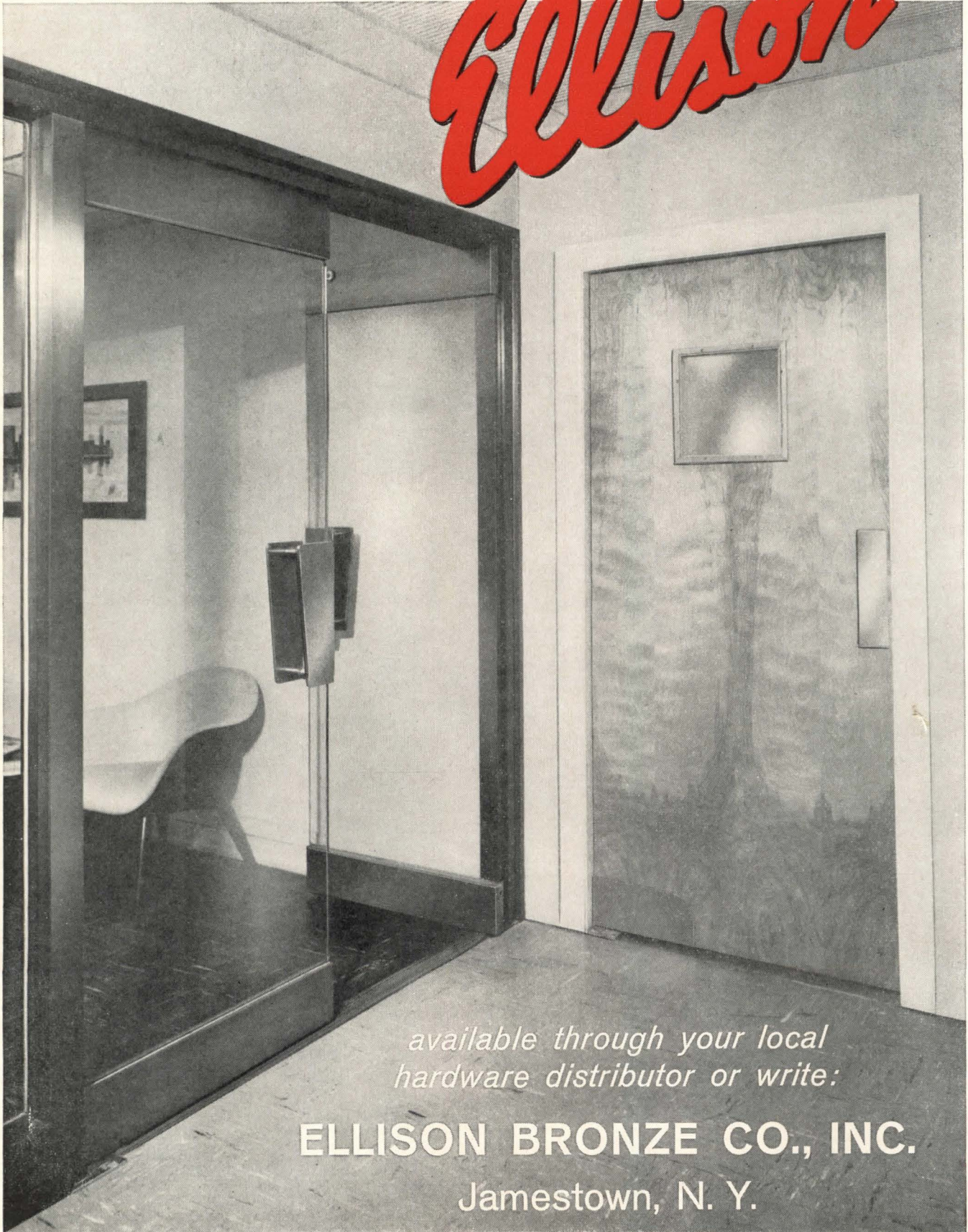
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# The Editor's Page

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## The Editor Argues

I recently received a "Letter to the Editor" from one Edward Colbert AIA of Royal Oak, Michigan, which led to a bit of correspondence. Instead of attempting to reproduce it on the "Letters" page, I think I'd like to present a condensed version of it this way:

**MR COLBERT:** As a reader who is becoming increasingly weary of the continuous and unrelenting propaganda assault by the *AIA Journal* relative to comprehensive services, I pose a question or two that I would like to have you consider.

The recently-passed "Designer's Law" in California, joined with the recently-installed "stock plans" program for schools in New York; the destruction of such landmarks as the Garrick Theater in Chicago and Penn Station in New York (to cite but two of a growing list); the visual anomalies, ubiquitous in their ugliness and inhumanity, created by an all-too-often untalented, miopically self-interested, sometimes incompetent, generally insensitive group of "professionals," and it is easy to see that *architecture* does very little these days to rightly influence anybody.

**EDITOR:** You have put a number of bad eggs in one basket, Mr Colbert, and I'm sure most architects would agree with you that they smell very badly.

**COLBERT:** It might not be amiss to attempt, through democratic processes, to make ourselves felt as a political force, individually and collectively. Aside from esthetics, many of our problems are rooted here.

I wonder if it would not be propitious to work at becoming much better at our professional tasks, then, possibly later, tackling the problem of becoming "universal men"?

**EDITOR:** You are quite right that we should work at "becoming much better at our professional tasks," but you apparently have failed to grasp the real significance and intent of the comprehensive services series in the *AIA Journal*—which you refer to as an "unrelenting propaganda assault." This is not propaganda, Mr Colbert, nor is it an assault. It is a basic course of instruction to help equip an architect to *become* better at his professional task—surely it is generally recognized that the architect needs to modernize and sharpen the tools of his trade. Then, by our recognized and unquestioned proficiency, we might find ourselves in a better position to make ourselves felt as a political force.

**COLBERT:** It is undoubtedly true that I may have missed a significance or two in the series on comprehensiveness, or that comprehensiveness itself is incomprehensible to me. However, I do believe that the implementation of comprehensive services, as it is outlined in the, admittedly, limited reading I have

done on the subject, will place architectural practice in the supermarket of popular economics as a commodity that will become, like many others, more valuable in its wrapping than in its content.

What separates our points of view might well be, rather than misunderstanding, our individual images of what we believe to be the "mission" of architecture. The extent of this cleavage throughout the profession might be in need of exploration.

If we rush to embrace the methods of our sales-oriented economic culture, simply because it is difficult not to, we will, in my opinion, only speed up the destruction of our heritage and our quality. This does not, to me, appear to be the proper function of "builders." I cannot see anywhere stated in the articles of D'Orsey Hurst, Richard Enion or Leo Daly (among others), the noble purpose or philosophic footing for a new world of building. As concepts grow increasingly greater in scope and content, should we scurry around solidifying our "businesses," cast in an image that others should determine for us? We must surely have better dreams than this?

**EDITOR:** I see no "rush to embrace the methods of our sales-oriented economic culture," but rather a realization that unless the profession operates on at least as modern and efficient a basis as do its principal clients, it will lose their respect and eventually their business.

The purpose of the comprehensive services series is not to discuss the "noble purpose or philosophic footing," etc—for such topics you should read elsewhere in the *AIA Journal*. Nor do I agree that the image of our "business" is determined by others. We would do well, however, to scurry around to broaden the scope of our business and to increase our proficiency, the better to serve.

The mission of architecture is too big a topic for this page, but the mission of the architectural profession has been thoroughly discussed many times in this journal. What is it? Briefly: Surely it is to introduce convenience, order, amenity and beauty into people's environment—in whatever social and economic state they may live, whether this involves single buildings, towns or regions, and to do this, as far as the services of the architect are concerned, with economy, efficiency and the highest standard of professionalism.

**COLBERT:** It is often proposed, by advocates of comprehensiveness, that the design functions be made a specialized sub-group of the over-all package. My own experience, as both employee and in practice, only serves to reinforce my belief that unless design is given the decisive role in leadership, its chief significance will be its absence. The adversaries of the quest for beauty are, already, diverse and powerful. The very intensity of the struggle has driven many to petty self-indulgence and sentimental whimsey.

**EDITOR:** The design function is apt to be a specialized grouping in any office, but in a properly organized office, or team of consultants, the designer *does* have "the decisive role in leadership."

*Cont'd on p 8*





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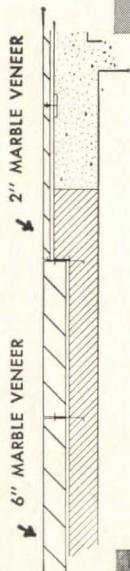
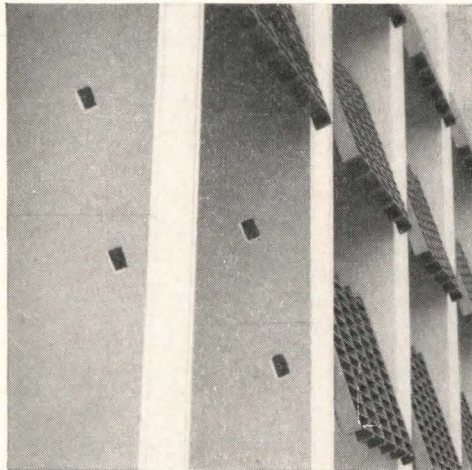
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### Editor's Page *Cont'd*

**COLBERT:** Another thing that worries me is, what becomes of the gifted men, the "givers" of artistic progress, under the new setup? Surely, many are individuals who would not fit well into the group. It might be said that they are but a minority, strong within themselves, in no need of looking after—yet all are in need of a home, I believe. Failure to provide for them might result in the body, indeed, removing its own soul. I'm not sure architecture could survive this any more than science could.

**EDITOR:** There is always room, and a very great need, for the gifted man in a comprehensively organized office—in whatever direction his talents may lie. If, as you suggest, they are "individuals who would not fit well into the group"—and there will always be such men—they will lose nothing by standing and practicing alone in their rugged and admirable individuality. They are needed, too. As you say, they need no looking after; but no one is depriving them of a "home." Surely they would resent and resist any effort on the part of the organized profession to provide them with one. They have their place. There is no danger of the profession's removing its soul, and only through the competence and the genius of its practitioners can architecture survive as a profession.

**COLBERT:** These observations could be expanded and continued until you would, justifiably, grow quite impatient with this imposition. Aside from these considerations, though, it is curious to me how our professional society has so enthusiastically embraced a concept which seems to act against the practical interests of more than half its members—nihilistic, almost, it seems to me.

**EDITOR:** I cannot gallantly let you have the last word, Mr. Colbert, since you end so negatively.

I infer that you feel the comprehensive services concept is only for large offices, and that the small office resists this "commercialization." But that is just where you are wrong. The big offices don't need instruction in what we call comprehensive services—many have been practicing that way for years (as, indeed, have many smaller offices). This series of articles is dedicated to the small and medium-sized office—comprising the great majority of Institute members—where the need has been felt and expressed for know-how in broadening the fields of their services.

There surely can be nothing "against the practical interests" of more than half the Institute's members—certainly nothing nihilistic—in setting up a program aimed at increasing their competence, the better to equip them to fight the ugliness, inhumanity and destruction you have *referred* to, as well as to stave off forever any possible abdication on the part of the profession of architecture in favor of more commercial and less esthetically and morally responsible interests—the true "adversaries of the quest for beauty."



# Letters

---

## Mr Kennedy: Postscripts

EDITOR, *AIA Journal*:

I have read the indictments of your "Visual Violence," and Mr Piper's remarks on pages 12 and 14 in the January issue. Among other things, I am a registered Democrat, independent in my voting habits, and I hope reasonably incisive in measuring the world of which I am a part.

While not denying the virtues of the so-called cultural appreciations that came with the advent of the Kennedys (too much overlaid, as is AIA, with a public relations fever), there could be the possibility that a leavening with the ideas of gradualness might have avoided, or at least mitigated, the depths of violence and hate visited upon us in the present shame that some say besmirches our individual citizenship as a consequence.

During the 1960 primary election in West Virginia, (never before of national political significance), some of us saw and deplored a quite different cultural picture forcibly painted for us. Its dull pattern continues to plague the American scene in many less than graceful ways. Because it is not popular, in these ex-cathedra days, I shall not draw the veil for your better view, but the dissonant reverberations, so badly started then, remain with us to our disadvantage, copious Federal grants and wailings at our lot in Appalachia notwithstanding.

Accept my reassuring comfort that on the horizon there are many signs of a gradualness coming upon us, and with it maybe a seasoning of sweetness in our relations one with another, locally and on the international scene. This is the conquering device for hate and ugliness.

Kentucky's coach Adolph Rupp (alive and kicking in Appalachia) comforts me when he says, "By your own soul learn to live, And if men thwart you, take no heed. If men hate you have no care; sing your song, dream your dream, hope your hope and pray your prayers."

I hope my hope and pray my prayers serenely and confidently in these beautiful, enfolding hills, and I am willing to share them with you.

C. E. SILLING FAIA  
Charleston, W Va

EDITOR, *AIA Journal*:

I am grateful to you for your editorial on President Kennedy's assassination and what it implied about the character of American life and attitudes today. I hope that your readers will take to heart what you have said. Of all the thousands of words which have been written about his death, your editorial and a piece in *The New Yorker* seem to me to have told us the most about the man and the essence of the tragedy of the assassination.

What is it in the American character which al-

*Cont'd on p 14*

March 1964

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## URBANISMS

A regular column by our specialist  
on Urban Programs, Robert J. Piper AIA

### Thoughts on Memorials

In early February President Johnson proposed that there be built in Washington a non-sectarian memorial to God. This, he suggested, would improve the image of Washington as a "prayerful capital of a good and God-fearing people." The proposal brought to mind Sacré Coeur, that gleaming white, bulbous monument atop Montmartre in Paris. Its construction was a symbol of repentance and hope after the Franco-Prussian war, and few such memorials have been more hotly attacked over the years. Similarly, Mr Johnson's proposal shocked some, angered others, and generally made Washington's citizens just plain uncomfortable. All in all the memorial idea generated markedly little support as an answer to urban image-improvement or problem-solving.

The Shocked, recoiling from the admitted image-building of the proposal, attacked its seeming hucksterism, "You don't build memorials to God. Memorials are built to men, to ideas, to events, not to the spirit. The spirit can not be packaged in brick," they said, "nor warmed by an eternal flame." These critics are correct, of course; our churches are the nearest things we have to memorials to God, but they still are places of assembly and worship. In the words of the *Washington Star*, "Too often the great churches have been more the measure of man's pride than of God's goodness. Such a fate seems inescapable for a structure conceived as an image-changer for a city."

All the same it ought to be pointed out that while man cannot build memorials to God, his lay memorials can become hallowed shrines, truly holy places when measured in terms of the respect and veneration in which they are held by their civilization. The Lincoln Memorial, for instance, is the American Shrine. Built to honor a man, his ideas and the events of his time, the Lincoln Memorial has become Democracy's Holy of Holies. For many Americans a visit to this Memorial transcends homage to Mr Lincoln's words and deeds and becomes a pilgrimage to a yet higher idea, to a yet higher tenet, even perhaps to a supreme being; and for these Americans we do not need *another* non-sectarian memorial to God in our Nation's capital.

This line of thought caused some observers to ask if a city has a heart, a soul, or better a soul's heart? Does a city have a single spot where its citizens naturally congregate in times of corporate joy or sadness? For most American cities I think not—most occasions pick their spot to happen. But such a civic heart is emerging in Washington, at the Lincoln Memorial.

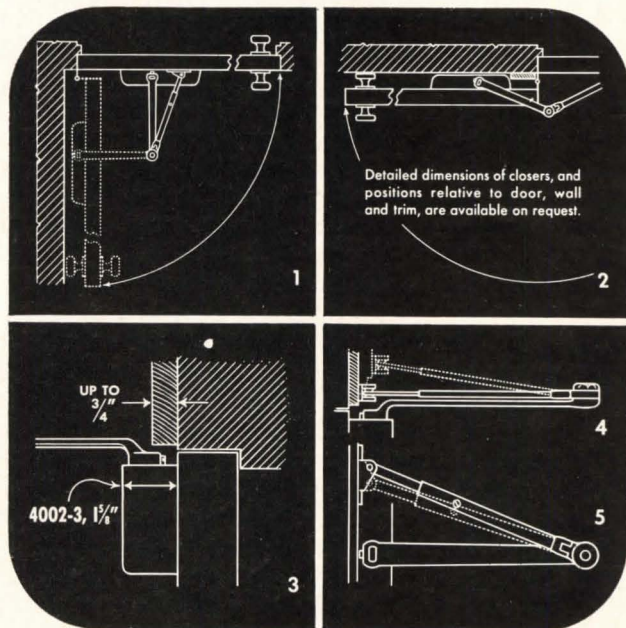
The Angered, their constitutional indignation

*Cont'd on p 12*

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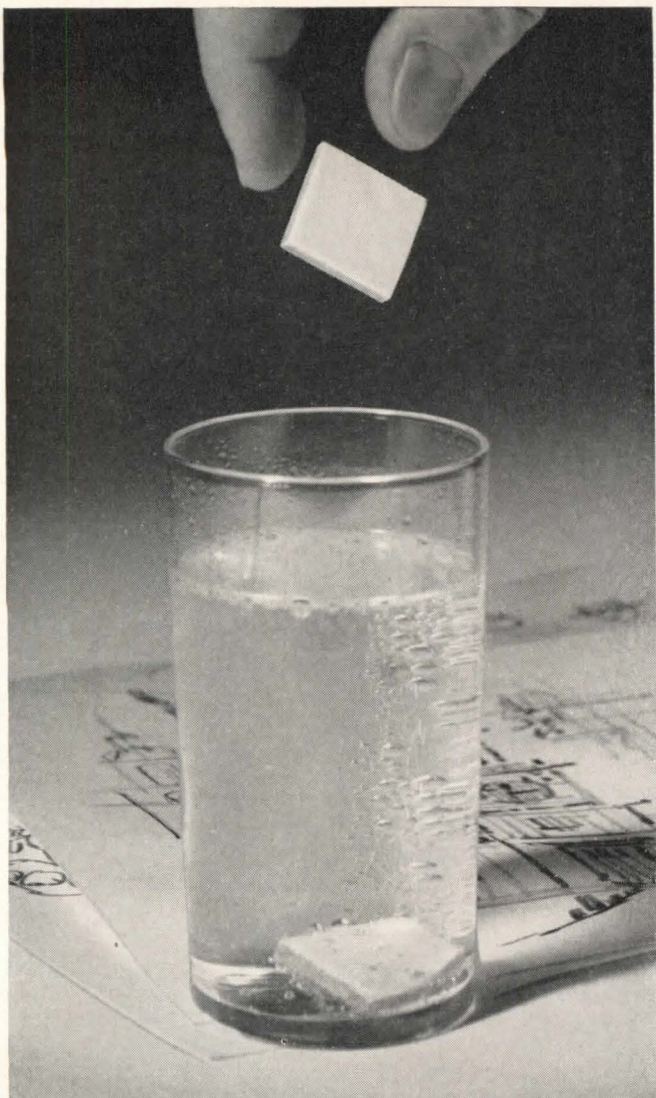
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### Urbanisms *Cont'd*

stirred, prepared to throw that ever-ready instant argument about church-versus-state into the fray surrounding the memorial proposal. But they found that the President had covered his tracks. Carefully emphasizing the importance of the church-state separation, Mr. Johnson noted that such a memorial should not be built or sponsored by the government but should be supported by all religious faiths. Thus, church-state separation was not really an issue here, but the proposal did prompt some urban observers to look again at the Jeffersonian doctrine of a wall of separation between church and state.

We all have been moved by recent judicial decisions taking religion out of public affairs. The actions have been dramatic, reaching out into our smallest communities. At the same time public affairs has been moving into many areas normally dominated by religion, and this has not been so dramatic. Our social welfare programs, especially those directed through Federal and state housing agencies, health programs and certain exemptive tax procedures, while governmental in the administrative and fiscal sense, certainly stem from church-based concepts. Public affairs can hardly provide such programs without either openly competing with or supporting religion. It well may be that the historic American view of church-state relations needs reevaluation; we may be deluding ourselves by our almost automatic referral to the rigid Jeffersonian concept of separation whenever the question comes up.

The Uncomfortable muttered something about "bad taste," "what's good for politics is bad for religion" and other phrases of uneasiness that generally condemned the President's proposal without really questioning the spirit in which it was given. These critics probably came the closest to feeling, if not actually voicing, the real reason for the general negative response to the memorial idea, ie, that seriously discussing God or religion in public makes us uncomfortable. This being so we usually advance the church-state argument to cover our embarrassment when a proposal such as this is made.

It is not that the average American is irreligious, he just likes to take his religion in private.

Likewise the average American is unemotional, undemonstrative—at least in public, and our cities characteristically do not have great spaces for civic gatherings. When the American does have occasion to mourn or rejoice in public he stations himself along a route since the person to be seen will be waving and perhaps speaking from an automobile rather than a balcony. Even then the American's reaction to public spectacle is singularly reserved simply because he does not favor showing his emotions in public. As a nation we allow ourselves to weep in the streets only when our President is assassinated; we publicly rejoice only upon some spectacular occasion such as the welcoming of our first astronaut.

As an age is known partly for its public celebrations there is little doubt that we will be remembered for our motorized rose gardens and five-story rubber dragons. ■



# ADDS BEAUTY



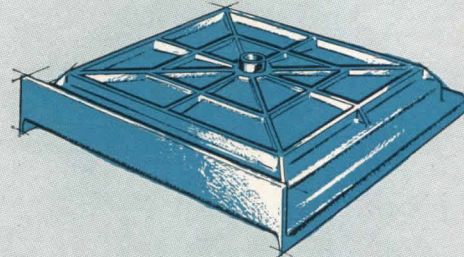
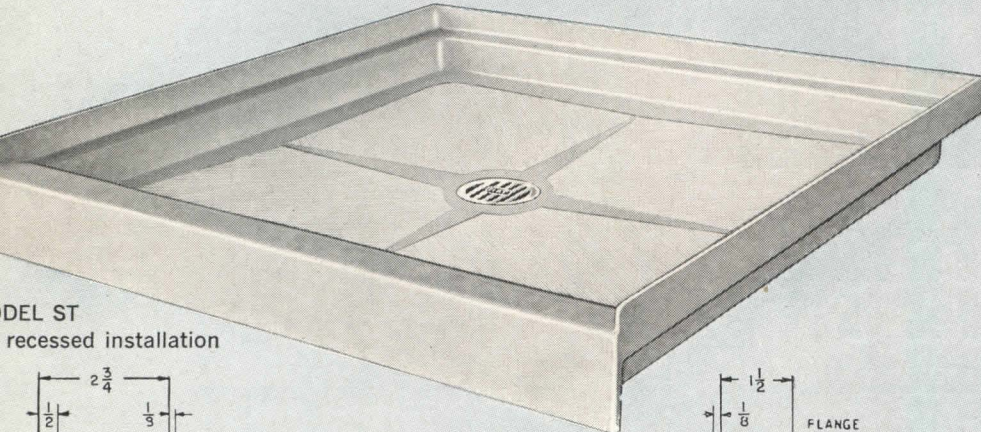
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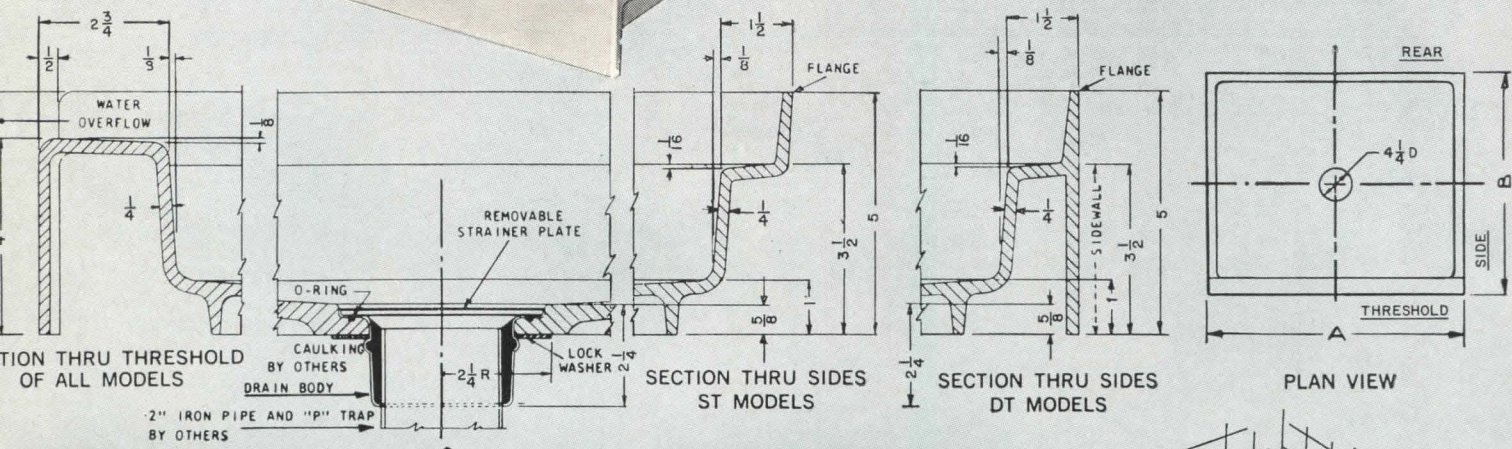
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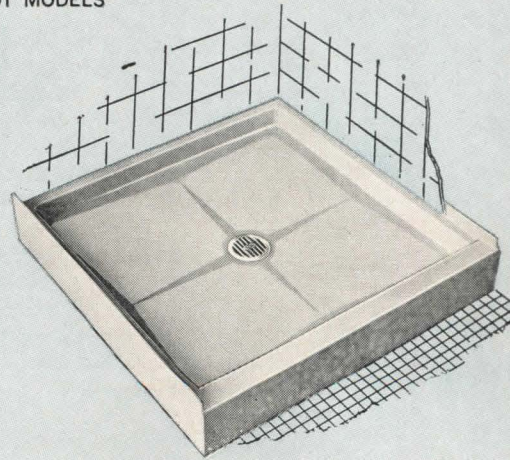
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MODEL DT with flange to floor for right or left corner installation.

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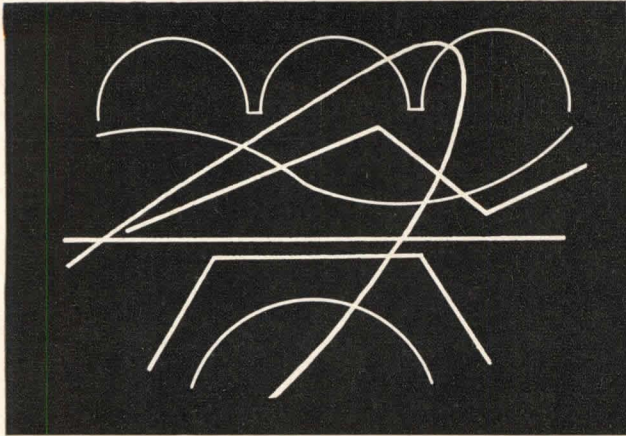
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says Joseph C. Clark  
President, New York Roofing Co.

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### Letters Cont'd

lows us to create and tolerate the ugliness you describe? I wonder whether this lack of sensitivity is a consequence of a materialistic philosophy or the laissez-faire nature of life in a democracy.

ROBERT J. KERR II  
Vice President  
Corinthian Conservation Company, Inc

EDITOR, *AIA Journal*:

The editorial you wrote in January needed to be written, and you have done it so well.

MRS HELEN T. SCHNEIDER  
Executive Director  
New Jersey Chapter AIA

EDITOR, *AIA Journal*:

Just a line to let you know how very much I admired your editorial on "Visual Violence!" It was superb!

G. E. KIDDER SMITH FAIA  
New York, NY

### Students: Cheers for and from

EDITOR, *AIA Journal*:

I hope you will reprint the statement from the *Memo* of December 6, 1963, made by Joseph E. Morse, newly elected president of the Association of AIA Student Chapters: "Architecture should not only be a matter of artistic expression. The time has come for architects to stop and analyze what they are doing. *They are trying too hard to be different just to be different.*" Mr Morse has certainly hit the nail on the head.

You and your staff are to be commended for publishing a consistently excellent periodical. I look forward to the *Journal's* arrival each month.

DAVID G. DETHLEFS AIA  
Dedham, Mass

EDITOR, *AIA Journal*:

The December issue has been the best yet. The articles on "The Remarkable Cruise of the *New Hellas*," "Human Factors Analysis" and "Architectural Psychology in a Psychiatric Hospital" are of great interest to me in view of my participation in a program in architecture and psychology (which I interpret as the behavioral and social sciences in general) at the University of Utah.

DONALD P. GRANT  
Salt Lake City, Utah

### Applause

EDITOR, *AIA Journal*:

Even if we are repetitious, we have to congratulate: "A Tale of Two Cities" and "The Fifth Annual Book Supplement" in November are masterpieces.

EUGENE PADANYI-GULYAS  
Architect  
Billings, Mont





A · I · A

Journal

# THE VIII ASSEMBLY OF THE UNION INTERNATIONALE DES ARCHITECTES Mexico City, October 8-12, 1963

## THE UIA—ITS FUNCTIONS AND ITS ORGANIZATION

JAMES LAWRENCE JR, FAIA  
*Member UIA Executive Committee  
AIA Director, New England Region*

I have been asked to tell the members something about my position as representative of the AIA on the Executive Committee of the Union Internationale des Architectes, but before doing so it seems well to speak briefly of the organization as a whole.

It is, in the first place, a world organization—a cardinal point to bear in mind, as it affects all operations to a degree not easily grasped by those familiar only with our own AIA. Communications are, as one would expect, supremely difficult, due not only to language barriers, but to the immense diversity of architectural organizations which compose the whole membership. Politics enter the picture intermittently and only in a most minor way, but because this factor has been so much to the fore on account of Havana, it calls for clarification.

In two places only has politics intruded itself into the operation of the UIA: one, in the composition of the Executive Committee; the other, in the admission into membership of divided nations. This latter problem presented only a fleeting difficulty as both halves of Germany, Vietnam and Korea are now happily within the fold after brief flurries. In the composition of the Executive Committee, politics must always be carefully watched, not because it is now or ever has been troublesome, but rather because any lack of intelligence on the part of the governing powers could make it so overnight.

At the outset, those shaping the framework of the UIA saw that the successful resolution of the problem of the composition of the UIA Assembly would require achieving a happy balance among three factors: one, density of architects; two, geographical distribution; three, political considerations. The division of the member nations into the four existing sections was their answer, and in the



light of the record, a remarkably successful one. (Sections: I—Western Europe and North Africa; II—Eastern Europe and the Middle East; III—North, Central and South America; IV—Africa, the East and the Far East) The arrangement has provoked no criticism until this year when, for the first time, the matter was raised in the Assembly for debate, due to the emergence of so many new nations in Africa. However, it was soon apparent that the matter could not be settled there and was duly referred to the Executive Committee for further study.

The representation of the nations on the Executive Committee is in fact largely decided by the Secretary-General, Pierre Vago (founder of the UIA), and the President who, after the utmost care, propose for election each two years those nations which they feel should be represented on the Committee for one reason or another. The members of the Assembly in their balloting have some choice but it is necessarily limited. Here again the job has been so well done that there have been no hurt feelings, to my knowledge, in any of the four main structural groups, but as time passes the rules governing the composition of the Executive Committee in particular and the election by which it is renewed every two years will inevitably be sharpened. But it is wise that this should be the product of time and experience.

It is important that this should happen, for the Executive Committee is very much the governing body of the UIA and membership on it is therefore important. Its functions are not very different from those of our own Board or any other controlling group, except that in these past years it has had the important task of passing on the qualifications

of those countries seeking admission. Fifty-four are already within the gates, with little apparent letup in the stream of aspirants.

Besides this task it has the difficult one of riding herd on the Working Commissions; of supervising in detail the work that goes into planning the biennial Congresses and Assemblies; of supervising the publication of the *UIA Revue*, and doing all the necessary financial chores that are the inescapable lot of any Executive Committee. In brief, the Assembly and the Executive Committee are two organs which are functioning tolerably well.

The Congress and Working Commissions are not so successful, but before commenting on them, a word about our own delegation to the biennial Assemblies. I am convinced that our delegation of five should *always* consist of the President, the Secretary and the Vice Presidents of the AIA. Nothing else will do. This is a most important moment to project the image of our national organization before the world, and these are the proper men to do it.

Turning to the Congress, I might say that this gathering is convened every two years, always until 1963 being held in the same city and at approximately the same time as the Assembly of Delegates and the Executive Committee meetings. It is the great catch-all gathering, loosely organized around a few "name" speakers and generally given over at its close to vague resolutions. There is lively dissatisfaction over this instrument of the UIA, and the suggestion was made in the Executive Committee meeting at Acapulco this year that in the future, beginning with Paris, it might be possible to have the over-all Congress abolished in favor of smaller Congresses organized around each of the five Work-

## AIA AND THE UIA

J. ROY CARROLL JR, FAIA  
*President*

*The American Institute of Architects*

The year 1963 may prove to have been the year in which our American Institute of Architects made its first major reappraisal of its international professional obligations. Like many other of our fellow-citizens we have come recently to realize that, like it or not, we are in truth near neighbors to all the world. Both contemporary communications and modern transportation have reduced our planet to a very small geographical ball, and a ball on which daily its inhabitants increase by uncounted numbers. The concern as to the role of the profession of architecture in these times is now shared by practitioners in every portion of our world.

The catalyst for this reassessment of our relationships to other architects and other architectural organizations in all parts of the globe was the opportunity to go to Mexico City, just across the border, to attend the Assembly of the Union Internationale des Architectes. Thus a large number of US architects, who had been unable and unwilling to attend the Havana meeting, registered for what the Mexican hosts called an "International Symposium on Architecture." Furthermore, the Texas So-



ing Commissions. The latter setup could be very fruitful, and I am personally supporting it actively.

The Working Commissions are, of course, the real *raison d'être* of the UIA. These are the groups which are intended to disseminate the best thinking being done in the major areas of building activity throughout the world. The task of collecting and collating data on this scale, of organizing and putting it within reach of the architects of the world is an immense undertaking, and one should be charitable indeed in judging the efforts of those who have been struggling with this problem, for the truth is that neither the organization nor the functioning of these Commissions are what they ought to be. However, all are keenly aware of this and intensive thought is being given to how they may be made more effective.

Moreover, the Commissions, regardless of structure or personnel, will never begin to do what is hoped of them until the UIA increases its income at least tenfold. There is a growing realization that this is the cardinal weakness of the organization, and for this reason I am glad to report that the dues structure is now under active study.

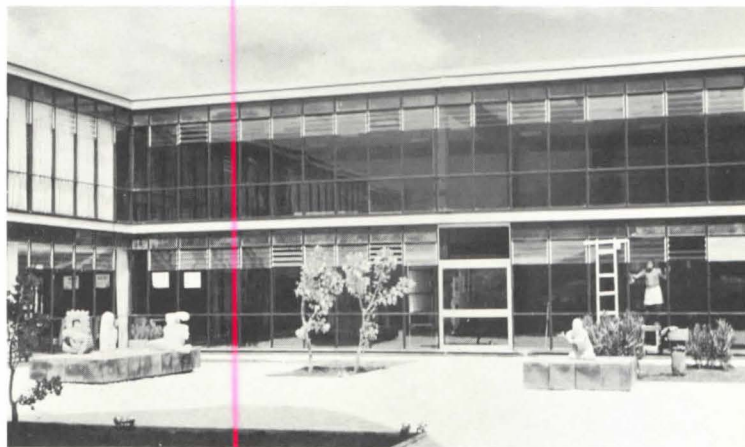
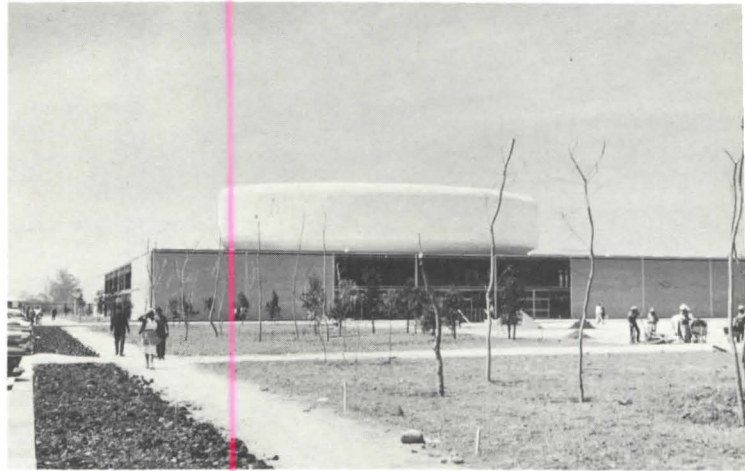
As to our role in the UIA: Quite simply, our role should be to participate to the fullest extent of our powers. We must participate just like any other nation, not as king-makers, which we most certainly are not. We will make our maximum contribution only by appointing the *best possible men* to every available position. Working patiently and persistently in these difficult gatherings, these representatives of ours will win respect for our country, and concurrently find to their satisfaction that their views are increasingly heeded, to the benefit of all concerned. ■

ciety of Architects held the closing portion of its annual conference in Mexico City during the last days of the UIA Assembly, and the California Council AIA held its convention there the following week.

In former years the representatives chosen by AIA to attend these international forums and UIA meetings were usually named on the basis of their temporary residence or intended travel in a foreign country. A few US architects appointed prior to 1963 were continuing their very capable representation of AIA either on the UIA Executive Committee or as members of one of the UIA Working Commissions.

The President of the Institute appointed as Delegates to the UIA Assembly at Mexico City James Lawrence Jr, FAIA, Director for New England, and AIA's representative on the UIA Executive Committee; Samuel Inman Copper FAIA, member of AIA's International Relations Committee and President of the Pan American Federation of Architectural Associations; Edwin W. Carroll FAIA, Chairman of the AIA Border Planning Committee; Llewellyn W. Pitts FAIA, Director representing Texas, and John

*Free-form auditorium nestled down into the geometric severity of the Institute at Zacatenco, relieved by a delightful inner court*



JOSEPH WATTESON

S. Bolles FAIA, of San Francisco. Carl Feiss FAIA and Neil Connor AIA, serving as members of the Working Commissions on Town Planning and Housing, respectively, were asked to represent AIA at Mexico City, as were Daniel Schwartzman FAIA and Mario C. Celli AIA to the Working Commissions on Professional Practice and School Building. The UIA had decided not to continue the Commissions on Public Health or Research, and so Rex Whitaker Allen AIA and Walter E. Campbell FAIA did not attend the symposium.

In 1965 the Pan American Congress will convene in Washington, DC, at the time of AIA's annual convention, and chiefly with this in mind it was decided to have President Carroll and First Vice President Odell attend the Mexican Congress as observers, together with Morris Ketchum Jr, FAIA, who is Co-Chairman (with Director Charles Nes FAIA) of the Board's 1965 AIA Convention Committee, and Executive Director William H. Scheick AIA. This strong delegation was asked to report individually on the Assembly and the Working Commissions, and they have done so. Their reports would



seem to confirm the validity of the opinion of the Institute's Board with regard to AIA's future participation in the programs and organization of UIA.

Generally speaking, it is not expected that AIA's participation in such meetings will result in the immediate development of new and tangible tools for the use of the average corporate AIA member. On the other hand, certain self-help techniques, such as the combination of prefabricated bents and local building materials as used in Mexico for school construction, may point the way for similar projects in our own country. The continuous exchange of information between architects in different countries at

international meetings and seminars will continue to contribute to the knowledge of all architects. In the development of new structural forms for example, and in city planning, our colleagues from other shores have exhibited pioneering and leadership.

The Institute believes we can help UIA to improve its organization and hence its service to its members, and that we, the AIA, can both learn and teach within the framework of that organization. Beyond this, UIA can and does provide all architects everywhere with an opportunity for fellowship which enriches individual lives and assures for all another step in the direction of peace and understanding. ■

## THE ASSEMBLY, MEXICO CITY AND OTHER THINGS

JOSEPH WATTERSON FAIA

*Independence Monument, known as the Golden Angel, on Paseo de la Reforma in front of the Hotel Maria Isabel*



CARL FEISS

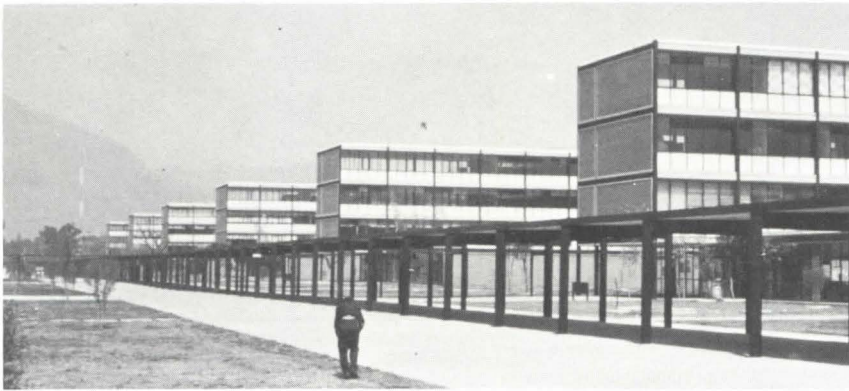
To attend an Assembly of the Union Internationale des Architectes for the first time is at once a delight and a confusion—perhaps it would be better to start my story with the confusions and wind up with the delights.

This was the VIII Assembly and the VII Congress of the UIA. The Assembly is the closed meeting of the official delegates, usually accompanied by meetings of the Executive Committee; the Congress is the wide-open meeting for all comers, together with meetings, both open and closed, of the Working Commissions. (Usually the Assembly and the Congress meet at the same time—somehow they got out of step.) The Working Commissions are the real working core of the Union, much as the national committees are of the AIA, but they have nothing to do with administration and policy. The confusion, to us, in terminology was further complicated by the fact that our Mexican hosts chose to call the meeting an “International Symposium on Architecture”—which, of course, it really was.

It was explained to me, by several people who were in a position to know, why this meeting was divided between two cities, so I hope this is the straight story: The dual sites, Havana and Mexico City, were selected *before* Cuba became off-limits to US citizens. Three or four years ago, Cuba and Mexico competed so vigorously for the first UIA Congress to be held in the Americas that it was decided to hold the Congress in Havana and the Assembly and meetings of the Working Commissions in Mexico City, with the Executive Committee meeting in both cities. It turned out to be very convenient for US architects unable to go to Cuba.

No minutes of the Havana meeting were available in Mexico City the following week, but the British and Canadian architects who had been there told us that the Congress was marred by too much political polemics and not enough discussion of architecture. The UIA President remarked that he was sorry the students and teachers in Havana spent so much time discussing politics rather than architecture—which may have been the reason Bucky Fuller was not able to lead a discussion as planned. But many were generous in their praise of Cuban hospitality and good will. Premier Castro addressed the





*New buildings at the  
National Polytechnic Institute  
at Zacatenco*

Congress at length, admitting a decline in Cuban production and housing—for which he blamed the US. However, delegates saw considerable progress in housing and all types of buildings—although automobiles, being US-made, are falling apart for lack of parts. As a gesture of hospitality, Mr Castro turned over one-third of Havana's entire taxi fleet for the free use of UIA delegates.

Most of the meetings in Mexico City were held at the new Instituto Politécnico Nacional at Zacatenco, far on the northern outskirts of the city; one or two were held at the University of Mexico, as far to the south; the hotels were in the center. The Sociedad de Arquitectos Mexicanos, as "host chapter," provided plenty of free buses—but a good deal of time was consumed waiting and riding! I'm sure our Mexican friends will forgive me if I quote a guide from the tour agency, who said to a bus-load which had been waiting over an hour for a tour to get under way (only the North Americans were fidgeting!), "I'm sorry but we are leaving about an hour late. Do not let it bother you—remember, you are in Mexico now!"

The buildings at Zacatenco are very handsome, and it is obvious that the Institute had put on a big push to complete the building in which the meetings were held—a well-detailed steel-and-glass two-story structure, with a great free-form auditorium set down in the middle of it, for all the world like the man in the Hertz TV commercial floating down through the air into the driver's seat.

The meetings of the four Working Commissions were successful to varying degrees, as the Commission members testify on other pages. Elaborate arrangements had been made for instantaneous translations into earphones, but owing to the newness of the building the system didn't always work. Translations were into English, French and Spanish, much to the disgust of the Russians. A series of special lecturers were scheduled for late afternoons, including Giedion, Candela, Doxiadis, Neutra, Fuller, Sharon and Aalto. Nobody was able to get to all of them, but the crush of Mexican students of architecture kept the meeting hall jammed.

An amusing situation arose during Mr Neutra's address. There was but one microphone, a table type,

which the speaker held in his hand for a few sentences, then handed over to his translator, a handsome Mexican woman. Becoming a bit impatient with the procedure, Mr Neutra waxed humorous and it became necessary to pass the microphone back and forth every two or three words amid shouts of laughter from the audience. Neutra doing a duet with his translatress!

As at our conventions, there were tours to points of interest within and near the city—but the city itself was the most fascinating sight of all. It covers a vast area, and although much of it is dingy and poor, like any city in the US, it is blessed with magnificent boulevards, eight and twelve lanes wide, with park strips—not expressways as we know them, but fine tree-lined avenues in the European manner. They need them, for the volume and speed of the traffic is terrific. The principal avenue, the Paseo de la Reforma, upon or near which are most of the hotels and shops, is as beautiful a boulevard as there is anywhere in the world.

There was plenty of social activity, in addition to the informal gatherings of friends old and new and of all nationalities. The Official Banquet was held Tuesday noon on the terraces of Chapultepec Castle—a beautifully staged affair in the open arcades of the palace built for the Emperor Maximilian, set high on a hill looking through the park and down the main axis of the Reforma. The photographers had a field day, and it's good they did, for it was the last full day of sunshine for a week. Mexico City is a cool and cloudy city; its 7,000 feet of altitude keeps jackets on—and causes many a lowlander to puff as he climbs stairs or runs for a taxi. That evening all who had registered were invited to the homes of Mexican architects for dinner and the evening—quite an undertaking when you realize that there were over 1,100 registrants and wives! I was invited to a home in Cuernavaca, which was two hours bus-ride away—but it was worth it for a lovely evening with a gracious Mexican host and hostess.

Wednesday evening the entire group went to the Ballet Folklorico in the Palacio de Bellas Artes, as magnificent a production as I have ever seen. Friday noon there was a splendid luncheon served buffet style at the unfinished Museum of Archeology and



Anthropology in Chapultepec Park. That evening all US architects were invited to a reception at the American Embassy, where we met Ambassador Thomas C. Mann, now Assistant Secretary of State for Latin American Affairs, and Mrs Mann.

The final gala banquet Saturday evening was truly a stupendous affair, held in the jai alai fronton at the University. We approached the great stone building in the dark, its battered sides sloping up into the blackness, lit only by kerosene flares set along the winding path which was lined with cheerful little men with hurdy-gurdys, their weird music mingling in the night. Turning a corner we saw a great flight of steps leading up to a brilliantly-lighted entrance—a most dramatic approach. The interior was transformed by draperies, with a glittering sea of colorful tables arranged unsymmetrically, stepping up in tiers toward the rear so all could see. There were Mexican bands and dancing girls everywhere, and a final floor show that was better than a New York night club. Even though catered to at least 2,000 people, the food and wines were delicious. The only others from the US at my table were Edwin W. Carroll FAIA and his wife—Ed is Vice Chairman of the AIA Committee on Border Planning. To my right were six or seven gentlemen from various Communist countries—Czechoslovakia, Rumania, Yugoslavia, Poland and others, conversing fluently in French. To my left were the Carrolls and beyond them were English-speaking Mexicans—of which there are many; in

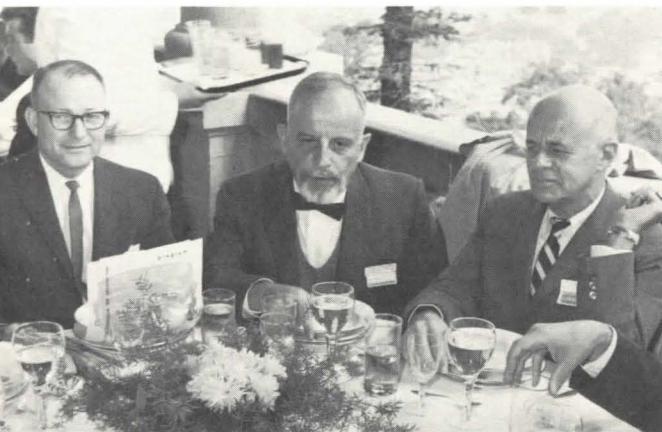
fact, most educated Mexicans seem to speak both English and French.

The attendance figure which was generally mentioned was “about 2,000.” Surely, the two times the entire group gathered together in the Palacio de Bellas Artes, for the “Official Inauguration” and for the ballet, they filled the huge theater—and again at the final dinner it certainly looked like 2,000. However, a count of the actual registrants shows 891 architects and 224 wives—not including 72 Texans and 51 Texettes who arrived late in the week.

A few further figures might be of interest: There were 30 non-Texan US architects there and 19 wives. Outside of the Mexicans, the French delegation was by far the largest, with 73 architects and 33 wives; the Communist nations were represented by 57 men, of whom eight were Russians, four Mongolians and nine Chinese—including a former Penn schoolmate of mine, Yang Ting-Pao, a UIA Vice President.

Sir Robert Matthew, President of UIA and also President of RIBA, presided over the Delegates' Assemblies with poise, judicial impartiality and a firm hand—occasionally necessary when a few delegates got a little persistent. The special gratitude of all who attended the Assembly is due to Ramón Corona Martin, HON FAIA, and a UIA Vice President, and to the Sociedad de Arquitectos Mexicanos and the Colegio Nacional de Arquitectos de Mexico, who went all-out to transport and entertain their guests with traditionally gracious Mexican hospitality. ■

JESUS MARTINEZ



Upper left—Lunch at Chapultepec Castle: Kenneth Brooks AIA, Carl Feiss FAIA, Joseph Watterson FAIA

Lower left—School Commission at the ECA plant: Gunther O. Wilhelm, West Germany; Luis Ramirez, Mexico; Elias Mecetela, Director General of ECA



Below—Members of the Working Commission on Schools are served lunch at Tlaxcala while on an all-day tour. Governor Anselmo Cervantes (light suit) addresses members through interpreter (with megaphone). Former AIA President and Mrs Henry L. Wright are seated in background





## THE WORKING COMMISSION ON SCHOOLS

*A Report by MARIO C. CELLI AIA  
Chairman, AIA Committee on School and  
College Architecture*

*Working Commission on Schools helps to build one while on a field trip to Belem; on the ladder, Arquitecto Sergio Gutiérrez Rodarte and an architect from Great Britain*

*Below—Commission members on a visit to Tlaxcala: foreground—Enrique Vergara Garza, Mexico; Henry L. Wright FAIA; P. Wilhelm Schütte, Austria; background—Mrs Mario Celli, Mrs Henry L. Wright*



The tenor of the meetings of the Commission on School Buildings was set about a month before I left home for Mexico City. I had just been appointed when I received a most gracious letter of invitation from the Secretariat of the Commission. The letter began “Dear Confrère”—and this is the spirit which prevailed throughout our sessions. Actually my participation started early because the welcoming letter was followed immediately by the advance agenda and some polite suggestions for homework to be done in preparation. I was made most welcome in Mexico City even before they checked my homework, and briefed at length regarding past history and present agenda.

Our Commission held three private sessions, one public session and one lu-lu of a field trip. Nine members (of seventeen) were present; eight observers attended most of the meetings. Absences were explained because this School Commission had had a full-scale fourteen-day session in Mexico City in March 1962 (reported in the June 1963 *Journal*) and some members simply did not want to repeat the trip. At all sessions interpreters were at hand and an official photographer always seemed to be just around the corner.

The first session was a continuation of studies in the principles of school construction. Senor Pedro Ramirez Vazquez presented a paper entitled “The Application of the Charter of School Construction in the Mexican School Construction Plan.” He notes, “The results attained have convinced us, in spite of some deficiencies still requiring correction, that what was judged utopian a few years ago can be achieved through a plan that coordinates the efforts of different sectors, provided it is sustained at all levels—as has been the case—by great human endeavor.” They are now building at the rate of one classroom every two hours. Eric Pawley AIA and Don Hardison AIA reported the Mexican Rural School program in detail in the June 1963 *Journal*. Senor Ramirez Vazquez comments, “Even though it is evident that the prefabricated parts are standard elements, they are not elements for predetermined solutions. The responsibility, freedom and selection of the solution is incumbent upon the professional man.”

The next agenda item discussed was the comparative “Grille” (meaning tabulation or graphic analysis) on schools for technical and vocational education. I ran into language and communication trouble here as Clemmer & Horton Associates of Hickory, North Carolina, can attest. I appealed to them for help as they had prepared the original technical school information submitted at the previous meeting of the School Commission in Hamburg. As a matter of fact, our own definitions of “industrial,” “vocational,” “business,” “technical,” “trade” or “sub-professional education” really need clarification. I hope the new Federal Act which grants some real millions for these programs also defines them a little better than most educators do. Add to the above “industrial art,” “continuing,” “terminal,” “sub-baccalaureate,” “rehabilitation,” “in-service-training” and classify the programs from





CARL FEISS

Top—One of the many monumental circles on the Reforma

Center—Luncheon is served to the entire Assembly at the Museum of Archeology and Anthropology, under construction  
Bottom—Mexico City cityscape



ANTONIO DIAZ JIMENEZ



CARL FEISS

sixth grade through two or even four years of college, and I, who am supposed to know a little about education in Pennsylvania, get confused!

However, this was the only language confusion, and it was because technical idioms and nomenclature are not yet resolved even in our own country. This agenda item is a study to determine basic curricula and methods in various programs at all levels. Information has been received on fifteen projects sent in by twelve countries. Several graphs were prepared to show progress to date. A decision was taken to supply rapid answers on unsettled points.

Next came a most interesting paper by Gunther Naleppa, an architect for the Educational Division, Department of Technical Operations, International Bank for Reconstruction and Development in Washington, DC, an agency of the UN and an affiliate of the International Development Association. It is of interest to note that the President of the "World Bank," George Woods, stated in September of 1963, "I believe that we will have to do more to help create the facilities necessary to the spread of education. . . . IDA already has made one credit for school construction in Tunisia and is considering similar credits elsewhere. I believe it would now be appropriate for the Bank, too, to lend for school facilities of high economic priority."

Mr Naleppa outlined the ground rules for financing educational projects. He stressed the importance of proper application. Not only would the educational program be examined to make certain that it is educationally sound, but also that the appraisal merits and the feasibility of the project would require an architect's study of location, design and financial aspects against the background of the educational expansion program in any given country. Mr Naleppa mentioned that a very real problem is that in most countries very few people know how to prepare a school building project for external financing; they want the money, but no one is able to select sites, submit cost estimates, outline educational building program specifications, etc. In other words, he stressed the need for professional approach to this problem. Mr Naleppa said, "International Bank for Reconstruction and Development and the International Development Association are looking forward to cooperating with the School Building Commission of the UIA in the future. We are confident this body, with the highest professional standards, will help us tackle the task of financing educational expansion in developing countries by sharing the experience of its members in the manifold problems of school building."

The fourth item of the agenda was a paper, "Equipment for School Construction," by Professor Edgar Wedepohl, which was a well-documented outline of the international efforts channeled toward the encouragement of school construction activity in countries undergoing development.

One of the highlights of our meetings was the all-day trip to Tlaxcala Province. We stopped at two villages, one on the way and one on the way back. We were met at the first village by the Governor





*Mexico, land of contrasts*

*At right, studying model of Museum of Archeology and Anthropology: Samuel Cooper FAIA; UIA Vice President Yang Ting Pao; UIA Secretary General Pierre Vago; Jaime Torres Bodet, Mexican Secretary of Education; Pedro Ramirez Vazquez, project architect; Hector Velázquez Moreno, President of Sociedad de Arquitectos Mexicanos; Sir Robert Matthew, UIA President*



ANTONIO DÍAZ JIMÉNEZ

of the Province, Senor Anselmo Cervantes, and the Commander of the Military Zone, General Joaquin Paredes Mendoza. Everywhere there was evidence of the prestige and honor which Mexican architects have been granted for their tremendous rural school program. These two gentlemen stayed with us through a lunch which was served in the courtyard of a new school. It was a superb assortment of native dishes, and during the lunch period we were entertained by local school girls performing dances and local beauties wearing native costumes. On the way back to Mexico City we stopped at a village where the structural steel components of a school were just beginning to be erected. Here the members of the School Commission pitched in and helped erect several bays of the school to the loud hurrahs of the villagers.

Another item was the presentation of "Latin American Center for School Construction" by Senor Ramiro Gonzalez Delsordo. This regional center, which will operate through the collaboration of UNESCO and the Mexican government, is designed to aid interested countries in the improvement, planning and execution of national school construction programs. Figures revealing the importance of this Center are as follows: In Latin American countries it has been estimated that during the 1960-70 decade it will be necessary to build places for 24 million students in the three divisions of education—an investment of four billion dollars!

The main functions of the Center will be: 1) the promotion, development and realization of school buildings, facilitating the exchange of information on experience acquired; 2) cooperation with the governments of Latin America in national school construction programs in the execution of experimental projects and in the formation of standards; 3) or-

ganization of specialization courses for technical personnel of the member countries; 4) advisory service for governments and international organizations interested in its activities.

There is no question in my mind that this Center, with the Mexican government in back of it, will flourish and develop as a very good information distribution center. I suspect that the Mexicans will devote the same attention and provide the same caliber professional services here as they have done on their own school program. The work will include a great deal of research and experimental projects. This is one of the five regional centers contemplated by UNESCO. Two others have been established in Jartum in Africa and Bandung in Asia.

Probably the most important paper presented was the paper on the "International Center for School Buildings" presented by Pierre Bussat, Director of the Center, which has been established in Lausanne and which day by day continues to enlarge its activities and relations with world agencies interested in school construction. It operates with the help of world famous personalities such as Professor Jean Piaget of the BIE, Honorary President; Mr Gibbon, of the British Ministry of Education; Mr Aubert, of the Board of Education of Lausanne; and three architects of the Commission on School Construction of the UIA, Messrs Marozeau, Wilhelm and Cahen. This school was fostered originally by the School Commission of the UIA and its charter was practically written by this Commission as a result of many meetings.

In its final shape as adopted and founded, this International Center for School Buildings is not officially a part of UIA or UNESCO, but it is seeking sponsorship of both. Here again this Center should be able to disseminate information and pro-



vide systematic research. This could and should be the International Center coordinating the activities of the five regional centers of UNESCO mentioned previously. This Center is well organized, has definite aims and functions, has a planned program divided into stages identified over a ten-year period and if UNESCO and the UIA get in back of it, it will flourish and thrive. Eric Pawley speaks of this Center in an article on the Commission's Reunion IX in the November 1963 *Journal*.

The last item was the agenda for the next meeting to be held in Lausanne at the end of May 1964. There are five main topics; the first two will be dis-

cussed in depth, the last three will be discussed briefly.

a) the development of educational methods and the application of new methods such as audiovisual aids, etc

b) the development of school construction methods with particular emphasis on industrialization and prefabrication

c) study of possible economies—and here I requested a real study of utilization of school buildings. I feel that somehow we should plan to get better utilization out of building space and teacher competence

## THE WORKING COMMISSION ON CITY PLANNING

*A Report by* CARL FEISS FAIA  
*Corresponding Member AIA Committee  
on Urban Design*

*Monument to Charles IV;  
Monument to the Revolution in the background*



CARL FEISS

Throughout the world, urban planning and re-planning, urban design and urban renewal are vital issues. In every developed nation and in many new and emerging nations, architects and, where they exist, architectural organizations are joining in the essential and frequently heartbreaking and financially unrewarding tasks of trying to rearrange obsolete and worn-out rural and urban communities to meet the impact of the worldwide population explosion.

Whether in Brazil or Burma, Hamburg or Hong Kong, the problem is both the same and different. Refugees from rural areas, refugees from political change, refugees from slums, and refugees from a wide variety of causes, are drifting both into cities and into the urban regions around cities. In many parts of the world the results are appalling in human misery, in misuse of buildings and land and, more important, in the social and psychological maladjustments and frictions which cause unrest, sometimes bloodshed, and frequently political and social scars that may last many generations. Paramount emergency problems in public health relate directly to the lack of capacity of urban areas to provide essential decent and sanitary housing, water supply and elemental municipal services. The job everywhere, including the US, is to bring order out of chaos, satisfy immediate needs, and plan wisely for the future.

The UIA, in establishing its Working Commission on Town Planning, has charged that Commission with investigating the role of the architect in this vast and complex problem. In its forthcoming meeting in Paris in 1965, the education and training of architects for this monumental task is a first order of business.

The late Henry Churchill FAIA was our first member of the Town Planning Working Commission of the UIA. He spent a great deal of time with the UIA Secretariat in Paris and at UIA meetings developing programs and agenda in cooperation with the many architects from other countries concerned with the developing role of the architect in the whole field of urban problems and urban development. After Churchill's retirement from this Commission because of ill health, while I was Chairman of the Urban



d) the social role of the school and its integration in urban planning

e) a study of sports and recreational areas in conjunction with the UIA Commission on Sports and Recreational Equipment.

The organization for this agenda is good. A letter, and a follow-up letter, was sent to each member of the Commission requesting him to submit a report by December 31, 1963, to the Secretary of the Commission giving his views on agenda subjects. A summary of these reports will be prepared by the International Center of School Construction in Lausanne and sent to each member before March 31 in

order to prepare for the meetings in late May in Lausanne.

I was quite impressed with the caliber of the members of the School Commission. Each one I met had been a member for quite some time and was very sensitive to school environment problems. They feel they are doing a very worthwhile service and each apparently is willing to spend time and energy. To them this School Commission is the most important one in the UIA. I am told that the meetings away from the General Congress get down to the coat-sleeve, pencil-in-hand, let's-settle-the-problem situation. ■

Design Committee of the Institute, I was appointed to succeed him for the full six-year term of membership to the UIA Working Commission. Arch Winter of Mobile, Alabama, a member of our Urban Design Committee, represented me at the Athens meeting of the Commission in June 1962 and his excellent report was published in the March 1963 *Journal*. The AIA has been connected with this important activity for some time.

The meeting of the Town Planning Working Commission in Mexico City in October 1963 was complicated by the fact that some working sessions had been held in Havana immediately prior to the meetings in Mexico. The records of the Havana sessions were not available, and unfortunately the regular chairman and other officers could not attend either meeting. Therefore, Carlos Contreras HON FAIA, of Mexico, assumed the chairmanship of the Mexican meetings. Since Contreras had not been in Havana either, we worked in Mexico City on a somewhat freewheeling basis. However we had very fine cooperation from all in attendance, and it was interesting to obtain views on urban problems from places as divergent as Brazil and Hungary. The upshot of our deliberations is the following report transmitted by Contreras to UIA Headquarters in November 1963:

1) Unity of action is proposed between the Planning Commission of the UIA and the International Federation for Housing and Planning in order to avoid any duplication of work, unnecessary competition and to promote and foster common studies and efforts.

2) We recommend a) the strengthening of the Planning Commission within the UIA, in accordance with the proposals outlined by Delegate Ling (of England), but substituting for the term "Association"—which he proposes—the words "Permanent Commission," to help in the development of the functions of the architect-planner; and b) the creation of a permanent Secretariat of the Planning Commission in Paris, in connection and collaboration with the General Secretariat of the UIA.

3) We suggest that the next meeting of this Commission be held in Israel in June 1964, in connection with the reunion of the International Hous-

ing and Planning Congress, and to transfer the meeting scheduled for May 1964 in Germany to November or December of that year, thus constituting a preliminary meeting of the Planning Commission, prior to the UIA Congress in Paris in 1965.

4) The VIII Congress of the UIA in Paris in 1965 will serve as a platform for the discussion of the training of the architect-planner, as was expressed by Delegate Ling in Havana and by Delegate Beaudouin (of France) in his preface to the Provisional Program. A paper is being prepared which will be presented at the next meeting of this Commission. This Commission will work with the people responsible for the preparation of the final program and will report to the Congress the result of its working sessions.

5) The concept of planning must serve as a major element in the training of architects, since it has been shown in practice in all countries that the architect has or tends to have the preponderant part in the professional "teams" entrusted with planning.

The Commission will study the best means to provide the services of architect-planners, with proper preparation and experience, to those countries that may require them or which lack local technicians, or in case they might require preparation or counsel on planning problems and the formation of specialized groups of technicians in planning. The Commission seeks an interchange of experiences with the organization of the United Nations in research and trends as well as a working program in all matters pertaining to planning.

6) Taking into account the experience of the International Symposium held in Mexico, this Commission suggests to the Executive Committee of the UIA a study of the organization of the next meetings in order to obtain more efficient and continuous working results.

Signed by Delegates: Ling, Wilson, Feiss, Virgili, Gusti, Perpiña-Sebria, Wilhelm, Hladky, Heim and Contreras.

As can be seen by the above recommendations, the session in Mexico was devoted more to organization, policy and procedures than to technical studies. However, at the open public session on October 10, we heard technical reports from Brazil,



Spain, Rumania, England, France and several from Mexico. I also put in a few words on what the AIA and North American architects were doing in the whole field. It was a very informative session, and hopefully the papers will be translated and made available for study. The audio-translations were, on the whole, excellent and I particularly admired the choice of the Spanish-English interpreter, an attractive brunette, who was a person of superior qualities. (Organizers of our Pan American Congress next year, please note!)

A visit to Mexico City is always exciting and valuable. Not only are the neighboring archeological and Spanish colonial sites and buildings of vast interest from the architectural and urban design standpoint, but the city itself contains many marvels, of which I place Chapultepec Park at the top of the list. Throughout the city are handsome boulevards and many fountains. New and frequently bad construction is seen, and much of the city is depressing in its vast deteriorated areas. But, like cities in all parts of the world, it suffers from the population explosion and poverty. Its population exceeds that of Chicago. However, valiant and exciting efforts at slum clearance and new housing are under way, new boulevards and parks are being installed, as are many new and fine schools and hospitals.

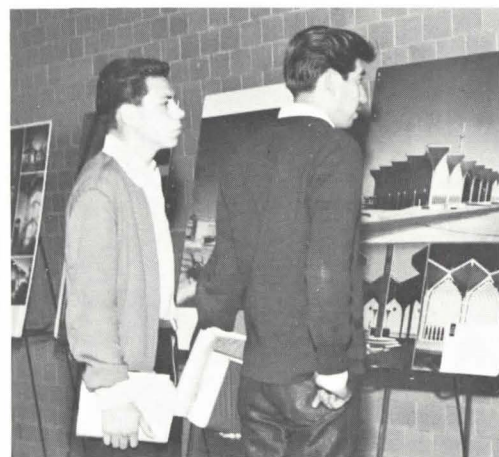
The University of Mexico (80,000 students!)

is a gigantic and interesting design experiment that fails in design unity and construction quality but is still an exciting architectural event. The new and handsome National Polytechnic Institute at Zacatenco, where most of the UIA sessions were held, comes off very well. I also commend the fine contemporary houses and beautiful gardens in the luxury suburb, the "Pedregal," one of Mexico City's best architectural exhibits. I was disappointed in the plan and design of "Satélite," the large, new garden city now under construction by private enterprise to the north of the city. It is clear, however, that Mexico City, like many United States cities, needs to enforce land-use and building controls related to its over-all plans.

The participation of the AIA in the work of the UIA, in my opinion, is an essential part in the development of international understanding and amity. Professionals must intercommunicate on problems of mutual interest. As any of us know who have traveled abroad in any hemisphere, new ideas, new design and new accomplishments are not exclusively ours. At the same time, much of the world is opening up to us for practice and we must learn its problems, its customs, its needs and its hopes. The meetings of the Working Commission on Town Planning of the UIA have been and I believe will be increasingly important to all of us. ■

JOSEPH WATTERSON

USIS



*Above—Exhibit of 1963 AIA Honor Awards, provided by the AIA International Relations Committee and placed by the USIS at the Polytechnic Institute of Zacatenco, is viewed by students*  
*Upper left—Indepencia has a community building facing on a fine paved terrace with sculpture*  
*Lower left—Apartments at Indepencia, a government housing project, have fine mosaic murals and beautiful landscaping*



## THE WORKING COMMISSION ON HOUSING

*A Report by NEIL A. CONNOR AIA  
Director, Architectural Standards Division, Federal Housing Administration*

Since the Housing Commission had held several meetings in Havana which could not be attended by this delegate, it was difficult to catch up with the business at hand in Mexico City. No official report of the part of the meeting held in Havana has yet been received but it was evident most of the Commission's work had been fulfilled in Cuba.

An article in a British publication, *The Builder*, dated November 1, after emphasizing the highly political overtures in general, went on to say that the housing meetings chaired by Aryeh Sharon of Israel were concerned with statistics in various countries on housing volume and on quality and quantity of space per person. The fantastic housing shortage caused by population explosions in and around cities showed in all countries that architectural problems cannot possibly be divorced from socio-economic forces. More than anything else the Havana meeting pointed out that the industrial revolution in Europe in the last century was now overwhelming most of the South American countries and many other less developed ones. To quote *The Builder*:

"The housing problem is fundamental, it affects the majority of the world, and becomes daily more acute. It requires planned and organized mass solution—the solution of the problem calls for the active participation of architects . . . it must create an adequate . . . environment for the whole of society. We need most careful and economic design on the part of the teams . . . to create communities. Other conclusions were: 1) The abolition of land speculation to eliminate the mistake of big industrial conurbations which currently hampered highly developed countries; 2) that housing was part of town planning so housing schemes must be integrated with public and service buildings as well as with the town as a whole; and 3) for results on the scale required we must train cadres of technicians, engineers and architects."

In Mexico City for various reasons we had only one private and one public meeting. As for the US delegate and others who had not gotten to Havana there just didn't seem to be time to bring us up to date on what had happened there. This was somewhat embarrassing when, for example, after I had given statistics on the amount of new housing in the US, the Soviet delegate was called on to repeat what was said in Havana. I had thought we were building more new housing than any other country but it turned out the Russians are building twice as many units as we are—granted that one room can be counted as a unit. The Soviets stated they were much concerned over the quality of their housing which they hope will last one hundred years.

Of the hundreds attending the Assembly a very large number were assigned to *Vivienda* (Housing) either through choice or otherwise. The evening that the Mexican architects invited many of us to have dinner in their homes, I was fortunate enough to be invited to Sr Malacara's, chairman of our meetings. A Harvard man, he is a fine linguist and a most gracious host. His house, shut off from the street by a high wall and with a lovely garden, was most interesting, creating in a contemporary vein a genuine feeling for Mexican culture. With Dr Don Luis Quintanilla, Director of the National Housing Institute, among the guests, we felt we were in good hands to learn what the country has been doing in housing. A former Ambassador to Moscow and other places, his views are broad and knowledgeable. A few of us lunched with him later at his home in suburban San Angel. Here again was a high wall behind which we found a fine garden with sculpture and a house which is a veritable museum full of things from all over the world.

Later I met again with Dr Quintanilla at the Housing Institute where among other programs one on planning research in inexpensive housing was most interesting. The multiplicity of programs and the participation, not only by government but by private groups, was most enlightening. It is hoped that a closer liaison with Mexico will help us with some of our problems which do not differ materially. It appears that Mexico in some respects is so far ahead in providing the ideal living environment that a number of us were quite envious. Of course, it must be remembered that while the US spends most of its Federal budget on defense, space exploration, etc, Mexico with its small army and navy has about the same large percentage left for social uplift.

The tours arranged for the Housing Commission were most rewarding. Projects shown us all had one primary objective regardless of income groups to be served, namely, a complete neighborhood. The Mexicans wouldn't think of building housing alone. Always included are community facilities such as stores, schools, pools, gymnasias, and a generous portion of the construction cost is allowed for art.

Independencia, a project which is a delight, had, I was told, a 5% allowance for sculpture, mosaics, fountains, etc. This beautiful project was started in 1960, now has a population of 15,000 and occupies an area of 91 acres, 67% of which is parks and gardens, 23% buildings and 10% streets and parking. It appeared to many of us that the parking may not be adequate in the future but otherwise we could find very little to criticize. In the project was a combination of individual houses, walkup and elevator



apartments. In the walkup buildings, which were usually four stories, the apartments, besides living room, dining room, kitchen and bath, ranged from one to three bedrooms. The rental range is considerable, varying from 120 to 800 pesos monthly. In this project the street names are chosen from the history and cultural heritage of Mexico, from Mexican literature, music and even archeology. The handsome plaza includes, of course, a fountain and some very fine sculpture. All this beauty impressed us very much as a most potent force in maintaining the project in its excellent condition. People are proud of their homes and do not deface their buildings as is the case in some of our subsidized projects.

Urban renewal is on a very grand scale, at least in Mexico City. The Nonoalco-Tlaltelolco project for 80,000 people is built over a former railroad marshalling yard. It was built *before* anyone was routed from slum dwellings, which solves the relocation problem. Like all Mexican projects qualifications for residence include proximity to work which means disturbing neighborhoods as little as possible. Architect Mario Pani has written a book "Nonoalco-Tlaltelolco Urban Development Scheme" in English, which describes the evolution of this project. While huge, the neighborhood idea is paramount so it is really a number of projects each relating to the history of the area. Nonoalco includes office buildings, as well as gymnasias, pools, theatres, child-care units and stores. We were told the office rents helped to subsidize some of the housing.

Even the least expensive apartments were very nice. One three-bedroom unit renting for \$26.40 a month had two full baths. Ingenious planning such as open stairs in the apartment houses reduced construction cost. Other savings were made in use of plastic panels for exterior wall sections. The over-all appearance of Nonoalco is not impressive but the quality of housing is good. Although the density is high, the coverage is low.

We visited several suburban projects all of which emphasize the complete neighborhood idea. They also demonstrated ingenious site planning, which resulted in interesting vistas, disturbed the terrain as little as possible and made the most of planting. The Mexicans strive for as much privacy in their homes as possible. Large estates are almost invariably surrounded by high walls enclosing considerable areas of ground. Small townhouses, such as one belonging to Professor Liceaga of the University of Mexico where we lunched one day, usually have both covered and uncovered open spaces, sometimes very small but always private.

The University of Mexico is setting up a graduate course in the Architectural School on housing—so important does the government feel this subject is to the welfare of the country.

So much can be learned from other countries that I regret that dissemination of this kind of information is so difficult. The next meeting of the Housing Commission is scheduled for Helsinki. There, too, I am sure we will find new and better ways of doing things. ■

## THE WORKING COMMISSION ON PROFESSIONAL PRACTICE

*A Report by* DANIEL SCHWARTZMAN FAIA  
*Chairman, AIA Commission on Professional Practice*

The Commission on Professional Practice met two times in private sessions attended by approximately fifteen members representing eight countries, which included J. M. Austin-Smith, Chairman of the Practice Committee of the RIBA. There was also a well-attended public session which was addressed by Mariano Garcia Morales of Spain, Chairman of the UIA Commission on Professional Practice. Antoni Peyri of the Faculty of the University of Mexico and the writer. There were some spirited comments from the audience, indicating that the importance of the Professional Practice aspects of the architect's responsibilities are widely recognized by architects of all countries.

An inspiring feeling of high common purpose was shared by all the Commission participants, who recognized the potential of the UIA for great usefulness to the position of the architectural profession in a world which improved communications is rapidly shrinking. Attention was given as well to the practical application of the work of the Commission and to the need to develop the "tools of practice" for the use of all practitioners of all levels of experience and size of organization. This can best be summed up by quoting from the preface to our own "AIA Handbook of Professional Practice":

*Since contemporary building and design construction techniques have become increasingly inventive and complex and require an increasingly larger share of the available professional time and energy, every effort must be made to bring to every architect the best collective thinking, experience and methods of administration devised by his fellow architects in a convenient and readily understandable form to conserve that portion of his energy that must necessarily be devoted to administration and to allow him more time for design.*

At the public session the writer explained the role of the Professional Practice Commission and



the committees it represents within the architectural profession in the US, with the following statement: "When two architects anywhere exchange information about their practices the interest of the profession of architecture is served. The more experienced architect of the two gains as much or more than the less experienced; since he must carefully organize his thoughts in order to make his advice effective. When this same information can be exchanged between many architects of a region, or most of the architects in the world, it will be even more effective."

Antoni Peyri, in the principal address at the public meeting, stated the goal for the UIA Commission when he said, "The opportunity afforded to exchange viewpoints and experiences, and of mutual enrichment through knowledge of the achievements and errors in our practice, makes our sense of responsibility keener and the need for professional and personal communion more evident. Faced with the great complexity of the problems of the contemporary world, man tends to turn spontaneously toward specialization as a refuge from greater responsibility. We must concentrate upon the heart of the matter, upon the active aspect of the profession."

It was encouraging to find that during the Assembly, whenever a group of architects with a common language gathered in informal discussion groups, the subject of their problems of practice received their attention as much or more often than any other subject of specialized interest.

The sharp differences between a successful practice in the US and in other countries were of course more interesting than were the similarities. For instance: Is the "Quantity Survey" method, which is standard practice for British architects, a satisfactory answer to the problem of "the architect's responsibility for cost of construction" with which we are becoming more and more concerned? It will be interesting to learn from the architects of Mexico, South America and some of the European countries, who build as well as design, just what are the advantages or disadvantages of their system. The architects of the US, and those of other countries who practice under similar conditions, are more and more being forced to accept some of the responsibilities which traditionally belonged to the builder-contractor, without the additional fee to compensate them for this burden of additional time, cost and anxiety.

One of the Mexican architects brought this into sharp focus by saying, "I am an artist; we start construction with minimum plans and we change the design of the project as we build it, as a sculptor changes the form of the stone or clay as he carves or molds it." This is a far cry from the perfection and completeness of plans and specifications which is demanded from the architects of the US and we can learn a great deal that is useful from further study of this difference.

At one of the private sessions of the Professional Practice Commission a report in French was circulated on the results of a survey of the nature of architectural practice made under the direction of

Joseph Moutschen of Belgium, former Chairman of the Commission, which covered the following subjects: 1) ratio of architects to total population, 2) registration laws, 3) schools of architecture and professional organizations, 4) volume of construction, 5) type of professional services and fees and 6) engineering consultants. Responses were reported from Algeria, East Germany, West Germany, England, Belgium, Brazil, Cuba, Spain, USA, France, Luxembourg, Hungary, Ireland, Italy, Japan, Morocco, Norway, Poland, Rumania, Czechoslovakia, Mexico, Uruguay, North Korea, Vietnam, Denmark, Holland, Turkey, Venezuela and Chile. While this information may be considered of limited usefulness to the architects of the US, the number of countries which participated is certainly impressive, and the information about the practices of architecture in those areas of such diverse social, cultural and economic backgrounds is fascinating.

The next meeting of the Commission is scheduled to take place in 1964. The date and location is to be chosen by the Chairman at the invitation of several of the countries represented.

Reports on, 1) scale of fees, 2) stature of the profession, 3) professional training, 4) public relations and 5) professional ethics were to be prepared by delegates representing Spain, Mexico, England, Turkey and Greece for review at the next meeting and final presentation to the next Congress of the UIA in Paris in 1965.

The UIA Commission on Research was terminated during the Mexican Assembly for lack of adequate funds. It is likely that many aspects of that subject as they apply to professional practice will be undertaken by this Commission.

An exchange of existing data on practice, which is represented by the "AIA Handbook of Professional Practice," with similar documents of other architectural organizations from which potentially useful information to their members can be extracted and circulated in their own publications, was instituted. David Keate, Secretary of the Professional Practice Committee of the RIBA, has already sent us their "Office Survey Report," "Practical Training Report" and "Management Handbook." We will reciprocate by sending our "Handbook of Professional Practice" and some pertinent articles from the *AIA Journal* on the subject.

It is fitting to conclude this report with two quotations from the UIA "Rights and Rules of the Architect":

*. . . it is desirable that society, recognising the fundamental nature of the architect's work, should provide such legal protection as the profession needs in order to function in a proper manner.*

*Whatever the form of his practice, the architect must not lose sight of the fundamental nature of his calling. Thus through his work he will contribute to the advancement of mankind.*

These are statements of high purpose to which we can all subscribe and state the case for close cooperation by the architects of the US with the architects of the world through the UIA. ■



# Principles of Feasibility for Revenue-Producing Real Estate

LARRY SMITH \*

**In order to properly serve the increasing number of clients who build for the use of others, rather than for their own use, the architect must have some understanding of real estate investment principles and be prepared to cooperate with clients and the real estate organizations that advise them**

*\*Next month, in a second article, the author will outline the relationships between the comprehensive services of architects and the roles of owners and real estate consultants. The author's firm, Larry Smith & Company, Real Estate Consultants, has general offices in Seattle, branch offices in Washington, New York, Chicago, Beverly Hills, Toronto*

*Architect's guide to revenue-producing real estate*

There is a significant difference between the approach to the design of real estate improvements for the use of an owner and those constructed for revenue-producing purposes.

Where real estate improvements are designed for the use of an owner—whether that use is personal, economic or institutional in nature—the judgment of the owner can be exercised freely in determining the extent to which the cost of development is a proper expression of the owner's attitude toward the suitability of the improvement for the desired use. Questions of future maintenance cost, depreciation, obsolescence, advertising value and convenience can all be answered within the framework of the owner's personal knowledge and attitude.

On the other hand, when a real estate improvement is created for revenue-producing purposes, the efficiency of the design and the cost of the total improvement must operate within a narrow and relatively rigid framework represented by the effective demand for the facilities being created, the market value expressed as rental for such facilities, and the ability of the owner and his advisors to solve the equation of costs and net return.

Therefore, in the development of revenue-producing real estate, the architect must be guided by the facts of effective market demand and must create a project design and specifications which will be capable of producing a net profit for the owner. Thus it is important in such cases to first obtain an expression of the economic elements which will control the effectiveness of the proposed project as a profit-producing investment.

The development of economically sound revenue-producing real estate is dependent upon the following factors:

- a) Market demand for the facilities at a rent capable of supporting the capital investment
- b) Identification of the cost structure best suited to produce the optimum net profit (the most effective combination of income and expense, including financing costs)
- c) The ability of the architect to design a project consistent with the identified costs and specifications
- d) The development of the project in the most effective location and the development of stores or other rental units within the project in most effective location relationships to each other



- e) The ability of the owner to control the cost of construction and develop, within the budget, the project as designed
- f) Ability of owner to lease or sell project efficiently
- g) Ability of owner to finance project economically
- h) Ability of owner to operate project efficiently.

The production of a sound piece of revenue-producing real estate therefore requires intensive efforts by the architect, by the owner and by the owner's real estate brokerage and management organization. This holds true whether there is an internal real estate organization or the owner employs outside talent for the real estate functions.

The extent to which an owner will require specialized real estate advice and talent in the execution of a project will depend largely on the owner's experience and on whether he has a competent real estate staff in his own organization. However, regardless of the source of the real estate "know-how," many of the decisions in connection with the development of revenue-producing real estate are real estate decisions; and decisions of this sort should be made against a background of real estate experience and full knowledge of current real estate techniques and market conditions.

### Market Analyses

The space limitations of an article of this nature preclude the possibility of any detailed discussion of techniques of market analyses. However, many offices in the United States have had a sufficient amount of experience to provide sound analyses of the market for all types of real estate investment property—residential, commercial, industrial, entertainment and institutional.

In many of the projects that have been built by owners with unsatisfactory results, preliminary analyses of the market would have indicated that there was no reasonable possibility of obtaining tenants in sufficient quantities—and at sufficient rentals—to make the projects profitable investments.

### *Margins of profit limited*

The margin of profit at current construction and interest costs is very limited—a typical annual return for entrepreneurial effort in office building and retail development being approximately \$.50 per sq ft of rentable space. This means that the available margin of error, which would wipe out all return for the developers' risk and effort, is somewhere between 8 and 20%. Any combination of vacancy factor, rent reduction, increase in operating expenses (particularly in taxes) or increase in the cost of land or building which would total the above percentage of variation from standard operating ratios and the identified economic specifications would be likely to wipe out an owner's profit over financing costs and, conceivably, make necessary significant cash investments each year in order to maintain ownership of the property.

Unfortunately, there are many projects in which an increase of capital cost above a budget of \$2 per sq ft, combined with a reduction of less than \$.20 per sq ft under the anticipated rental scale, have been sufficient to put the operating results "in the red."

Therefore, before any development of a revenue-producing project is undertaken, it is imperative that a sound analysis of the available market should be made. The result should be expressed not only in terms of quantitative demand but in terms of the revenue per sq ft at which that demand can be expected to be effective, and at which the quality of development and associated



## Cost Specifications

*Direct relationships  
between costs and income*

costs required can be justified by the market.

From the market analysis, the owner and his advisors should determine the cost specification for the project under consideration. Shopping centers have been developed at costs ranging all the way from \$8 to \$35 per sq ft including land and building. Office buildings in recent years have been developed at anything from \$12 per sq ft, for construction alone, to as much as \$55 per sq ft. In a given case, the expenditure required to produce the type of structure which will assure the *maximum revenue in proportion to cost* and the most effective ratio of operating expense and depreciation to income is a matter of investment decision and should be made by the owner, in discussion with his architect, before even preliminary plans are prepared.

There is not always a direct relationship between cost and income. In some cases, improvements in the amenities and specifications are essential in order to capture the maximum income for projects. In other cases, the market will not be capable of producing rentals sufficient to justify such amenities and specifications. In many cases the relationship between landlord and tenant is such that certain costs are passed on to the tenant, when the costs are related to the *tenant's* motivations and interests. Other costs related to the *landlord's* interests are usually absorbed by the landlord.

Profitable investments can be planned if they are based on sound knowledge of the market, on predetermined specifications of costs and on planned distribution of cost between the landlord and tenant. The extent to which this is possible is not generally understood by most people. Variations, between one project and another of similar class, between the capital costs of one project and another in the same category or in the relationships between landlords and tenants with respect to division of costs and operating expenses in projects, can cause variations in income of as much as two or three times the probable net profit to the landlords. This is only one indication of the extreme care that must be exercised in the planning of any revenue-producing project. From a practical standpoint, there is little likelihood that a sound investment balance can ever be achieved unless there has been an initial determination of the cost range which must be achieved.

## Project Design

In many cases, architects have demonstrated their ability to design projects within cost limitations. Too rarely is this ability used in developing projects to cost specifications that had been determined in advance. Often, the practice has been to achieve tolerable results through the process of trial and error or by the stipulation, at some point in planning, that costs "simply must be kept—or brought—down."

Too often the architect makes the assumption that a project must necessarily be developed with a certain degree of quality with little regard for the fact that a range of possibilities is open to both the architect and the owner. The selection of the standards of design and construction for a project should be based on *joint decisions* of the owner and the architect—decisions which are in harmony with the investment objectives of the owner. Rather than having decisions *presented* to him by the architect, the owner should be invited by the architect into discussions which can lead to informed decisions.



## Construction Cost Control

It is well known that bidding procedures, as well as sub-contracting and material purchase techniques, can cause variations in the cost of a project of as much as 15 to 30%. When a real estate facility has been developed for *use* by the owner rather than for *investment* purposes, savings in time during construction may be of greater value to the owner than savings in costs if the latter can only be achieved by a delay in completion.

Based on the general assumption that the margin of annual profit available to a developer is likely to average \$.50 per sq ft of rental area (although experience shows the range to be from an actual loss to a profit of as much as \$1 per sq ft or more), a saving of thirty days in the construction process might increase the profit, before income taxes, by approximately \$.04 per sq ft.

*Time vs costs*

In certain cases the meeting of contractual deadlines for delivery of space in a building may be important, altogether apart from the question of cost. In such circumstances the owner must be guided by his contractual obligations. In other cases, the possibility of a higher volume of retail business in space for which rent is payable as a percentage of sales (such as during the latter months of a calendar year) might increase the value to an owner of any time saved. However, speaking in general terms, a cost saving of only \$.04 per sq ft of rentable area could justify an owner in *delaying* the completion of the job for thirty days, if the delay would permit greater cost savings through redesign or changes in specifications and materials after consultation with the sub-contractors actually doing the job.

Obviously, a 10% cost variation in a structure costing \$20 per sq ft is an extremely important investment factor to an owner; but even minimal cost savings such as those discussed are of such importance in revenue-producing real estate that generally speaking, substantial delays of completion are justified if they result in more efficient design or more effective cost controls.

*High interest rates make time-cost ratios critical*

This relation between time and cost is most critical during the periods of relatively high interest rates on the first mortgage borrowing characteristically used to finance revenue-producing buildings. At present interest rates—which are very near their high point for the last twenty years—correct determination of the relative importance of time and cost controls is more essential now than at any time since the beginning of World War II. The control of cost is frequently stated to be the responsibility of the architect. If he assumes this responsibility on a project, the architect must understand that costs must be contained within the framework of the budget originally specified for investment success. This requires complete understanding of construction cost processes and the ability to foresee all variations which might occur in construction.

Many experienced owners who engage in frequent construction activities have developed their own engineering and design departments for the express purpose of cost controls even though independent architectural offices are used for project design, preparation of working drawings, etc.

Frequently the owner-developer who is developing one or two projects which represent the investment of surplus funds suffers the greatest penalty for ineffective cost control in terms of the original project specifications. The architectural offices which



## Marketing

*\*The Dollars and Cents  
of Shopping Centers,  
Urban Land Institute, 1962-63*

perform the greatest service to the real estate investment community are those whose knowledge of cost relationships and whose ability to exercise the required controls for owners who have no engineering departments are equal to the investment tests.

If a project under development is to be sold by the owner to a prospective user or to be leased under either gross or net lease terms, the ability of the owner to market the project effectively will be critical in determining its economic feasibility.

Recent studies of shopping center economics\* indicate a very wide range in the rentals obtained by the owners of the project which form the base of the studies. In many cases, the variation was due to general or local market conditions beyond the control of the owner. In other cases the variations in rents represent expressions of the efficiency of the owners in negotiating with the tenants or the effectiveness of the architectural design.

Except for design, these matters are beyond the control of the architect, but knowledge of the effectiveness of an owner's marketing organization is of importance to the architect in determining the flexibility of design and cost control available.

For example, there are certain owners and leasing organizations who thoroughly understand the leasing of basement areas in shopping centers when these have been properly designed. Other owners regard basements as uneconomical—possibly due in part to the fact that they and their leasing organizations may not understand the proper utilization of basements. Architects must be aware of these strengths or weaknesses before recommending specific designs. When designing any revenue-producing structure, the architect must determine whether or not the owner is capable of efficiently marketing a specific project which may be designed.

## Location

Experienced operators of real estate recognize that the location of a project and the arrangement of specific uses within the project are two of the most important concepts in the development of real estate values.

The architect may not be able to control the location of the project as a whole, but he will be responsible for the location and orientation of the project on the available land. However, the selection of the land itself is a real estate matter; as such it should be covered in the market analysis because the analysis of available uses should always be related to a specific location under consideration by the owner.

The size, shape and location of the space to be occupied by each tenant in a revenue-producing project is a matter of current real estate experience, as well as design efficiency. The best results will be achieved when the architect cooperates closely with the owner or the owner's representatives in determining the specific size, shape and location of the areas to be rented to each individual tenant.

*What makes real estate  
parcels unique*

The unique quality of real estate is that no two parcels are identical; the individual location of a parcel creates its value. Even two adjoining parcels of similar size will have different qualities of location. One of the principal differences arises from the occupancy of each parcel.

*Shopping center locations*

Extensive experience has been developed in recent years concerning the qualities of location as they apply to retail stores



in shopping centers. For example, it was previously believed that the funneling of pedestrian traffic from the parking lot into the project would create an intensity of traffic that would attract customers to stores which normally thrive on heavy pedestrian traffic. However, experience has shown that the total amount of traffic from a shopping center parking lot entering a mall through one of several entrances is not of sufficient intensity to support stores that require pedestrian traffic for survival. Such locations have been found to be acceptable only to occupants of specific appeal, such as banks and service activities. Similarly, certain stores have been found to thrive when located adjacent to other stores handling particular types of merchandise.

*Conventional retail locations*

The problem of locational attraction for retail stores in conventional business centers and in central business districts was thoroughly studied several years ago at the University of Michigan. Similar studies concerning locational relationships in shopping centers have been made by several real estate management and leasing offices but so far have not been published for public distribution. Certain publications, notably those of the Urban Land Institute, have dealt with the types of tenant most frequently found in shopping centers of various sizes; but the locational relationships of these shops have not been examined in the same depth.

Whenever the revenue to be anticipated from a project depends to any extent on the locational relationship of one tenant to another, the most intensive study by both architect and real estate organization will be required.

**Financing**

During the last fifteen years, financing techniques for new real estate construction have expanded significantly. Among the reasons for the new techniques are the guarantees provided by the Federal government for mortgage financing of certain classes of residential and commercial structures. The exact provisions of these Federal guarantees are important in design, but they are of even more importance in the economic feasibility of the projects to which they refer.

*Effects of taxes, subsidies, guarantees*

Similarly, there are certain state laws which provide tax benefits or abatements for certain types of development (such as urban renewal) or certain functional uses (such as parking). These laws are of significance in the determination of economic feasibility. In addition to the government influences in the form of direct guarantees or tax subsidies, the provisions of the Federal income tax laws—with reference to depreciation and to the impact of income taxation on certain types of investors such as pension funds—provide financing possibilities which go beyond the conventional investments by private individuals or corporations that are taxable on the full current income at current rates.

*Effects of types of control*

Capital from various organizations such as pension funds (whether corporate, union or government-controlled) and endowment funds of various types, as well as some banking and other provisional investment sources, have added not only to the total body of capital but to the multiplicity of forms of investment available to the experienced owner of real estate.

The particular forms of the investment capital do not always have a direct controlling effect upon the design or specifications for a particular project although, in the case of government-



guaranteed financing, such cases of control do exist. However, the availability or non-availability of the various types of capital will have a significant bearing on the ability of developer to develop his project in its most efficient form. Also, such investors of capital may require the right to approve or disapprove the project design as well as the relationships between landlord and tenant.

### Operation

After a project has been completed, there is likely to be a period, of one to four years, in which it will be critical for the owner, through his management organization, to take whatever steps are necessary in the way of promotion, cooperation with tenants and other typical management functions, in order to program the investment operation to produce the most effective investment result.

One of the most important activities during this preliminary operational period is a reconstruction of the effectiveness of the space allocation among various tenants.

#### *Need for flexibility*

In numerous cases, large and experienced organizations have soon found themselves short of space in new office buildings, even though, presumably, they had planned their operations carefully. Space must be designed, in close cooperation with real estate management organizations, to achieve the maximum flexibility that is consistent with sound economics and make possible changes for the convenience of tenants and for improved investment results for owners.

Similarly, in shopping centers, some tenants will—almost invariably—be more successful than they had anticipated; and these tenants may soon require additional space. Others will be less successful, either due to locational influences or to their inability to operate competitively.

The review of occupancy after a project has been in existence for a short time is essentially a real estate function. However, it can be successfully resolved only if the initial design was such that any necessary changes can be made economically and only if imaginative solutions were developed by the architect and real estate organization working in concert for maximum efficiency, at reasonable costs, in the relocation process.

#### *What makes a sound real estate investment*

The creation of a sound parcel of revenue-producing real estate is, therefore, not only the result of a proper combination of ownership, real estate, engineering and architectural abilities directed toward the acquisition of the land and the designing and construction of effective improvements upon it. In addition, a whole series of decisions founded on experience in real estate leasing, financing and management must be made in such a way as to produce effective compromise within the very narrow limits that mean profit rather than loss.

In the creation of a required investment result, the most effective relationships between an architect, an owner and a real estate organization will result in a cooperative effort in which the total skills and experience of each are brought to bear on the total problem. Neither the architectural office nor the real estate office will usually have sufficient experience and skill to solve all of the problems of sound development. The most effective result will flow from proper identification of areas of responsibility of each and from the desire to work in harmony.



# Comprehensive Architectural Services: The Government Client

LEONARD L. HUNTER AIA

**The Federal government offers unmatched opportunities for accomplishment to architects who are prepared to satisfy its complex requirements**

*First in a series describing the needs for basic and comprehensive architectural services of some of the more important clients, the present article explores the requirements of the Federal government*

*GSA serves to demonstrate principles*

*Numerous existing agencies should be unified into two*

Historically the great monuments of architecture were built either by the State or the Church. In fact these great clients of the architect are as old as architecture itself.

The Church has now become almost non-existent as a client for structures that can be expected to mark an epoch in history and architecture. On the other hand, the State—that is to say the governments of the 231 nations of the world—is still, potentially, a great client of the architect.

To take a look at our own government and its potentials as a client, it would be necessary to examine the practices of several different agencies. However, a discussion of the General Services Administration (GSA) procedures may serve to demonstrate the principles involved in working with all government clients. Practically every department—and many of the agencies—has its own architectural-engineering staff. The size and potency of these staffs vary from the small groups which design and supervise the construction of buildings for their own agencies, to the large groups, that administer contracts with architect-engineers, review drawings and specifications at predetermined intervals and either supervise construction, or participate in its supervision. The General Services Administration, the Navy's Bureau of Yards and Docks and the Army's Corps of Engineers follow the latter course.

Obviously, for more efficient performance the numerous existing design and construction groups should be unified into two major groups having complete control of all design and construction falling within the two broad areas—civil and military.

The civil group could absorb into one agency or department the many construction programs of the non-military agencies. Such an organization should logically be a bureau of a new department (such as a Department of Fine Arts) which would be responsible for the sponsorship, development and guidance of all of the arts. In lieu of a new department, another possibility would be an expansion of the Department of Interior to include a Bureau of Fine Arts. Whether a bureau of a new department or a division of a bureau of an old department, the advantages of such a fine arts agency would be many. Chief among them would be repre-



sentation in the Presidential Cabinet, uniformity in practices and procedures, standardization of construction without stifling ingenuity and elimination of duplicate personnel. The three benefits last-named would also reduce government expenditures.

A new Bureau of Design and Construction would administer all programs for design and construction except those significantly devoted to the military (shore installations, camps, airfields, etc). The programs of this Bureau would include those now sponsored by: Architect of the Capitol; Atomic Energy Commission; Department of Health, Education and Welfare; Department of the Interior; Department of Justice; Department of State; Federal Aviation Agency; General Services Administration; Federal Housing Administration, Public Housing Administration, Urban Renewal Administration, all under Housing and Home Finance Agency; US Post Office Department; Veterans Administration. However, since there is no such Bureau in such a Department at present, the following will demonstrate present procedures.

*GSA an experienced client*

GSA is not a novice architect's client, but can call upon a century and a quarter of experience encompassing many billions of dollars of construction to guide it in its multi-billion dollar programs. This vast experience has bred into the organization an understanding of the architectural profession and a degree of reasonableness that differentiates GSA from some of the less experienced agencies.

*Funds and program must  
be procured first*

The private client in many instances comes to the architect without a program. This is not the case in government. A government agency must have had sufficient funds allocated to cover an A-E contract prior to entering into such a contract. To acquire such funds, the agency must have a program for a proposed building so that an estimate can be prepared. The fiscal budget of the agency may call for an office building to house ten Federal agencies in "X" city. The specific program for this building will consist of the detailed requirements of the ten occupying agencies; their space requirements, their needs for greater-than-average floor loading, vaults, data processing equipment, etc. From this program the staff prepares an estimate which is submitted to the Bureau of Budget and, if approved, to the Congress for appropriation. The initial appropriation will probably include only those funds required for purchase of a site and for A-E fees.

*Selection of architect*

After the project has been authorized by the Congress and funds have been appropriated for A-E fees, the agency will then be ready to select an architect.

The procedures for the selection of architects vary widely among government agencies. For example, the system of the Foreign Buildings Operations of the State Department makes use of a committee of architects in private practice for review of the qualifications of architects on a nationwide basis. This committee then recommends to the Deputy Assistant Secretary for Foreign Buildings the architects it believes are best qualified to perform the required services. GSA also uses a committee system; but in this case, the committee is composed of staff architects and engineers. The committee reviews the qualifications of architects practicing in the vicinity of a proposed building and makes recommendations to the Commissioner of Public Buildings, who then passes



the recommendations along to the Administrator of GSA for final approval. The fact that selections, made by an unbiased committee of qualified civil servants and based entirely upon the qualifications of local architects, have to be submitted to such high authority for approval indicates approval is not automatic.

*Contract negotiation*

Once an architect has been selected, he will receive a letter from the agency announcing his selection. This letter will request that he come to Washington on a given date to negotiate a contract for architectural services. Along with the letter will be an agenda of the proposed negotiation meeting, a brief description of the building to be designed, a preliminary estimate, several GSA handbooks and a typical A-E contract.

The purpose of the negotiation meeting is to arrive at an agreement which will be acceptable to both the architect and the government. GSA expects each architect to make a reasonable profit; long years of experience have shown that the government, like other clients, gets what it pays for.

*Setting of fees*

After the government's negotiation committee and the architect have reviewed the scope of the architectural services, the project program, the preliminary estimate and the status of funds, and the architect understands the proposed contract, he will be asked to name a fee which represents his best judgment as to what it would cost him to provide the required services and make a reasonable profit. The architect and the negotiating committee chairman will probably make several offers and counter-offers before they can agree upon a lump sum fee. This fee will not be adjusted up or down later if the contract price varies from the estimate which had been reviewed and agreed to at the negotiation meeting. The only cause for a change in the fee will be a change in the scope of the work.

Some agencies, particularly the Defense Department groups, use an estimated sheet count times a sheet cost factor as the basis for determining fees. However, GSA believes that a fee curve established on its long years of experience and adjusted to meet the conditions governing specific projects is more reliable.

*Submissions required*

At this point, the architect will have a government contract which requires him to make at least four submissions for review by the agency staff of architects and engineers. After approval of each of these submissions, a progress payment will be made to the architect. The required submissions may be supplemented with informal presentations, particularly in the earlier stages, if the architect wants to make certain that his *parti* is acceptable before going too far with it.

*Submissions approval*

What is acceptable and what is not acceptable? Is the government staff whimsical and capricious in making such determinations? Absolutely not. The government client demands from the architect a functional solution that will embody its program within its cost limitations; and it expects that the architect's ability as a designer will produce an imaginative concept. The demand items will be insisted upon; if the architect's *parti* does not fulfill them, the government staff will make suggestions and require resubmissions until they are fulfilled. Insofar as an imaginative concept is concerned, again the staff will make suggestions if it feels the architect has fallen short of the requirements. How-



ever, this is in the area of taste and creative concept and the final decision will usually be left to the architect.

In the two preliminary stages, the architect is expected to present a complete concept of the future building. All elements of design—both architectural and engineering—must be shown in sufficient clarity to leave no doubt as to the end product. With the submission of the second stage of preliminaries, the architect is required to present an outline specification and a detailed cost estimate. The approval of this stage is the first big milestone. Then, the architect will be directed to proceed with working drawings and specifications.

*Review of government documents by architect*

At this point, the architect should again review the various documents furnished him by the government. He will find most of his questions answered for him in the GSA handbooks. Periodically these handbooks are reviewed and updated by the staff, as well as by consultants in specific fields who are engaged to insure that the handbook requirements and other standards represent the latest and most acceptable construction practices; in this, cost is definitely a factor. The architect is not arbitrarily required to adhere to these handbooks; if he thinks he has developed a better way of achieving results, he should not hesitate to propose it.

*What GSA expects from architect*

The government client does not make a detailed check of quality of his buildings, cost again being a factor. This quality begins on the drafting boards. GSA not only demands that the architect's drawings and specifications call for quality, but also insists that these documents be complete and accurate to insure the intended quality and eliminate future change orders.

The government client constantly strives to upgrade the drawings and specifications but relies on the competence of the architect. If he is not thorough and conscientious, the architect may well be embarrassed by the change orders that ensue.

The architect's second big milestone will be the acceptance of his working drawings and specifications for bidding purposes. Now he can relax a while until the construction contract is awarded. The government takes care of reproduction and distribution of drawings and specifications, the opening of bids and the award of the construction contract.

*Working drawings, specifications, construction*

In some cases, the architect's contract will require of him, during construction, only the checking and approval of shop drawings and recommendations for the approval of finished building materials; in such instances, the government provides its own construction supervision. However, in recent years GSA has provided an option in its contract which permits varying degrees of supervision by the architect.

*Success in GSA work*

In such a large organization as GSA an architect will deal with many individuals. However, these individuals are all members of the Design and Construction team. Most of them are architects or engineers; and they have a single purpose—that of helping to produce the best buildings that can be built for the available funds. Design is always a factor. Architects are encouraged to be imaginative within reasonable limitations; the bizarre is not acceptable. If the architect doesn't produce an outstanding result, it will not be because his client has not given him freedom, encouragement and assistance.





# Keeping on Target

ACCORDING TO A SPORTSWRITER, Satchel Paige, baseball pitcher and philosopher of parts, once remarked, "Never look back, somebody might be gainin' on you"—a variation of the Red Queen's "Faster, faster!"

In 1961 the Institute, heeding the Committee on the Profession, decided to run faster and has been at it ever since. In spite of Satchel's advice, a quick backward glance over the shoulder might be risked at this point to be sure we are gaining ground in the right direction.

The principal means for new activities was provided by the membership through supplemental dues. The acquisition of these funds called for action. But new ideas, bursting like blossoms on a warm spring day, could use twice the income. There was a job to do to create the methods and tools for wise and orderly utilization of our resources for progress toward major objectives.

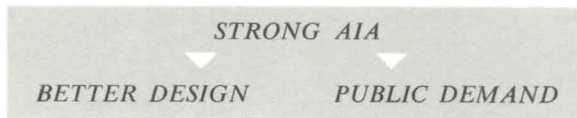
On this page in last September's issue, I told you that the new Commission-Committee structure provided the desired mechanism. In December the Commission members reviewed all projects proposed by Committees for 1964. Next the Committee on Committees (the five Commission Chairmen and the First Vice President) evaluated the projects, listed them in order of priority, and recommended the funds required for each. The Finance Committee then allocated money from both supplemental dues and regular income according to its judgment of the appropriate use of funds.

Both of these Committees were guided by two important previous reports typical of the hard thinking that has been done by Officers and Directors dedicated to the Institute's progress. One report by a Committee on Project Priorities (Messrs Eshbach, Roberts, and Bachman) set certain yardsticks for evaluation. In essence, the detailed criteria added up to "what projects are of greatest value to the greatest number of Institute members in either a short-term or long-range program."

The other report was a presentation by Morris Ketchum FAIA, entitled "A Suggested Program for the Institute." In this paper he proposed that everything the AIA does should have two overriding objectives: 1) to improve architectural design—in its broadest and most comprehensive concept, and 2) to create public understanding of architecture and public demand for better design.

A corollary to these two great objectives is a third: the continual strengthening of the AIA to enable it to perform the monumental tasks required by the profession in the years immediately ahead. The tools and methods for this objective were created by the report of the Committee on Structure adopted at the Miami convention.

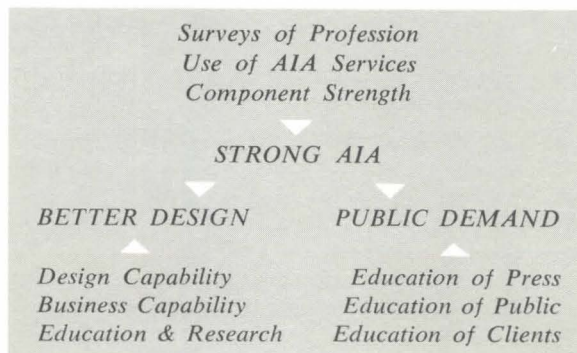
Now let us look at the big picture, leaving until later a detailed report of the 1964 projects. The basic design for program and project planning is:



A strong AIA requires: 1) a statistical understanding of the profession and motivations to promote Institute growth, 2) a membership well informed on and using the Institute's services, and 3) strong component organizations.

Better design requires programs to: 1) increase design capability, 2) increase business capability, and 3) advance education and research.

Public education requires programs to: 1) reach and educate the press and present and future generations of the public, 2) educate potential clients both private and public. The diagram then expands on this pattern:



The 1964 program of activities and projects, financed with both regular and supplemental dues, will implement programs which fit and amplify every phase of this master outline. We will report on this program in detail prior to the St Louis convention. With this "grand plan" before us we should keep on the target and continue to expend our resources in "big thrusts" that count. W.H.S.



# Book Reviews

**God's Own Junkyard.** Peter Blake. New York, Holt, Rinehart and Winston, 1964. 144 pp illus 8½" x 10½" \$2.95 paper, \$4.50 cloth

*Reviewed for the AIA JOURNAL by Stephen Watterson, Associate of the New York Chapter AIA*

"No people has inherited a more naturally beautiful land than we: within an area representing a mere six per cent of the land surface of the globe we can point to mountain ranges as spectacular as those of the Dolomites and to jungles as colorful as those of the Amazon valley; to lake-studded forests as lovely as those of Finland and to rolling hills as gentle as those around Salzburg; to cliffs that rival those of the French Riviera and to sandy beaches that are unexcelled even by the shores of Jutland; in short, to about as varied and thrilling a geography as has ever been presented to man."

So starts "God's Own Junkyard" by Peter Blake, a book which then documents, by word and picture, the most sickening crime against God and man in the history of our country—the conversion of this priceless heritage into "the biggest slum on the face of the earth."

Under the subtitle, "The Planned Deterioration of America's Landscape," Mr Blake has drawn an indictment against the forces engaged in the deliberate and systematic uglification of our cities and open countryside. The book is profusely illustrated with photographs showing scenes of supreme squalor, strikingly contrasted with pictures of what-used-to-be or what-could-have-been. The alarming thing about these photographs is not their ugliness, which is appalling, but the fact that the scenes are so familiar—we see them all the time.

The culprits are brought into clear focus: the powerful billboard industry; the laws, codes, regulations and government policies which encourage the bad and penalize the good; the fantastic urban land values, encouraged by local authorities, which preclude any attempt at good urban design; the highway planners bent on stamping out grass, trees and pedestrians—these and more are explored in this book, together with their devastating effect on our physical environment.

Behind these lie the real villains: the sanctity of free enterprise and the all-pervading American belief that only public good can result from private profit. The most hideous scars inflicted upon our landscape—the vast faceless subdivisions and the grotesque highway interchanges—are pridefully viewed by Americans as examples of progress, a contemporary synonym for profit, and the festering sores of automobile graveyards and roadside honky-tonk are accepted as reasonable by-products.

The root of the matter, to paraphrase Mr Blake's thesis, is that Americans have simply not learned how to live, and continue to foul their nest to an extent unparalleled in other societies, both past and present. The notion that it is a man's vested right

to do with his land as he pleases has indeed made this country great, and in the process is turning it into a sprawling wasteland, where irretrievable treasures, both natural and man-made, are destroyed in the name of expediency and in the belief that the only things worth preserving are those things which serve us *now*.

But Mr Blake also puts the finger of blame on the makers of public taste, the architects, artists, writers and critics—the "intellectual elite." This element in our society, says Mr Blake, is indeed leading—leading in hot pursuit of novelty with an eye to box office and circulation figures, and the public is following and following well.

Mr Blake states in his preface that his book was written not in anger, but in fury. This reviewer wishes he could say that this is a furious book, or even an angry book. The ground covered *needs* to be stalked in fury, with examples, causes and effects kicked up and flung in anger into the faces of the perpetrators, the public, the "intellectual elite." Unfortunately, Mr Blake's prefatory intentions notwithstanding, the book comes through as a sophisticated, almost dispassionate examination of the problem. It is clear and damning, even sarcastic, but sarcasm is too gentle a rebuke for so heinous a crime.

Nevertheless, this is a good book, and this reader, for one, fervently hopes that it will reach the widest possible audience. The real problem, of course, is that most persons who will buy and read it are already concerned about the mess around them, and that Mr Average American, should he see its pages, will most likely wonder what all the fuss is about. For Mr Blake's photographs of jazzed-up diners, used-car lots and garish motels are jolting only to the sensitive eye, and the juxtaposition of Jefferson's serene University of Virginia campus with the screaming vulgarity of New Orleans' Canal Street will have meaning only for the citizen who can distinguish between order and chaos.

The most distressing aspect of this march of destruction is its ever-accelerating pace brought on by the mushrooming population. Suburban blight creeps no more, but instead races over the countryside. The result of this explosion, an endless slurbania spread like a cancerous growth along the expressways and highways, devouring woodlands and pasture and replacing ponds with chain-linked drainage sumps, is hailed in the popular press as proof of progress and marvelous to behold.

Recognizing that families must be housed and that the means to transport them from one place to another must be provided, how are we going to influence the shape of the solution, the form of our environment, the city, town and landscape of our children? Peter Blake's book is a good beginning, because it is aimed at an audience beyond the design professions. But other books, articles and public critiques must follow in a constant effort to bring the issue and the stakes before Mr Average American, lest future historians condemn us as the leaders of public taste who presided over the wanton destruction of their God-given and man-created heritage. ■



# Laboratory Animal Housing—Part I

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Illustrated by  
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*In recent years, the use of laboratory animals for bio-medical research has shown a marked increase. Economic and efficient housing is a necessity. This report establishes guidelines for design and selection of materials for conventional animal housing. Part II will appear in April*

SCIENTISTS AND ENGINEERS have developed many intricate instruments and pieces of equipment for use in medical research. These precision devices have refined research activities so that this same accuracy is needed in all phases of a project. Probably the most valuable medical research tool, in addition to equipment, is the laboratory animal. In order to obtain accurate and consistent experimental results, animals of a uniformly high quality must be available to the scientists. Animals form the baseline of a great many experiments. If the baseline varies, all subsequent findings will reflect this deviation. Proper housekeeping, disease control and administration, as well as adequate animal housing facilities are required to provide a uniform supply of high-quality research animals.

In order to discuss the subject of animal housing facilities, three types of animals must be recognized. Those raised in an open colony with normal sanitation measures are classified as *conventional animals*. This type of animal is of sufficient quality for most present applications. *Specific pathogen-free animals* are of a higher quality than conventional animals. They should be tested for certain pathogens or organisms. *Germ-free animals* are those which are maintained free of detectable microorganisms. In addition to the distinctive qualities of these three types of animals, the physical barriers that are erected between the outside environment and the laboratory animal become increasingly complex as one changes from conventional to germ-free animals.

This report is limited to a discussion of the facilities for housing conventional animals. However, many of the areas mentioned and equipment described will also be applicable in a specific pathogen-free facility. The main difference, as mentioned above, would be the completeness of the physical barrier.

In designing animal facilities for research laboratories, it must be remembered that emphasis on different species of animals *will* change from

year to year. Therefore, the facilities should whenever possible have a built-in flexibility to allow a maximum of different uses for any one room or area.

In any discussion of animal housing facilities, three specific areas must be recognized: production and breeding; quarantine facilities; and experimental and holding areas.

This section of the paper considers facilities for production and breeding of conventional laboratory rodents, quarantine of dogs, cats and primates, and possibly for holding rodents and/or larger animals under experimentation.

## Production and Breeding Facilities

Animals bred in standard production are mice, guinea pigs, rats, hamsters, and rabbits. The design of housing for these species is very similar and, in many cases, an organization will alternate the use of its animal rooms to accommodate all of these animals. When laboratory facilities include production buildings, they should be kept in the vicinity of the research complex. This greatly reduces the difficulties of transportation for animals and personnel. The area may be separated from other buildings and confined to one portion of the property so that unwanted personnel may be excluded from the buildings, and noises and odors from the animals can be isolated.

There are several methods of predicting the area needed in a production colony, depending on the type of facility to be built. Growth curves for the research institution and existing animal production, if obtainable, should be analyzed and extrapolated. The research program will, of course, affect the numbers of animals required and all available information should be obtained from the scientific directors.

Although there are many different arrangements for breeding and production colonies, two comparatively new arrangements have proven effective in increasing production rates and reducing the possibility of contamination. However, these may not be feasible in small-scale operations.

The "clean and refuse" corridor system, as illustrated in Fig 1, utilizes dead-end service corridors, which greatly reduce the transfer of contaminants. The "clean corridor" provides circulation for operations such as food and bedding delivery to the breedings rooms, and removal of animals for research.



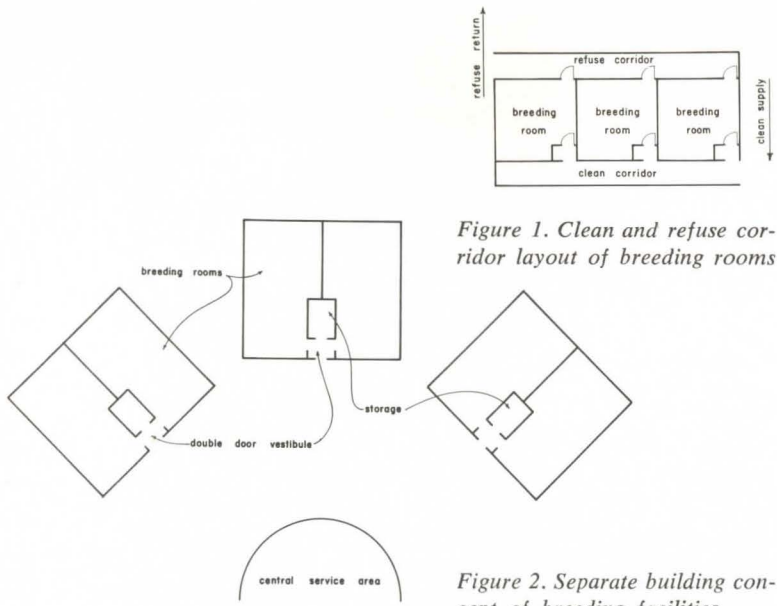


Figure 1. Clean and refuse corridor layout of breeding rooms

Figure 2. Separate building concept of breeding facilities

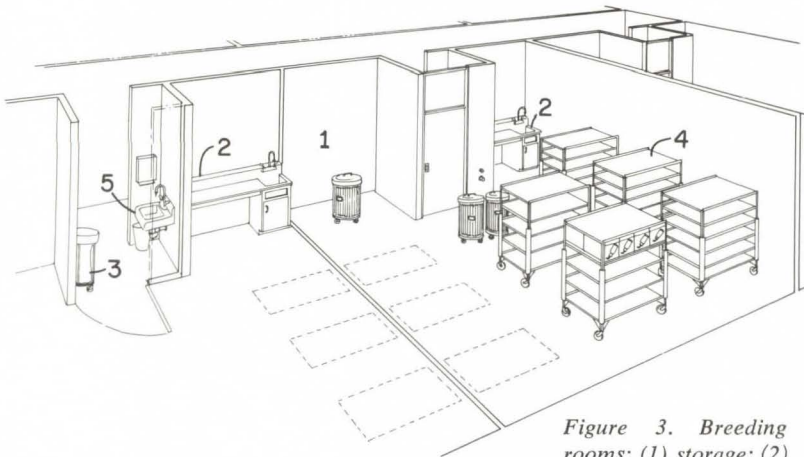


Figure 3. Breeding rooms: (1) storage; (2) sink and workbench; (3) soiled linen; (4) cage racks on casters; (5) lavatory

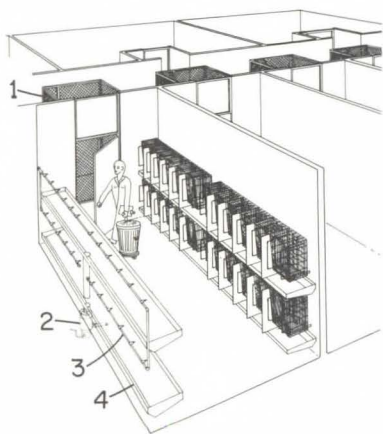


Figure 4. Typical module showing automated features: (1) vestibule—screened vestibule only for primates; (2) garbage disposal in floor under each rack; (3) automatic water device; (4) flushing pans

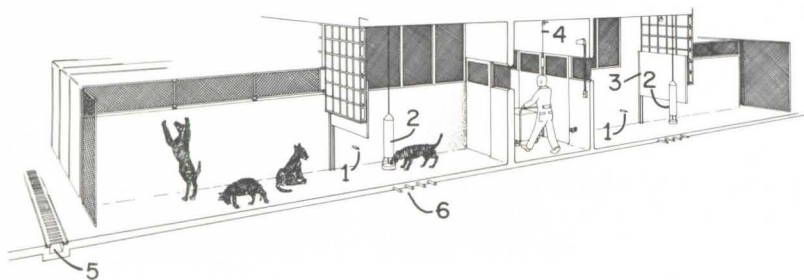


Figure 6. Dog runs: (1) drinking nipple; (2) feeder; (3) outside door—full width of dog run; (4) corridor control—for dog run door; (5) drain; (6) piping for radiant heating

The "refuse corridor" provides a means of controlling contamination through such operations as the removal of dirty cages, dead animals or used bedding.

The second system, "separate building concept," as illustrated in Fig 2, utilizes many small buildings, each containing one or more breeding rooms, mechanical equipment, and storage space. The small buildings are located around a central service building, which acts as a receiving building for supplies, an office area, and holds cage and rack washing equipment.

There are several distinct areas to be included in a production facility. Of these, the breeding room itself is the most important. The size of this room may vary between 300 and 700 square feet. Each room should contain a sink, workbench, storage space, and electric outlets. If the rooms are too small, the above items will be unnecessarily duplicated. If the rooms are too large, epizootics may wipe out a large portion of the animals, or even the entire colony. It would be difficult to place a monetary value on the time and effort of the researcher and technician if the colony were to be lost during an experiment. A small vestibule for hand-washing before the caretaker enters the room is helpful in preventing cross-contamination. Fig 3 illustrates a possible arrangement of a breeding room. Provision of an area for caretakers to change clothes and shower before entering the actual breeding rooms is an important means of preventing entrance of contamination.

The type of caging system will affect room size and layout.<sup>1</sup> Standardization of cages and cage racks will facilitate planning of the building and washing equipment. The possibility of using fixed racks with removable cages should be investigated. If cages with grid bottoms and waste pans which can be flushed are used, labor and handling costs can be reduced substantially. This system has been used successfully for rabbits, rats, and monkeys, as illustrated in Fig 4.

The need for storage space should not be underestimated. Feed, bedding, cleaning equipment, racks and cages can occupy considerable space. The cage washing area should be conveniently located with respect to the breeding rooms. Space should be provided for soiled as well as clean racks and cages. A large loading dock leading directly into an enclosed short-term storage room is needed for receiving shipments of feed, cages, and other supplies.<sup>2</sup> While this dock can be used for shipment of animals, it is more desirable to provide a separate dock for this purpose. Addition of a pathology laboratory and autopsy facility will permit early detection of disease in the colony. Provision should be made for employee shower, locker, and lunch rooms. See Fig 5 for a diagram of area relationship.

#### Quarantine Facilities

With a few minor modifications, indicated on Fig 5, the same arrangement can be used for a quarantine facility.

<sup>1</sup> See refs 1 and 2, Appendix III

<sup>2</sup> See ref 3, Appendix III



If no breeding stock is maintained, an area should be reserved for inspecting and conditioning the animals received at an institution. This area should preferably be separated physically and operationally from other portions of the animal colony.

Quarantine rooms for laboratory rodents are not different from rooms in experimental areas which are to be described later. Therefore, this section will describe facilities for dogs, cats and monkeys only. Small animals, such as mice, rats and other laboratory rodents, should be purchased from dealers who are well known and the quality of their animals predictable.<sup>3</sup> These animals require a long period of quarantine; and, because they are often transported many miles and are usually in poor condition of health when received, medical and surgical treatment is needed.

In quarantine facilities the movement of animals is from the receiving dock to conditioning rooms to holding areas. Materials are moved from the receiving dock to storage. Separate covered platforms for shipping and receiving animals should be provided. The receiving platform should be located adjacent to the quarantine area. There should also be adequate storage space adjacent to the receiving dock. A separate preparation room for animals to be shipped is also desirable.

Dogs and cats are usually obtained from city pounds or from dealers who collect the animals from such organizations. Provision must be made for examining and dipping or spraying the animals as they enter the quarantine building. This room should be completely washable with a well-sloped floor and floor drain. The room should contain cages for animals to shake and dry in after being dipped or sprayed.

Dogs which are on long-term holding should be provided with some type of exercise area. If space is available, an indoor-outdoor run arrangement is a very convenient method of housing the dogs. It is best to allow at least ten square feet for a thirty to thirty-five-pound dog in an indoor run. It is undesirable to house more than four dogs in a runway. However, when dogs are placed in a run together, they should be of similar size and of the same sex. Large gang cages in which many dogs are housed together are more difficult to keep clean and fighting becomes more of a problem. Fig 6 shows the relationship of the interior run to exterior runs.

In a quarantine building housing all types of dogs, a solid partition should be provided on the lower four to five feet of the runs so that waste cannot be transferred from one pen to the next. This also prevents much of the barking which is caused by visual contact between animals. A grate-covered waste gutter should be provided at the outside end of the outdoor runs. The runs may be modified for holding cats by putting a wire covering over the top of the outside run. Hot water radiant heat coils in the indoor run will dry the floors quickly after washing and help keep the animals healthy. The climate in which the facility is located will determine whether

<sup>3</sup> See ref 2, Appendix III

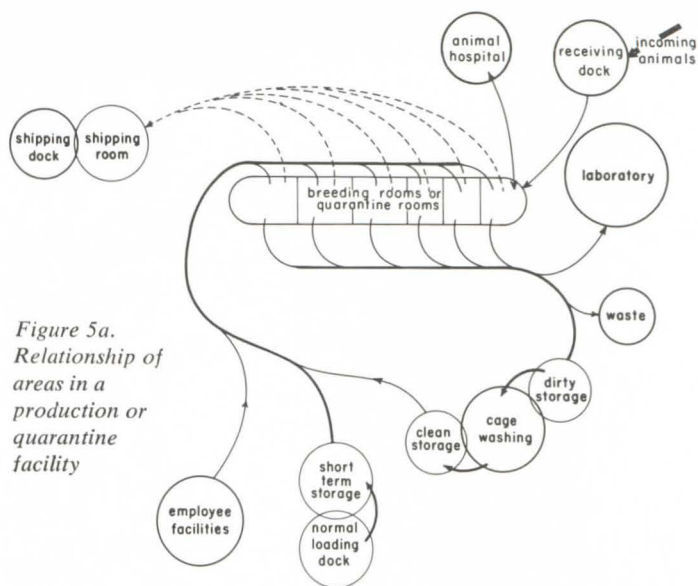


Figure 5a.  
Relationship of areas in a production or quarantine facility

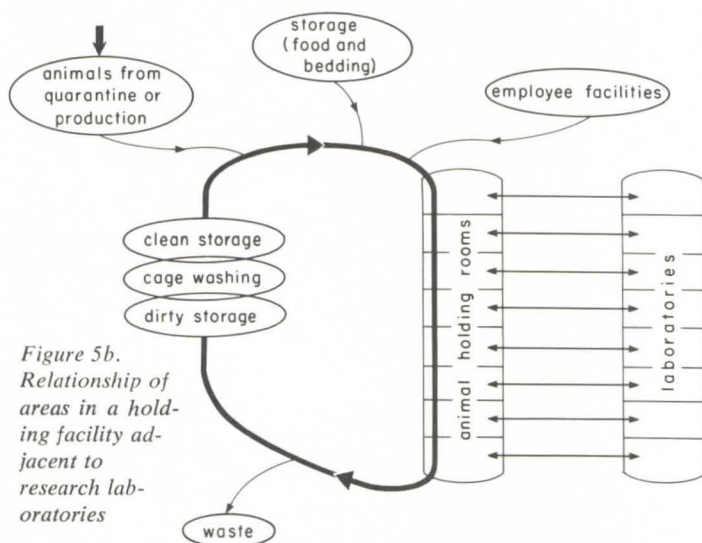


Figure 5b.  
Relationship of areas in a holding facility adjacent to research laboratories

facilities for snow removal from the outside runways should be provided.

A quarantine period, which will vary among institutions, is required for primates. During this time outdoor runs are not required; in fact, individual cages are preferable. These may be either movable cages with solid sides, top and grid bottom, or the stainless steel or galvanized wire type which are placed over a stainless steel waste trough. This latter method of caging has become very popular in the short time it has been in use. Automatic watering devices and automatic flushing devices for the waste pan cut down caretaker cleaning time considerably.

An important aspect of the quarantine area is a multipurpose operating room. This should be available for minor surgery and for required treatment of animals brought from pounds or other sources. Provision should be made for employee locker, shower, and lunch rooms.

### Experiment and Holding Areas

Rooms of this type may be required to house almost any type of animal under experimentation in close proximity to research laboratories. The individual details and arrangement of the room is



Figure 7. Examination alcove: (1) wall-hung writing shelf; (2) wall-hung examination table—removable; (3) soiled instrument cart; (4) clean instrument storage; (5) movable examination light

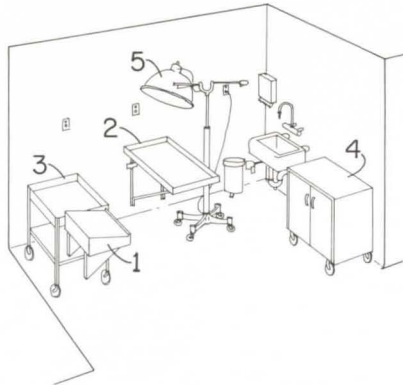


Figure 8. Treatment alcove: (1) wall-hung writing shelf; (2) wall-hung examination table—removable; (3) treatment carts

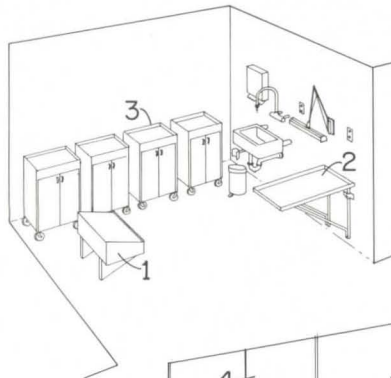


Figure 9. Preparation alcove: (1) preparation table; (2) hair cutter; (3) floor drain; (4) doors to operating room; (5) spray hose with mixing valve

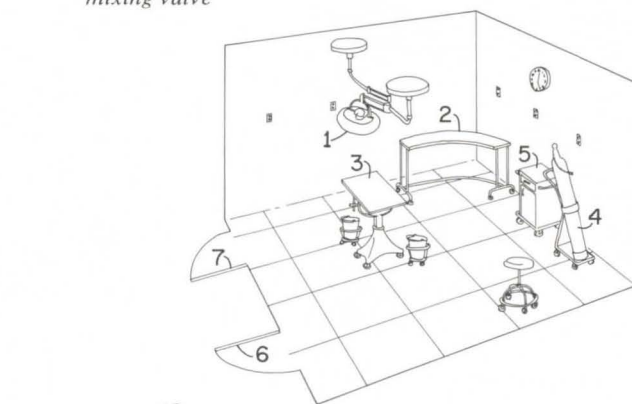
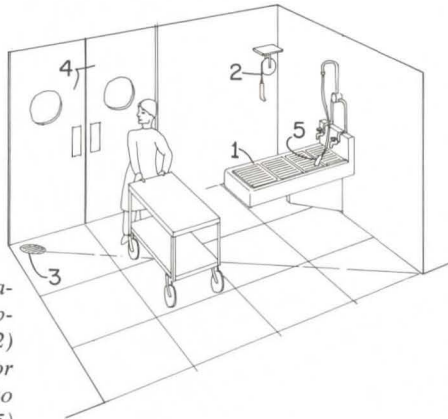


Figure 10. Small operating room: (1) operating lights; (2) instrument table; (3) operating table; (4) oxygen tank; (5) storage cabinet with casters; (6) door to sub-sterile room; (7) door from scrub-up

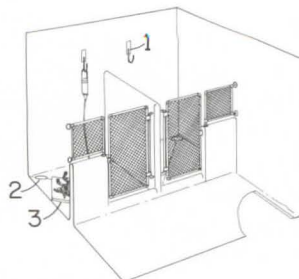


Figure 11. Recovery room: (1) hook for blood plasma; (2) floor drain; (3) pallet

dependent upon the type of research and species of the animal housed. Three basic arrangements are used: room adjacent to the laboratory; animal rooms in one area on each floor; and/or a separate animal building adjacent to the laboratory building connected with a walkway. The first system is not economical because the rooms are dispersed over a large area and facilities such as storage and mechanical equipment are unnecessarily duplicated. However, the system may need to be used when the scientist must visit his animals several times a day.

Thought should be given to the use of separate elevators and corridors for animal traffic if animals are housed in a laboratory building. In designing this type of facility, a number of precautions must be observed. Care should be taken in waterproofing the floor to prevent water from leaking into laboratories on the lower floors. Cracks in the wall and ceiling should be sealed to exclude harborage for insects or disease-carrying agents. If primates are being used, a vestibule with outer and inner doors is required to prevent escape.

In addition to the cage and rack washing, provision must be made for the removal of soiled bedding and the supply and storage of clean bedding, water and feed. Very often it is feasible to transport the soiled racks and cages to a central washing area where the bedding is removed and racks, cages and water bottles are washed and then reassembled.

The second arrangement, while eliminating the duplication of facilities inherent in the first system, does present the same construction problems. A possible way of eliminating some problems is to locate the animal quarters, cage and rack washing, and storage rooms on the ground floor. This method would eliminate vertical traffic and minimize possibility of cross-contamination.

The most economical and practical arrangement is the third, provided that it is satisfactory to the investigators involved. When all animal facilities are grouped in one building, duplication is at a minimum, cross-contamination problems are reduced (since the animal buildings and the laboratory are separated by a natural barrier of air), and service and storage areas can be centrally located.

The inclusion of an operating suite and supporting areas, required for corrective and experimental surgery, in the separate animal building will facilitate the work of the scientists. It should include a preparation room, operating room, recovery area, examination and treatment room, X-ray and autopsy room, pharmacy, and pathology laboratory. Provisions should also be made for employee locker, shower, and lunch rooms. Fig 7 through 11 illustrate the different areas of an operating suite.

(to be continued in April) ■



# THE COLLEGE UNION STORY

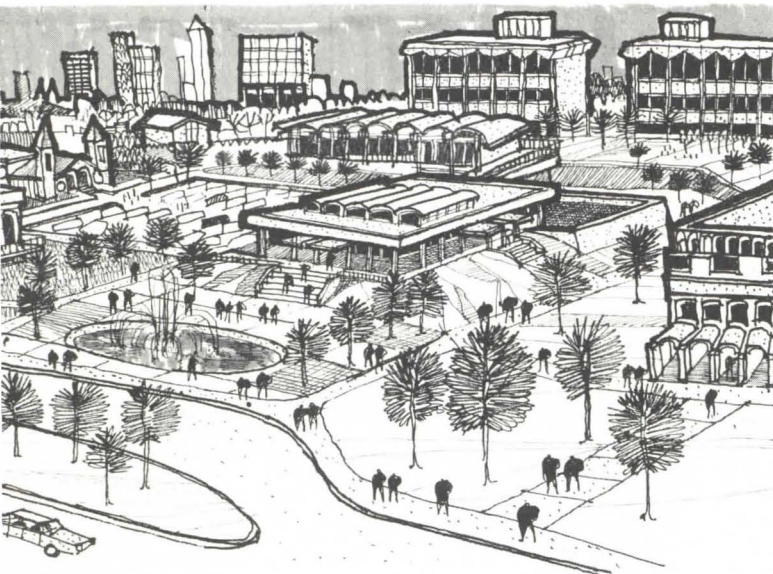
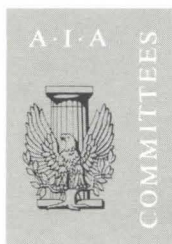
PORTER BUTTS

*Editor of Publications. Association of College Unions*

*Sketches by BOB SWAIM  
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*Commission on Architectural De-  
sign, Robert L. Durham FAIA,  
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*Committee on School and College  
Architecture, Mario C. Celli AIA,  
Chairman*



THE COLLEGE UNION is an ancient and honorable institution which had its beginnings at Cambridge in 1815. What happened then tells us something about why unions are what they are today.

The members of three Cambridge debating societies used to gather before a debate to compare notes, and afterwards to carry on the argument—usually in a dingy back room of the Red Lion Inn, where they could have something to eat and drink (the forerunner of the snack bar found in almost every union today). But the Red Lion wasn't very satisfactory. Students needed more elbow room. They wanted club rooms and a debate hall of their own. The first union was literally the *uniting* of the three debating societies to establish their own quarters. Thus the name—fifty years, by the way, before there was such a thing as a labor union.

Emphasis in the British unions was, and still is, on debate and discussion, on independence of student thought and action. The Oxford and Cambridge Unions have played such an important part in the discussion of national political and social issues, and in training students to take part in public life, that they have come to be known as the “cradle of the British Parliament.”

Gradually, reference libraries, dining rooms, meeting rooms, lounges and offices were added. The buildings took on the character of men's clubs—the British “gentlemen's club,” with a bar. And they emphasized good paintings as part of the decoration, books of poetry and philosophy in the libraries. So unions came to be known also as centers of good taste and social acquaintance.

They became, in fact, a symbol of the traditional British two-fold goal in education: to promote the art of living, and especially of living together—of civilized behavior as well as knowledge—and to infuse students with the idea that they are responsible for the welfare of their country.

American colleges at the turn of the century saw in the British unions an element needed in American education.

“If one were to name the most fundamental characteristic of these English institutions (Oxford and Cambridge),” Wisconsin's President Van Hise said at his inaugural in 1904, “it would be the system of halls of residence and unions. The communal life of instructors and students in work, in play, and in social relations is the very essence of the spirit of Oxford and Cambridge. If Wisconsin is to do for the sons of the state what Oxford and Cambridge are doing for the sons of England, not only in producing scholars but in making men, it must have halls of residence and to these there must be added a union.”

It was a time of expanding campus populations when the social agencies which once seemed to humanize, enrich and unify college life—the chapel, the convocation, the boarding house, the informal and spontaneous gatherings of teachers and students—became inadequate or impossible. There was growing concern that the communal living of the small college must be lost in its populous successor.



Then came President Woodrow Wilson of Princeton, affirming (in 1909) the British concept in terms that largely reshaped the course of educational emphasis at many institutions: "The mind does not live by instruction. The real intellectual life of a body of undergraduates, if there be any, manifests itself not in the classroom, but in what they do and talk of and set before themselves as their favorite objects *between* classes and lectures . . .

"If you wish to create a college, therefore, and are wise, you will seek to create a life. . . . My plea, then, is this: That we reorganize our colleges on the lines of this simple conception, that a college is not only a body of studies but a mode of association. . . . It must become a *community* of scholars and pupils."

It was into this climate of ideas about what constitutes an education that the union came in America. One can see why the union became what, in a large measure, it still is—a place for students to come together and talk among themselves, a place for comradeship. The first building erected explicitly for union purposes was Houston Hall at Pennsylvania; the dedication address in 1896 stressed the importance of a "place where all may meet on common ground."

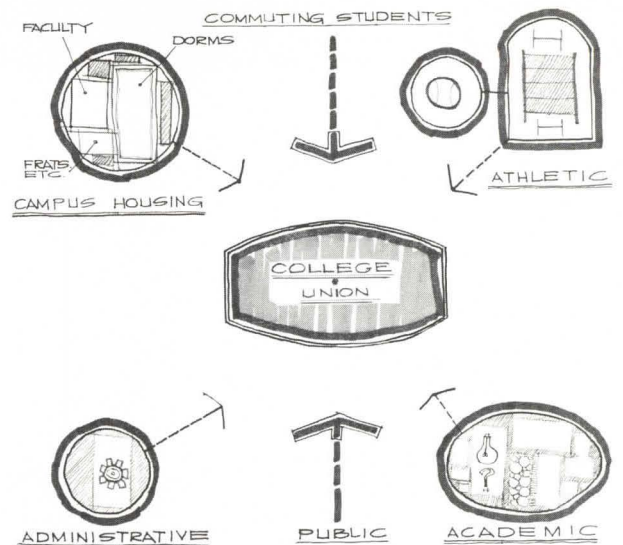
For a time—the first quarter of the century—this seemed to be a good idea for men only (again, the British influence). But in the 1920's when women's suffrage appeared and the ancient tradition of education-for-men-only began to dissolve, students saw that it was odd for men and women to eye each other across the campus from their respective strongholds, when they really wanted to be together; unions turned into social centers for everybody, and have with few exceptions been thoroughly coeducational ever since.

At this juncture, in the 'twenties, two circumstances came together to launch the massive union development of the last forty years.

There was a great postwar upsurge in enrollment in the 'twenties (as after the Second World War), and students were forced into a fairly grim social existence, unless they belonged to fraternities. It was hard to find a place to eat, or for students to find each other. Colleges had seen what the canteen and recreation centers had meant to the servicemen away from home. A counterpart on the campus—a union—now loomed importantly as an answer to many problems of campus life.

And the answer to the problem of how to get the building also came out of war. What better type of living memorial to honor the college men who had served in the war? What better way to serve the cause of democracy than to create a new campus democracy? The memorial theme was joined to the felt need, and this fund appeal coming in a time of prosperity gave a sudden and successful impetus to the slow-maturing union movement on a wide front.

In the mid-twenties there were barely a dozen unions. Now there are more than 900, built or being planned. The junior colleges, 700-strong and



multiplying fast, are just starting to get interested, not to mention the multitude of unions already built or being planned overseas. And the end is not in sight.

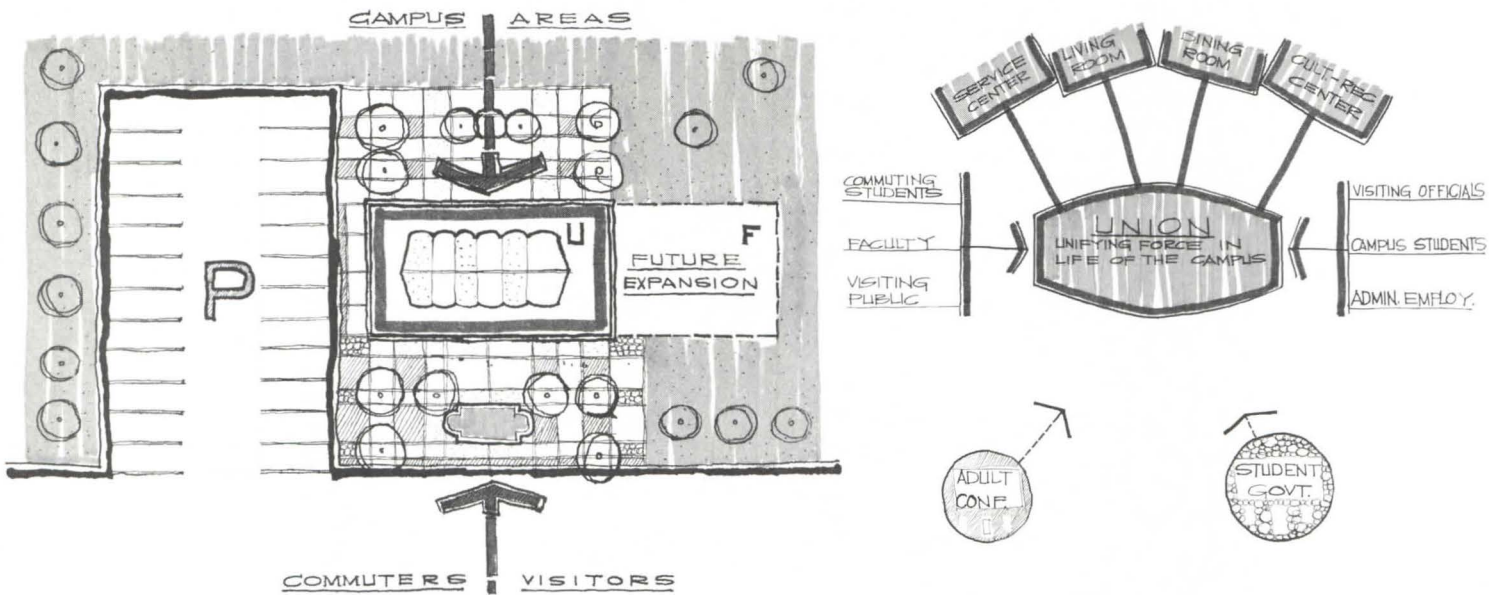
A nationwide survey by the US Office of Education in 1960 showed that 409 unions—new buildings or additions—were being planned for the five-year period 1961-65, at a total estimated cost of \$346,784,000. The rate of expansion, accelerated by the adoption by Congress of a four-year college housing loan program\* with \$120,000,000 earmarked for union financing, is estimated by the Association of College Unions to have increased since the US Office survey. Three hundred *new* building projects, averaging \$1,000,000 each, plus many projected additions, costing in the neighborhood of \$250,000,000—for a total of \$550,000,000—are foreseen for the five-year period 1964-69.

As of now, an estimated 800-900 additional institutions are potential builders of unions for the future, not counting the rapidly-expanding junior college field. The next ten years may see more than twice as many new college unions constructed as presently exist, along with major expenditures for expansion of existing facilities.

In short, almost every college now recognizes that wherever young people gathered together away from home, a center and program for their out-of-class life are needed if the college is to fulfill the needs of living along with learning—that the union is as normal and necessary a part of the college equip-

\* Since the organization of the college housing program in 1956, more than 300 unions have been financed in part by Housing and Home Finance Agency loans. To date, there has not been a default in payment of principal or interest.





ment as a gymnasium, dormitories and library.

Where it once waited on gifts, the union now assumes a high priority in the campus plan. This is especially apparent when a new college is created or an old one moves to a new campus. Of 150 new colleges and new branch campuses established or expected to open in the five-year period 1961-65, forty already have or are expecting to have a college union; still others are rehabilitating existing buildings to provide union facilities.\* And the union is often the second or third building built—sometimes ahead of the library.

### The Multiple Functions of a Union

In the 1930's the leaders of the union movement, influenced greatly by the concurrent development and success of general community recreation and cultural centers, began to see the union as the campus counterpart of the "community center" elsewhere, with a positive recreational and educational mission to perform. And the Association of College Unions ultimately defined the union officially as "the community center of the college, for all members of the college family," and as "part of the educational program."

It has become not just a sheltering building structure but a priceless tool for shaping community solidarity and the individual student's sense of social responsibility—a natural laboratory where all who will may have a part in the direction of community enterprise.

It is caterer to the campus at large, housing the bulk of its meetings and serving its dinners; advisor to student committees; trouble shooter in certain problems of student personnel; teacher of

the arts of leisure and recreation. It is, or can be, the social-cultural heart of the campus.

It is a lounge, dining room, reading room, art gallery, workshop, theater, music room, forum, game room, dance and party center, public relations agency, office building, ticket bureau, post office, conference headquarters and store. It may perform all of these functions, or part of them, or perhaps still others—but all brought together under one roof so that physical proximity does its part in furthering a sense of community.

So the days when the union was merely "a place to meet," or an incidental supplement to housing—a kind of service station, filling accidental gaps in the provisions for out-of-class needs—are long since gone. It is now, indeed, a community center of the first order, with an identity and meaning of its own.

In sum, a union rightly conceived and planned, can serve the campus community in the following major ways:

#### *As the Living Room of the College*

The original function of the college union on this continent as a place for social association is still a central function, of course. As one university president said, "The union gives us a living room which converts the university from a 'house' of learning to a 'home' of learning." More specifically:

*Men and women students* needs a common meeting ground. If college men and women are to meet informally and to share common interests beyond drinking a coke together in an overcrowded, noisy corner drugstore, a union is essential.

*Commuting students* need a place to headquarter on the campus, and the administration and student organizations need an effective way to com-

\* U.S. Office of Education survey of new colleges



municate with them. The commuters' ties to the central student body, their participation in campus life, and their satisfaction with their college experience increase immeasurably when there is an adequate social-dining-activity center.

*Students and faculty* need a common meeting ground to further informal associations outside the classroom, to personalize relations between students and teachers, and to create an intellectual environment outside as well as inside the classroom.

*Faculty and alumni* always want to entertain at dinners, receptions, and parties. Visitors, parents and alumni need a central place to go when they visit the campus—an information center, lounge, places to meet and visit with friends.

Serving as a living room for the campus in the above ways is a function which has continuing important relevance at any college, representing as it does, the answer to needs which exist regardless of the size of a college, its location, or its plan for housing.

#### *As the Dining Room of the College*

The union is also the campus dining room—usually the main, and often the only dining center for students and faculty who do not dine where they live, and on smaller campuses, many times the dining hall for all or part of the dormitory students, too. Since students have to eat, the dining room function is in many ways the most important service. In the student view, if a union were to consist of

the US Office of Education reports that the total pattern of college development is such that *most* students who attend college in the future will commute from their own homes; and they will *rely* on the union for their meals.

This heavy emphasis on dining is not a digression from the social purposes of a union. Quite the contrary. Just as the dining table is universally the symbol and the center of family social life—the natural and necessary daily gathering place where the influence of conversation and contact are continuous and most effective—so is it also with college family life. In the union dining rooms, the student gains not only his daily bread or morning coffee, but also a wider circle of friends and a sense of community. And much of what a union does or can do by way of programmed social activity is done to the accompaniment of food and drink.

#### *As a Service Center*

There are countless other services and conveniences which a union can provide and which simply make life easier: a place to check your things; lockers; an information desk; telephones; barbershop; a handy place to get supplies and books and mail; hometown newspapers; travel bureau or ride exchange; maybe guest rooms where you can put up a visiting friend overnight; a place to cash checks. The union typically provides the answer to the daily service needs of students, by drawing all services together and thus providing a welcome convenience for students and faculty who are likely to be thronging to the union for other purposes.

#### *As a Conference Center*

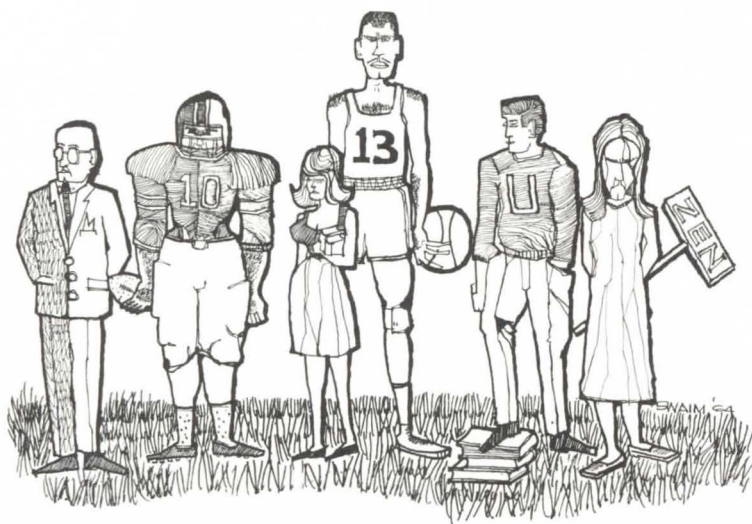
Accommodating conferences, institutes and symposia, and extending hospitality to town groups related to the college, are other valuable functions a union serves on most campuses. The conference meeting program dovetails well with the student-faculty meeting program, because conference meetings are normally held mornings and early afternoons, or on weekends; student and faculty meetings are usually late afternoon or evening on weekdays.

And, of course, playing host to invited groups identifies the college more closely with the community and is a great aid in enlisting interest and support.

#### *As a Center for Cultural Recreation*

Informal cultural and hobby facilities—constructive outlets for students in their free time are indispensable if they are to be exposed fully to the civilizing influences of the arts—are the hallmark of the union as an educative center: recreational reading room with the latest books and periodicals; music-listening and piano-playing rooms for group recreation; workshops for informal student hobbies; photo darkrooms; an adequate gallery for art displays and other exhibits prepared by students; a good small theater.

The cultivation of taste and intelligence in using discretionary time is an important part of what a



only one facility, it would be a lunchroom and snack bar. Many temporary buildings on small campuses which have borrowed the union name for the time being, are just that. And taking all unions together, almost half of the total building area and up to about 70% of the building and equipment investment is devoted to dining and dining-related space.

This role is not likely to diminish. We hear a lot about the vast expansion of college housing, but



union is about. The union has a unique and superlative opportunity to enhance the quality of leisure, because it is precisely in the area of student leisure time that it operates.

Since one of the primary functions of a college is to introduce students to the arts and to get them to try out in their daily living the cultural interests the college so painstakingly cultivates in the classroom, the more cultural opportunities presented to students, the better. Bringing these opportunities to the place where the students are, as in their social center, is likely to result in more interest and participation than if students are expected to seek them out elsewhere on the campus or in the city.

It is well known that the whole pattern and tone of student interests have been substantially changed—away from the often-pointless, time-consuming “collegiate activities” toward serious rewarding cultural pursuits—by the presence of a union that has good cultural facilities and effective leadership. This all means, in short, that with a good union a college can vastly expand the time area in which it educates, and the means by which it educates. And by inviting the public to participate in the union theater and art programs, it can extend cultural benefits to the city and influence cultural standards in the whole community.

#### *As a Laboratory for Student Government*

A college finds that its efforts toward useful citizenship and its encouragement of student government and responsibility can be greatly expanded and improved if the students have the tools to work with: more offices more closely related to the ongoing life of the campus; handy meeting and conference rooms; workshops—and the new union building itself to govern. All these facilitate student self-directed programs, enlist more student participation, and give student leaders a new sense of the importance of their role.

#### *As a Unifying Force*

There is always a risk, even in small colleges, that special interest groups and living-unit groups—the fraternities, the dormitories, the church centers, the clubs or the commuters—will become insular, withdrawing into themselves and splitting the campus socially. Because of its centralized social-cultural-dining facilities and because all students are members equally, the union becomes the common meeting ground. It encourages and strengthens the special interest groups, but on occasion, by conscious design, it brings all together—at open houses and mixers, game tournaments, parties, receptions and audience programs. In this way the strengths of separate groups can be combined to produce a strong unified student body, with all students widening their acquaintance and sharing the feeling of belonging to the larger college community.

Then there is the obstacle to campus cohesion that comes from the weekend exodus, or, on the urban campus, the daily exodus. The prevalence of student cars doesn't help. When students disappear

into town or leave for the weekend, they miss identification with the college community as a whole.

In the past, the values of a campus-centered fellowship were sought mainly by recreating the Oxford kind of residential college, with the union as the supplement which counteracted the attractions of the town and facilitated interchange among the several college residences. But the residence halls are no longer the main answer—not when non-residents, as noted, are beginning to outnumber all resident students put together. For the increasing number of commuters the residence halls are simply of no significance. This spectacular turn of events in who goes to college, assigns to the union the role of creating a common life for students that educators once anticipated the residence halls, mainly, would fulfill.

#### *The Planning Approach*

If the union is to realize the potentials just described, the planning of the building becomes not just a matter of roofing over a set of miscellaneous, unrelated facilities, nor the opposite—erecting a certain kind of physical structure with predetermined standard elements, as with a dormitory or gymnasium. The planning of a union, in the best sense, means arriving at a comprehensive, well-considered plan for the community life of a college.

Under this approach, the union becomes fundamentally an expression of the needs of the people of the college at leisure. Whatever interests them, whatever is important to them outside their working hours, becomes interesting and important also at the union, the center of their campus life.

Provisions for personal, dining and social needs will heavily populate the union. The presence and the message of the arts will add grace and purpose to social activity. Coming to the union for one activity, students will be exposed to and perhaps inspired by another. The college should provide there, the means of cultivating new interests that may not at the moment be in local demand but which, on trial, have had strong appeal to other young people and which have inherent recreational or cultural value.

It follows that some realignment of campus facilities and of plans for the future may be necessary so that there will not be missing at the union an element essential to its functioning as a true center of campus life, or a facility important as a matter of sheer convenience to the student-faculty-alumni body.

It is equally a mistake in planning if the union is treated merely as a catch-all for just those miscellaneous college needs not previously accounted for, without regard to their appropriateness in the union.

The ways that many colleges actually have planned, and still plan, their unions is, regrettably, a melancholy story. The same college which will put a team of scientists to work to study with meticulous care for a year the potential of a research project before asking for a \$50,000 grant, will the next day



list a score of facilities to go in a \$3,000,000 union and command an architect who has never seen a union to have the plans ready to meet a deadline next month. Incredible, but it happens—over and over.

There are reassuring, even brilliant, exceptions of course. And more and better guides are available. But when a union director, called to operate a new \$2,500,000 union, says in utter frustration (as one did recently), "No part of the building works well; much of it doesn't work at all!" and we continue to hear variations of this sad theme across the country, we have to concede there is still some distance to go.

It isn't only that some architects stoutly resist information; that the union director is often left standing outside the door when the building is planned; that too many presidents take a fancy to some union they dropped in on and thoughtlessly transplant it to alien soil, or feel there's nothing to be gained by having hasty drawings checked to see if they will work. The problem goes deeper than architectural inadequacy. Even more important is what colleges are deciding to put in or leave out of union buildings.

Unions continue to submit to special pressures and end up saddled with faculty lounges, which the faculty doesn't use, which no one else *can* use, but which stand there as a symbol of separateness between student and teacher; exclusive clubrooms for Greek-letter societies and commuters, creating disunion instead of union; chapels which are seldom entered; infirmaries which give off odors; deans' offices which give off an aura of discipline; vast shopping centers masquerading as bookstores; enormous ballrooms, used to capacity only three or four times a year (which comes under the heading of building the church for Easter Sunday); "president's dining rooms" for the president only (a surrender to presidential vanity, paid for by students). All these take space. All affect what the union is, or can do. On the other hand, consider things that are so often left out:

*Conference facilities*, for example. The conference and short course are part of contemporary education. And not only do they widen the influence of the college and strengthen public support for what it is doing; they make the student aware that there is more to education than undergraduate classes; they are an enormous aid in paying the union bills, reducing what students have to pay in fees and prices. But to have conferences successfully and avoid conflicts in building use, one has to see the conferences coming, and plan accordingly.

The problem is not solved by leaving out a few necessary auxiliary spaces and hoping for a conference center that may never come. Nor is it solved, at least not prudently, by building a separate center at \$1,000,000 to \$2,000,000. This is extravagant waste of somebody's money, when a tenth of that amount added to the union fund could give the college a better answer for both students and conferences.

*Cultural facilities.* Throughout the country, the interest of students in the cultural facilities a union can provide—*theater, gallery, browsing room, music rooms*—is extraordinary. Such facilities for the arts are supported in almost all surveys by 65-75% of all students, and often are exceeded in student interest only by snack bar, lounge, ballroom, cafeteria—the traditionally acknowledged essentials.

To ignore such trends in student interests is to miss one of the very best bets in union planning. Yet when the planners sit down to establish priorities, the auditorium and art gallery are usually the first facilities to go to the bottom of the list, or be dropped entirely.

While the architect cannot control what goes into the building, he can bring to the attention of the college client the numerous aids which can enlarge the client's perspective and, hopefully, improve the ultimate judgments.

One source of aid is the store of publications available through the Association of College Unions or at the library. (See accompanying bibliography.) Another is the consulting service sponsored by the Association since 1945 and designed, as in the case of other national organizations concerned with specialized buildings, to make special operating requirements available to architects and colleges. A number of union directors experienced in planning are available, as their time permits, for consultation (professional basis) on the potentialities and requirements of union facilities, methods of conducting a needs survey, preparation of an adequate facility list and building program, and detailed checking of drawings from an operational point of view. A list of such consultants—also interior designers, food service specialists and others—who have assisted in planning unions can be obtained from the Association.

Especially, the architect can see to it that whatever facilities are chosen are blessed with an environment that is humane. And of course, he can see to it that the architecture is fitting to the purpose; an invitation to informality, human in scale; creative rather than imitative; and, hopefully, inspirational.

For the union of its very nature is a center of artistic as well as social experience. As the scene of daily living for hundreds, sometimes thousands, of students, the building's architectural form, decoration and furnishings have subtle and continuing influence on the standards of taste of its young users.

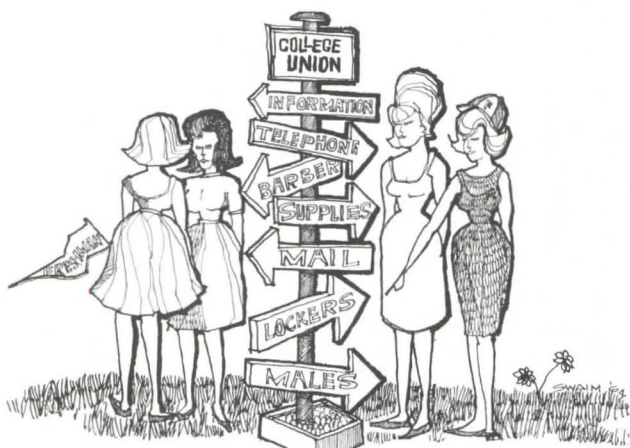
#### **Where the Union Should Be**

The best possible site for a union is the one which creates conditions favorable to maximum use—the one most central in terms of ready accessibility to most students. This is not necessarily a location that is central *geographically*, but rather a location that is central to the concentrations of classroom population and the natural paths of student pedestrian traffic, and where there are large numbers of commuters, reasonably close to access from parking lots. In a growing institution, of course, centrality should be gauged by where and how the mass of



students will move in the future, rather than according to where the concentrations of student traffic may happen to be at present, accepting some temporary disadvantages if necessary.

The reason for the importance of site centrality is that the use of a union is voluntary, in contrast, say, to the use of classroom buildings. Students will go to the union, wherever it is, for certain organized special events like club meetings, parties and lectures. But this organized use constitutes normally less than 20% of the total use of the building—that is, of one centrally and conveniently located. The remaining 80% or more is “drop-in” use generated by the building’s accessibility. It is this



easy-to-achieve, natural, drop-in use which in the end determines both the social and financial success of the building.

Students, like everyone else, are creatures of habit; they feel that they have just so much time. If a union is off the beaten path or too far away, what with poor weather, shortage of time between classes, extra distance to walk, or no visual reminder, countless students forego what seems like a “special trip.”

Final site recommendations are ordinarily made *after* the planning committee has determined more closely what kind of building it hopes the union will be and how large it will be, and after general campus development policies are clarified. But it is useful to have criteria in mind from the beginning of the discussions, especially if the development of the campus master plan is proceeding concurrently or if commitments of available areas are being made while planning progresses. The general considerations which have proved important in actual union operation are these—with the ones starred to be given the greatest weight:

- \*1) Is the proposed union site on a main, natural path of student pedestrian traffic? Will it be in the future?
- \*2) Will the proposed site be convenient to the dormitory dining centers? And convenient for the

non-residents, faculty, and staff who are expected to dine at the union at noon? (The heaviest union use comes before, during, and after meals.)

\*3) Does it lie close to the principal concentrations of student housing? (The relationship to dormitories and rooming houses is the most important, since students in dormitories and private houses ordinarily have the greater need for, and make the greater use of, the union’s standard daily services than fraternity members or married students. And the relationship to women’s living units is more important than to men’s, since women will not go as far to use a union (and the men can be depended upon to go where the women are).

\*4) Is it convenient to the buildings which house the main volume of classroom attendance? (Buildings devoted to laboratory purposes are relatively much less important.)

\*5) Is there sufficient nearby site area, or facilities within a block, for more than street parking—parking for large groups attending parties, dinners, meetings, lectures, etc. as well as student commuters and visitors? (This factor assumes added importance when a union is used as a conference center.)

\*6) Is it large enough to permit substantial future additions?

\*7) Will the future development of the campus and of student housing enhance or reduce the volume of student traffic near the proposed site?

8) Does the site lie on the main student pedestrian route to town?

9) Is it close to the point where students arrive from home by auto or bus?

10) Is it close to buildings used after class hours, and especially in the evening (library, large auditorium, gymnasium, stadium)?

11) Does it provide a pleasant outlook over the campus and especially an outlook toward any unique, attractive natural feature?

12) Will the union, when built, be readily found by visitors—parents, prospective students, college guests, visiting conference groups?

13) Can a service drive be readily and inconspicuously brought up to the building?

It is rare that a given site can satisfy all the above criteria, so one usually selects the site that satisfies more criteria—especially the more important criteria—than do the others.

### The Essentiality of Parking

All the attractions of the union building and its program are of little avail if people choose not to come because they can’t get there with reasonable convenience by car. And these days, of course, we’re talking about no small numbers. We’re talking about the faculty, alumni, townspeople, out-of-town visitors, and often a very high percentage of the student body. On many campuses almost every student either has a car or access to his roommate’s car. It is not uncommon for students in an urban situation to rank parking first or second among all facilities they consider important at the union. Nationwide, all kinds of campuses considered



together, including those that ban cars, parking ranks sixth among thirty-eight typical union needs surveyed—ahead of everything but dining rooms, bookstore, lounge, and ballroom.

Funds for financing a union cannot, and should not, be relied upon to solve a general campus parking problem, but with parking so important to union users, there is every reason to consider parking as a key facility to be closely associated with the union physically. A union gains enormously in use, and the campus car-driving population gains greatly in convenience and time-saving, if drivers can arrive by car at the union area. Washrooms, checkroom, telephones, information desk, food services, auditorium, ballroom, and meeting rooms are all natural objectives and conveniences for car drivers.

The impact of parking on the success of a union has come to be felt so keenly that some colleges are building parking ramps, fee lots or underground facilities near the union, and underwriters of loans are beginning to ask for site plans showing nearby parking—to protect their interest in their loans.

Such is the story, in main outline, of the college union to date—universal acceptance of the need, growing understanding of what it is for, the kinds of facilities and environment it should account for, and where it should be.

It remains for architects and colleges together to write the next chapter as they plan for new unions, one by one.

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Numerous articles on union purpose, planning, design, facilities and operation are found in the annual *Proceedings* and *Bulletin* of the Association of College Unions, Willard Straight Hall, Ithaca, NY. Architects may subscribe to these publications, or order single copies. (For extensive bibliography see "College Union Planning Aids," *College and University Physical Facilities Series*, bulletin of the US Office of Education, Aug 1962.)

A series of pamphlets on facility types and building planning and operation, and a definitive volume on the development of unions in the US and overseas, are to be published by the Association in 1964.

Illustrative articles on individual buildings appear frequently in *College and University Business*, and a few in *Progressive Architecture* and *American School and University*. (For bibliography see "College Union Planning Aids," *College and University Physical Facilities Series*, bulletin of the US Office of Education, Aug 1962.)

An exhibition of photographs of representative buildings and a collection of color transparencies are available through the Association of College Unions central office, Willard Straight Hall, Ithaca, NY, and a forty-minute color-sound film, "Living Room of the University," may be rented by writing the Wisconsin Union, Univ of Wisconsin, Madison. ■



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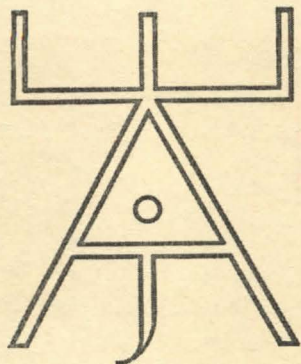
*Monuments and Monumentality by Cecil D. Elliott*

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## Monuments and Monumentality

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by Cecil D. Elliott, Auburn University

*In his article "The Variety of Scale" in the December issue, Cecil Elliott discussed a concept which, though of manifold intellectual ramifications, is relatively free from emotive content. The case is very different with the subject of the following article. For reasons connected with the history of modern architecture and the ideals of certain of the most articulate of its pioneers and theorists, monumentality is a word which, encountered on the printed page, provokes in most of us an instant reaction of a non-rational kind. Yet, as Professor Elliott points out, there has as a matter of historical fact been a revival of monumentality, and of the monument too, during the past two decades. In view of this, the time has clearly come for a reconsideration of the subject of monuments and monumentality.*

A generation ago monuments were derided as purposeless. Man's urge to commemorate was supposed to have advanced beyond the building of monuments to the endowment of institutions dedicated to human betterment. Cold stone was weighed against the working memorial. In 1937, Lewis Mumford proclaimed "The Death of the Monument," declaring it inappropriate to a culture that should "travel light" and a symbol of society's fixation on death: "The

very notion of a modern monument is a contradiction in terms: if it is a monument, it cannot be modern, and if it is modern, it cannot be a monument."<sup>1</sup>

Perhaps prosperity or maturity has softened the sternness of such opinions; perhaps commemorative works of betterment have been overshadowed by governmental and philanthropic bureaucracies arising from present-day taxation. Whatever the reason, the last two decades have seen an increase in demand for monuments and an increase in popular respect for monuments. Furthermore, there has been a corresponding increase in the expression of monumentality in buildings which are not, strictly speaking, monumental in purpose. Monuments and monumentality have been revived.

Before a monument is built there obviously must be general belief in the lasting significance of

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<sup>1</sup>"Death of the Monument" by Lewis Mumford in "Circle: International Survey of Constructive Art," London 1937. Eighteen years later Mumford again wrote on this subject (*Architectural Review*, April 1949), still viewed the monument from the socio-functional bias, and only admired that monumentality which came from the enrichment or survival of clearly utilitarian constructions.



the person or event to which it is to be dedicated. Sufficient funds must be collected to erect something more than a simple historical marker. The results of commemorative zeal can include everything from gravestones to great temples. But, to begin, let us limit our attention to those monuments falling within the most exact limitations of function and to those that are architectural both in size and character, to the obvious and indisputable examples.

Since the decision to establish a monument necessarily presupposes that its meaning will endure, the monument too must endure. In the past, this requirement of permanence was in accord with the general architectural criteria of the period; but today, when material and economic factors severely limit the expected life of buildings, permanence is an exceptional requirement. The flimsy materials and indifferent details used in transient and speculative construction cannot produce genuine memorials. It is difficult to imagine monuments made of materials other than those proven to endure and to survive neglect. New materials must slowly gain acceptance as suited to monuments. Some of these materials do not suggest monumentality simply because they are not its customary media. We do not associate them with permanence; we do not identify them as materials of luxury, because their dominant use has been utilitarian.

Monuments deal with ideas that are expressed in general and simple terms and are executed in a deliberate manner. Their nature requires that they be designed in a way that is neither casual nor personal. The thoughts that lead to the establishment of a monument demand a degree of impressive formality in the design, since a serious and meditative mood is the principal objective. This emotional response has most frequently been caused by the accepted method of symmetrical arrangement—a fact which has meaning beyond the habitual use of classical traditions. Great events and ideas have in them a majesty that naturally proposes the static resolution of formal symmetry. It does not necessarily follow that majesty in architecture can be attained only by symmetry, but frequent use of this obvious system does not lessen its validity or its effectiveness. The fundamental condition is static resolution of the composition, a kind of arrangement echoing the monumental criteria of significance and permanence.

The monument is formal in spirit. It is formalistic in design. Monumental form may appear as geometric abstraction—as it has since the times of pyramids and obelisks; or it may appear as architecture, simplified and concentrated until it has become more a monumental symbol of buildings than a building itself. Throughout history, there seems to have been a geometric precision in the selection of monumental forms and in the design of monuments. Results have often been far removed from modernism's unadorned geometric solids. Although a period may have demanded a profusion of detail and decoration, its monumental vernacular was usually controlled by a simple and regular geometry,

whether it was the vertical taper of a spire or a cubical solid of columns and entablatures.

It can be argued that monumental architecture is an architectural stylization of architecture itself. This interpretation may seem to ignore the *raison d'être* of a monument, the moment or the man. However, a monument does not really function as a means of explicit communication. It is predicated upon the assumption that the viewer already knows pertinent facts about it and its subject, and monuments are customarily overlaid with minutiae and subtleties of symbolism which are meaningless without the viewer's previous knowledge. A monument need not identify, describe or justify its subject, and with few exceptions there is only slight relationship between the subject and the essential architectural decisions, if the connection is even identifiable. Were the figures of Lincoln and Jefferson in our national capital exchanged, I doubt that our evaluation of the monuments that shelter them would change appreciably.

What then determines the particular nature of architectural monuments? If they are not exact representations of unique characteristics of their subjects, what are they? It seems an inevitable conclusion that monuments are designed in dedication to *the idea of monumentality*. This profound purpose tends to make the monument a crystallization of the architectural ideals of an era.

As it is seen in architecture, the idea of monumentality has two aspects: the creation of an architectural object which will, through its permanence, its dignity and its form, evoke feelings that are in sympathy with its purpose; and the creation of idealized architectural form which will, having liberal budget and simple function, act as an abstract of architectural style. The first involves characteristics common to all architectural monuments; the second involves characteristics which relate a monument to the architecture of its period.

Both of these aspects are present in the monumental non-monument, the building that is not monumental in function but adopts certain characteristics of monuments. It may be dignified in manner, permanent in construction, static in form, geometric in shape, and grandiose in scale—but it is an office building, a school or even a family residence. Such a building may also be an epitomization of architectural style however clearly that may be determined today. When the building is the focal point of government or an institution, the result may be appropriate; when it is a private or commercial building, the result is unreasonable. To be sure, the grand treatment for the office building is psychologically understandable: The owner feels that the building's importance to him is (or should be) shared by everyone and he often confuses the corporation with an institution; the architect, eager to make a lofty statement, imbues the building with meaning that it does not come by naturally. A commercial building does not represent ideas or events of spiritual significance, and such pretensions can only encumber the real qualities of the building.



Monumentality derives from the origins of a building; it is not subject to the offhand choice of the designer or the client.

Are buildings that do not fully qualify as monuments to be denied the earmarks of the monument? Because it is unavoidably large, a skyscraper may be designed in heroic scale. The smallest residence can have dignity. Every design characteristic of the monument is common in the design of other buildings. It is the concurrence of them all that is undeniably and exclusively monumental and should be reserved for the monument.

Today there is increased demand for larger buildings, planned groups of buildings, and a more orderly urban scene; and the seductive factors of urgency and affluence have led us to use monumentality too often and without discrimination. Misapplication of monumental standards threatens to waste our resources of emphasis and weaken their power.

Perhaps we can discover new techniques of monumentality, but there is little evidence that this is happening. In the present predicament we can recognize the truth of Sigfried Giedion's warning that modern architecture, having been preoccupied with low-cost dwellings and urbanism, has another problem to face. "The third step lies ahead. In view of what has happened in the last century and because of the way modern architecture has come into being, it is the most dangerous and the most difficult step. This is the reconquest of the monumental expression."<sup>2</sup>

<sup>2</sup>"The Need for Monumentality" by Sigfried Giedion, in "New Architecture and City Planning," New York 1944. This article underwent minor changes in re-writing for publication four years later (*Architectural Review*, September 1948). At that time statements by Henry-Russell Hitchcock, Walter Gropius, Lucio Costa, and Alfred Roth were also published.

## Going into Orbit: An Essay in Vital Ballistics

by Pierre C. Zoelly

*The author of this application of the science of ballistics to the upbringing, education and early career of the architect—an interdisciplinary study of a new kind—practices architecture in Switzerland and the United States, with his office in Zurich. Formerly he was associate professor at Ohio State University, where he taught senior design.*

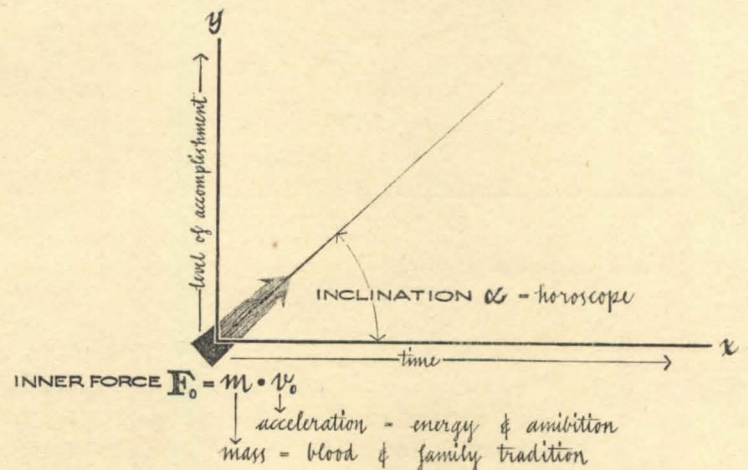
Students of architecture are very anxious about their future career; young practicing architects are too. We all think that something magic will happen one day that will make us famous. To calm my own apprehension and to help curb the impatience of students, I have written this essay.

The charts and formulas used follow directly the simple theories of *Ballistics*.

We are placed at birth at the crossing of a coordinate system where on one side time goes by (X axis) and on the other our accomplishments are recorded (Y axis). We are born with an inner force  $F_0$  over which we have no control: It is made partly of *inheritance*, partly of personal physical and mental *constitution*.

Obviously, family generations of refined living and exposure to the arts, or of constant engineering invention and leadership, are assets for a beginning architect. Obviously, too, strong health and energy are a great asset for facing adversity and working

Figure 1

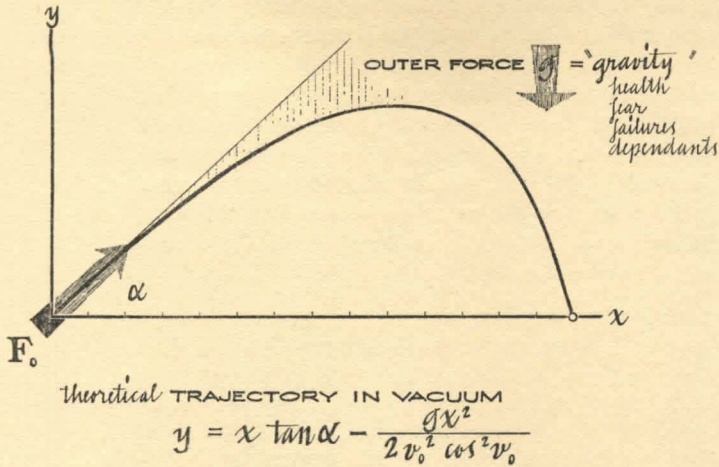


overtime. Then we are shot out of the nozzle under a certain inclination  $\alpha$  that again we cannot control: it is our *horoscope*. With inner force and horoscope we enter the world for better or for worse.

In our trajectory, the first outer force we encounter is *gravity*. It makes a curve out of our straight line of shooting. It consists of accidents in

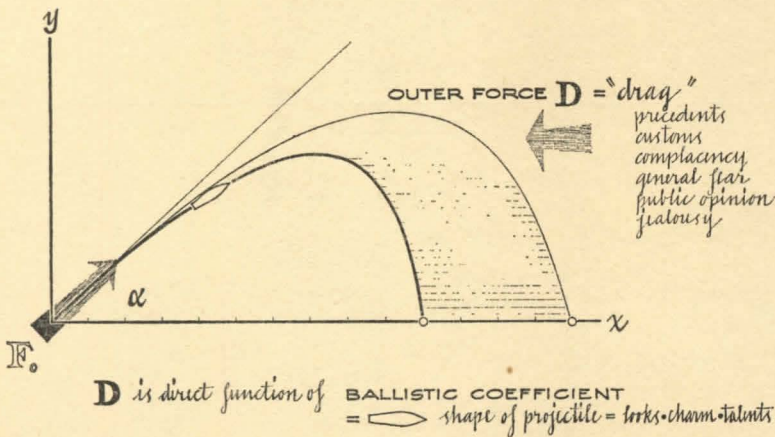


Figure 2



health, accidents in courage, accidents in work and accidents in procreation. It is a force opposed to the direction of achievement (Y axis). According to the ballistic formula  $y = x \tan a - \frac{g x^2}{2 v_0^2 \cos^2 v_0}$  it increases with the second degree of time. The formula shows that whereas everybody is affected similarly by decreasing health etc (g), those with greater energy (Vo) or higher inclination (a) rise high but last little.

Figure 3



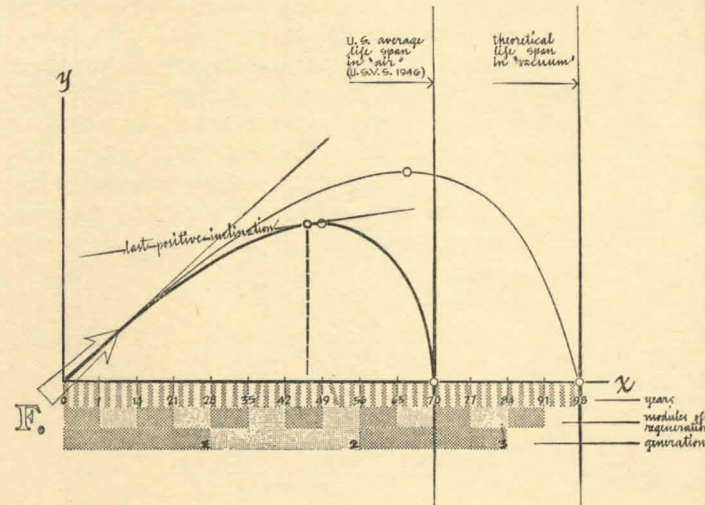
The second outer force we encounter is air resistance which the ballisticians call "Drag" (D). To the inventive young architect it is public lethargy concerning novelty (expressed in standards, codes, laws, habits) and that strange but unavoidable phenomenon called professional jealousy.

It shortens the trajectory from an ideal life span to a realistic one. Now it appears that D is directly proportional to the "ballistic coefficient," or the shape of the projectile, that is its areodynamic qualities.

There should be no doubt in our time of "public relations," "journalistic photography" and "psycho-

logical testing" that the looks, the charm and the talent of a man are marketable items. A good look at a photographic portrait of Bertram Grosvenor Goodhue will confirm this (see *American Architect*, Oct '34). Obviously—and unfortunately—our ballistic coefficient is again something we can't do anything about.

Figure 4

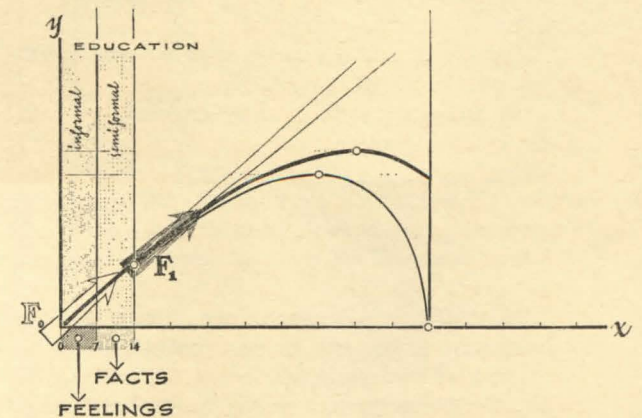


If shot out into a vacuum, that is away from people and civilization, but under healthy and safe conditions like an idyllic south sea island, we would theoretically last ninety-eight years, which is fourteen cycles of seven years; seven years being the time it takes for all the cells of our body to regenerate.

US vital statistics of 1946 show an average life span of seventy, or ten cycles of regenerations. This practical life span is a combination of progress in medicine and regress in the art of living and varies in time and in countries.

The highest point of achievement in one's uneducated life, according to US standards, would be around forty-nine. The last chance for tackling a new venture would be a little ahead of that age, where the tangent to the life trajectory still shows a

Figure 5





slight positive inclination. (See recent writings on the "Art of Retirement")

Now come the effects of education. First we go through two regeneration cycles of primary education, starting with the informal home atmosphere and going through the semi-formal grade school.

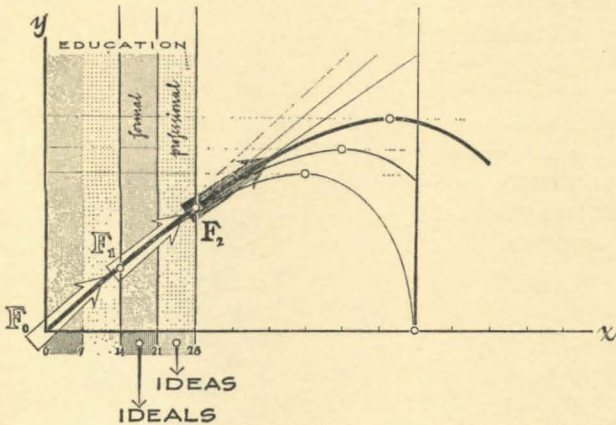
At home we learn *feelings*, from hot to cold, soft to hard, sour to sweet, love and hate, dry and wet. But these feelings must be nourished and enjoyed, not suppressed or avoided. We must, as children in the first cycle, have seen and played with a real fire, a real fountain with bubbling water, have been in a real windstorm and have dug our own hole to bury a cat. Then only do we have the primary prerequisites for architecture: knowledge of the four Greek elements—fire, water, air and earth.

Then at school we learn "facts," like words and figures, which are symbols for understanding the world and gravity and growth, which are forces shaping the world.

Only then are we equipped to appreciate the thrill of a cantilever and the beauty of a snail shell, which will make us good architects.

If this course through feelings and facts has been nourishing, intense and fruitful, then we may say that we are enriched by a new force F1 which will—not unlike a first-stage rocket—give us a new impetus in our original trajectory and make us reach, later in life, a higher tangent of accomplishment than we would have otherwise without any primary education.

Figure 6



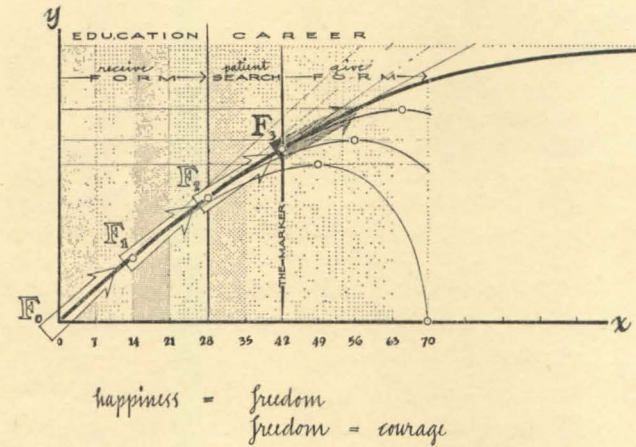
Next we enter secondary education with one cycle of formal schooling. This is where we are supposed to pick up all our life's ideals: comfort, happiness, peace, progress, freedom, eternity. If these are documented through the history of art, science, religion and politics, we may reach the age of twenty-one with maturity. We may also—as future architects—know all there is to know about modern living.

Then comes the crucial period of the fourth cycle, where sex and military get mixed up with the professional education. This is the time for ideas—ideas from the past, of the present and for the future. Every architect—in that period—should come under

the influence of a master craftsman and philosopher. This is the last chance for transmittal of professional knowledge from master to scholar, because at twenty-eight—according to US vital statistics—we switch to the next generation (See figure 4).

So we have reached a second period of fourteen years enriched and empowered with a new force F2—a second-stage rocket—which will push us farther up in our trajectory and enable us to reach a new tangent of maximum achievement later on in life.

Figure 7



Finally we are on our own, supposed to perform without the crutches of further education—but we are afraid—we feel ill at ease. The professional atmosphere we encounter around us is trite, the standards too low for our high ideals and the clients, we think, stupid. Yet we must go through two cycles of "patient search" (saying borrowed from Le Corbusier) via State Board exams, public hearings and all sorts of minor commissions. This is where we are silently tested from the outside and where we are silently forming our personality from within. Then—suddenly and unaccounted for by ourselves—we succeed in something which we can claim as essentially our own and nobody else's and which—as we find out—becomes a marker for any further work of ours—or, if you please, a masterpiece.

Henry-Russell Hitchcock in his article, "The Evolution of Wright, Mies and Le Corbusier" (*Perspecta No 1*, Yale University) establishes these markers for the three masters as follows: Wright, age 35: Hillside Home School, Spring Green, Wisconsin; the Ward Willitts House, Highland Park, Illinois. Mies, age 43: the Barcelona Pavilion. Le Corbusier, age 39: the Stein House at Garches.

If our search has been passionate enough and our luck good (see horoscope), we may reach this marker—envied by all—which will as force F3 and third-stage rocket blow us into orbit, that is to say into a trajectory approaching an asymptote of maximum possible achievement in our life.

We shall then reach our ultimate goal as individual and as architect, that of being a form giver. ■



## Curricula in Schools of Architecture: A Directory

by William Muschenheim  
University of Michigan

*The compiler of this curricular directory of schools of architecture outside the United States was Chairman of the ACSA Committee on Relations with Foreign Schools of Architecture in 1961-63. The data was obtained by him in Europe in 1958 and supplemented by data in charts prepared by Professors Muschenheim and Gardner-Medwin in 1962. Professor Muschenheim was assisted in the compilation by Professor Edward Olencki, also of the University of Michigan.*

Architectural education has been undergoing sharp scrutiny in recent years—and not only in this country. The revolutionary changes in the contemporary scene due to new technological, economic, social and political factors in a highly industrialized civilization have made it imperative to reassess our cultural heritage in terms of the relevance of its many facets to the training of students who are to practice the art of architecture; to discover where it may be necessary to discard outworn habits in order to advance to new and stronger positions.

An investigation of the curricula of schools of architecture all over the world would be highly informative with regard to contemporary orientations in the philosophy of architecture and architectural education; at the same time it would promote that productive interchange of ideas and experience which is so much needed. The data on foreign schools of architecture and their curricula here assembled are offered as a first step in this direction.

### Use of the index and key

In this index and key the Arabic numerals following the subjects indicate the schools among those listed below in which that subject forms part of the curriculum; thus the numeral 4 after "public speaking" in section X, "Miscellaneous," indicates that public speaking is part of the curriculum at the University of Toronto School of Architecture.

In the sections headed "Curriculum" below, the Arabic numerals following the lower-case letters indicate the year or years in which the subject is normally taken. For example: IV: d, 1, 2, 3 means that the history of architecture is studied in the first, second and third years.

## I LIBERAL ARTS AND SCIENCES

- a: civics—22
- b: cultural geography—5
- c: economics—2-5, 22, 26, 30-33
- d: economics, building—11-15
- e: elective—2, 19, 23, 32, 33
- f: general culture—15
- g: history—3, 4, 22, 29, 33
- h: history of civilization—21
- i: history of culture—18, 26
- j: humanistic studies—12
- k: language—3, 22, 28, 29, 33
- l: literature—3-5, 24
- m: philosophy—29
- n: philosophy and esthetics—20
- o: philosophy of arts—1
- p: philosophy of science—4
- q: political science—4
- r: religious instruction—30
- s: sociology—3, 18, 22, 26
- t: sociology, urban—5

## II VISUAL FUNDAMENTALS

- a: applied design—27
- b: basic design—2-4, 9, 11, 17, 19, 23, 24, 29-33
- c: basic design, building form—16
- d: color—3-5, 9, 13, 14, 21, 31, 32
- e: color and decoration—27
- f: decoration—29
- g: drawing—3, 4, 7, 8, 10-17, 19, 21-23, 25, 29, 31-33
- h: drawing and painting—20
- i: drawing, life—26
- j: drawing, perspective—2
- k: elective—13, 15, 32
- l: field sketching—4
- m: lettering—1, 2, 12
- n: modeling—2, 7, 11-14, 16, 17, 19, 24, 31-33
- o: modeling and sculpture—20, 22
- p: model making—21
- q: perspective—11, 14
- r: sciagraphy—10

## III GENERAL SCIENCES

- a: chemistry—3, 7, 8, 18, 23, 24, 28
- b: descriptive geometry—1-4, 7, 8, 12, 14, 16, 22-26, 31, 32
- c: geodetic projects—13
- d: geology—21, 23, 24, 32
- e: geology and astronomy, topographical geodetics—30
- f: geology and topography—3, 7, 8
- g: mathematical operations analysis—18
- h: mathematics and geometry—2-5, 7-11, 13, 15, 16, 19, 20, 22-26, 28, 29, 31-33
- i: methodology—18
- j: physics—3, 7, 18, 19, 23, 24, 26, 28-30, 33

## IV HISTORY AND THEORY

- a: esthetics—4
- b: architectural criticism—16
- c: elective—13, 15, 19, 32
- d: history of architecture—2-25, 27-33
- e: history of art—1-5, 8, 12, 13, 15-17, 19, 20, 23, 24, 28, 30, 31, 33



f: history of medieval art—32  
g: modern architecture—25  
h: morphology of modern art—1  
i: philosophy of art—3  
j: seminar, design—5  
k: seminar, history of building—15  
l: stage scenery—2  
m: theoretical knowledge—18  
n: theory of architecture—26  
o: theory of design—3-7, 10, 11, 14, 16, 18, 20, 21, 23-25, 27, 29, 30, 33  
p: theory of design, functional form studies—1

#### V DESIGN AND GRAPHICS

a: architectural design projects—2-17, 19-33  
b: architectural graphics—2-5, 7-10, 14, 15, 17, 18, 22, 24, 27, 33  
c: architectural graphics: perspective—1, 6, 32  
d: architectural planning—25  
e: building colloquium—32  
f: building types—1, 2, 4, 6, 10, 12-17, 23-25, 31, 32  
g: building types: analytical survey of an existing building—22  
h: composition of buildings—30  
i: detailing—21  
j: elective—13, 19, 32  
k: elements of architecture—30  
l: introduction to design—12  
m: measured drawings—2, 12-17, 21, 23, 27  
n: modular design—18  
o: perspective—15, 16, 31  
p: restoration of monuments—2, 20, 22-24  
q: thesis—22, 25, 26  
r: thesis and research—27  
s: thesis, B Arch—5  
t: thesis, diploma—17, 33  
u: thesis, written—4  
v: working drawings—10, 23  
w: workshop—11, 18, 22, 30

#### VI ARCHITECTURAL SCIENCES

a: applied mechanics—19  
b: applied physiology—18  
c: building and form (technical)—15  
d: building materials and testing—17  
e: building science—9, 11  
f: construction and materials—1-33  
g: elective—13, 19, 32  
h: equipment—12, 25, 27, 30  
i: equipment, mechanical—28  
j: geodetics—31  
k: heat, light and acoustics—1, 3-6, 8-15, 20-22, 24, 26-33  
l: hydraulics—8  
m: masonry and stonework—2  
n: materials—18  
o: mechanics—5, 9  
p: mechanics and machines—30  
q: mechanics and materials—4, 11  
r: metals—18, 26  
s: prefabrication—18  
t: sanitation—2-5, 8-11, 13-16, 20-24, 27, 29-33  
u: specifications—22  
v: statics—1-8, 12-14, 16-18, 23, 24, 26, 31, 32

w: statics and strength of materials—15  
x: structures—1-4, 8-11, 13-30, 32, 33  
y: surveying—2, 4-6, 9-17, 19, 22, 25, 27-29, 33  
z: vaults and domes—10

#### VII PRACTICAL EXPERIENCE

a: building site—4, 6, 10-14, 16, 19  
b: building trades—15  
c: estimates and quantities—28  
d: excursion elective—13  
e: field studies—31  
f: field trip—5  
g: inspection of buildings—32  
h: professional office—4, 9, 11-17, 19, 27, 28  
i: professional office (summer)—5  
j: special subjects—19  
k: study journey—31  
l: travel—8, 20  
m: travel and measured drawings—6  
n: visits to buildings and construction—9  
o: working drawings—2, 32

#### VIII PROFESSIONAL PRACTICE AND LAW

a: building costs—2, 13, 15, 17, 32  
b: building regulations—21  
c: building trades—20  
d: economy and organization of building—31  
e: elective—19  
f: erection studies—18  
g: law—1-4, 6-8, 13, 19, 20, 24, 25, 29, 31-33  
h: law and political economy—30  
i: office practice—2-5, 7-12, 16, 20-29, 33  
j: professional ethics—26  
k: professional expression—5  
l: specifications—4, 27, 28  
m: specifications and costs—9  
n: specifications and quantities—10, 11, 21

#### IX URBAN PLANNING AND DESIGN

a: elective—13, 19, 32  
b: history—1, 10, 22, 24  
c: history (law)—31  
d: housing—1, 2, 5, 6, 11-15, 17, 19, 20, 32  
e: regional planning—1, 2  
f: research—6  
g: road construction and waterworks—20  
h: theory and design—1-6, 8-33  
i: topography and highway construction—23, 24  
j: transportation—31

#### X MISCELLANEOUS

a: decoration—24, 32  
b: elective—13, 19  
c: industrial design—5, 6, 11, 21  
d: interiors—2, 6, 9, 11, 13, 15-17, 19, 20, 23, 24, 29  
e: interiors (equipment)—14  
f: interiors (furniture)—5, 21, 22  
g: landscape—3, 4, 7, 9, 11, 19, 20, 22, 28, 31, 32  
h: materials and form—31  
i: national spirit—30  
j: physical education—4, 29  
k: public speaking—4  
l: seminar, "Das Haus"—2  
m: stereotomy—8



**Austria**

1 MEISTERSCHULE FUR ARCHITEKTUR, AKADEMIE DER BILDENDEN KUNSTE, VIENNA

*Admission requirements:* on basis of previous training, talent and aptitude

*Normal age of entry:* about 24

*Approximate number of students:* 45

*Duration of course:* 3 years

*Curriculum:* I: o, 2, 3. II: m, 1. III: b, 1. IV: e, 1; h, 3; o, 3. V: c, 1; f, 1. VI: f, 1, 2; k, 2, 3; v, 1, 2; x, 1, 2. VIII: g, 3. IX: b, 3; d, 1, 2; e, 3; h, 2, 3.

*Degree or diploma:* granted upon successful completion of 8-day tests at end of each year; equivalent to Master of Architecture

*License:* after 5 years of professional experience

*Title:* Architect, protected by law

2 FAKULTAT FUR ARCHITEKTUR, TECHNISCHE HOCHSCHULE GRAZ, GRAZ

*Admission requirements:* technical high school matriculation

*Normal age of entry:* about 18

*Approximate number of students:* 330

*Duration of course:* 5 to 6 years for 4-year course projects

*Curriculum:* I: c, 4; e, 4. II: b, 1, 2; j, 2; m, 1; n, 2, 3. III: b, 1; h, 1. IV: d, 1, 2, 3; 1, 4. V: a, 2, 3, 4; b, 2; f, 1; w, 3, 4; m, 1, 2; p, 4. VI: f, 1, 2, 4; m, 2; t, 3, 4; v, 1; x, 1, 3; y, 2. VII: o, 2, 3. VIII: a, 2; g, 4; i, 4. IX: d, 3; e, 4; h, 3, 4. X: d, 3, 4; 1, 1.

*Degree or diploma:* 8-day written (second) state examination; also oral in 3 subjects

*Professional experience:* 5 years before obtaining license

*Title:* Architect, protected by law

*Remarks:* If the student does not have a good record at the end of the 2nd year, he is obligated to take an 8-day written state examination before proceeding. Two semesters of "Meisterschule" may be attended upon completion of the above curriculum.

**Belgium**

3 INSTITUT D'ARCHITECTURE, ECOLE NATIONALE SUPERIEURE D'ARCHI-

TECTURE ET DES ARTS DECORATIFS, BRUSSELS

*Admission requirements:* entrance examination

*Normal age of entry:* 18

*Approximate number of students:* 80 (350 with art students)

*Duration of course:* 5 years

*Curriculum:* I: c, 4; g, 1; k, 1; 1, 1, 2, 3, 4; s, 4. II: b, 1, 2, 3, 4; d, 1, 2; g, 1, 2, 3, 4, 5. III: a, 1, 2; b, 1; f, 2; h, 1, 2; j, 1, 2. IV: d, 2, 3, 4, 5; e, 2, 3, 4; i, 5; o, 3, 4, 5. V: a, 3, 4, 5; b, 2; v, 1, 2. VI: f, 1, 2, 3, 4; k, 3, 4; t, 3, 4; v, 1; x, 2, 3, 4. VIII: g, 4, 5; i, 4; j, 5. IX: h, 4, 5. X: g, 4, 5.

*Remarks:* The philosophy of the school (based on Van de Velde) stresses functionalism. Introductory courses acquaint the student with elements of buildings (doors, windows, etc) and with materials; he does not design until he has acquired a knowledge of all the elements that go to make up a building.

**Canada**

4 SCHOOL OF ARCHITECTURE, UNIVERSITY OF TORONTO

*Admission requirements:* Ontario Grade XIII Certificate or equivalent

*Normal age of entry:* 18-20

*Approximate number of students:* 200

*Duration of course:* 5 years

*Curriculum:* I: c, 2, 5; g, 5; 1, 1, 2; p, 3; q, 4. II: b, 1; d, 2; g, 1, 2, 3; 1, 4. III: b, 1; h, 1. IV: a, 3; d, 1, 2, 3, 4; e, 4; o, 1, 2. V: a, 2, 3, 4, 5; b, 2; f, 3; u, 5. VI: f, 1, 2, 3, 4; k, 3, 4; q, 2; t, 2; v, 1; x, 3, 4, 5; y, 1. VII: a, 1, 2, 3, 4, 5; h, 1, 2, 3, 4, 5. VIII: g, 4; i, 5; 1, 5. IX: h, 4, 5. X: g, 3; j, 1; k, 3.

*Degree or diploma:* Bachelor of Architecture

*Professional experience:* 2 years

*Title or license:* Architect, protected by law

*Remarks:* The school is recognized by the RIBA, which admits graduates to associate membership on application, without examination.

5 SCHOOL OF ARCHITECTURE, UNI-

VERSITY OF MANITOBA

*Admission requirements:* arts matriculation examination (1 year, 5 full courses in arts and science).

*Normal age of entry:* 18-20

*Approximate number of students:* 350

*Duration of course:* 5 years

*Curriculum:* I: b, 2; c, 3, 5; 1, 1; t, 2. II: d, 2. III: h, 1. IV: d, 1; e, 3, 4, 5; j, 5; o, 1, 2, 3, 4. V: a, 1, 2, 3, 4, 5; b, 1, 2, 3, 4, 5; s, 5. VI: f, 1, 2, 3, 4; k, 4, 5; o, 1; t, 4; v, 2; x, 3, 4, 5; y, 1. VII: f, 4; i, 2, 3, 4, 5. VIII: i, 5; k, 5. IX: d, 4; h, 4. X: c, 4, 5; f, 2, 5.

*Degree or diploma:* Bachelor of Architecture

**Denmark**

6 ROYAL ACADEMY OF FINE ARTS, COPENHAGEN

*Admission requirements:* technical high school matriculation

*Normal age of entry:* 18-20

*Approximate number of students:* 375

*Duration of course:* 5 years

*Curriculum:* IV: d, 4; o, 1, 2. V: a, 3, 4; c, 1, 2, 3; f, 4; v, 1, 2. VI: f, 1, 2; k, 4; v, 1, 2, 4; y, 1, 2. VII: a, 1, 2; m, 4. VIII: g, 1, 2. IX: d, 3; f, 3; h, 1, 2, 4. X: c, 4; d, 4.

*Remarks:* By the 5th year required courses should have been completed. The student then chooses his professor and project and may specialize if the faculty feels that he is mature enough, so as to acquire well-grounded architectural competence in city planning, landscaping, furniture design, industrial design or some other field. After 5th or 6th year or later, a competition project for the diploma is issued (3 months or 100 days). There is no criticism before submission; projects are judged by a committee from the Academy (12 architects from the Council).

**France**

7 ECOLE NATIONALE SUPERIEURE DES BEAUX-ARTS, PARIS

*Admission requirements:* baccalaureate examination, preparatory 2 years; 25% of applicants accepted

*Normal age of entry:* 20

*Approximate number of students:* 240 (3 patron architects and 8 private ateliers each with patron)



*Duration of course:* 5-6 years; 4 more years with Prix de Rome

*Curriculum:* II: g, 1, 2, 3, 4, 5, 6; n, 1, 2, 3, 4, 5, 6. III: a, 3; b, 1; f, 2; h, 1; j, 3. IV: d, 1, 2, 3; o, 1, 2, 3. V: a, 1, 2, 3, 4, 5, 6; b, 1, 2, 3. VI: f, 1, 2, 3, 4, 5, 6; v, 1. VIII: g, 5; i, 5. IX: h, 4, 5, 6. X: g, 4, 5, 6.

*Degree or diploma:* Diploma Architect—DPLG or DESA

*Professional experience:* 1 year minimum before gaining diploma

*Title or license:* DPLG or DESA, protected by law

*Remarks:* Total of approximately 2,000 students in ateliers in France connect with Beaux-Arts at Lille, Rouen, Rennes, Lyon, Marseilles, Toulouse, Bordeaux, Clermont, Grenoble, Nancy, Nantes, Algiers. 8 ECOLE SPECIALE D'ARCHITECTURE (TRELAT), PARIS

*Admission requirements:* baccalaureate degree, preparatory 2 years; 25% of applicants accepted

*Normal age of entry:* 20

*Duration of course:* 6 years minimum

*Curriculum:* II: g, 4, 5, 6. III: a, 5; b, 4; f, 4, 5; h, 4. IV: d, 5, 6; e, 4, 5, 6. V: a, 4, 5, 6; b, 4. VI: f, 4, 6; k, 6; l, 6; t, 6; v, 4; x, 5. VII: l, 5, 6. VIII: g, 5, 6; i, 6. IX: h, 5. X: m, 4.

*Degree or diploma:* Diploma in Architecture

*Professional experience:* minimum 1 year before gaining diploma

*Title or license:* DPLG or DESA, protected by law

## Great Britain

9 THE ARCHITECTURAL ASSOCIATION SCHOOL OF ARCHITECTURE, LONDON

*Admission requirements:* national General Certificate of Education, with 2 "advanced" subjects

*Normal age of entry:* 17-18

*Approximate number of students:* 150-200

*Duration of course:* 5 years

*Curriculum:* II: b, 1; d, 1. III: h, 1. IV: d, 1, 2, 3. V: a, 4, 5; b, 1. VI: e, 2; f, 1, 2, 3; k, 1, 2, 3, 4; o, 1; t, 1, 2, 3, 4; x, 1, 2, 3, 4; y, 2. VII: h, 4; n, 1, 3. VIII: i, 5; m, 2, 3. IX: h, 2, 3, 5. X: d, 2; g, 1, 3.

*Degree or diploma:* Bachelor of Architecture

*Professional experience:* 1 year

*Title or license:* Associate of Royal

Institute of British Architects; Fellow by election after 7 years; protected by law

*Remarks:* At end of 3rd year all previous work is reviewed by external examiners as part of RIBA intermediate examination. External examiners representing RIBA inspect portfolios at end of 5th year upon completion of diploma, final examination.

10 BARTLETT SCHOOL OF ARCHITECTURE, UNIVERSITY COLLEGE, LONDON

*Admission requirements:* national General Certificate of Education, with 2 "advanced" subjects

*Normal age of entry:* 17-18

*Approximate number of students:* 200

*Duration of course:* 5 years

*Curriculum:* II: g, 1, 4; r, 1. III: h, 1. IV: d, 1, 2, 4; o, 1, 2. V: a, 2, 3, 4, 5; b, 1, 2; f, 3; v, 3, 4. VI: f, 1, 2, 3, 4, 5; k, 3, 4; t, 2; x, 2, 3, 4; y, 3; z, 2, 4. VII: a, 1, 2, 3, 4. VIII: i, 3; n, 3, 5. IX: b, 5; h, 5.

*Degree or diploma:* Bachelor of Architecture

*Professional experience:* 2 years

*Title or license:* Associate of RIBA; Fellow by election after 7 years; protected by law

11 THE LIVERPOOL SCHOOL OF ARCHITECTURE, UNIVERSITY OF LIVERPOOL

*Admission requirements:* national General Certificate of Education, with 2 "advanced" subjects

*Normal age of entry:* 17-18

*Approximate number of students:* 150-200

*Duration of course:* 5-7 years

*Curriculum:* I: d, 5. II: b, 1; g, 1, 2; n, 2; q, 1. III: h, 1. IV: d, 1, 2, 3; o, 1, 2, 3, 4. V: a, 1, 2, 3, 4, 5; w, 1, 3. VI: e, 1, 2, 3; f, 1, 2; k, 2, 3; q, 1; t, 2; x, 2, 3, 4, 5; y, 1. VII: a, 2, 3; h, 4. VIII: i, 4; n, 4. IX: d, 3; h, 3, 4, 5. X: c, 2; d, 2; g, 2, 4.

*Degree or diploma:* Bachelor of Architecture

*Professional experience:* 1 year

*Title or license:* Associate of RIBA; Fellow by election after 7 years; protected by law

*Remarks:* In the 2nd year, 1 week is spent at an historic town on a measured and freehand drawing project relating to the town. In the 5th year alternate advanced

studies are offered: Advanced Structural Design, Building Science, Civic Design. M Arch is awarded after 2 years' postgraduate work.

## Germany

12 FAKULTAT FUR ARCHITEKTUR, TECHNISCHE UNIVERSITAT, BERLIN CHARLOTTENBURG

*Admission requirements:* technical high school matriculation; 6 months building experience at site and on building

*Normal age of entry:* 19-20

*Approximate number of students:* 800

*Duration of course:* 5-8 years

*Curriculum:* I: d, 1, 2, 4, 5; j, 1, 2. II: g, 1, 2; m, 1, 2; n, 1, 2. III: b, 1. IV: d, 1, 2, 4, 5; e, 1, 2. V: a, 4, 5; f, 4, 5; l, 1, 2; m, 4, 5. VI: f, 1, 2, 4, 5; h, 1, 2; k, 1, 2; v, 1, 2; y, 1, 2. VII: a, 1; h, 3. VIII: i, 1, 2, 4, 5. IX: d, 4, 5; h, 4, 5.

*Degree or diploma:* after final examinations entailing 3-month project for degree, 2-day sketch problem, 14-day oral examinations

*Title or license:* Architect, protected by law in 4 of 10 states

*Remarks:* In the 2nd 2 years, 4 electives (minimum) are required for final examination. Other courses, to be chosen at student's discretion, are: Colloquium on Statics, Specific Problems in City Planning, Methods of Research in History of Buildings (Archaeology), Techniques of the Theater, Regional Planning, Modern Trends in Building, Life Drawing, Wood Conservation, Building Laws and Property Rights.

13 FAKULTAT FUR ARCHITEKTUR, TECHNISCHE HOCHSCHULE, DARMSTADT

*Admission requirements:* technical high school matriculation and entrance examination, with 6 months' practical experience (as mason, carpenter, etc)

*Normal age of entry:* 19-20

*Approximate number of students:* 500

*Duration of course:* 5-8 years

*Curriculum:* I: d, 3, 4. II: d, 2; g, 1, 2; k, 1, 2, 4, 5; n, 1. III: c, 1, 2; h, 1. IV: c, 4, 5; d, 1, 2, 4, 5; e, 1, 2, 4, 5. V: a, 4, 5; f, 4, 5; j, 4, 5; m, 1, 2. VI: f, 1, 2, 4; g, 4, 5; k, 2; t, 1; v, 1, 2; x, 4; y, 1. VII: a, 1; d, 4, 5; h, 3.



VIII: a, 1, 2; g, 4. IX: a, 4, 5; d, 4, 5; h, 4, 5. X: b, 4, 5; d, 4, 5. *Degree or diploma:* Diploma after final examination; program given to all students for anonymous competition with anonymous judging by all design faculty

*Professional experience:* 3 years' practical experience after examinations

*Title or license:* Architect, protected by law in 4 of 10 states

*Remarks:* Examinations are given at the end of 1st 2 years. Special studies: 1st 2 years—Design of Engineering Structures, Lettering, Acoustics; 2nd 2 years—Egyptian Art, Greek Architecture Art History Seminar (Wurtemberg) with excursion, Drawing from Life, Modeling, Drawing and Painting, City Planning Colloquium, Special City Planning Study, Perspective Rendering, Design of Engineering Structures, Landscape Design, Fundamentals of Urban Utilities, Regional Planning.

14 ABTEILUNG FUR ARCHITEKTUR, TECHNISCHE HOCHSCHULE, HANNOVER

*Admission requirements:* technical high school matriculation, with 6 months' practical experience with building contractor at site

*Normal age of entry:* 19-20

*Approximate number of students:* 450

*Curriculum:* I: d, 5. II: d, 1; g, 1, 2; n, 1, 2; q, 1. III: b, 1. IV: d, 1, 2; o, 2. V: a, 2, 4, 5; b, 1, 2; f, 3, 4, 5; m, 2. VI: f, 1, 2; k, 2, 4; t, 2; v, 1, 2, 4; x, 1, 2; y, 1. VII: a, 1; h, 3. IX: d, 4, 5; h, 4, 5. X: e, 2, 4.

*Degree or diploma:* final project for degree follows above curriculum when both written and oral examinations have been passed

*Title or license:* Architect, protected by law in 4 of 10 states

*Remarks:* For final examination student chooses professor to formulate program and can ask questions during 1st 2 weeks; the project is due after 3 months. There are 3 chairs for Building Design and one for City Planning and Housing. Student has free choice—usually works with 2 or 3 professors. In addition, there are electives which as far as order, subject and teacher are concerned may be chosen freely by the student: History of Art

(special studies, advanced), Acoustics, Lighting, Landscape Architecture, Construction, Drawing and Painting, Graphic Presentation, Building Laws, etc.

15 ABTEILUNG FUR ARCHITEKTUR, TECHNISCHE HOCHSCHULE FREDERICIANA, KARLSRUHE

*Admission requirements:* technical high school matriculation

*Normal age of entry:* 19-20

*Approximate number of students:* 380

*Duration of course:* 4½ years minimum

*Curriculum:* I: d, 3, 4; f, 1, 2, 4, 5. II: g, 1, 2; k, 4, 5. III: h, 1. IV: c, 5; d, 1, 2; e, 1; k, 4. V: a, 2, 4, 5; b, 2; f, 2, 4, 5; m, 1, 2, 4; o, 2, 5. VI: c, 1, 2; f, 1, 2; k, 5; t, 5; w, 6; x, 1, 2; y, 1. VII: b, 2; h, 3. VIII: a, 4. IX: d, 4; h, 4. X: d, 4.

*Degree or diploma:* final project for degree follows above curriculum (3 months without criticism)

*Professional experience:* 12 months between 1st 2 years and 2nd 2 or more years; 3 years' practical experience after examinations

*Title or license:* Architect, protected by law in 4 of 10 states

*Remarks:* Examinations occur after 1st 2 years and final examinations after 2nd 2 or more years. Student must choose 3 different professors for projects. In 5th, 6th, 7th and 8th semesters there are 5 large projects and 5 sketch problems (2-3 weeks each) and 2 electives. Upon satisfactory completion of the above, the student can undertake his final project for the degree.

16 ARCHITEKTUR ABTEILUNG, TECHNISCHE HOCHSCHULE, MUNICH

*Admission requirements:* technical high school matriculation and 3 months' bricklaying, carpentry or related craft

*Normal age of entry:* 19-20

*Approximate number of students:* 800

*Duration of course:* 4-6 years

*Curriculum:* II: c, 1, 2; g, 2; n, 4. III: b, 1; h, 1. IV: b, 1; d, 1, 2; e, 1, 2; o, 2. V: a, 3, 4; f, 4; m, 2, 3; o, 1. VI: f, 1, 2; t, 3; v, 1, 2; x, 1, 2, 3, 4; y, 1. VII: a, 1; h, 4. VIII: i, 4. IX: h, 3, 4. X: d, 3, 4.

*Degree or diploma:* 6-week final project for degree and 1-day ex-

amination in city planning and design detailing

*Professional experience:* 3 years' practical experience after examination

*Title or license:* Architect, protected by law in 4 of 10 states

*Remarks:* Before final examination 16 months' practical experience is required—8 months' bricklaying, carpentry or related craft (of which 3 months, as noted above, must be completed before admission), and 8 months' office practice in architect's or building company's office. Electives totaling 10 hours are required during the last 2 years from the following: Restoration of Monuments, Church Buildings, Industrial Buildings, Interior Design, Freehand Drawing (advanced), Lettering, Art History (exercises), Landscaping, Building Economics, Building Materials (advanced), Stone (exercises), Acoustics and Insulation, Building Law, Building Practice (estimating, etc), *Spannungsoptik*.

17 ARCHITEKTUR ABTEILUNG, TECHNISCHE HOCHSCHULE, STUTTGART

*Admission requirements:* technical high school matriculation

*Normal age of entry:* 19-20

*Approximate number of students:* 500

*Duration of course:* 5-8 years

*Curriculum:* II: b, 1, 2; g, 1, 2; n, 2. IV: d, 1, 2; e, 2. V: a, 2, 4, 5; b, 1; f, 4; m, 2; t, 5. VI: d, 1; f, 1, 2, 4; v, 1, 2; x, 2, 5; y, 1. VII: h, 3. VIII: a, 2. IX: d, 4, 5; h, 4, 5. X: d, 5.

*Degree or diploma:* final project for degree (3 months without criticism) follows above curriculum

*Professional experience:* 12 months between 1st 2 years and 2nd 2 or more years, and 3 years' practical experience after examinations.

*Title or license:* Architect, protected by law in 4 of 10 states

*Remarks:* Examinations occur after 1st 2 years and final examinations after 2nd 2 or more years. During the last 2 years a comprehensive list of electives is available to students.

18 DEPARTMENT OF INDUSTRIALIZED BUILDING, HOCHSCHULE FUR GESTALTUNG, ULM

*Admission requirements:* Institute of Technology degree or equivalent



*Normal age of entry:* about 25

*Approximate number of students:* 150

*Duration of course:* 4 years

*Curriculum:* I: i, 1; s, 1, 2, 3, 4. III: a, 1; g, 2, 3, 4; i, 1; j, 1. IV: d, 2, 3, 4; m, 2, 3, 4; o, 1. V: b, 1; n, 2; w, 1. VI: b, 2, 3, 4; f, 3, 4; n, 2, 3, 4; r, 2; s, 3, 4; v, 2, 3, 4; x, 2. VIII: f, 2, 3, 4. IX: h, 2.

*Degree or diploma:* Diploma of the Hochschule Fur Gestaltung

*Remarks:* The recent pedagogical consolidation of the Institute of Design resulted in a new curriculum based on numerous studies by the administrative committee and the faculty and on past practical experience. The immediate effect on the curriculum was to broaden it to include a group of technical and scientific disciplines. The approach to design problems is from the construction and production angles, as well as from the methodological foundations demanded by present-day technical problems, the object being to educate the designer of industrial products that he may be able to work with specialists in construction, production engineers and economists.

## Holland

19 DEPARTMENT OF ARCHITECTURE, TECHNISCHE HOGESCHOOL, DELFT  
*Admission requirements:* classic or high school diploma

*Normal age of entry:* about 18

*Approximate number of students:* 250

*Duration of course:* 5-8 years with practical experience interspersed

*Curriculum:* I: e, 3, 4, 5. II: b, 1, 4; g, 1, 2, 3, 4, 5; n, 1, 2, 3, 4, 5. III: h, 1; j, 3. IV: c, 3, 4, 5; d, 1, 2, 3; e, 2, 3, 4. V: a, 1, 2, 3, 4, 5; j, 4. VI: a, 1, 2, 3; f, 1, 2, 3, 4, 5; g, 3, 4, 5; x, 2, 3, 4, 5; y, 2. VII: a, 1, 2; h, 4; j, 5. VIII: e, 4; g, 4. IX: a, 4; d, 3; h, 3, 4, 5. X: b, 3, 4, 5; d, 3, 4, 5; g, 2, 3.

*Degree or diploma:* Diploma in Architecture (university degree)

*Professional experience:* 9 months

*Title or license:* title of Architect is not protected by law, though title of Architectural Engineer is

*Remarks:* A Town Planning option is offered in the 4th and 5th

years.

20 ACADEMIE VAN BOUWKUNST, AMSTERDAM

*Admission requirements:* must be practicing architectural worker

*Normal age of entry:* 25

*Approximate number of students:* 400

*Duration of course:* 4 years, leading to VBO, after which 2 years, leading to HBO, may follow; school attended 8 months in the year in evenings and on Saturday afternoons

*Curriculum:* I: n, 3, 6. II: h, 1; o, 1, 4. III: h, 1. IV: d, 2; e, 3, 6; o, 2, 3. V: a, 1, 5; p, 3. VI: f, 1, 2, 5; k, 1, 3, 4; t, 1; x, 1, 3. VII: l, 1. VIII: c, 4; g, 4; i, 4. IX: d, 1, 2, 5, 6; g, 6; h, 1, 3, 5, 6. X: d, 2; g, 1, 3.

*Degree or diploma:* VBO after 4 years, HBO after 6 years

*Title or license:* Architect, recognized by the architects' organization BNA

*Remarks:* The purpose is to train experts in the field of town planning; the 6-year planning course is recognized by the organization of town planners.

## Hong Kong

21 FACULTY OF ARCHITECTURE, UNIVERSITY OF HONG KONG

*Duration of course:* 5 years

*Curriculum:* I: h, 2, 3. II: d, 1; g, 1, 2, 3; p, 1. III: d, 2. IV: d, 1; o, 1. V: a, 1, 2, 3, 4; i, 2; m, 1. VI: f, 1, 2, 3, 5; k, 4; t, 4; x, 1, 2, 3, 4, 5. VIII: g, 5; i, 4, 5; n, 5. IX: h, 2. X: f, 3; c, 4.

*Degree or diploma:* Bachelor of Architecture

*Title or license:* Architect, protected by law

*Remarks:* The faculty is recognized by RIBA, which admits graduates to associate membership on application, without examination.

## India

22 SIR J. J. SCHOOL OF ARCHITECTURE, BOMBAY

*Normal age of entry:* 18-20

*Duration of course:* 5 years

*Curriculum:* I: a, 1; c, 4, 5; g, 1; k, 1; s, 4, 5. II: g, 1, 2, 3; o, 2, 3. III: b, 1; h, 1. IV: d, 2, 3. V: a, 1, 3, 4, 5; b, 1, 3; g, 5; p, 2, 3; q, 4, 5; w, 1, 2, 3. VI: f, 1, 2, 3, 4, 5; k, 2, 4, 5; t, 4, 5; u, 3, 4, 5; x, 3, 4, 5; y, 2, 3. VIII: i,

4, 5. IX: b, 4, 5; h, 5. X: f, 2; g, 4, 5.

*Degree or diploma:* Bachelor of Architecture (Bombay State Government Diploma)

## Italy

23 FACOLTA DI ARCHITETTURA, ISTITUTO POLITECNICO DI MILANO, MILAN

*Admission requirements:* baccalaureate degree

*Normal age of entry:* 18-20

*Approximate number of students:* 1,200

*Duration of course:* 5 years

*Curriculum:* I: e, 1, 2, 3, 4. II: b, 3; g, 1, 2. III: a, 1; b, 1, 2; d, 2; h, 1, 2; j, 2, 3. IV: d, 1, 2; e, 1, 2; o, 3. V: a, 4, 5; f, 3; m, 1, 2; p, 5; v, 4. VI: f, 1, 2, 5; t, 5; v, 3; x, 4, 5. VIII: i, 5. IX: h, 4, 5; i, 4. X: d, 4, 5.

*Degree or diploma:* Doctorate in Architecture or in Structural Engineering

*Title or license:* protected by law

*Remarks:* Electives are as follows: in 1st year, 1 cognate course (minimum); in 2nd year, Italian Literature, Ornamental Sculpture, English (2 parts), German (2 parts); in 3rd year, 1 cognate course (minimum); in 4th year, 1 cognate course (minimum); in 5th year, Horticulture, Landscaping, Building Laws, City Planning.

24 ISTITUTO UNIVERSITARIO DI ARCHITETTURA DI VENEZIA, VENICE  
*Admission requirements:* baccalaureate degree

*Normal age of entry:* 18-20

*Approximate number of students:* 500

*Duration of course:* 5 years

*Curriculum:* I: l, 1. II: b, 3; n, 2. III: a, 1; b, 1, 2; d, 2; h, 1, 2; j, 2, 3. IV: d, 1, 2, 4; e, 1, 2, 4; o, 4. V: a, 4, 5; b, 2; f, 3; p, 5. VI: f, 1, 5; k, 4; t, 3; v, 3; x, 3, 4. VIII: g, 3; i, 5. IX: b, 1, 2; h, 3, 4; i, 4. X: a, 3; d, 4, 5.

*Degree or diploma:* Doctorate in Architecture or in Structural Engineering

*Title or license:* protected by law

## Japan

25 COURSE OF ARCHITECTURE, KYOTO UNIVERSITY OF INDUSTRIAL ARTS, KYOTO

*Approximate number of students:* 120



*Duration of course:* 4-5 years

*Curriculum:* II: g, 1, 2. III: b, 1; h, 1, 2. IV: d, 1, 2, 3, 4; g, 1; o, 1, 2, 3, 4. V: a, 1, 2, 3, 4; d, 1, 2, 3, 4; f, 1; q, 4. VI: f, 1, 2, 3, 4; h, 1, 2, 3; x, 1, 2, 3; y, 1. VIII: g, 3; i, 3. IX: h, 3.

### Mexico

26 INSTITUTO TECNOLOGICO Y DE ESTUDIOS SUPERIORES, MONTERREY

*Admission requirements:* baccalaureate degree and entry examinations in Physics, Mathematics, Geometry and Chemistry

*Normal age of entry:* about 18

*Duration of course:* 5 years

*Curriculum:* I: c, 3; i, 1, 2, 3, 4, 5; s, 3. II: i, 1, 2, 3. III: b, 1, 2; h, 1; j, 1. IV: n, 1, 2, 3, 4. V: a, 1, 2, 3, 4; q, 5. VI: f, 2, 3, 4, 5; k, 2; r, 2; v, 1; x, 3, 4. VIII: i, 4, 5; j, 5. IX: h, 4, 5.

### South Africa

27 SCHOOL OF ARCHITECTURE, UNIVERSITY OF CAPE TOWN, CAPE TOWN

*Admission requirements:* matriculation certificate

*Duration of course:* 6 years

*Curriculum:* II: a, 5; e, 1, 2, 3. IV: d, 1, 2, 3; o, 1, 2, 3. V: a, 1, 2, 3, 5, 6; b, 1; m, 2, 3; r, 6. VI: f, 1, 2, 3, 5; h, 5; k, 5; t, 2; x, 1, 2, 3, 5; y, 1. VII: h, 4. VIII: i, 5; l, 5. IX: h, 6.

*Degree or diploma:* Bachelor of Architecture

*Professional experience:* 1 year

*Title or license:* protected by law

28 FACULTY OF ARCHITECTURE, UNIVERSITY OF WITWATERSRAND, JOHANNESBURG

*Admission requirements:* matriculation certificate

*Duration of course:* 6 years

*Curriculum:* I: k, 1. III: a, 2; b, 1; h, 1; j, 1. IV: d, 2, 3; e, 5. V: a, 1, 2, 3, 5. VI: f, 1, 2, 3, 5, 6; k, 3, 5; x, 2, 3, 5; y, 2. VII: c, 6; h, 4. VIII: i, 6; l, 5. IX: h, 6. X: g, 6.

*Degree or diploma:* Bachelor of Architecture

*Professional experience:* 1 year

*Remarks:* A 2-year course following the above leads to degree of Master of Architecture; in addition, there are degrees of Doctor of Philosophy, Doctor of Architecture, Bachelor of Science in Quantity Surveying.

### South Korea

29 DEPARTMENT OF ARCHITECTURE, COLLEGE OF ENGINEERING, DONG-A UNIVERSITY, PUSAN

*Approximate number of students:* 100-150

*Duration of course:* 4 years

*Curriculum:* I: g, 1; k, 1; m, 1. II: b, 1; f, 1; g, 1. III: h, 1; j, 1. IV: d, 1, 2, 3, 4; o, 1. V: a, 1, 2, 3, 4. VI: f, 1, 2, 3, 4; k, 1; t, 1; x, 1, 2, 3, 4; y, 1. VIII: g, 4; i, 4. IX: h, 4. X: d, 1; j, 1.

### Spain

30 ESQUELA SUPERIOR DE ARQUITECTURA DE MADRID, MADRID

*Admission requirements:* approved course selective and approved course of Initiation I in a technical school of architecture.

*Approximate number of students:* 300

*Duration of course:* 5 years and initiation course of Admission I

*Curriculum:* I: c, 5; r, 1, 2, 3, 4. II: b, 1. III: b, 1; e, 3; j, 1, 2, 3. IV: d, 2; e, 1; o, 2. V: a, 2, 3, 4, 5; h, 3; k, 1; w, 4. VI: f, 1, 2, 3, 4, 5; h, 5; k, 4; p, 1; t, 4; x, 2, 3. VIII: h, 5. IX: h, 5. X: i, 1, 2, 3.

*Degree or diploma:* Diploma Architect; 1 additional year, plus original thesis, for Doctor's degree.

*Professional experience:* not required, but students work in architects' offices for part of last 2 courses

*Title or license:* protected by law

*Remarks:* An architectural samples room is continuously serviced by building trades.

### Sweden

31 INSTITUTIONEN FOR ARKITEKTUR AND STADSBYGGNAD, KUNGL. TEKNISKA HOGSKOLAN, STOCKHOLM

*Admission requirements:* technical high school matriculation examination.

*Normal age of entry:* 19-22

*Approximate number of students:* 280

*Duration of course:* 4 years to 4½ years

*Curriculum:* I: c, 1. II: b, 1, 2; d, 1, 2; g, 1, 2; n, 1, 2. III: b, 1; h, 1. IV: d, 1, 2, 3; e, 2. V: a, 1, 2, 3, 4; f, 3; o, 1. VI: f, 1, 2, 3, 4; j, 1; k, 2, 3; t, 2; v, 1. VII: e, 1, 2; k, 4. VIII: d, 4; g, 1. IX: c, 4; h, 3, 4; j, 3. X: g,

3; h, 2, 3.

*Degree or diploma:* successful completion of the course carries right to admission to National Society of Swedish Architects

*Title or License:* Arkitekt SAR (National Society of Swedish Architects)

*Remarks:* A higher examination, "Teknisk Licentiatexamen," can be taken after a further 2 years of study; after another 2 years beyond that the degree of Doctor of Technology may be obtained.

### Switzerland

32 ABTEILUNG FUR ARCHITEKTUR, EIDGENOSSISCHE TECHNISCHE HOCHSCHULE, ZURICH

*Admission requirements:* certificate of maturity at recognized school or corresponding examination for admission

*Normal age of entry:* 18

*Approximate number of students:* 400

*Duration of course:* 4 years

*Curriculum:* I: c, 4; e, 3. II: b, 1; d, 1, 2, 3; g, 1, 2, 3; k, 2; n, 1, 2. III: b, 1; d, 2; h, 1. IV: c, 2, 3, 4; d, 2, 4; f, 1. V: a, 2, 3, 4; c, 1; e, 4; f, 2, 3, 4; j, 3. VI: f, 1, 2, 3; g, 1, 3; k, 2, 3; t, 2, 3; v, 1, 2; x, 1, 2, 3, 4. VII: g, 3, 4; o, 1, 2. VIII: a, 3, 4; g, 3. IX: a, 3, 4; d, 2; h, 2, 3. X: a, 3; g, 2.

*Degree or diploma:* Diploma in Architecture. Diploma thesis in 8th semester (10 weeks, 3 criticisms)

*Professional experience:* 1 year practical experience before gaining diploma

*Title or license:* not protected by law

### Turkey

33 DEPARTMENT OF ARCHITECTURE, TECHNICAL UNIVERSITY OF ISTANBUL, ISTANBUL

*Admission requirements:* matriculation diploma

*Normal age of entry:* about 18

*Approximate number of students:* 500

*Curriculum:* I: c, 4; e, 3, 4, 5; g, 5; k, 1, 2, 3, 4. II: b, 1, 2; g, 2, 3; n, 1. III: h, 1; j, 2, 3. IV: d, 1, 2, 3, 4; e, 1, 2, 3; o, 1, 2, 3, 4, 5. V: a, 2, 3, 4, 5; b, 2, 3; t, 5. VI: f, 1, 2; k, 3, 4; t, 3; x, 3, 4; y, 1. VIII: g, 5; i, 4. IX: h, 3, 4. ■



## Books

*The Architecture of Fantasy*, by Ulrich Conrads and Hans G. Sperlich; translated, edited and expanded by Christiane Crasemann Collins and George R. Collins. NY: Frederick A. Praeger, 1962. \$16.00.

Praeger has published the English version of "Phantastische Architektur" bearing the motto "Books that Matter." I think there would be ample justification of the claim in the many informative, often rare, on-the-scene letters, illustrations and manifestoes from the works of Bruno Taut, Hans Scharoun, Luckhardt, Poelzig, Mendelsohn, Soleri, Goff, Gaudi, and others whose work lies within the authors' definition of the fantastic. This definition "tries to avoid the derogatory and slangy overtones that cling to the English term 'fantastic' and includes work which is not pure fantasy or all necessarily fantastic in the same sense but in some way is imaginative or utopian." It is high time for such a serious study.

The authors briefly examine a set of categories held as significant for fantastic architecture. Topics such as "a pre-figured architecture, the found object, extreme tangibility, cave and labyrinth" are discussed. The photographic illustrations accompanying these sections are generally good and are helpfully annotated. A glossary supplying pertinent programmatic and biographical information about the projects and their authors adds a good deal to the worth and sobriety of the whole presentation.

Sometimes scholarly buttresses are weak. An association between Baroque floor plans which conform to a monogram or heraldic device and the geometric floor plans of Wright and Goff seems to me of somewhat remote value. But some of the difficulty stems from the over-simplification that must accompany verbal accounts of architecture. In the main this is a selfless book. It aims at informing and avoids propitiation.

As to the main outline of the book, the textual classifications have value in that cave, labyrinth, utopia, the transparent and fantastic frameworks (many membered skeletal structures) allow readers to bring to bear their familiarity with concepts established in architecture and literature. This helps to make the authors' compressions accessible and should enable the book to take an active place in any literature concerned with an imaginative architecture. However, these classifications of cave, crystal and labyrinth may turn out to be the most limiting aspect of the book. The imagery often focused upon by these categories supplies the link to the kinds of romance which avoid facts; the imagery of other worlds preferred to this one which has in fact undermined imaginative speculation for much western architecture. I can't but feel that I speak for most in saying that while we are enormously interested in human imagination, our interest in concepts harboring escape is practically zero.

In place of the cave and labyrinth categories, an inquiry into the process and content of imagination along lines suggested by A. N. Whitehead and William James seems more fruitful, if at the moment

more difficult to develop. The cave image tends to foist a form too historically fixed on to the creation in question, perpetuating old entanglements and channelling memorabilia into dead ends. James and Whitehead emphasize the process by which the particular image or form evolves—including the modifications induced by human cognition. For this approach, importance lies in the description of the assembly of each process or—in Whitehead's terminology—in each event. The difficulties in tracking the seemingly mercurial activity of the process as it appropriates whatever is necessary to itself along its routes of nascency must be undertaken as part of the description. Traditional images may still come into the picture but not as the dominant organizers.

Modern philosophy, Whitehead's in particular, has given us penetrating explanations of the extensional properties of form, of its topology and its content. This work could suggest the means with which to attempt a formal analysis of the constitution of an esthetic entity, or for that matter, any entity in its concrete aspects. Whitehead's scheme is a rendering of the types of relations possible among occasions of experience including forms, which does much to explain the current interest in the "found object" of the authors' discussion. Familiarity with this scheme might at least make us guard against Aristotelian classifications and habits of language which so often deflect discussions of esthetic topics.

This suggestion that modern philosophy is a means of extending the authors' thesis is hinted at by the book itself. The authors hope that their work will call attention to ideas of neglected importance, and possibly encourage other studies dealing with imagination in architecture. The application of certain forms of modern philosophy, with their improved powers of classification and of the analysis of content, together with presuppositions of aim and outlook human and humane, strikes me as one of the most promising routes for such investigations. Special attitudes such as fantasy could give way to those of imaginative value in general. Surely a creation such as the Getty Tomb with its expressive attainment regarding life, death and femininity is a greater feat of imagination than most works which obviously machinate over the established and predetermined subject matter of the fantastic. The Getty Tomb should also act as a brake to those who see new technology as the basis for an imaginative architecture. Without minimizing the importance of new materials and new concepts of enlarged scope and form, it is well to remember Sullivan's ideality: "The greatest poet will be he who shall grasp and deify the commonplaces of our life. Those simple normal feelings which the people of his day will be helpless otherwise to express."

HERB GREENE

University of Kentucky

## To the Editor

Sir:

The AIA Special Committee on Education (Three-Man Commission) has concluded that "the broad-



ened concept of architectural education obviously requires new curricula expanded both in character and time. As a consequence, the number of academic years must also be increased . . ." The ACSA Committee on the Advancement of Architectural Education has concurred and recommended that "the member schools of ACSA revise their programs as conditions permit to require, ultimately, that students entering the professional programs have a minimum of the equivalent of a two-year course of study in the basic liberal arts and sciences." It has further recommended that this be a condition for ACSA membership or for establishing new schools.

Both these committees believe that there should be collegiate level preparation for the undertaking of professional academic training and thus that a "stretch-out" should occur at the "intake" end of the process. This would undoubtedly secure a better student to be architecturally educated, but it would not necessarily produce a better architect. I think this might better be achieved by lengthening the process on the "output" end, combining it with pre-registration training and increasing the prospective registrant's exposure to academic work at a more mature time in his life.

There are many reasons why the extension of academic training to six years as recommended would be desirable—and some why it would not.

On the positive side:

- 1) There is a larger technology now to be mastered, almost a limitless technology—and it shows no sign of ceasing to expand. A working knowledge of it takes longer to acquire.
- 2) Society may not be vastly more complex, more difficult to understand and more in need of sensitive interpretation than ever before—but it seems to be.
- 3) A reliable basis for eliminating poorly qualified students from increasingly large entering classes is desirable. Delaying entrance into the professional curriculum is a way of doing this.

On the other hand:

- 1) If it is a bachelor's degree that is to be received at the end of six years, it should be realized that five years is already a greater-than-typical time to be spent in earning such a degree. And, as a practical matter, we must often compete for good students.
- 2) Students are frequently surfeited with an uninterrupted five years of professional education—let alone six.
- 3) There is no assurance that the objectives of academic training can be met with just one additional year—a really effective program of continuing education would seem more to the point.

Certain additional thoughts are at the root of proposals I would make:

- 1) Design instruction should begin as early as possible, hopefully in the first year of collegiate study.
- 2) An additional year of design beyond five would serve little purpose as a requirement for the B. Arch. degree.

- 3) Most curricula, including that at Arizona State, can be improved to do more with the five years.
- 4) It is more important that we increase and improve the breadth of academic training than that we increase the depth of its professional content.

With all these ideas in mind, I would propose the following as the program of academic and pre-registration training toward which we should evolve:

- 1) Maintain the five-year B. Arch. degree as presently visualized and accredited by NAAB.
- 2) Maintain the one-to-two year M. Arch. degree as presently offered by individual institutions.
- 3) Establish the B. Arch. degree as the level of academic training *required* of all candidates for registration.
- 4) Increase the period of apprenticeship required for registration from three years to five.
- 5) Require as part of pre-registration training the completion of eighteen semester hours or equivalent of junior-, senior- or graduate-level courses at any convenient collegiate institution in disciplines related to architecture. While this embraces almost everything, it can be expected that certain outstanding courses would be identified at each institution through experience, evolution and the recommendations of local AIA chapters and/or schools of architecture. Perhaps as much as half of this requirement could be met by completion of courses offered by schools of architecture. The total requirement could be met by the applicant's completing one three-hour day, night or extension course in each of any six of his first ten post-B. Arch. semesters and/or summer sessions. It would do much to instill or strengthen the habit of continuing study in the maturing candidate.
- 6) Accept the M. Arch. degree as the equivalent of two years of pre-registration training. (Perhaps the master's degree should be placed under the surveillance of NAAB.)

*These procedures would require the equivalent of a semester of advanced study and encourage completion of the master's degree. The academic and pre-registration training periods would total nine years with the M. Arch. degree, ten with the B. Arch. A minimum of five-and-one-half years of academic training would be included. It would be possible for this program to be implemented in any state through the joint action of its registration board and all its schools. It would not be desirable, of course, without the blessing of NCARB, AIA and NAAB as well as ACSA. It is possible, as has been demonstrated, for schools independently to pursue a six-year curriculum. In the interest of preserving the asset we have in the varied approaches of various schools, I would hope that the program outlined above and other alternative proposals could be fully explored before there is any action decreeing that B. Arch. degree curricula shall be of six-year duration.*

JAMES W. ELMORE  
*Arizona State University*



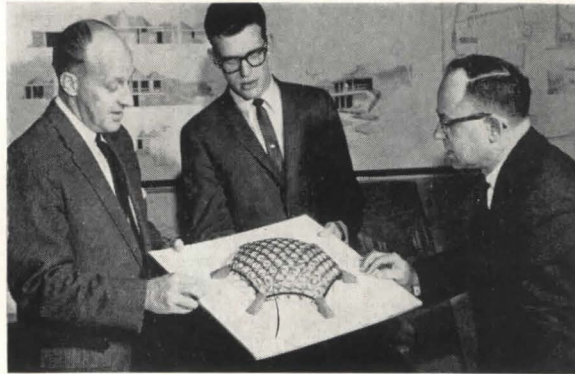
# News

## Reynolds Prize to Notre Dame

Design of a "Dynamic Clear Span," a shallow dome constructed of identical aluminum rings enclosing glass or translucent plastic, has won the fourth annual Reynolds Aluminum Prize for Architectural Students for John F. Torti of the University of Notre Dame. The \$3,000 prize will be divided equally between the 21-year-old, fourth-year student and his school. The AIA stipulates that the winner must use his prize for further education, and Mr Torti plans to do graduate studies in city planning.

Intended to span large areas without shutting out natural light, the design consists of aluminum rings joined by single bolts at the points where they touch. The size of the rings is determined by the area to be spanned and other design factors.

The twenty-seven entries—each had won a competition within its own school for a cash prize of \$200—were judged by an AIA jury composed of Chairman Joseph D. Murphy FAIA, St. Louis; Dean Sam T. Hurst of the School of Architecture, University of Southern California; W. G. Lyles, Columbia, SC.



*Model of winning design is examined by Dean Norman Gay, University of Notre Dame's College of Engineering; John F. Torti, winning student; and Francesco Montana AIA, Head of the Department of Architecture*

## Building Products Register in Third Edition

The Third Edition of the AIA Building Products Register will be off the press this month, and a free copy will be sent to each corporate member requesting it. Additional copies are available to members, as well as all others, at the prepaid price of \$20.

*Cont'd on p 88*

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### News Cont'd

Developed after 12 years of study, the Register was created as a technical reference for architects, engineers and other construction industry specifiers. It provides a fingertip-fast source of factual product data at the initial stage of material selection, prior to research into more detailed informational areas.

The Third Edition is in the standard 8½" x 11" size with a hard cloth-bound cover. This change from the previous editions makes it easier to handle and, for example, to keep with Sweet's Architectural Catalog File and other bound product literature. In addition to AIA file numbers, the Register also uses Sweet's 1964 file numbers for quick easy references.

Product data, within 27 different categories, paralleling those of Sweet's, are condensed into three-line listings across two pages under an average of two dozen pertinent criteria headings.

Requests for complimentary copies and orders (five or more will receive a 25 per cent discount) should be directed to the Register, AIA, 1735 New York Ave NW, Washington, DC, 20006. Make checks payable to "The American Institute of Architects—BPR."

#### Hospital Newsletter Makes Debut

Rex Whitaker Allen AIA, Chairman of AIA's national Committee on Hospital Architecture, an-

nounces that the Committee is in the process of compiling a mailing list of members interested in receiving a "CHA Newsletter." The newsletter will be sent to regional committees in hospitals and health facilities and to others expressing an interest in receiving information on activities of the national Committee and collaborating organizations. Members who wish to be added to the mailing list are invited to write Mr Allen at 259 Geary St, Union Square, San Francisco 2, Calif.

#### PCI Sets Awards Program

The second annual Prestressed Concrete Institute Awards Program will be open to structures completed within the three years prior to March 31, 1964, or substantially completed by that date. Deadline for entries is May 1.

The jurors, headed by Richard M. Bennett FAIA, Chicago, will consider originality in design including applications, techniques of assembly, arrangement or use of prestressed concrete. Further details can be secured through PCI headquarters, 205 W Wacker Drive, Chicago, Ill, 60606.

#### About Members

• Eric Pawley AIA, Professor of Research in Architecture of the University of Southern California's

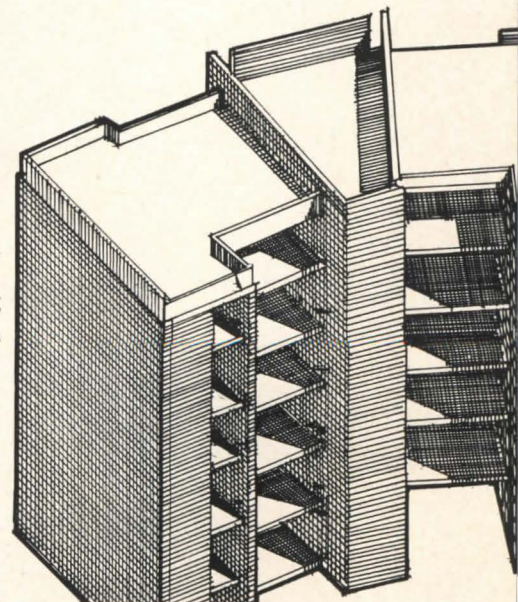
## TODAY'S BRICK BEARING WALL OFFERS VARIETY

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School of Architecture and Fine Arts, has been named chairman of the US Expert Committee on Lighting Education of the Paris-based International Commission on Illumination. Formerly Research Secretary of the AIA headquarters staff and Technical Editor of the *Journal*, Professor Pawley joined the USC faculty last summer. His newly initiated course "Introduction to Research for Architecture" already has discussed some elementary aspects of architectural illumination.

- Leo A. Daly AIA, Omaha, Neb, has received the highest award the Air Force can make to a civilian, the Exceptional Service Medal, in recognition of his services to the Strategic Air Command Consultation Committee. He authored the article "The Architect in the Business World," which appeared in the January 1964 *Journal* as part of the comprehensive services series.

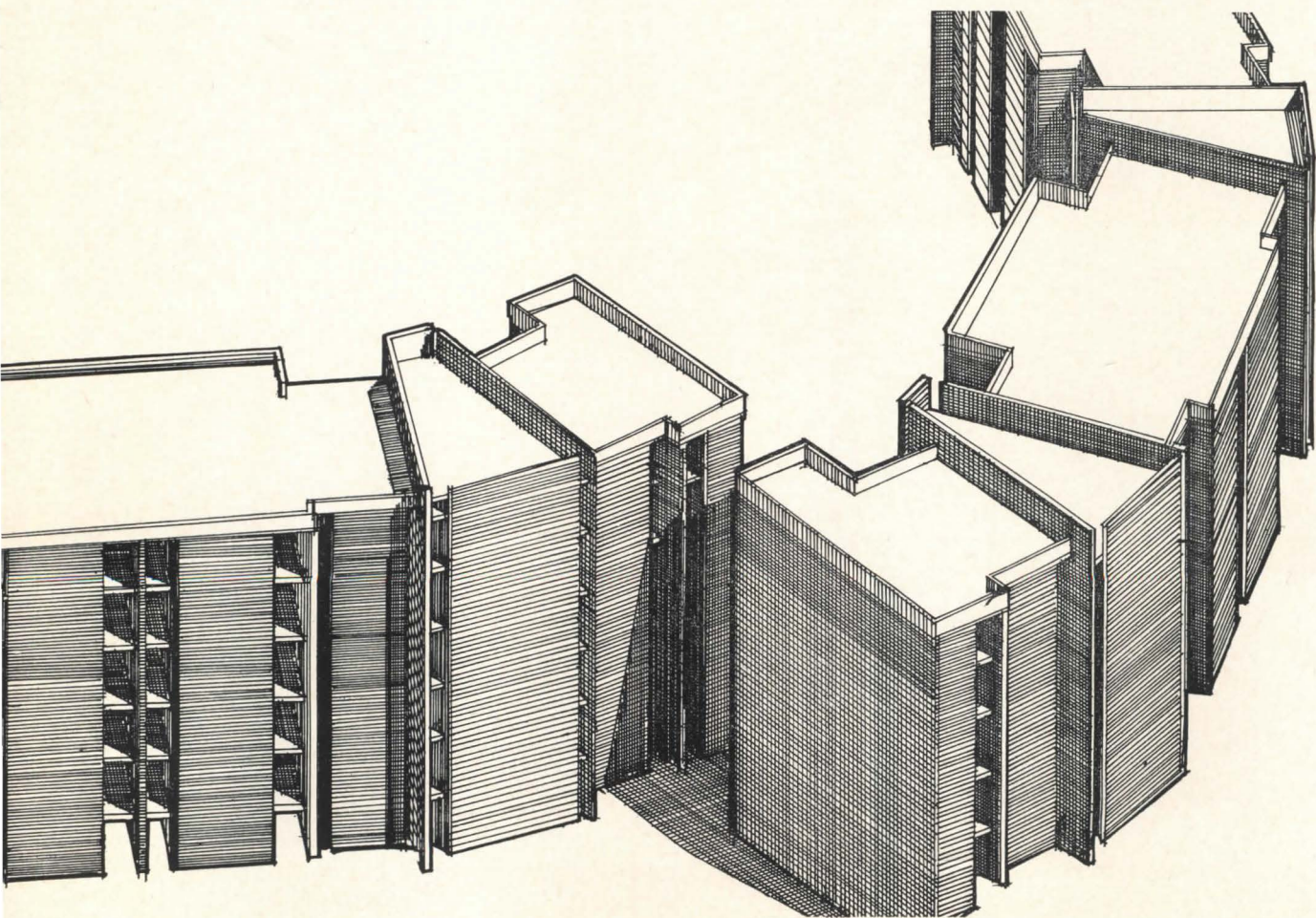
- Like a goodly number of his colleagues, James T. Potter AIA spends many a busman's holiday photographing what he considers "the best contemporary architecture" across the country. He has carried his avocation one step further by developing three slide lectures ("A New Face for America," "Designing Today's Church," "The Architect, His Camera and the Public") which he presents to the general public and AIA groups. Interested parties may contact him at 121 S. Pinckney St, Madison, Wis.

### Miscellany

- The nearly eighty-year-old New York architectural firm of Voorhees Walker Smith Smith & Haines, noted for the continuity in its practice, has changed its name for the seventh time. Established in 1885 by Cyrus L. W. Eidlitz and becoming a partnership in 1900 with the addition of Andrew C. McKenzie, the firm name has always consisted of the active partners. Thus at the beginning of this year it became known as Smith Smith Haines Lundberg & Waehler, marking for the first time since 1910 that the name of Stephen Francis Voorhees has not appeared on the letterhead.

- In commemoration of the 50th anniversary of the Virginia Chapter AIA, a select group of buildings which have been erected or restored between 1914 and 1964 will be presented by the Garden Club of Virginia during Historic Garden Week April 18-25.

- Architects who are planning new collegiate library buildings will be interested in learning of the availability of a collection of graphic materials—colored slides, photographs, floor plans, brochures, etc—descriptive of projects erected in the US since 1948. More than 150 libraries are included in the collection, which may be rented through Harold D. Jones, 36 Clark St, Brooklyn 1, NY, who has served on several building planning committees as a librarian. He has appeared before a meeting of the Council for the Advancement of Small Colleges Inc.





# Glass Conditioning\*

(a systematic plan for controlling indoor environment with PPG glass products)

**Hypothetical Assignment:** A projected office building in Chicago, facing Lake Michigan per client's request. Building dimensions: 300 feet high by 100 feet by 50 feet.

**Site Conditions:** Latitude subject to extremely low temperatures, severe winters with high winds, hot summers. Heating season: approximately 6300 degree days. Air

conditioning season: 120 days of which 90 would have an average of 80F for a 12-hour air conditioning period. Indoor temperature to be maintained at 70F. \*Service Mark

